CRACKING IAS ACADEMY CURRENT AFFAIRS 2016-SEPTEMBER

NATIONAL

1. Lodha panel moves SC seeking removal of BCCI top brass including Anurag Thakur- TRANSPARENCY IN SPORTS.

Lodha Committee

- The committee was appointed by the SC in 2014 to make recommendations to the BCCI in order to prevent frauds and conflict of interest in cricket administration.

Status report

- The committee recently filed the status report regarding the implementations of its recommendations by BCCI.
- The nomination of the powerful Maharashtra politician, SharadPawar, as "alternate director for International Cricket Council (ICC) meetings" and BCCI president Anurag Thakur's role as representative of the Board in Asian and international cricket bodies are among the few violations cited by the committee.
- Due to this reason the committee pushes for the "immediate" removal of the BCCI office-bearers by the Supreme Court.
- According to the report the BCCI placed "impediments" to the implementation of the recommendations so as to "frustrate" the Supreme Court's July 18 verdict to usher in transparency in cricket administration.
- Further the committee wants the court to declare "non estand ineffective" all the decisions taken by the BCCI in violation of the verdict.
- The Bench gave the BCCI time till October 6 to respond to the status report.

Lodha committee's recommendations

- Governing Bodies should be separated for Indian Premier League (IPL) and BCCI, with limited autonomy for the IPL Governing Council.
- No Minister or government servant should become a BCCI office-bearer.
- Office-bearer's tenure should not exceed more than two consecutive terms, and he/she cannot hold two posts at the same time.
- Membership should be only to team representing the respective states.
- Each state should have only one vote.
- The relevance of different zones should be for the purpose of tournaments and not for the governance of the BCCI and its committees etc.,

Source - **http://timesofindia.indiatimes.com/top-stories/Lodha-panel-moves-SC-seeking-removal-of-BCCI-top-brass-including-Anurag-Thakur/articleshow/54559354.cms**

2. India fourth on RTI list

India has ranked fourth in a worldwide comparative assessment of national legal frameworks for right to information, **slipping a rank as Mexico replaced Serbia** to head the list of 112 countries this year and pushed each of last year's top five countries a notch lower.**Sri Lanka, at ninth spot**, **is the only other South Asian country to figure among top ten nations** in the ratings released on 28 September 2016 **to mark International Day for Universal Access to Information**. Developed by **the Centre for Law and Democracy and Access Info Europe**, the ratings are done on **the basis of 61 indicators totalling up to 150 points** to gauge a **country's legal framework**.

- **Mexico scored 136 points**, edging past Serbia, which **ended up with 135 points**.
- **India slipped one rank this year not because of its own performance but because of Mexico's surge**. "Mexico has recently revamped General Act of Transparency and Access to Public Information and has outranked Serbia.
- **All countries in South Asia, barring Pakistan, scored more than 100 points**. Pakistan remains at 89th spot.
- As per the ratings, **Arab countries are among the world's weakest on this important human rights indicator**, with only four of the 22 member states of the Arab League – Jordan, Sudan, Tunisia, Yemen – having RTI laws.

What is Surgical Strike?

- The popular myth 'RTI is meant for developed countries while developing countries have other urgent issues of poverty, hunger, poor levels of basic services like education and health' stands disproved once again.

3. Indian Army conducts surgical strikes across Line of Control

- Indian Army conducted surgical strikes on terror launch pads across the Line of Control. Director General of Military Operations Lieutenant General Ranbir Singh said the motive of the operation was to hit out at the terrorists who were planning to infiltrate into the Indian Territory.
- Lt General Singh informed that significant casualty was caused to terrorists during the operation. He said that it is a matter of serious concern that there have been many infiltration bids by terrorists at LoC and it was reflected in the terror attacks in Poonch and Uri on 11 September and 18 September 2016.
- As per DGMO nothing was done despite India's persistent request to Pakistan not to allow territory under its control to be used for terror activities. He said Pakistan gave a commitment to India in 2004 that it will not allow its soil to be used for anti India terror activities.
- Besides, he also informed that almost 20 infiltration attempts have been successfully foiled by Indian Army in 2016. India has also offered consular access to apprehended terrorists from Pakistan and finger prints and DNA samples of the terrorists killed in Uri and Poonch attacks can also be made available to the neighbouring country.
- Lieutenant General Singh said, he spoke to his Pakistani counterpart to share India's concerns and told him about the surgical strikes. He said, India cannot allow terrorists to operate across the LoC.
- A surgical strike is a military attack which results in only damage to the intended legitimate military target, and no or minimal collateral damage to surrounding structures, vehicles, buildings, or the general public infrastructure and utilities.
- A swift and targeted attack with the aim of minimum collateral damage to the nearby areas and civilians is a surgical strike.
- Surgical strikes that require not just detailed and exhaustive planning but also needs precision in execution are undertaken by forces across the world.

India's surgical operation across LoC in Pakistan

- Indian Army performed a four hour surgical strike across the Line of Control (LoC) in Pakistan-Occupied Kashmir (PoK). As per army, the strike was conducted to prevent terrorists who were prepping to infiltrate and attack the Kashmir region and metros.
- The strike which resulted in heavy casualties on terrorists also indicated a change of stand on the rules of engagement on the disputed LoC. As per reports, first-of-its-kind strike across the Pakistani border was based on specific intelligence reports.

Details of the Surgical Strike

- As per reports, the operation in which paratroopers from Special Forces were involved began on 28 September 2016 around 12.30 am. The commandos were airdropped at the LoC from where they crossed over the Pakistani side. They entered about three kilometers to conduct the surgical strikes in Bhimber, Hotspring, Kel & Lipa sectors, on Pakistans side of LoC. As per reports, seven terror launch pads were destroyed in which about 38 terrorists and 2 Pakistani soldiers were killed. The best part of the operation was that no Indian casualties were reported.

4. Railways Ministry launches various Railways Services

Railways Minister Suresh Prabhakar Prabhu on 29 September 2016 launched various Railways Services and dedicated them to the nation. These Railways services are:

• Liberalised station to station special freight rates policy.
• Policy providing sub quota of 33% to women within reserved categories for the allotment in catering units.
• Policy giving preference to local domicile holders for commercial licenses at stations.
• New system of allocating vacant berths after final charting to wayside stations.
• Launch of the new tag Train at a Glance 2016 and new Time Table effective from 1 October 2016.

Liberalised station to station special freight rates policy

• Existing as well as new traffic shall be eligible.
• Concession shall be granted up to a maximum of 30 percent on the incremental traffic over and above the benchmark NTKM.
• Concession shall be in the form of percentage discount over the Normal Tariff Rate (NTR). It should be ensured that the concessional freight should not be less than the NTR of Class 100.
• Concession shall be admissible to Block rake, two/multi point rake, Mini Rake etc.
• Concession may be granted for retention of traffic also up to maximum of 15 percent.
• STS scheme will be applicable for all terminals namely goods sheds, sidings, ports, CRTs, PFTOs etc.
• Commodities excluded from STS are - All commodities with classification below Class-100, All commodities under Main Commodity Head Coal & Coke, Iron ore, Military traffic, POL and RMC.

Policy providing sub quota of 33% to women for the allotment in catering units

• A Sub Quota of 33 percent for women in allotment of the reserved catering units was introduced in order to extend economic empowerment for women.
• This will ensure allotment of minimum 8 percent stalls to women at A1, A, B & C category station and minimum 17 percent allotment at D, E and F category station.
• There are approximately 8000 Minor Catering Units over Indian Railways.
• Under this provision, Railways shall ensure that women participation does not fall below a specific level.

Policy giving preference to local domicile holders for commercial licenses at stations

• In compliance of Budget Announcement 2016-17, a process of giving weightage to district Domicile Holders for commercial licenses at stations is being proliferated at all stations over Indian Railways.
• It would help to build local ownership and rural empowerment along with socio-economic development.
• The weightage to district domicile holders is being proliferated for allotment of Catering Units at all categories of stations.
• It will ensure protection of livelihood of the small vendors.
• The allotment of Minor Units over Indian Railways will ensure local ownership and will also promote regional / local cuisine, which is always a preferred choice.

Transfer of vacant berths for optimal utilisation of berths

• This facility of transfer of berths remaining vacant after second charting at the train originating station to the next and subsequent stations will clear the way for the waitlisted passengers at such stations.
• The PRS system will automatically allot vacant berths available at the originating stations after preparation of second chart to the subsequent stations where waitlisted passengers are available.
• The passenger will get SMS on his registered mobile indicating the coach and berth number allotted.
• This will help passengers boarding at road side stations to get confirmed berths.
• The TTEs will be able to allot vacant berths on board after departure of the train only upto the next station where quota is available for the train.
• At present about 3 lakh berths per year go unutilised while there may be demand at intermediate stations.

5. MANA TV - Telangana inks MoU with ISRO to promote education

Indian Space Research Organization (ISRO) and Telangana government signed a Memorandum of Understanding (MoU) to provide digital classes across the state through its state channel Mana TV.

- As per the MoU, the ISRO's Development & Educational Communication Unit (DECU) will work with the state government to disseminate educational content using satellite technology.
- The channel will telecast a four-hour programme daily.
- Besides, about 6000 schools of the state will launch digital classes.
- The digital classes will provide a platform for lakhs of students and job aspirants to get quality education.

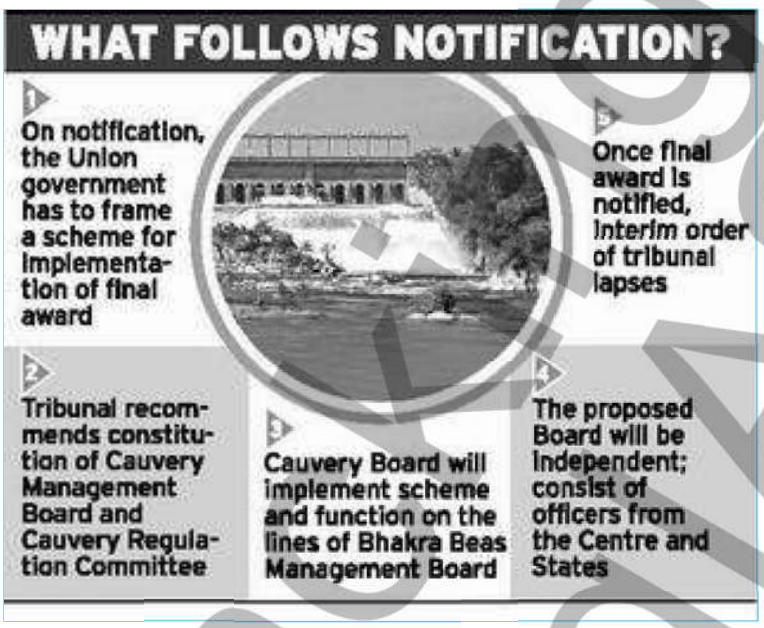
Note

- Earlier, the state's Irrigation Department signed MoU with ISRO's National Remote Sensing Centre (NRSC) to use space technology for real-time monitoring of all water resources in the state.
- The state in 2006, entered into a similar agreement with ISRO.

Mana TV

- Mana TV was an initiative started by the undivided Andhra Pradesh to provide programmes on distance education, telemedicine and agriculture extension under different channels.

6. Cauvery Management Board



The Supreme Court has directed the Centre to constitute a Cauvery Water Management Board.

What is the Cauvery Management Board?

Composition of the Board:

Functions of the Board:

Reservoirs:

Expenses of the Board:

India's largest civilian research and development agency Council of Scientific and Industrial Research (CSIR) celebrated its platinum jubilee.

Achievements of Council of Scientific

- The Cauvery Water Dispute Tribunal mandated the establishment of the Cauvery Management Board to ensure implementation of and compliance with its 2007 final order on the sharing of the river waters, mainly between Karnataka and Tamil Nadu, but also with Kerala and Puducherry.
- **permanent body under the Union Ministry of Water Resources**The board is a .
- According to the rules, the Centre will appoint the chairman and all the members of the management board.
- Members will include an Irrigation Engineer and an agricultural expert and two other representatives from the Centre, who will be appointed by the Ministry of Water resources and Ministry of agriculture.
- Also all four Cauvery states – Karnataka, Tamil Nadu, Kerala and Pondicherry will have their representatives on the board.
- Once the Board is set up, all the Cauvery reservoirs in Karnataka will come under the control of the board and the state will lose its rights over the management of water.
- The Board will take decisions on water usage and distribution.
- The Board will also see to it that states ensure proper hydraulic structures at relevant sites.
- It will determine the amount of water to be received by the states.
- The Board will ensure adequate storage by the end of May each year during good years. This will help during delays in the onset of monsoons. In case of consecutive bad years, the Board will handle the issue appropriately by distributing water in a planned manner with minimum distress.
- The important reservoirs will be handled by the concerned states as per guidelines issued by the Cauvery Water Management Board to meet the requirements of various states.
- The expenses of the board will be borne by all the member states.
- The expenses of the member representing a state will be borne by the respective state.
- The cost of installations, constructions or maintenance of hydrological systems shall be borne by the concerned states.

7. Platinum jubilee of CSIR

- Council of Scientific and Industrial Research (CSIR), established in 1942, is an autonomous body and the largest research and development (R&D) organization in India.
- It runs 37 laboratories and 39 field stations or extension centres spread across the nation.
- Although it is mainly funded by the Ministry of Science and Technology, it operates as an autonomous body registered under the Registration of Societies Act of 1860.
- The research and development activities of CSIR includes aerospace engineering, Structural engineering, ocean sciences, Life sciences, metallurgy, chemicals, mining, food, petroleum, leather, and environment.
- CSIR is ranked at 84th among 4851 institutions worldwide and is the only Indian organization among the top 100 global institutions, according to the Scimago Institutions Ranking World Report 2014.

& Industrial Research of 2014-15

SOURCE - http://pib.nic.in/newsite/PrintRelease.aspx?relid=134037

- The Council of Scientific and Industrial Research (CSIR) has been continuously striving to address the unmet needs through its unique S&T interventions. CSIR through its New Millennium Indian Technology Leadership Initiative (NMITLI) has been successful in developing a reflectance confocal microscope with super continuum light source
. The development has paved way for India's presence in global photonics research. This
is a World Class 'Made in India' High-end Product.
- CSIR also made great headway in developing niche aerospace technologies. CSIR and the India Meteorological Department (IMD) are jointly producing the Drishti system, a visibility measuring system that provides information to pilots on visibility for safe landing and take-off operations, so as to enable the deployment of 70 such systems at Indian airports. The system has already been installed in 5 major Indian airports.
- CSIR has been a consistent comrade of the ISRO and DAE. Its unstinting strong R&D support to the strategic sector has been most beneficial to the country. Gyrotron, a device used in nuclear fusion process, is currently imported in the country. Countries that manufacture gyrotrons namely the United States, Russia, Japan, and European Union do not disclose their designs and associated technology. Through focused efforts, CSIR with the Department of Science and Technology (DST) has developed the first Indian gyrotron which is ready to be tested at the Institute for Plasma Research (DAE), Gandhinagar, which is a partner institute on this project. CSIR has also been providing support in the development, production and supply of neodymium doped phosphate laser glass to the Raja Ramanna Centre for Advanced Technology (DAE).'DHVANI', the Detection and Hit Visualization using Acoustic N-wave Identification system developed by CSIR for perfecting marksmanship skills by accurately determining the location of bullet impact and providing real-time feedback, has been approved for induction into the Indian Army.

- CSIR's endeavours in the domain of traditional knowledge for providing affordable healthcare have been praiseworthy. An anti-diabetic herbal formulation BGR-34, from a combination of natural extracts derived from six plant species mentioned in ancient Ayurveda texts has been developed. The drug which was approved by the Ministry of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy (AYUSH) is an adjuvant to existing diabetes treatment, to help maintain normal blood glucose levels and also in improving the immune system. The herbal drug has been launched by industry in parts of North India.
- Further, a national cGMP facility for extraction, formulation and packaging of traditional herbal medicines has been set up at CSIR-Indian Institute of Integrative Medicine (CSIR-IIIM), Jammu. It has been created as per WHO guidelines. The facility will also be made available to R&D institutions and industry. The facility will target preparation of extracts and formulations for conducting clinical trials, process development, scale-up & optimization of lab- processes and converting them into commercially viable technologies besides generation of authentic and accurate clinically acceptable data. This facility will transform quality herbal drug production in India and its export to US and European markets.
- The farmers are the backbone of our country. CSIR has developed and released to farmers a new improved high yielding variety of Ashwagandha, NMITLI-101 which is rich in several bioactive compounds. The average root yield from NMITLI-101 crop is about 25 quintal/hectare and the seed production from the variety is up to 3 quintal/ha, under optimum conditions. The estimated economic return from cultivation of this variety is about Rs. 2.5 Lakh/hectare per crop.
- CSIR has also launched the JK Aroma Arogya Gram (JAAG) project which targets job and wealth creation through intensive cultivation of CSIR agri-technology of high value, low volume medicinal and aromatic crops. The benefits of the JAAG project include handholding of the farmers by CSIR for cultivation of medicinal plants, besides providing unemployed youth an opportunity to set up ventures in cultivation of medicinal plants. Awareness camps for farmers of the area besides demonstrations of Mobile Distillation Unit for extraction of essential oils are conducted. Started in July 2015, so far, seventy three farmers in 14 villages of Kathua district (J&K) have been distributed slips of lemongrass, Java citronella and vetiver for cultivation in 17.47 hectares area under the JAAG project.
- Also focusing at 'Reaching to the Unreached', CSIR's Centre for High Altitude Biology (CSIR-CeHAB) in Lahaul and Spitiis providing deployable knowledgebase to local communities for inclusive growth. The CSIR knowhow related to food & agri-processing was showcased at the Tribal Fair at Keylong for the benefit of the local farmers in making novel products from major crops of the region such as Buckwheat and also brining of the peas and cauliflower.
- As part of efforts towards developing sustainable energy solutions, CSIR under the CSIR-NMITLI, has successfully developed indigenous know-how to make technology components and the process for building Proton Exchange Membrane Fuel Cell (PEMFC) multi-cell stack of desired power output. CSIR has taken existing technology know-how from stack-to-system level higher by scaling-up the power produced to 3.5 kW and validating it for a commercial application such as telecom tower power backup. For this, a modular test bed has been designed, built and commissioned with in-house knowhow at Reliance Industries Ltd (RIL), Patalganga site. The fuel cell facility commissioned now, is expected to provide plenty of useful data for testing and developing indigenous fuel cells at low costs for commercial applications.

DEPARTMENT OF SCIENCE & TECHNOLOGY

1. India International Science Festival (IISF) 2015

IISF (2015) was organised in IIT, Delhi during 4th Dec. to 8th Dec. 2015 with the objective of exposing the fruits of Science & Technology to the masses; building strategy to instill scientific temper among the masses; showcasing Indian contributions in the field of S&T over the years; providing platform to young scientists for exchange of knowledge and ideas; and supporting flagship programmes like Make in India, Digital India, Start-ups, Smart Villages, Smart Cities, etc. Approximately 10,000 delegates from all over the country participated in the following components of the festival – young scientists' conference, techno-industrial expo, science film festival, national level exhibition and project competition showcasing innovative models under INSPIRE programme of Department of Science & Technology, industry academia conclave, largest practical science laboratory demo and interactive workshops and informative sessions.

Largest Practical Science Session with 2000 students, on 7th Dec. 2015, working in small teams to complete experiments as part of the lesson that focused on catalysts has found the entry in the **Guinness Book of World Records.**

2. National Supercomputing Mission

The Cabinet Committee on Economic Affairs approved the launch of the National Supercomputing Mission on 25th March 2015. This is a visionary program to enable India to leapfrog to the league of world class computing power nations. The Mission would be implemented and steered jointly by the Department of Science and Technology (DST) and Department of Electronics and Information Technology (DeitY) at an estimated cost of Rs.4500 crore over a period of seven years.

The Mission envisages empowering our national academic and R&D institutions spread over the country by installing a vast supercomputing grid comprising of more than 70 high-performance computing facilities. These supercomputers will also be networked on the National Supercomputing grid over the National Knowledge Network (NKN). The NKN is another programme of the government which connects academic institutions and R&D labs over a high speed network. Academic and R&D institutions as well as key user departments/ministries would participate by using these facilities and develop applications of national relevance. The Mission also includes development of highly professional High Performance Computing (HPC) aware human resource for meeting challenges of development of these applications.

3. DST-MHRD Collaboration in Impacting Research Innovation and Technology (IMPRINT) Project: Department of Science & Technology (DST) is working with Ministry of Human Resource Development (MHRD) to evolve a mechanism for joint implementation of IMPRINT projects which was launched on 5th Nov. 2015 by the Hon'ble President of India. Preliminary meetings with MHRD have

already taken place and detailed modalities are being worked out with MHRD. IMPRINT projects will address major societal and developmental needs such as healthcare, information and communication technology, energy, sustainable habitat, nano technology, water resources and river systems, advanced materials, security and defence, and environment and climate.

4. DST-Ministry of Railways (MoR) Joint R&D Initiative : Department of Science and Technology (DST) and Ministry of Railways (MoR) are shaping a joint R&D initiative to address research problems of immediate and direct relevance to MoR by taking up suitable projects within time span of 3-5 years with well defined deliverables. Collaboration between MoR and DST are in the area of fuel efficiency and emission control technologies, alternate fuels, fuel conservation in diesel traction etc. and to derive synergy based on mutual strengths. As an outcome of these efforts, scope of programme support has been finalized in the meeting of 8th September, 2015

5. Science and Technology of Yoga and Meditation (SATYAM)

DST has launched a new programme "*Science and Technology of Yoga and Meditation (SATYAM)*" in 2015-16 to rejuvenate research in yoga and meditation. Given the ever increasing prevalence of physical and mental health problems, the holistic approach of Yoga and Meditation is believed to have the potential to find beneficial treatment that is relatively safer and more cost-effective. Cutting-edge research under SATYAM will seek to identify related issues and challenges and address these to enhance human well-being. Another objective of SATYAM is to also harness knowledge obtained in academic institutions and other related agencies for finding S&T-led solutions that would enable us to cope with stress and strain associated with fast changing social, economic, environmental and professional circumstances. The programme will encourage research in two major thematic areas: (1) investigations on the effect of Yoga and Meditation on physical and mental health, and (2) investigations on the effect of Yoga & Meditation on the body, brain, and mind in terms of basic processes.

6. Scheme for funding Industry-relevant R&D

The Science and Engineering Research Board (SERB) recognizes the need to facilitate increased Public Private Partnerships in its funding mechanism, and has recently approved a scheme that provides an opportunity for collaborative research between academic institutions and industry. This scheme aims to bridge the gap between public funded research and industrial R&D. The new scheme seeks to target solution driven research to address industry specific problems. Project will be jointly designed and implemented by the academic partner and industry, and the cost will be shared between SERB and Industry with industry share not less than 50 % of the total budget. All industries (including Micro Small and Medium Enterprises (MSME) & industrial R&D Centres) are welcome to participate in this scheme.

7. Scheme for funding High Risk-High Reward Research

Science and Engineering Research Board (SERB) has approved a new and significant initiative to support proposals that are conceptually new and risky, and if successful, expected to have a paradigm-shifting influence on the S&T landscape. Outcome could be new and significant theoretical or experimental advances, formulation of new hypotheses, or breakthrough science which will lead to new technologies. Proposals that address scientific issues leading to "incremental" knowledge will not be supported.

8. Early Career Research Award

A new scheme *viz*. Early Career Research Award (ECRA) has been launched to provide quick research support to the researchers who are in their early career for pursuing exciting and innovative research in frontier areas of science and engineering. The Award carries a research grant up to Rs. 50 lakhs for a period of three years. More than 600 young scientists have responded in November 2015 for the Award.

9. National Post-doctoral Fellowship (N-PDF) scheme

In order to attract and retain young scientists and discourage brain drain in academic/R&D institutions, a National Postdoctoral Fellowship (N-PDF) scheme has been launched. It aims to identify motivated young researchers and provide them support for doing research in frontier areas of science and engineering. The Fellow will work under a Mentor, and it is expected that the training will provide him/her a platform to develop as an independent researcher. The Fellow will be provided a fellowship of Rs. 55,000/ pm for a period of 2 years with a research grant of Rs. 2.0 lakh per annum.

10. Technical Research Centres - Five Technical Research Centres (TRCs) in the existing autonomous institutions of the Department of Science & Technology are being set up. A detailed road-map has been prepared by the Department for setting-up of these centres. TRCs are expected to further enhance translational research being carried out by these autonomous institutions. Final financial approval of TRCs is expected by end of December 2015.

11. Technology Applications by Institute of Nano Science & Technology (INST), Mohali

(A) Waste Water Treatment: Institute of Nano Science and Technology (INST), Mohali, an autonomous institution of DST, is working towards the development of low cost filter for waste water treatment. They have developed low cost novel nano-adsorbent for removal of toxic metal ions as well as organic pollutant. For this, the water purification trials for removal of lanthanides, transition metal ions, arsenic and organic dyes at laboratory level have been done. The initial trial have been done on purification of real domestic waste. The following are proposed future plans :

(a) Setting up the metal adsorbent pads at the bottom of the boats :

INST is fabricating trapping pads for metal ions and organic pollutant removal. This will be a portable pad which can be fixed to the wall of boats and hence clean river.

(b) Domestic waste treatment:

In this area INST is planning to make small cartridge (low cost) which can be put at the exhaust of the sink or washing machine and then exhausted clean water will be recharged by clean water. This is kept in river cleaning concept because the most of the river waste is from waste generated from the people of the country. And if we can address these waste at the source level then we can definitely protect our river to get contaminated form human generated waste.

(c) Industrial waste treatment:

Since the adsorbent made by INST's scientist are very efficient in trapping high concentration of metal ions, the idea is to put a cartridge at the exhaust of the industry and trap the waste product and for different industries, specific cartridge will be made.

(d) Plans for urban and rural areas:

For urban cities, it is planned to do the real time detection and removal of water impurities and its implementation in real life. It is also planned to make low cost water testing strips for rural people and small portable ca cartridge for instant water purification.

(B) Development of Clinical Biomarkers: Institute of Nano Science and Technology (INST), Mohali, an autonomous institution of DST is developing cost effective biosensing platforms for clinical biomarkers like Cardiac serum markers (Myoglobin, Troponin I, BNP, FABP etc.) and Prostate cancer markers along with environmental pollutants such as food/water pathogens (E. coli and other enteric pathogens) and new generation pesticides. INST's aim is to design and develop its own optical/fluorescence/electrochemical based sensors using nanotechnology approach to minimize the size of the sensor as it can be suitably used for rapid and field applications. INST is attempting to increase the specificity of our biosensor by generating our own bio-receptors (antibodies/aptamers) and immobilizing them onto nanostructured platforms in order to have enhanced sensitivity (upto sub picomolar range). The developed sensors will be highly versatile and can be used for other target analyses depending upon the kind of bio-receptor used on the sensor surface.

12. Revamping and Reorientation of Innovation in Science Pursuit for Inspired Research (INSPIRE) Scheme

The INSPIRE Award component which is meant for school children from class 6th to 10th is being reoriented to align it with the national agenda of the Government and observations made by the Hon'ble Prime Minister. The programme is being modified to encourage children to visualise/analyse needs of the nation; develop critical thinking about national issues and problems pertaining to everyday life, as well as, create awareness and inspire them to devise innovative ideas to address them. Follow-up mechanism to further fine tune the best creative ideas/concepts is being put in place.

The second component of the INSPIRE scheme deals with organizing Science Camps for science students of Class 11th based on their performance at the Class 10th Board examination. Through the Science Camps, these students are provided an opportunity and exposure for interaction with scientists and academicians including Nobel Laureates. Now, "Innovative Idea Writing" has been introduced on themes specific like Water, Energy, Security etc. in keeping with the current initiatives of the Government like Make in India, Swachch Bharat etc. In each Camp, the ideas are being screened for finding the 3 best innovative ideas.

13. New Initiatives in Water and Clean Energy

(a) Recognizing that Water is of fundamental importance for human development, the, ***Water Advanced Research and Innovation (WARI) Fellowship Program***- a dynamic and transformative program has been launched on 21 September 2015 to foster long term **Indo-American Science and Technology partnerships**. A programme for natural water treatment and waste water treatment has also been initiated with French collaboration.

(b) In the area of clean energy following new initiatives have been taken :

- A new research track on energy storage and smart grids have been agreed for **Indo-US collaboration during Energy Dialogue** co- Chaired by Hon'ble Minister of Power and US Secretary of Energy on 21st September 2015. A new programme on Clean Coal Research is also on the anvil.
- Considering the importance of capacity building in energy efficiency for built environments, a fellowship programme for Indian researchers have been launched to expose them to world class research facilities in US.
- An **Indo–UK Virtual Centre for Clean Energy** has been initiated to explore integrated solution for remote and rural locations using distributed solar energy generation, storage and off grid/ grid interaction following an India-UK discussion meeting on 10-11 June 2015.
- In order to improve energy security of the country, a roadmap for Methanol Economy as a promising alternate energy source has been initiated in partnership with NITI AAYOG following brainstorming with stakeholders on 11thSeptember 2015 steered by Dr VK Saraswat, Member, NITI Aayog and Secretary DST.

14. Waste Management Technology Development

With the objective to contribute towards Swachch Bharat, a new programme under the Technology Development Scheme has been initiated to come up with technological solutions for the problems faced by the country in waste management. Areas under this include hospital waste, plastic waste, e-waste, etc. First call for proposals has received an overwhelming response.

15. Advanced Manufacturing

Aligning with the Make in India agenda of the Government, the Department has initiated a programme to promote development of advance manufacturing technologies in the country. The areas include robotics and automation, nano-materials, precision manufacturing, etc. Call for proposals has already been given.

16. Development of Bio-medical Devices

The Department is planning to initiate stakeholder consultation to identify bio-medical devices to be taken up for indigenous development. The programme is being evolved to align with the objective of **Swasth Bharat** of Government of India.

A Technical Research Centre at Sree Chitra Tirunal Institute of Medical Sciences and Technology, Thiruvananthapuram is being established to give a big push to the development and commercialization of biomedical technologies in this institution which has an enviable record in this domain.

17. Scheme for Promoting Innovations, Creativity and Entrepreneurship among ITI Students (SPICE ITI)

As suggested by the Hon'ble Prime Minister during the meeting with Science Secretaries on 29th July 2015, a separate scheme is being worked out by the National Innovation Foundation, Ahmedabad for promoting innovations, creativity and entrepreneurship among Industrial Training Institute (ITI) students.

18. North Eastern Centre for Ethno Medical Research:

DST has recently approved establishment of "*Ethno Medicinal Research Centre*" at FEEDS, Manipur with budgetary support of approx. Rs 6.00 crores. This Centre aims to undertake ethno phyto-chemical research of wild herbs available in the NE region that have unique medicinal and aromatic properties, particularly in our traditional systems. The Centre will not only give scientific validation of traditional herbs but aims to improve quality of life and economic status of local community through product development and better livelihood.

19. Revamping of Science Express

As suggested by the Hon'ble Prime Minister, the Department has initiated action to strengthen outreach activities along the route of the 8th Phase of the Science Express. The Department intends to approach NCSTC-Network (a conglomeration of 83 NGOs), National Council for Science Museum (NCSM), Vigyan Prasar (VP), National Innovation Foundation (NIF), Centre for Environmental Education (CEE), Vikram Sarabhai Community Science Centre (VASCSC), academic and research institutions at 65 destinations of Science Express etc. for providing additional S&T activities to the children visiting Science Express.

The CEE has been advised to exhibit interactive models graphic interfaces and animations to make it more interesting. In addition to this, several platform activities for children are being planned to make the Science Express experience more meaningful for children.

20. Recent Developments through International S&T Cooperation

(a) A new programme with Russian Science Foundation was concluded by DST for cooperation in Basic Sciences (Physics, Chemistry, Earth Sciences, Biology (Medical and Agriculture), Mathematics) during 8th Session of India - Russia Working Group on Science & Technology in Moscow on September 3, 2015.

(b) A joint declaration of extension of Indo-German Science & Technology Centre was signed on 5th Oct. 2015 .

(c) A Letter of Intent (LoI) for Indian participation in annual meeting of Nobel Laureates and Students was signed on 5thOct. 2015.

(d) The Indo-US fellowship programme on Climate Research is being launched this year.

(e) Collaboration with USA on Women in Science has been strengthened with 20 Indo-US Women Fellowship in S&T; training programme on leadership and career development; and Silicon Valley visitation programme for women entrepreneurs.

(f) Under support of US-India Endowment Fund, prototypes of several innovative technologies on affordable healthcare and food security have been developed with a potetial for societal impact and commercial application. Through the five calls, the **United States-India Science and Technology Endowment Fund** is currently supporting and funding 17 joint U.S.-India entrepreneurial projects in the area of **Healthy Individual** *(affordable biomedical devices, diagnostic/preventive/curative measures, or food and nutrition products to improve health)* and **Empowering Citizens***(information and communication technologies, water, agriculture, financial inclusion, and education etc.)* with a grant size of up to **Rs. 2.50 crores** or approximately $ 400,000. The joint entrepreneurial teams are working together on co-developing innovative product or technologies that are beyond the idea stage with high societal impact and significant potential to commercialize with 2-3 years. In addition to this, 3 project proposals are under the review process of evaluation. In the recent call of Sixth round of July 2015, 19 bi-national teams have been shortlisted by the joint U.S.-India expert panel for Stage II: detailed business plan and presentation at USA . Out of 19 companies, 5 have been shortlisted in November 2015 by the joint panel for further due diligence before award of the grant.

21. Showcasing of Indian Innovators in Silicon Valley during the visit of Hon'ble Prime Minister.

Under the India Innovation Growth Programme jointly supported by DST and Lockheed Martin Corporation, 10 Innovators participated in the Start-up Connect Programme and displayed their innovations. It would be worthwhile to mention that out of the 34 innovations showcased at Silicon Valley; approximately 50% were supported in one way or the other by DST. The innovators have attracted a lot of attention from the Venture Capitalists (VCs) in Silicon Valley and many of them have stayed back to explore further deals and investments.

22. UV Imaging Telescope

UV Imaging Telescope developed by Indian Institute of Astrophysics is one of the payloads on ASTROSAT which has been recently launched by ISRO. Telescope has started giving images and calibration is being done by ISRO.

23. Big Data Initiative

A proposal to initiate a new scheme viz. Big Data Initiative has been prepared and is under consideration of the Department. The scheme is aligned with the Government's Digital India initiative.

24. Policy on Conflict of Interest

In a significant move, the Science and Engineering Research Board (SERB) has given its nod to go ahead with the much awaited policy on Conflict of Interest for grant applicants (including collaborators), reviewers and committee members and officers dealing with various programs. The Board felt that issues of conflicts of interest and ethics in scientific research and research management have

assumed greater prominence in the new era of knowledge economy. All the stakeholders are required to sign an undertaking to adhere to the policy on conflict of interest. The approved policy aims to bring more transparency and increased accountability in funding mechanisms and provide assurance to the general public that processes followed in award of grants are fair and non-discriminatory.

Department of Biotechnology

Success Stories – 2014-15

I. Healthcare

(1) India is today a leading Vaccine Manufacturing Hub:

The Vaccine Grand Challenge Programme is under implementation to encourage novel and innovative vaccine related discoveries, accelerated development of candidate vaccines for which earlier leads are available, research of basic & applied nature to improvise current understanding of vaccine science and to strengthen the scientific basis for future vaccine design. R&D projects supported through VGCP are focusing on Development of candidate vaccines & Development of vaccine related technologies. Some major initiatives are:

(i) **Rotavirus vaccine launched by Hon'ble Prime Minister** : The first indigenously developed and manufactured Rotavirus vaccine 'Rotavac.' from an Indian strain 116E was launched by the Hon'ble Prime Minister on 9th March, 2015.The indigenously developed vaccine will boost efforts to combat infant mortality due to diarrhoea. ROTAVAC developed in collaboration with Bharat Biotech under the Public-Private Partnership mode is efficacious in preventing severe rotavirus diarrhoea in low-resource settings in India. ROTAVAC significantly reduced severe rotavirus diarrhoea by more than half - 56 percent during the first year of life, with protection continuing into the second year of life. Moreover, the vaccine also showed impact against severe diarrhoea of any cause. The developed Rotavirus Vaccine at $1 per dose has been cleared for market license. Potential to prevent >500K childhood diarrheal deaths. The NTAGI of M/o Health & FW has approved introduction of the vaccine in EPI in a pilot mode.

(ii) **Malaria Vaccine**: To promote the development of vaccines against P. *falciparum* and P. *vivax* malaria, Department has provided continued support to MVDP (Malaria Vaccine Development programme)- A consortium of DBT, ICGEB, Malaria Vaccine Initiative (MVI), PATH, EMVI and WHO-TDR. Currently MVDP is involved with developmental of malaria vaccine JAIVAC1 & JAIVAC 2 at ICGEB.

(iii) **Dengue Vaccine**: Department is supporting the group at International Centre for Genetic Engineering and Biotechnology (ICGEB) for developing a safe, efficacious and inexpensive tetravalent dengue vaccine. The recombinant EDIII-based sub-unit dengue vaccine candidate is being developed in the form of VLPs using the yeast *P. pastoris* as an expression host.

(2) DBT has significantly augmented the infrastructure for diagnosis & treatment of human genetic disorders in India

Impact

- 21 Genetic Diagnosis cum Counseling Units established
  - >5 lakh affected families and >1 lakh tribal families benefited
- DNA typing of 25 autosomal markers in 53 ethnic groups (tribal, caste and religious communities) completed
  - Revealed evidence of human migration from India to SE Asia.

(3) A major flagship programme on International Cancer Genome (ICG) specific to Oral Cancer is under implementation.

(4) India Bio-design makes new advances

Technologies developed: - 5

- Ostomy Management device;
- Emergency medical alert device;
- A breathable and customized cast for immobilization of the fractured limb;
- Fluid extraction device;
- Posture support device

Technologies Transferred: - 2

- T*echnology for Fetomaternal Parameter Monitoring System transferred to* M/s. Brun Health Private Limited, Telangana, startup Company formed by Fellows 2013 Batch.
- Technology for '*A Portable Hand Sanitization device*' transferred to M/s. Observe Design Private Limited, New Delhi.
- Fecal Incontinence device technology received USFDA 510 approval for their device.

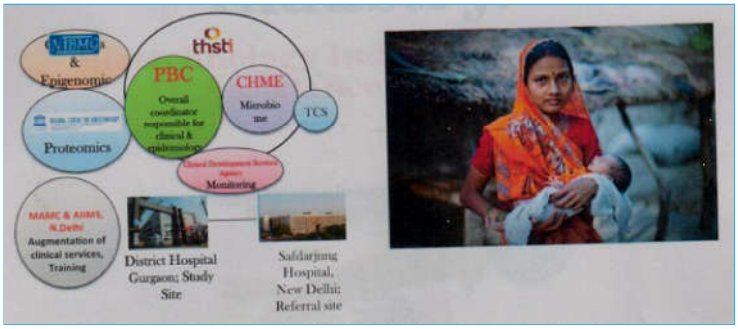
Patents, Trademark, Industrial Design Filing:

- 6 Indian patents and 6 PCT applications filed; 6 trademark applications filed; and One design registration filed for the Accufeed Invention.
- Patents have been granted in 4 countries namely Singapore, Japan, USA and Europe for the device for collecting fecal discharge in incontinent patients

New initiatives:

- *i-Fellowship* program initiated with Australia as a new international partner
- BMJ Innovations launched.

(5) Major New Effort on Pre-Term Birth



Multi-institutional National Programme on pre-term birth launched

Pre-term Birth Program is the first inter-institutional program on maternal infant health and spontaneous pre-term birth sciences in India funded by the Department under Grand Challenge Program at a total cost of the project is Rs. 48.85 crore for a period of 5 years. It envisages a multidisciplinary research effort to predict & diagnose Preterm Birth (PTB) by enhancing the knowledge of the underlying pathophysiological mechanisms. It is expected that the clinically relevant research outputs from the study will aid characterization of biological, clinical and epidemiological risk factors to achieve appropriate risk stratification of mothers who may deliver before term. These in turn would provide a basis for discovery of novel therapeutic agents & determine appropriate timing for their clinical application. Together, it would strengthen the commitment of the Department of Biotechnology to health equity, contributing significantly to reduction in infant and maternal mortality.

II. Agriculture and Industrial:

(i) Rice variety Samba Mahsuri: With the support of Department of Biotechnology (DBT), Scientists at Centre for Cellular and Molecular Biology (CCMB) and Directorate of Rice Research (DRR) have jointly **developed bacterial blight resistant Rice variety "Samba Mahsuri'** through Marker Assisted Selection and Backcross Breeding. The variety has so far spread to an **area of 90,000 ha in the states of Tamil Nadu, Karnataka, Telangana and Andhra Pradesh.**





(ii) Decoding the Wheat Genome: A strong partnership in Decoding the Wheat Genome has been built. 15 countries joined hands to complete this huge task of decoding 17,000 million bases. Indian Scientists participated in Decoding Chromosome 2A.

(iii) **Maize hybrid (Vivek 9) with High Quality Protein and Increased Provitamin A** was developed and released.

(iv) **High zinc rice has been developed for the first time which has 22-24 ppm zinc** and named as CGZR-1 and after all India trials would be available to farmers in another two years.

(v) **12 popular rice varieties** to be grown in the rain fed agri-eco systems have been developed by incorporating major quantitative trait loci (QTL) or genes for flood, drought and salt tolerance.

(vi) **Bread wheat and durum wheat genotypes with high yield and high micronutrient** concentration in optimum soil zinc have been developed.

(vii) **First indigenous technology developed for commercial production of Ethanol from lignocellulosic waste: DBT-ICT Centre for Energy Biosciences** established at Institute of Chemical Technology, Mumbai **has developed Cellulosic ethanol technology**. Based on this indigenous technology a demo/pilot plant designed by an Industry, India Glycol Limited with financial support from DBT-BIRAC with a capacity of **10 tonnes lignocellulosic biomass per day to produce 3000 L ethanol/day on a continuous basis.** It is expected that the commercial plants based on the technology will be built in 2016, which is not far behind the technologies being implemented in the USA.


Pilot plant for production of 3000 litre ethanol/day using Lignocellulosic biomass technology from DBT-ICT Centre for Energy sciences India glycols, Kashipur


Pilot scale production technology for generating Biological Hydrogen from sweet sorghum using 15 tonne biomass at Nagarjuna, Hyderabad

(viii) **Under a Mission programme on microbial prospecting: 'Drugs from Microbes'** Involving nine institutes and an industrial partner in a public-private partnership model, 2.50 lakhs microbes were screened for four activities i.e. anti cancer, anti diabetic, anti

inflammation and anti infective activities. A total of 16123 three stars hits were obtained- Anti-infective- 5286; anti cancer-518; anti inflammation-3643; anti diabetic-6676. **One New Chemical Entity with anticancer and anti-inflammatory activity and 12 probable new use of compound were identified.** Efforts are being made to explore the strategies for moving some of the active molecules obtained in the current program from discovery to Pre- Investigational New Drug (IND) studies, thereby creating a path of development of molecules. The Country's largest Microbial Culture Collection Centre was set up at NCCS, Pune will 2,00,000 culture.

III. Human Resource Development

(i) DBT has undertaken multiple initiatives for teaching & training in biotech education…

- Star College Program
  - ¾ 92 colleges supported
  - ¾ 10 colleges accorded star status
- >1600 personnel trained under UG, PG training courses
- >2000 candidates provided training in biotech industries under BITP

(ii) The **Ramalingaswami Re-entry Fellowship** was conceived with the idea of encouraging Indian scientists working outside the country (Indian Nationals), and who would like to come back home and pursue their research interests in life sciences and biotechnology and other related areas. During the last six years 247 overseas scientists were selected and 173 have already returned and joined various research institutes/ universities 27 scientists are likely to join in next six months. 50 scientists are selected every year. This has enriched the scientific pool of the country.

IV. Societal Impact

"Women's health, hygiene & nutrition" is the current focus under DBT's women's societal upliftment programme of DBT. The Department has supported major programme on cervical cancer screening, genetic disorder & counseling, pregnancy-related complications, breast cancer screening & post-operative care. While education on menstrual hygiene, cervical cancer & preventive measures were conducted in several villages involving more than 2,000 women, including school girls, around 5,000 women were offered cervical cancer screening services through village based camps. A network programme on Breast Cancer Screening was implemented in 4 districts of North-East, namely Manipur, Meghalaya, Mizoram and Tripura with the help of Cancer Foundation of India, Kolkata.

A project for awareness, counseling, screening & education to prevent genetic and congenital disorder has been implemented in West Bengal and a web based portal (www.genomegyan.com) on genetics has been developed to popularize it as a subject among medical students and physicians.

(V) **Biotech Based Developments in North Eastern Region (NER) of India**

The North Eastern Region (NER) of India comprises of eight 'sister' states. The region is one of the most ethnically and culturally diverse regions of Asia and the home for more than 150 tribes. In order to give focused attention for the North Eastern Region, the Department of Biotechnology (DBT) has allocated 10% of its annual budget for promoting/strengthening biotechnology driven activities in North Eastern States of India. A dedicated cell, North Eastern Biotechnology Programme Management Cell (NER-BPMC) has been established by DBT in the year 2009-2010 and the cell is assisting DBT to evolve, implement and monitoring of various programmes for the benefit of NER states.

Some of the major flagship programmes/schemes implemented and created impact on biotech based developments in North Eastern States during the last one year are as follows:

- **Twinning Programme**
- The goal of this programme is to strengthen R&D activity in the North East India through joint collaborations. Financial assistance is provided to competitive R&D projects from scientists in the North Eastern States in collaboration with Scientists from National Institutions from other parts of the country.
- The programme has supported nearly 400 R&D projects, leading to more than 200 papers published in peer reviewed journals, and more than 450 young scientists of NER trained in advanced biotechnology. Every year approximately 70-80 projects under this flagship programme are being supported to NER.
- **Setting up of "DBT-NER Centre for Advanced Animal Diagnostics and Services on Animal Health and Diseases (ADSAHD)" involving stake holders from all NER States including national laboratories from Bhopal, Bangalore and Hissar.**
- 

- The North Eastern Region of India, owing to its unique geographical location sharing five international borders, bears constant threat of exotic trans-boundary diseases of our valuable livestock. This programme is aimed at strengthening regional infrastructure and capabilities for developing latest diagnostics and organizing rigorous surveillance for the highly contagious and ravaging diseases so

that forecasting model on disease outbreaks in the region can be developed for a formidable defense to guard the territories. The programme envisages establishing three core laboratories across the NER for carrying out research and training activities in trans-boundary and endemic animal diseases. It aims to impart training to the State veterinary personnel in disease reporting, sample collection techniques and fostering public-public partnership module for effectively handling the animal-man-environment continuum chain.

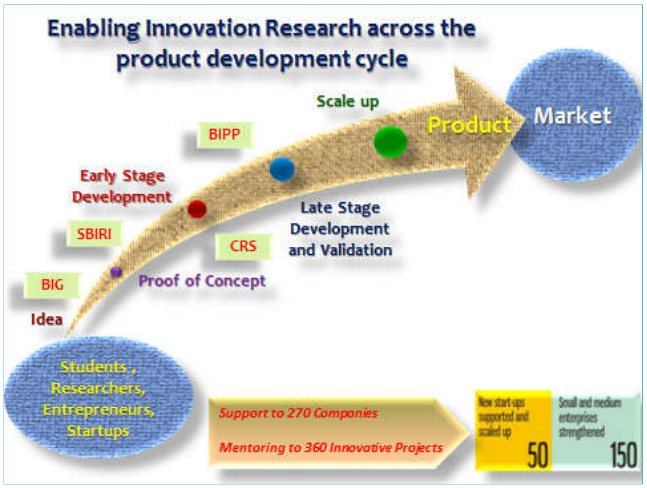
- Dr. Harsh Vardhan, Hon'ble Minister of Science & Technology and Earth Sciences, Govt. of India, has launched this programme in NER on February 17, 2015.
- · **Establishment of Unit of Excellence in Biotechnology (U-Excel)**
- With a view to recognize promising mid-career scientists in NER, a programme of awarding Unit of Excellence grant to them has been initiated so as to enable them to pursue their innovative research in frontier areas of biotechnology. So far, 12 Units of Excellence have been established during the year.
- **Overseas Associate ship for NER Scientists**
- This scheme aims to promote capacity building in cutting edge areas of biotechnology and life sciences. The Award promotes and supports scientists of merit in their pursuit of skill enhancement in scientific research/training in overseas laboratories for short term as well as long term. So far,
  130 scientists have been awarded the Associate-ship. As of now more than 110 scientists have availed this Associate ship. This overseas associate ship has resulted in more than 20 research papers in peer reviewed journals and has also enabled more than 15 laureates in getting extra-mural funding for their R&D projects besieging training in house scientific human resource of NER.

(VI) Enhanced Innovation Ecosystem:

Under the DBT, for a well-defined Innovation Ecosystem for product development - a Public Sector undertaking, Biotechnology Industry Research Assistance Council (BIRAC) has been set-up, supporting nearly 300 companies and 100 young entrepreneurs for innovation, research and product development. Further, the Biotechnology Translational research and industry academia partnership has promoted through 3 Biotech clusters, 8 Biotech Parks and 13 Bioincubators. Also, 16 Centers of Excellences have been created as a flexible model of long-term support for highly innovative, basic and translational research to create high quality state-of-the-art facilities for R&D.

Taking Science and Technology to Industry

Biotechnology Industry Research Assistance Council



- The biotech startup scenario in India was transformed by one of BIRAC's flagship scheme called BIG (Biotechnology Ignition Grant). BIG has supported 140 entrepreneurial ideas over 5 calls at pre-proof-of-concept stage. 22 new startups were created (in 18 months) and the total number of employment generated is 231.
- Providing access to high end infrastructural requirement to the biotech community in India. BIRAC through its bioincubation scheme (BISS) has supported 15 bioincubation centres across the nation and has created 124,000sq.ft of incubation space. Within these incubators, around 199 biotech start-ups are being provided support. In each of the bioincubator, BIRAC has supported a common pool of high end instrumentation that is being used by incubate and other SMEs for R&D.
- 17 Products, 11 Technologies, 16 Early Stage-Technologies. 2 Process Innovations, 23 IP Generated/Facilitated.
- 322 Start-Ups, SME, and Entrepreneurs Supported.
- BIRAC Ace Fund – An Equity Fund for Accelerating Entrepreneurs was announced by Hon'ble Minister of Science & Technology and Earth Sciences during BIRAC Foundation Function.
- Products Launched/Developed:
  Malaria Antigen Detection Kit, Quality Wine Produced By Enzymatic Maceration of Mango Pulp, Indigenous Production of Dextranase using Ssf Technique.

8. First open defecation-free (ODF) cities

Mysuru and Mangaluru have been declared the first open defecation-free (ODF) cities in the categories of million-plus population and below 5 lakh-population, respectively.

The announcement was made by the Quality Council of India (QCI).

Mysuru was declared "open defecation free" after a survey of 73 cities was conducted by the Quality Council of India under the Ministry of Urban Development.

9. India ready to ratify ILO

Labour Minister Bandaru Dattatreya on 27 September 2016 said **India is ready to ratify ILO conventions 138 and 182 related to child labour**. **India is now in a position to ratify the ILO conventions 138 and 182 concerning child labour** and has started the process in this direction. The minister made the comments at the **2-day BRICS labour and employment ministerial meeting**, which began in the national capital on 27 September 2016.

- **India has put a complete ban on employing children below 14 years of age** and **employment in hazardous occupations below 18 years**, the ministry said.
- In another significant step, the government has presented **amendment to the Maternity Benefit Act, raising the paid maternity benefit to 26 weeks from 12 weeks**. The Bill has been passed by the Rajya Sabha and will be introduced in the Lok Sabha in the Winter Session of 2016.
- India is committed to inclusive growth so that **benefits reach the marginalised and they become integral to the growth process**.
- **The deliberations during the forthcoming three technical sessions** covering employment, social security and inclusive development would be focused, constructive, fruitful and presence of International Organisations would add value to the deliberations.
- **BRICS is home to about 45 per cent of world's economically active population** and that the bloc (including South Africa), the largest emerging market, needs to develop in rapid strides.
- The **two-day meeting will have dedicated sessions on key thematic areas - employment generation**, **social security and inclusive development**, including**formalisation**.
- **India assumed the presidency of BRICS in February** and is **hosting the 8th BRICS Summit 2016, which is scheduled to be held on October 15-16 in Goa**.
- The theme of India's BRICS chairmanship is '**Building Responsive, Inclusive and Collective Solutions**'.

10. PM Narendra Modi dedicates 7 new plant species to nation

Prime Minister Narendra Modi has dedicated seven new indigenously developed varieties of plants to the nation to mark the 75th anniversary of the Council of Scientific and Industrial Research (CSIR).

- The new varieties of the plants that have ornamental and medicinal qualities were developed by the CSIR laboratories, especially Central Institute of Medicinal and Aromatic Plants (CIMAP).
- The plants include new varieties of lemongrass, citronella, vetiver and canna lily plant.

11. WATER SCARCITY AND SECURITY IN INDIA

In spite of 75% of the earth' surface comprising of water, fresh water constitutes only 3% of the total amount of water on the earth. In this light, it becomes imperative to understand the critical scarcity of water by defining water security. Water security implies affordable access to clean water for agricultural, industrial and household usage and hence it availability becomes an integral part of human security. Water security becomes equally vital for a nation as the energy security or food security is.

On the same lines, water security for India means effective responses to changing water conditions in terms of quality, quantity and uneven distribution. The scarcity of water may arise inter-state and intra-state tensions in India, as have been observed in southern India in post-independence times. Water touches every aspect of life, and in India uncertainty over access to and the availability of this basic resource may be reaching crisis levels. As India continues to undergo dramatic shifts caused by a growing economy and

population, competing demands for this limited resource coming from households, industry, and agriculture have wide-ranging implications for the country's future.

Following are some of the root causes of water scarcity that may aggravate in recent future:

- Increasing population pressure and persistently decreasing per capita water availability
- Poor water quality resulting from insufficient and delayed investment in urban water-treatment facilities.
- Dwindling groundwater supplies due to over-extraction by farmers amidst free electricity and distorted crop cultivation

India has an abundance of water within its region, with many major and minor basins. The Ganges-Brahmaputra is the largest basin, in addition to the Indus, Godavri, Krishna, Narmada etc. of the country contributing towards water resources. The major sources of water in India are rainfall and glacial melt contributing to perennial river flows from the Himalayan region.

In spite of all these abundant resources, Indians are doomed to face severe water scarcity in the coming future owing to the factors like lack of awareness, massive inequality in water availability, unmindful and irresponsible uses of water to include a few. It becomes not only inevitable but also urgent for the various stakeholders to tackle the situation on revolutionary scale. Some of the measures to enhance water security in India can be following:

1. The central and state governments should empower local groups with knowledge, awareness, understanding, and actual information on the status of groundwater so as to manage extraction in a cooperative way. Rural people and farmers need to be sensitised about the importance of ground water. Since groundwater is an open resource, farmers extract as much as they can. But when everyone does this, it leads to extraction above a replenishable level. This problem can only be managed by a cooperative agreement among the users of the aquifer, who should know how much should be the optimum extraction without depleting the resources. The concerned authorities can monitor and apprise people with this information.

2. India needs to promote watershed development. Moreover, it can be undertaken at the local level all over the country and can be accomplished in a relatively short time. Rainwater harvesting and programmes to revitalise traditional tank systems present a considerable opportunity to capture and store water during periods of heavy rainfall. The reduced risk of floods, increased aquifer recharge and year round access to greater stores of fresh water are all desirable potential outcomes. Increasing traditional tank volumes and general water storage capacity in India could reduce the pressure on overexploited groundwater resources and provide safer water for human consumption.

3. India should engage with its neighbour and work on the basis of benign partnerships for water sharing. India needs to bring about a turnaround in the overall dysfunctional relationship and invest in long-term political linkages with its SAARC neighbour. Being an upstream country, India should take care of the downstream countries' (Pakistan and Bangladesh) vulnerabilities and then only expect its upstream countries like China and Nepal to be good.

4. India must educate people about the necessity for dams to store water. The environmentalists and other groups who oppose dams should be engaged in a dialogue to work out alternatives and build a consensus.

5. The government should brace state pollution control boards to enforce effluent standards. The technical and human resources currently available to the boards are inadequate to effectively monitor activities, enforce regulations, and convict violators. In addition, adequate sewage treatment facilities must be constructed. Many cities treat only a portion of the effluent. Cities need to charge a proper price for water so that local sewage work operators have the income and resources to sufficiently maintain treatment plants. If necessary, India should work with private firms to modernize urban water-distribution systems.

6. Policy and Governance

- National Water Policy 2002 provides an overall participatory framework for water management in India. The creation of water user associations (WUAs) is a part of this policy, designed to encourage more inclusive management systems at the local level.
- Farmer participation in the WUAs is essential if they are to improve the efficiency and productivity of water use and agricultural development through irrigation.
- The National Groundwater Recharge Master Plan is another important tool for water management. Designed to assess groundwater recharge potential, the plan aims to increase the quantity of available water in urban and rural areas.
- Policies to store water, recharge groundwater levels and increase soil moisture on the lines of recently launched Jalyukta Shivar Abhiyan in Maharshtra should be encouraged.

7. International efforts and cooperation –

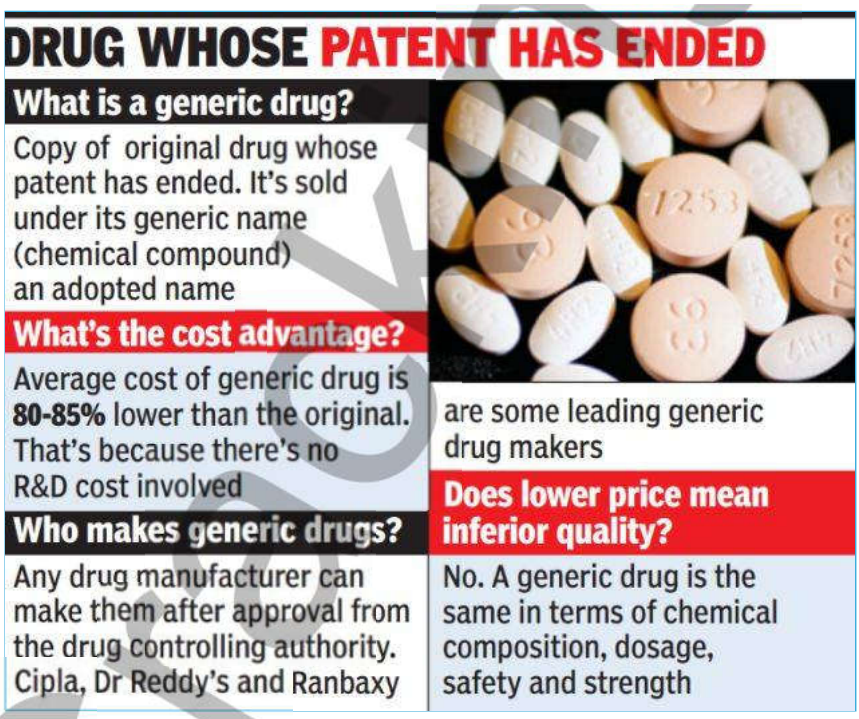
- The World Bank seeks to help countries increase their resilience to climate change by providing the tools, best practices, and funds to help support action. The World Bank is also empowering local communities in a number of states to improve the conservation of their watersheds and integrate adaptation in all rural livelihood projects. Projects are helping improve the availability of water, enabling farmers to move to higher value crops, and promoting the efficient use of scarce water resources. Such programs should be intensified with greater engagement of institutions like ADB and newly New Development BRICS bank.

Quoting our prime minister "Water is the gift of God. We need to learn how to preserve this gift," becomes the mantra amidst all the other concerns India is facing in contemporary times.

12. SC slams govt over new drug pricing policy

India being the second most populated country and having the highest number of population under poverty line which massively impacted the people's health of nation. Therefore India is branded as a generic market, which means rather than the underlying formulation; doctors prescribe the brand of medicines which should be consumed by patients. Doctors in various cases prescribe leading brands which are priced at a higher price, despite availability of cheaper brands.

As patients are ignorant about



cheaper substitutes, they seldom switch to the low-cost equivalents of the expensive drug brands recommended by their doctors. Patients have little discretion in the choice, making it necessary for the state to intervene and make essential drugs available to the needy at reasonable prices.

In this environment India became one of the first countries from the third World, who formulated a National Drug Policy (NDP) for promoting the indigenous manufacturing, increasing the technological capabilities in pharmaceuticals sector, and controlling the prices of selected essential and life saving medicines.

The government's efforts to procure drugs for public distribution, even for special disease-targeted programmes were half-hearted effort, usually lagged behind its more energetic industrial initiatives, never looked properly focused on the concept of essential drugs and life saving medicines or a need clause, and not adequately backed by public funding or regulations.

Until 1970, the government made hardly any efforts to control the prices of important medicines, although it had issued the Drug (Price Control) Order in 1963. The Drug (Price Control) Order of 1970 was significant in two respects. First it limited the scope of price control to 16, and eventually to 33 essential medicines, on which a mark-up of 75 per cent over cost was permitted.

Later on, after two decades, the Drug Price Control Order (DPCO) introduced in 1995, which covered 74 bulk drugs and their formulations. The result of this law was not quite as hoped resulted into half the products were discontinued after their producers exited. The extremely Vital drug's Indian production shifted to China.

Historical underpinning:

To formulate the drug policy, India reached a high point in the 1970s and resulted in the robust and high growth of an indigenous pharmaceuticals industry which massively benefited from a favourable regime of intellectual property rights (IPR) which allowed innovation. In the 1980s, although the policy was substantially diluted by the pressure from the powerful drug industry. But government succeeded to formulate the Drug policy in 1986. The main objectives of the Drug Policy, 1986 are as under:

i. Ensuring abundant availability, at reasonable prices of essential and life saving and prophylactic medicines of good quality;

ii. Strengthening the system of quality control over drug production and promoting the rational use of drugs in the country;

iii. Creating an environment conducive to channelising new investment into the pharmaceutical industry to encouraging cost-effective production with economic sizes and to introducing new technologies and new drugs; and,

iv. Strengthening the indigenous capability for production of drugs.

By the early 1990s, it was very nearly abandoned as the Indian government, under the tutelage of the World Bank and the International Monetary Fund (IMF), embraced a new economic policy. This policy favoured indiscriminate deregulation, extensive liberalisation, privatisation of the public sector and cutbacks in public investment in health care, along with a dismantling of the effort to achieve self-reliance and protect indigenous producers against oligopolistic foreign cartels.

With the signing in December 1993 of a new international trade agreement under the Uruguay Round of the General Agreement on Tariffs and Trade (GATT), involving a severe change in the IPR regime, there are signs that India's gains-improved (but by no means adequate) availability of relatively low-priced medicines, and a vigorous technological capability in the drug industry-will be wiped out.

There is a growing danger of a considerable deterioration in the drug supply situation in India and adverse effects on the countries poor.This danger results from the failure to impose rational controls on the registration of drugs or prescribing practices-itself related to the ideology underlying the new economic policy-the absence of an independent source of information on drugs, and the soaring prices of medicines.

With all the issues regarding IPR rules, indigenous manufacturing of drugs, strict controls over pricing looming around, Drug Price Control Order (DPCO) was introduced in 1995- Covered 74 bulk drugs and their formulations; from which half the products were discontinued after their producers exited.

Later on the new Drug Price Control Order (DPCO) in 2013 formulated as its successor. It was issued by the Ministry of Chemicals and Fertilisers on the basis of National Pharmaceutical Pricing Policy, 2012 (NPPP), issued in 2012 for fixing the ceiling price of medicines contained in the National List of Essential Medicines (NLEM-2011), issued by Ministry of Health and Family welfare.

Under the new DPCO-2013, the shift has been favoured more towards non-controlled products since no new investment was coming up. Under the provisions of DPCO 2013, only the prices of drugs that figure in the National List of Essential Medicines (NLEM) are monitored and controlled by the regulator, the National Pharma Pricing Authority. Under the earlier avatar of the DPCO (1995), 74

drugs were subject to price control. In the 2013 version, the number of drugs under the price control was expanded five-fold to 348. The recent controversy over drug prices erupted after the NPPA decided to regulate the prices of drugs outside the NLEM; the Government has now said that it should stick to regulating essential medicines alone.
In May 2013, NPPA notified that the maximum prices for these 348 essential drug formulations cannot exceed the average price of various brands (of the same underlying formulation) with a market share of one per cent or more. This is a departure from the cost plus pricing formula used in DPCO 1995. Then, companies were allowed to make a nominal profit over manufacturing cost. While the coverage of newer drugs used to treat cardiovascular problems and diabetes under DPCO 2013 has benefited patients, the move from a cost- to a market-based pricing mechanism has been positive for drug-makers too. The average number of incumbent brands and new introductions of drugs in the DPCO 2013 list has been reduced compared to the non-DPCO 2013 list; strengthening oligopolistic behaviour and reducing the choice set of doctors and patients

Why price control under new Policy?

As per WHO estimates, the economic impact of pharmaceuticals is substantial -- especially in developing countries. While spending on pharmaceuticals represents less than one-fifth of total public and private health spending in most developed countries, it represents 15 to 30% of health spending in transitional economies and 25 to 66% in developing countries. In most low income countries pharmaceuticals are the largest public expenditure on health after personnel costs and the largest household health expenditure. And the expense of serious family illness, including drugs, is a major cause of household impoverishment.

Despite the potential health impact of essential drugs and despite substantial spending on drugs, lack of access to essential drugs, irrational use of drugs, and poor drug quality remain serious global public health problems:
India is among the countries with the highest Out Of Pocket (OOP) expenses on health care. Expenditure on drugs constitutes over 67% of out of pocket expenditure on health care (NSSO 68th Round 2011-12). High Level Expert Group Report (HLEG) on Universal Health Coverage (UHC) for

India recommended that an increase in the public procurement of medicines from around **0.1% to 0.5% of GDP** would ensure universal access to essential drugs, greatly reducing the burden of out-of-pocket expenditures and increasing the financial protection for households. As per WHO study estimates, about 65% of the Indian population lacks regular access to essential medicines. This is a paradox given that India is one of the largest manufacturers and suppliers of generic drugs to the world.

Branded medicines are generally costlier than generic medicines even though their effectiveness remains the same, given the standardized procedures for its manufacturing. Annual Report 2014-15 of Department of Pharmaceuticals points out some instances of such price differentials where certain branded medicines comes at 17 times costlier than the generic versions. In some cases, prices have dropped by almost one-third in certain states when publicly procured through an open tendering, indicating the super normal profit margin available to manufacturers in these cases.

Moreover, doctors hardly prescribe medicines by generic names, but by brand. In some states, instructions were issued that doctors should prescribe by generic names only. But this has not brought relief to the consumers/ patients since the chemist would give him/her a list of brands with the same chemical / generic name and ask him/her to choose. In the process they end up buying the costliest brand because of the notion that 'the costlier the better'.

This is not to say that price regulation is the best solution in the present context. As is the case with any price regulation, some companies try to get around price regulation by registering their brands and declaring that these are not medicines. Also, there have been many instances when firms have resorted to changing their formulations by using derivatives of the scheduled drugs/ formulations (raw material) for escaping price regulation. Under DPCOs, particularly during the earlier DPCOs when the bulk drugs prices were fixed alongside their related formulations, some companies either stopped producing the particular formulation or started producing only for export destinations.

All these point to the complexities involved in regulation of pharma pricing. However, given the asymmetry of information and the essentiality of the medicines, price controls are resorted to. This was also justified by the Supreme Court of India.

As mentioned in NPPP-2012, Government has resorted to a regulatory framework for pricing of drugs so as to ensure availability of required medicines – "**essential medicines**" – at reasonable prices even while providing sufficient opportunity for innovation and competition to support the growth of industry, thereby meeting the goals of employment and shared economic well being for all.

Impact of Drug Policy

As per the estimates given in NPPP-2012, Indian Pharmaceutical industry is, globally, the 3rd largest producer of medicines by volume yet 14th in terms of value. The lower value is due to the fact that Indian medicines are amongst the lowest priced in the world. However, despite this, medicine costs continue to be an important component in the overall medical expenditure in the country, given the low purchasing power of the citizens.

There are 628 formulations specified in the first schedule of DPCO, 2013 as in September 2015, covering 27 therapeutic groups including medicines used in the treatment of Cancer, Tuberculosis, Diabetes, Cardiac disease, vaccines etc.
Significant reduction in prices have been effected on the medicines notified under DPCO, 2013 as compared to the highest price prevailed prior to the announcement of DPCO, 2013. Ceiling prices have been formulated for more than 84% of the medicines enlisted in the Schedule I of DPCO-2013.

NPPA has also notified 139 retail prices of new drugs on request of the manufacturers till 31st December, 2014. Around 108 non-scheduled drugs were also brought under price cap using the exceptional powers granted under para 19 of the DPCO-2013. Prices of 127 drugs have reduced over 40% after the enforcement of DPCO, 2013 as per the Annual report of Department of pharmaceuticals 2014-15. Around 509 medicines in total have benefitted from price decrease. Pharmaceutical companies had gone to the court against price controls. However, there has been no stay order on the reduced prices.

There are **two contradictory developments over this policy**:

1. There is now a possibility that stents (a small mesh tube used to treat narrow or weak arteries) will become a component of the National List of Essential Medicines (NLEM).

2. Lifting up of Customs duty exemptions on a number of drugs.

This juggling act of government achieves the twin objectives:

i. Enabling broad access to reasonably priced medicines, and

ii. Allowing the marketplace to function well enough for pharmaceutical companies to invest in innovation.

Road Ahead:

Amidst all the chaotic version of reality that the India Pharma industries exhibits, the Supreme Court's description last year of India's drug pricing policy as irrational and unreasonable is unfortunately accurate from several angles. Courts have done well to clamp down on the practice of ever-lasting patents and protecting the India's vital generic drug industry. India should move towards some different approach to work on. Such as:

1. Establishing of New Ministry for pharmaceutical and medical devices. The National pharmaceutical Pricing Authority should be brought under this Ministry. It would be responsible for setting up the price ceiling for essential drugs and live saving drugs.
Another organization like The Central Drugs Standard Control Organization and the Drug Controller General of India (Presently governed by the health ministry) should also be brought under this ministry. It looks after the regulatory control over: Import of drugs, Approval of new drugs and Clinical trials.

2. To create Bulk Drug Policy for reducing the India's dependence on China as India gets more than 75% of its bulk drugs from China. It would be a big boost for public sector enterprises, Tax-free status for manufacturers and Cluster development.

3. Regulation for the online booming market for drug selling.

4. Ceiling on Trade Margin: Total business in these drugs, known as trade generics, is estimated at Rs.5, 000-6,000 crore, or five to six percent of India's total pharmaceutical market. It requires the ceiling because in trade generics practice, the distributors appoint medical representatives (MR) to market products to doctors in rural areas, in addition to supplying to retailers.
Apart from all the above, there are certain core issues which needs to be corrected in due course of time. One of that is expansion if insurance coverage.

According to a Rand Corporation study, about Regulating Drug Prices, has shown that financing consumer price reductions via insurance has many long-term benefits over ceiling of price controls. But as far as India is concern, it is one of the least penetrated insurance sectors in the world. As per IRDA o nly 17% of the population had any health insurance coverage till March 2014. The raising of the FDI cap in the insurance sector to 49% last year should, ideally, introduce benefits. But so there has been little in evidence, where much works has to be done by government.

13. Digital India gets local language

At a time when **global technology giants such as Google and Microsoft are exploring ways to incorporate Indian languages in their products and services**, a government-run research organisation has **developed a language interface that facilitates real-time translation of online content in more than 15 languages**.

- **Centre for Development of Advanced Computing (C-DAC)**, a research organisation of the **Department of Electronics and Information Technology**, has developed a localisation framework that **translates content from websites, applications and databases into multiple Indian languages**.
- There is a huge government focus on e-governance. Under Digital India, the government has been talking about making digital information databases and services available to citizens... This requires massive inputs in languages, because **90 per cent of people require their local language to be able to consume that information**.
- The **Digital India initiative aims to connect 1.2 billion Indians through internet** and provide government services online at an estimated investment of Rs 1.13 lakh crore over the next three to five years.
- Late last year, **Google launched a virtual keyboard for Android that allows typing in 11 Indian languages**.
- In May this year, Google released a feature called "**Tap to Translate**" that allows instant translation of any text on any Android app.
- Of the **103 languages that the feature supports globally, 10 are Indian**. Google also launched voice search in Hindi and seven other Indian languages.
- Earlier this month, **C-DAC collaborated with the Election Commission to launch an application under which the enrolment forms** and electoral services were made available in **15 Indian languages**.
- These forms, which were earlier available in one official language, can now be converted into 15 Indian languages in real time.
- **C-DAC is also implementing the language interfacing abilities for mygov.in and farmer.gov.in.**

Going for the Mass play

- India is expected **to have 730 million internet users by 2020**, compared with 400 million at present
- More than **7 out of every 10 new users to emerge from rural areas**
- **Only 10% Indians understand English**
- Regional language capabilities to **help government deliver digital services to masses**
- **CDAC has created a framework to convert content on government websites**, applications and databases from English to more than 15 Indian languages in real time

- Companies like **Google and Microsoft have been working to bring Indian language capabilities in their products and services**
- In addition to Google Translate, which **completed 10 years in 2016**, the company has launched virtual keyboard for Android with 11 Indian languages
- **Google's 'Tap to Translate' initiative features 103 languages, of which 10 are Indian.**

14. Why Medical council of India needs reforms?

Several studies have found glaring lapses in the functioning of the existing system under the Medical Council of India (MCI). A committee headed by NITI Aayog Vice-chairman Arvind Panagariya has proposed to replace it with a new body called the National Medical Commission (NMC).

MCI- The Criticisms

- An unwieldy institution with 102 members — 35 nominated, 67 elected — who keep churning.
- Unable to deliver uniformity in standards of medical education
- Rampart corruption viz. medical seats and accreditation of medical colleges
- Unable to create a holistic infrastructure to serve to the health needs of the nation

NMC- what new it offers?

- NMC will have just 20 members including the chairman, a member-secretary, eight ex-officio members and 10 part-time members – a much smaller body than the MCI
- It would house a permanent secretariat- more transparency , information and accountability
- Four semi-autonomous boards that will function under the NMC to deal with the following specific issues: undergraduate education, post-graduate education, rating of institutions and regulation of the medical profession.
- A live national register of all medical practitioners in the country will be created.

Lacunae in the proposed NMC Draft Bill

- First, the proposed reforms are mainly directed at improving the quality of education, standardising college entrance tests and upgrading curricula.
  - These are obviously important, but perhaps it is excessive that three of the four semi-autonomous boards are dedicated to medical education.
  - Other areas like regulating profession need equal attention
- The second issue is the composition of the NMC and the statutory boards.
  - The proposed reform will bring some diversity of membership, but the majority is still likely to be doctors.
  - This often causes conflict of interests.
- There is no explicit mention of who supervises research, field trials, introduction of new drugs/technology, and so on.
  - Managing the medical sector cannot just be about teaching existing knowledge but also about generating and absorbing new knowledge.

Way ahead and conclusion

- The proposed NMC bill is definitely a welcome step in reforming Medical regulation and healthcare delivery.
- However some concerns like supervising, punitive power to regulatory bodies still remain
- The NMC should include a majority of members from diverse backgrounds while providing for representation from doctors.
- Managing the medical sector cannot just be about teaching existing knowledge but also about generating and absorbing new knowledge. The excessive emphasis on teaching over research and testing is a problem that plagues all technical fields in India.

15. Higher Education Financing Agency

HEFA will be setup for raising funds for infrastructure development in higher education institutions from market in form of loans, bond sales and supplement them with donations and CSR funds. All centrally funded higher educational institutions, like IIT's, NIT's and central universities, would be eligible for joining as members of the HEFA by contributing a specific amount from their internal accruals.

HEFA is set up to:

- provide funds to institutions like IISERs that require more funds than what they generate from fees
- ease pressure on the government, which currently is the sole funder of such institutions
- fund infrastructure development and state-of-the-art research labs at these institutions

HEFA will likely impact as below:

- mark the beginning of a market-linked fee structure in central government-funded educational institutions

- institutions would provide better facility, better infrastructure to students
- the cycle of providing better infra and need to borrow will instill accountability in higher educational institutions
- monitor implementation, fund utilisation & review outcome, thus necessitating greater financial discipline across institutes
- promote research and innovation
- improve institutions' credibility and attract global learners
- may also lead to fee hike as institutions would be eligible for more funds if they put in more escrow amount. This may hinder in their access to poor and middle class population.

Better infrastructure, intensive R&D and use of technology in education are needed to produce the best talents of the world and leverage them. Care must be taken for its access to all along with increasing the quality.

16. "Operation Calm Down"

Under the code-named "Operation Calm Down", the Army recently stepped in to bring back normalcy in Kashmir. Under the operation, the Army plans to reach out to people, provide a sense of security and chase out militants who are blamed for fanning the unrest.

17. DU Photocopy Case: A Breakthrough in Indian Copyright

In its much awaited judgment in the Delhi University photocopying case (The Chancellor Masters and Scholars of the University of Oxford v. Rameshwari Photocopy Services), the Delhi High Court has dismissed the copyright infringement petition initiated in August 2012 by three publishers (Oxford, Cambridge and Taylor & Francis) against a photocopy shop located in the premises of Delhi University.

Why this case is important?

- **it involves questions of access to knowledge.** The case has immense significance as
- The judgment has immense consequences beyond India and is a bold articulation of the principles of equitable access to knowledge.

Initially involving only the publishers, the photocopier and the university, the case also saw intervention petitions being filed by a student group as well as by teachers and academics.

Arguments by publishers:

- The creation of course packs and the photocopying of academic material for the same amounted to an infringement of the exclusive copyright of the authors and publishers.

The petitioners tried to provide a narrow reading of the section 52(1)(i), claiming that at best what the section allows for is the provision of materials in the course of a lecture and spatially restricted to a classroom.

Arguments by defendants:

- The reproduction of materials for educational purposes fell within the exceptions to copyright under Section 52(1)(i) of the Copyright Act.

What exactly the Section 52(1)(i) of the Copyright Act says?

The nature of Section 52 of the Copyright Act is such that any act falling within its scope will not constitute infringement.

Section 52(1)(i) allows for the reproduction of any work

- By a teacher or a pupil in the course of instruction; or
- As part of the questions to be answered in an examination; or
- In answers to such questions.

Important observations made by court:

- **Copyright is a statutory right and not a natural right**, and hence any right that is granted to owners is also limited by exceptions carved out by law.
- The court has argued that "instruction" cannot be narrowly understood and concludes that instruction includes the entire ambit of pedagogy from the creation of syllabus to teaching and provision of reading materials
- The court has argued that "when an action, if onerously done, is not an offence, it cannot become an offence when, owing to advancement in technology doing thereof has been simplified". For instance, when photocopying was very limited, students used to copy by hand, like a scribe. Photocopiers have just made the task simpler and faster.

What will be the Global implications of the judgement?

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- No law can be interpreted so as to result in any regression of the evolvement of the human being for the better.
- If Indian law makers have allowed through statute for the reproduction of a copyrighted work in the course of instruction, it has done so on the basis of purpose (teaching) and with the conviction that this does not unreasonably prejudice the legitimate interest of the author.
- For a while now, the Globalisation of copyright norms through international law (Berne Convention, TRIPS Agreement), aggressively pushed by the copyright lobby, such as Hollywood, the music industry and the publishing cartels seem to cater to narrow commercial interests.
- S. and other countries that have defined quantitative restrictions on photocopying might not happy with the judgement.

Summing up

- The court while delivering the judgement is acutely aware of the specific needs of countries like India where libraries and universities have to cope with the needs of thousands of students simultaneously, and it would be naïve to expect every student to buy copies of every book.
- The publishers should understand that teacher, readers, students and photocopiers are not the enemies of publishers; they are their greatest allies.
- In a time when books and reading itself are under threat from competing media forms, it may be useful to remember that it is education and greater access that makes readers, not copyright.

18. Union Ministry of Tourism has approved projects worth ₹500 crore for tourism development in Jammu and Kashmir under Swadesh Darshan Scheme

The Union Ministry of Tourism has approved projects worth 500 crore rupees for integrated development of tourism in Jammu and Kashmir under Swadesh Darshan scheme.

The projects were approved by Central Sanctioning and Monitoring Committee for the scheme as part of Development Package of Prime Minister Reconstruction Plan.

tourist infrastructural development The new projects are envisaged at in Jammu and Kashmir.

They include Baramulla-Kupwara-Leh, Mantalai – Sudhmahadev – Patnitop Circuit, Rajouri – Bafliyaz – Shopian – Pulwama Circuit and Anantnag-Kishtwar- Pahalgam – Daksum – Ranjit Sagar Dam Circuit.

Convention Centre The projects also involve developing a in Gulmarg and Patnitop, development of Ethnic Villages, Development of Water Sports Centre at Baghliyar Dam – Pool Doda.

Nearly 100 crore rupees have been approved for integrated development of tourist facilities in lieu of damaged assets in the September 2014 floods.

Other major interventions proposed in the circuits include last mile connectivity, tourist facilitation and interpretation centre, base camps for trekking.

Besides it will also facilitation centre for pilgrims for Amarnath Yatra, Sound and Light Show at Shalimar Bag, illumination of heritage structures, provision of eco friendly vehicles.

Swadesh Darshan Scheme

The Ministry of Tourism (MoT), Government of India had formulated a plan scheme Swadesh Darshan for **integrated development of tourist circuits around specific themes.**

A Tourist Circuit is defined as a route on which At the same time, it would be ensured that they are not separated by a long distance. **atleast three major tourist destinations are located such that none of these are in the same town, village or city.**It should **well defined entry and exit points.** haveA tourist who enters should get motivated to visit all the places identified in the circuit.

The five circuits identified under this Scheme are Buddhist Circuit, Himalayan Circuit, Coastal Circuit, Krishna Circuit and North-East Circuit.

These circuits/destinations cover major and relevant tourist places and attractions and have a mix of to give a of the country. **culture, heritage, spiritualism, and Ecotourismholistic perspective**

Tourism contributes foreign exchange in a big way to the exchequer of India and it contributes 6.8 percent of the GDP share in India.

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How will it benefit

Follows a community-based development and pro-poor tourism approach.

Will help creading awareness among the local communities about the importance of tourism for them in terms of increase in sources of income, improved living standards and overall development of the area.

Will promote local arts, culture, handicrafts, cuisine, etc to generate livelihoods in the identified regions.

19. Cabinet approves shipping ministry proposal to enact Admiralty Bill 2016

Union Cabinet on 21 September 2016, gave its approval **to the proposal of the shipping ministry for a bill to consolidate existing laws relating to admiralty jurisdiction of courts, arrest of vessels** and other issues besides **repealing five archaic statutes**. The Union Cabinet under the Chairmanship of Prime Minister Narendra Modi has given its approval to the proposal of the Ministry of Shipping to enact **Admiralty (Jurisdiction and Settlement of Maritime Claims) Bill 2016** and **to repeal five archaic admiralty statutes**," the Ministry of Shipping said in a statement.

- **India is a leading maritime nation and maritime transportation caters** to about 95 per cent of its merchandise trade volume but under the present statutory framework, the admiralty jurisdiction of Indian courts flow from laws enacted in the British era.
- The Bill consolidates **the existing laws relating to admiralty jurisdiction of courts**, admiralty proceedings on maritime claims, arrest of vessels and related issues.
- **Admiralty jurisdiction relates to powers of the High Courts** in respect of claims associated with transport by sea and navigable waterways. The repealing of five admiralty statutes is in line with the government's commitment to do away with archaic laws which are hindering efficient governance.
- The **Bill confers admiralty jurisdiction on High Courts located in coastal states of India** and this jurisdiction extends upto territorial waters.
- The jurisdiction is extendable, by a central government notification, up to exclusive economic zone or any other maritime zone of India or islands constituting part of the territory of India.
- **Inland vessels and vessels under construction are excluded from its application** but the central government is empowered to make it applicable to these vessels also by a notification if necessary.
- In order to ensure security against a maritime claim, a vessel can be arrested in certain circumstances, the Bill provides.
- The liability in respect of selected maritime claims on a vessel passes on to its new owners by way of maritime liens subject to a stipulated time limit.
- The government said in respect of aspects on which provisions are not laid down in the Bill, **the Civil Procedure Code, 1908 is applicable**.

It repeals **five obsolete British statues on admiralty jurisdiction in civil matters**, namely

- The Admiralty Court Act, 1840
- The Admiralty Court Act, 1861
- Colonial Courts of Admiralty Act, 1890
- Colonial Courts of Admiralty (India) Act, 1891
- The provisions of the Letters Patent, 1865 applicable to the admiralty jurisdiction of the Bombay, Calcutta and Madras High Courts.

20. Centre creates a new body under PM's chairmanship to carry out its clean Ganga mission

The Cabinet on 21 September 2016 **gave more teeth to the National Mission for Clean Ganga** in its fight against pollution in the river by **creating a new body to administer it**. The approval of **the River Ganga (Rejuvenation, Protection and Management) Authorities Order, 2016** envisages the setting up of the **National Council for River Ganga (Rejuvenation, Protection and Management) (NCRG)**.

- The new body **will act as an authority replacing the existing National Ganga River Basin Authority** for overall responsibility for superintendence of pollution prevention and rejuvenation of river Ganga Basin.
- The Order lays down a **new institutional structure for policy and implementation in fast track manner and empowers National Mission for Clean Ganga** to discharge its functions in an independent and accountable manner.
- The new body will be **directly under the Prime Minister**, who will chair it. The NCRG will have powers **to issue directions and also to exercise the powers under the Environment (Protection) Act, 1986** to enable it to carry out efficiently its mandate.
- The National Mission for Clean Ganga (NMCG) has also been **elevated to an authority status**. Although, the NMCG has been

functional as a **registered Society since 2012** its role has been largely limited to fund the projects to implementing organizations.

- It neither had the mandate to take cognizance of various threats to river Ganga nor the powers to issue directions to the concerned authorities polluters. It will also set up of an empowered 'task force' to ensure that the Ministries, Departments and State Governments come up with an action plan with specific activities and timeliness for rejuvenation and protection of River Ganga.
- The council will also **ensure co-ordination amongst the ministries and departments and state governments**.
- It has been decided **to grant a Mission status to the Authority with corresponding powers under Environment (Protection) Act, 1986** to take cognizance of the provision of the said Act and follow up thereon.
- Similarly, there is adequate delegation of financial and administrative powers which will distinctly establish NMCG as both responsibility and accountability centre and effectively accelerate the process of project implementation for Ganga Rejuvenation.
- At the State level, it is **proposed to create the State Ganga Committees in each of the defined States as Authority**, to function as Authorities in respect of each State and perform the superintendence, direction and control over the District Ganga Protection Committees under their jurisdiction.
- The **Ganga Action Plan (GAP) Phase-I was launched in 1985** and later **GAP Phase-II was initiated in 1993** with the objective of improving the water quality of river Ganga and was later expanded to include some of its tributaries also.
- In May, 2015, the Government approved the **Namami Gange programme** as a comprehensive mechanism to take up initiatives for rejuvenation of river Ganga and its tributaries.

21. Once in 12 years: Naropa Festival the 'Kumbh of Himalayas'

The fourth edition of the Naropa festival is attribute to the 1,000th birth anniversary of saint Naropa. The week-long celebrations that began on September 16 will conclude on September 22.

It is rightly called the Kumbh of the Himalayas.

It is a carnival of Buddhist spirituality, culture and tradition -- and a grand congregation of Drukpa masters.
The 12th Gyalwang Drukpa, the spiritual head of the 1,000-year-old Drukpa Order based in the Himalayas, unfurled the brocade amidst chanting of prayers.

22. The Union Government launched Urja Mitra Helpline

Urja Mitra Helpline The Union Government has launched through which customers can get **information on power outages from distribution companies by dialing 14401.**

The helpline was launched by the Department of Telecom (DoT) of the Union Ministry of Communications and Information Technology.

Urja Mitra Helpline is for pan-India usage to send information through voice calls and SMSes. T

power situation in their area he information will apprise customers about so that they can plan accordingly. It is a mandatory service, which will be provided by all the telecom operators.

Besides, Power Finance Corporation (PFC) on behalf of the Union Power Ministry has developed Urja mobile app.

enhance consumer connect with power distribution companies. It will Using it consumers can get information on outages, complaint redressal, timely release of connections, and power reliability, among others.

23. Chilli-filled PAVA shells seen as alternative to pellet guns

Union Home Minister Rajnath Singh approved the use of chilli-based Pelargonic Acid Vanillyl Amide (PAVA) shells for crowd control measures as an alternative to pellet guns.

- However, the government has not completely banned use of Pellet Guns. They will be used in rarest of rare cases to control violent crowd.

PAVA shells

PAVA shells also called Nonivamide are **chilli-filled grenades**.

- The PAVA shells contain Pelargonic Acid Vanillyl Amide, an organic compound (also known as Nonivamide) found in chilli pepper. It derives its name from the compound.

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- It causes severe irritation and paralyses for a short duration.

PAVA shells vs. pellet guns:

- PAVA shells are less lethal compared to pellet guns and immobilises the target temporarily rather than causing physical injury.
- It is considered to be bio-safe and less lethal than pellet guns but equally effective.

The PAVA shells once fired burst out to temporarily stun, immobilise the target (protesters) in a more effective way compared to tear gas shell or pepper sprays.

Note

- The use of PAVA was recommended by a seven-member expert committee, headed by Joint Secretary in the Home Ministry T.V.S.N. Prasad, in its recently submitted report.
- The panel was constituted after scores of protesters were blinded by the use of pellet guns in the Valley.
- The PAVA shells were under trial for over a year at the Indian Institute of Toxicology Research, a Council of Scientific and Industrial Research (CSIR) laboratory in Lucknow, and its development has come at a time when Kashmir is on the boil.

24. Spanish Talgo train

The Spanish Talgo train has completed its final trial between Delhi and Mumbai in less than 12—hours at a maximum speed of 150 km per hour speed, to make a strong pitch for its induction in Indian Railways future venture.

- The lightweight aluminium coaches, made by Madrid-based Talgo, can travel at much higher speeds due to their weight and also don't need to de-accelerate at sharp turns like conventional coaches used by the Indian Railways.
- Besides being faster, the light-weight of the Talgo trains coaches means that the train guzzles up to 30 per cent less energy than a train with conventional coaches.
- Railways had conducted the first trial run of Talgo trains on the Bareilly—Moradabad stretch in Uttar Pradesh followed by the second trial run was conducted on the Palwal—Mathura section of the North—Central Railway.

25. CBEC to be renamed as CBIT under GST regime

Apex indirect tax body Central Board of Excise and Customs (CBEC) will be renamed as the Central Board of Indirect Tax (CBIT) once the new national tax framework kicks in from April 1 next year, as per the draft dealing in GST organisational structure prepared by the Centre.

Structure of the CBIT

- CBIT will be headed by a secretary-level officer.
- It will implement the rules, including exemptions and threshold, to be set by the GST Council, which is chaired by Union Finance Minister and has state finance ministers as its members.
- CBIT will consist of six members, who will look after Customs, policy and IT, central excise and legal issues, training and litigation.
- Besides, an additional secretary of the department of revenue, who will be secretary to the GST Council, will be a CBIT member for Central GST (CGST) and Integrated GST (IGST) related matters.

CBEC

The Central Board of Excise and Custom is the nodal national agency responsible for administering Customs, Central Excise, Service Tax & Narcotics in India.

- It is one of the oldest government departments of India.
- The Customs & Central Excise department was established in the year 1855 by the then British Governor General of India, to administer customs laws in India and collection of import duties / land revenue.
- The agency is staffed by IRS officers.
- **comes under the Department of Revenue, Ministry of Finance.**Currently the Customs and Excise department

26. NMEP to expand mineral reserve portfolio

The **National Mineral Exploration Policy (NMEP)** recently unveiled by the Government of India can provide an **impetus to exploration and generate a continuous flow of mineral blocks to be auctioned**, says a report by Ernst & Young (EY) titled '**Indian Minerals Exploration — Play to Win**'.

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- **With only 10% of the 0.8 million sq km potentially resource-bearing area in the country explored**, exploration presents a large opportunity for both domestic and international players in the country.
- The **Indian minerals exploration sector presents a large opportunity for domestic and global explorers** supported by the **new policy framework** introduced by the government.
- The policy provisions such as **competitive bidding**, **revenue sharing** and cost reimbursement for unsuccessful explorers are bold, innovative and move away from the traditional path adopted by most other countries.
- In order to achieve sustainable progress, **the report lists 15 critical success factors**, including the availability of risk capital, a viable exit strategy for explorers, quality and availability of digital data, and private sector participation. These factors are expected to help explorers to engage, perform and succeed.
- The proposed model is likely to attract risk-averse exploration service providers relatively under-utilised because of current downturn in global exploration activity.
- It also evaluates whether this is enough to attract and engage the top global explorers having the talent, competence, leadership, sustainability and risk appetite.
- **Global mining is undergoing a downturn with the major miners - still prime spenders of late** - having cut their exploration budgets by more than half from $9.1 billion in 2012 to $4.3 billion in 2015.
- The number of funded projects for mining companies listed in TSX-V exchange in Canada dropped 31% year-on-year on an average.
- The report also notes that **FDI in mining increased sharply in the last couple of years**, from a very low base, on the back of reinvigorated mining sector regulations and activities.
- The **Government of India aims to increase the volume of mined minerals in India by 30-35% annually** and increase the share of mining in GDP by 1% in the next two to three years.

27. DoT introduces 'Urja Mitra' helpline for power outages

The Union Government has launched Urja Mitra Helpline through which customers can get information on power outages from distribution companies by dialing 14401. The helpline was launched by the Department of Telecom (DoT) of the Union Ministry of Communications and Information Technology.

- Urja Mitra Helpline is for pan-India usage to send information through voice calls and SMSes.
- The information will apprise customers about power situation in their area so that they can plan accordingly.
- It is a mandatory service, which will be provided by all the telecom operators.
- Besides, Power Finance Corporation (PFC) on behalf of the Union Power Ministry has developed Urja mobile app.
- It will enhance consumer connect with power distribution companies.
- Using it consumers can get information on outages, complaint redressal, timely release of connections, and power reliability, among others.

28. Govt to extend pact with ISA on exploring manganese nodules

Government has decided to extend the agreement with International Seabed Authority (ISA) by **5 years for exploration of manganese nodules** that will also help in extracting minerals like, **nickel, cobalt and copper**.

- The Cabinet has approved **extension of contract between Ministry of Earth Sciences and ISA for exploration of Poly metallic Nodules** (manganese nodules) for five years (2017-22).
- **The earlier contract is due to expire on March 24, 2017**.
- By extending the contract, **India's exclusive rights for exploration of Polymetallic Nodules** in the allotted area in the central Indian ocean basin will continue and would open up new opportunities for resources of commercial and strategic value in area beyond national jurisdiction.
- Further, **it would provide strategic importance for India in terms of enhanced presence in the Indian Ocean** where other international players are also active.
- **These potato-shaped, largely porous nodules**, also called manganese nodules, are **found in abundance carpeting the sea floor of world oceans in deep sea**.
- Besides **manganese and iron**, they contain **nickel, copper, cobalt, lead, molybdenum, cadmium, vanadium, titanium**, of which **nickel, cobalt and copper** are considered to be of economic and strategic importance.
- **India had signed a 15-year contract for exploration of Polymetallic Nodules (PMN) in Central Indian Ocean Basin with the ISA**, an institution set up under the**Convention on Law of the Sea to which India is a party, on March 25, 2002** with the approval of the Cabinet.
- **At present, India has an area of 75,000 sq km, located about 2,000 km away from her southern tip for exploration of PMN**.

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- Ministry of Earth Sciences is carrying out the survey and exploration, environmental impact assessment, technology development (Mining and Extractive Metallurgy) under PMN through various national institutes.
- They include **National Institute of Oceanography (NIO)**, **Institute of Minerals and Materials Technology (IMMT)**, **National Metallurgical Laboratory (NML)**,**National Centre for Antarctica and Ocean Research (NCAOR)** and **National Institute of Ocean Technology (NIOT)**.

29. CCEA approves proposal for initiation of 3rd phase of TEQIP

The Cabinet Committee on Economic Affairs, chaired by the Prime Minister Shri Narendra Modi, has **approved the proposal for initiation of the Third Phase of Technical Education Quality Improvement Programme (TEQIP)**. The Project will be implemented as a '**Central Sector Scheme**' with total project outlay of Rs. 3600 crore. However, **the project would be initiated with a cost of Rs. 2660 crore**, with the possibility of additional financing of Rs. 940 crore at later stage. Out of the Rs.2660 crore, **the Central share will be Rs.1330 crore** and external assistance from the World Bank through **International Development Association (IDA)** Credit of Rs. 1330 crore ($ 201.50 million as first tranche). The project will be **implemented with the facility of Direct Funds Transfer** to the accounts of beneficiary institutes. The project will be **initiated in the current year** and will be **co-terminus with Fourteenth Finance Commission (FFC) i.e. 2019-20**.

The major outcomes of the project are:

- **Better academic standards**, through accreditation, filling up faculty positions, training faculty in better teaching methods, improved research outputs in institution in Focus States/UTs.
- Better administration of the institutions with improved financial/academic autonomy.
- **Better systems for assessment of Student Learning, higher transition rates**.
- Transparent and expeditious release of funds to institutes by way of Direct Funds Transfer (DFT) System.
- An estimated 200 Government / Government aided engineering institutes and **Affiliating Technical Universities (ATUs)** including the **Centrally Funded Technical Institutions (CFTIs)** will be selected.
- The project will cover **all Government / Government aided engineering institutes, ATUs and CFTIs from Focus States/UT**.
- **High-performing TEQIP-I/ TEQIP-II Government / Government aided institutes/ATUs across the country** would be eligible to participate in twinning arrangements for knowledge transfer, exchange of experience, optimizing the use of resources and developing long-term strategic partnerships.
- **The Focus States are 7 Low Income States** (Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Rajasthan and Uttar Pradesh), **3 Hill States** (Himachal Pradesh, Jammu & Kashmir and Uttarakhand), **8 North-Eastern States** (Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura) and Union Territory of Andaman and Nicobar Islands.

Background

- **The Technical Education Quality Improvement Programme (TEQIP) commenced in 2003 with World Bank assistance** as a long term programme to be implemented in three phases.
- **The first phase of TEQIP commenced in 2003 and ended on March 31st, 2009**. It covered **127 institutes across 13 States including 18 Centrally Funded Technical Institutions (CFTIs)**.
- **TEQIP-II commenced in August 2010**, covering 23 States/Union Territories (UTs) and 191 Institutes (including 26 CFTIs).
- **TEQIP-II is scheduled to conclude in October, 2016**. Both projects have had a positive impact on the infrastructure and educational standards in the technical institutions where they were taken up.
- Institutions in the central, eastern and north-eastern region and hill States are at present in need of similar and specific interventions. **The initiation and implementation of the project TEQIP-III will bridge this gap**.

30. Union Government launches Integration of DigiLocker with Driving Licenses and Vehicle Registration Certificates

Nitin Gadkari, Minister of Road Transport and Highways and Shipping, and Ravi Shankar Prasad, Minister of Electronics and Information Technology and Law and Justice, on 7 September 2016 jointly launched Integration of DigiLocker with Driving Licenses (DL) & Vehicle Registration Certificates (RC) in New Delhi.

The new service will end the need of people carrying around physical copies of their RCs and DLs. They can instead access digital copies of the same on their mobile phones via the DigiLocker mobile app.

Key highlights of DigiLocker with DLs and RCs

• Driving Licenses and Vehicle Registration documents can now be issued directly to the DigiLockers of individuals in digital formats.

• These digital copies can be shared with other departments as identity and address proof.

• They will also be used for on the spot verification through the citizen's mobile, by various law enforcement authorities like the Traffic Police.

• Besides being convenient for people, this will also result in assured authenticity of such documents and reduction of administrative overhead.

'Digital Locker' Scheme

After Digital Locker trial version was launched in February, 2015 over one lakh Digital Lockers have been opened by the Citizens. **Digital Locker** is one of the key initiatives under the **Digital India vision**, which is aimed at eliminating the usage of physical documents.
Digital Locker will allow various agencies to push the documents into the Digital Locker of citizens mapped to their Aadhaar Number. It also allows citizens to upload their own electronic documents with or without digitally signing them using the e-sign facility allowing them to store all such documents for posterity.

Advantages

- **Print anytime from anywhere:** All electronic documents will be in a printable, enabling user to print from anywhere. Also, incase of disasters, non availability of documents, it is easily accessible by user even when the documents are lost.
- **Convenience:** No more long queues or procedures to get the documents.
- **Free of cost:** Digital Locker facility is provided to Indian Citizen free of charge and will enable its use by all strata of society.
- **Shareable:** Residents can easily share the documents with other agencies/departments without having to share photocopies, scan copies, document uploads, etc. Sharing can easily be done even on feature phones even via SMS and text based systems.
- **Verifiable:** Government documents and certificates issued can be verified online, eliminating the use of fake documents/certificates.
- **Secure:** Only the owner has the right to see and share the documents as per their own requirement and convenience.
- A number of individual certificates such as Birth, Domicile, etc., may be applied online to speed up the process.
- The user agencies will be authorised to access the documents by the owner of digital locker.
- The local bodies issuing these documents can push these certificates in digital form directly in the Digital Locker eliminating the risk of fake document.
- This will greatly benefit the people who find it difficult to have proper storage space for physical documents.
- This would be safe during the National Disaster such as floods, cyclones, fire etc.
- Hassel free registration of Sim Card, LPG connection and Driving License.

In India, most of the government documents used for various purposes are in physical form. This means that every time a citizen needs to avail any service, a self-attested photo copy either in physical or scanned form is shared. Use of physical copies of document creates huge overheads in terms of manual verification, paper storage, manual audits etc. and thereby incurring cost and inconvenience for all the stakeholders. This also creates problem for various agencies to verify the authenticity of these documents. The Digital Locker is going to address these concerns.

31. Union Government issues fresh guidelines for flexi-fund for CSS

Union Government on 9 September 2016 issued fresh flexi-fund guidelines for Centrally Sponsored Schemes (CSS). The guidelines would give more freedom to states in spending money under the CSS to meet local developmental requirements.

Under the new norms, flexi-funds in each CSS have been increased from the current 10 percent to 25 percent for states and 30 percent for Union Territories. Now, the states can use the fund to undertake mitigation or restoration activities in case of natural calamities, or to satisfy local requirements in areas affected by internal security disturbances.

The guidelines said that state governments will have to constitute a state-level sanctioning committee to avail of the flexi-fund facility. The flexi-fund facility is not for CSS which emanate from legislation, like MNREGA. Based on the recommendations of the sub-group of chief ministers and consultations with stakeholders, Niti Aayog had issued instructions for rationalisation of Centrally Sponsored Schemes.

32. Proposal to replace MCI approved

NITI Aayog's proposal to replace the existing scandals-tainted Medical Council of India (MCI) with a **National Medical Commission** has received the go-ahead with a majority of the States in favour of the recommendations. NITI Aayog met **representatives from 20 States to hold discussion on the overhaul of the MCI**. The meeting was chaired by its Vice-Chairman, Arvind Panagariya. Most States were on board with the recommendations given by the Aayog's. One of the significant proposals is that instead of just **one chairman of the new regulatory body**, there should be some members also. Also, the States have asked for more representation in the commission.

Consultative committee

- Separately, **it has been proposed that a consultative committee be formed**, whose function will be to advise the commission.
- However, the suggestions will not be binding on the commission.
- The **final recommendations will now be sent for approval of the Prime Minister**. The official said the final Bill was likely to be presented in the upcoming winter session of Parliament.

- In March 2016, a Parliamentary Standing Committee report had called for "radical reform" of the MCI, saying that it neither "represents professional excellence nor its ethos" and that its composition was "opaque".

33. Union Government launches NIDHI for nurturing ideas and innovation into start ups

Union Government on 6 September 2016 launched a new program called National Initiative for Developing and Harnessing Innovations (NIDHI). The initiative aims at nurturing ideas and innovation into successful start ups.

NIDHI, an umbrella programme of the Department of Science & Technology (DST), will focus on helping startups to meet their funding, infrastructure and other mentorship needs. NIDHI will allow youths of the country to give a concrete shape to their ideas.

National Initiative for Developing and Harnessing Innovations

• The programme focuses on building a seamless and innovation driven entrepreneurial ecosystem especially by channelizing youth towards it and thereby bringing in the positive impact on the socio-economic development of the country.

• It aims at providing technological solutions not only to the pressing needs of the society but also targets to create new avenues for wealth and job creation.

• By design it connects and strengthens all the links of the innovation chain from scouting to sustaining to securing to scaling to showcasing, because a chain is only as strong as its weakest link.

• There are eight component of NIDHI that support each stage of a budding startup from idea to market. The first component is PRAYAS (Promoting and accelerating young and aspiring innovators and startups) which aims to support innovators to grant up to 10 lakh rupees.

• The final component is the Seed Support System which provides up to One Crore rupees per start-up and is implemented through Technology Business Incubators.

During the financial year 2016-17, Department of Science has allocated 180 crore rupees, with a view to drive the innovation and startup centric new initiative.

Key stakeholders

The key stakeholders of NIDHI includes various departments and ministries of the Union government, state governments, academic and R & D institutions, mentors, financial institutions, angel investors, venture capitalists, industry champions and private sectors.

34. World's largest river island, Majuli, becomes India's first island district

The inauguration of Majuli as a district coincides with the 90th birth anniversary of music maestro Bhupen Hazarika.

Recently on 1 September 2016, Majuli replaced Brazil's Marajo to become the world's largest river island in the Guinness Book of World Records.

Key facts related to Majuli island

• **Geographical features:** It is a fluvial landform (a riverine delta), a unique geographical occurrence and a result of the dynamics of the Brahmaputra river system.

• It is bounded by the river Subanisri and her tributaries on the North West, the kherkatia Suli (a spill channel of the river Brahmaputra) in the northeast and the main Brahmaputra River on the South and the South west.

• It is the largest mid river delta system in the world. It is also comprised of many islets locally called the **Chaporis**.

• Its area has shrunk from about 1250 square kilometers in 1891 to about 352 square kilometers in 2014 due to the erosion of river-bank.

• **Vaishnavite cultural centre:** It is the abode of the Assamese neo-Vaisnavite culture initiated around 15th century by the revered Assamese saint Srimanta Sankardeva and his disciple Madhavdeva.

• There are a total of 30 Sattras or Vaishnavite monasteries including the Dakhinpat Satra which was established in 1584 AD.

• Each Sattra, represents, within its region, a centre for cultural activities and even acts as a democratic institution to settle local disputes.

• Most of the villages associate with respective Sattra, and the villagers partake in the activities of their own Sattra during festivals and occasions.

• These sattra villages and other vernacular settlements house people from various ethnic origins all of whom have settled in Majuli like Mishings, Deori, Sonowal Kachari, Koch, Kaivartta and Nath.

• **Flora and fauna:** It is a hotspot for flora and fauna, harbouring many rare and endangered avifauna species including migratory birds that arrive in the winter season.

• Among the birds seen here are the greater adjutant stork, pelican, Siberian crane and the whistling teal.

• **Agriculture:** Paddy, mustard, potato, pulses, sugarcane, wheat are the main crops cultivated on the island.

• Various seasonal vegetables and fruits like orange, banana, pineapple, jackfruit, etc are also grown in abundant quantity.

• **Recognition:** In March 2011, the Archaeological Survey of India (ASI) of the Union Ministry of Culture proposed to nominate the island for inclusion in the UNESCO World Heritage list.

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35. Swachhta (cleanliness) survey

Sikkim and the Left Front-ruled Kerala have been ranked as top performing states in a Swachhta (cleanliness) survey conducted by the **National Sample Survey Office (NSSO)** while **Chhattisgarh and Jharkhand have been placed among the last on the table**. An official report released by **the Ministry of Drinking Water and Sanitation** on 8 September 2016 also found **Dungarpur in Rajasthan and Panchmahal in Gujarat among the low ranking districts**, while **Sindhudurg in Maharashtra tops having recorded 99 percent of houses having access to safe toilets**.

- **Nadia district in West Bengal has been ranked second** followed by Satara (Maharashtra) and Midnapur East (West Bengal).
- Among the states, **Sikkim has recorded 100 per cent in the category of people using household/community toilets** and 98.2 per cent in the category of households having sanitary toilet.
- **Kerala has been ranked second**, **followed by Mizoram in third place** and **Himachal Pradesh in the fourth**.
- A survey on Swachhta status was conducted by NSSO during May-June 2015 covering 73,176 households in 3788 villages across India," said the report **entitled Swachh Survekshan - Gramin 2016**.
- The percentage figures have been derived by multiplying "the percentage of households having sanitary toilets and the percentage of people using household/community toilets of the people having access to toilets".
- **Chhattisgarh has 21.2 percentage of *households* having sanitary toilet** while **Jharkhand has only 18.8 per cent**.
- Among the performing states besides Sikkim and Kerala, other states which show good results are Mizoram, Himachal Pradesh, Nagaland and Haryana.
- The state of **West Bengal has been ranked 12th** while Jammu and Kashmir with 47.4 per cent of households having sanitary toilet stands at 17th position.
- **75 districts including 22 from north east and special category states across the country were also shortlisted on the basis of their performance** on following indicators as per the data available with the ministry of Drinking Water and Sanitation.
- **Mandi in Himachal**, **West Sikkim in Sikkim**, **Shimla in Himachal** have been designated as the three best performing districts among the north east and special category states while Papum Pare and Anjaw in Arunachal Pradesh have been ranked at the bottom of the table.

36. Mother Teresa canonised

In a **historical and proud moment for India**, Pope Francis on 4 September declared **Mother Teresa 'Saint Teresa of Calcutta'** in a ceremony at the Vatican as celebrations broke out across India especially in her adopted city of Kolkata. Thousands of people including a sizeable number of Indians flooded the St. Peter's Square in the holy Vatican City of Rome since morning to witness the canonisation ceremony of Mother Teresa.

- A **12-member central government delegation led by Minister of External Affairs Sushma Swaraj** and two state level delegations led by Delhi Chief Minister Arvind Kejriwal and West Bengal Chief Minister Mamata Banerjee were in attendance.
- There were celebrations and special prayers on the occasion in different parts of the country including **Goa, Mumbai and Delhi** but the revelry was grand and elaborate in Kolkata.
- From setting up giant screens that beamed her canonisation live to projection of songs and films depicting her journey, Kolkata matched the Vatican on the big day.
- A series of events including a **"Thanksgiving Holy Eucharist"** were lined up to celebrate the occasion while the city observed with solemn prayers that were conducted by the Archdioceses of Calcutta and the Missionaries of Charity.
- The Albanian nun had made Kolkata her home and **in 1950 set up the Catholic order Missionaries of Charity**, hailed across the globe for its service to the poorest of the poor and the infirm.
- Mother Teresa took care of the hungry, naked, homeless, crippled, blind, lepers and all those who were shunned by the society.
- Mother Teresa **died on September 5, 1997** but the branches of Missionaries of Charity in several countries continue their service to humanity, reaching out to the needy, regardless of their religion or social status.

37. New Arms Rules notified

Safe use and storage of firearms, provisions for granting restricted category of arms to those living in militancy-hit areas and a decision on applications for arms licence within two months are part of the new rules issued by the central government. According to **the Arms Rules, 2016**, which **supersedes the Arms Rules, 1962**, every person applying for an arms licence or a rifle club or association or firing range or staff employed by such club or a manufacturer or dealer shall be required to complete the arms and ammunition safety training course.

As per rule

- **The training course involves basic arms and ammunition safety practices**, including safe handling and carry procedures, firing techniques and procedures, care of arms and ammunition and their safe storage and transportation.
- **The designated authority will consider granting the restricted or permissible arms** to those who face grave and anticipated threat to their life by reason of being resident of a geographical area or areas where militants, terrorists or extremists are most active, and those being the prime target in the eyes of militants, **any government official, any MP, MLA or their family members**.
- The licensing authority, after considering the application and on being satisfied that the applicant has fulfilled the eligibility conditions, shall grant or refuse to grant a licence of arms or **ammunition within a period of sixty days of the receipt of the police report**.

INTERNATIONAL

1. WHO declares Region of the Americas as Measles free

- The World Health Organisation (WHO) on 27 September 2016 declared the Region of the Americas as Measles free. The declaration came during the 55th Directing Council of the Pan American Health Organization/World Health Organization (PAHO/WHO).
- With this, the Americas became the first in the world to have eliminated measles, a viral disease that can cause severe health problems, including pneumonia, blindness, brain swelling and even death.
- This achievement marked culmination of a 22-year effort involving mass vaccination against measles, mumps and rubella throughout the Americas.
- Measles is the fifth vaccine-preventable disease to be eliminated from the Americas, after eradication of smallpox in 1971, poliomyelitis in 1994, and rubella and congenital rubella syndrome in 2015.

Spread of Measles and its Elimination in the Americas

- Before mass vaccination was initiated in 1980, measles caused nearly 2.6 million annual deaths worldwide.
- In the Americas, 101800 deaths were attributable to measles between 1971 and 1979.
- However, a cost-effectiveness study on measles elimination estimated that with vaccination 3.2 million measles cases and 16000 deaths can prevented between 2000 and 2020.
- In the 1990s, a decline in measles cases was recorded, but the most notable decrease was observed after the Americas launched its initiative to eliminate measles in 1994.
- The countries of the Americas established the goal to eliminate indigenous transmission of measles by the year 2000, through the implementation of surveillance and vaccination strategies.
- The last indigenous measles outbreak was registered in Venezuela in 2002.
- However, some countries in the Region still notified imported cases. Between 2003 and 2014, 5077 imported measles cases were registered in the Americas.
- Brazil also witnessed the measles outbreak in 2013. However, after a year of targeted actions, the last case of measles in Brazil was registered in July 2015.
- Considering that the Region has sustained elimination for more than 12 years, the International Expert Committee accepted the evidence presented by the countries and declared the elimination of measles in the Americas.

Measles

- Measles is one of the most contagious diseases and affects children primarily.
- It is transmitted by airborne droplets or via direct contact with secretions from the nose, mouth, and throat of infected individuals.
- Symptoms include high fever, generalized rash all over the body, stuffy nose, and reddened eyes.
- It can cause serious complications including blindness, encephalitis, severe diarrhea, ear infections and pneumonia, particularly in children with nutritional problems and in immunocompromised patients.

2. White Helmets

- It is a Syrian civil organisation of emergency responders in rebel-held areas. It has won the prestigious Right Livelihood Award which is also known as 'alternative Nobel' prize.

- Also known as the Syria Civil Defence, the group was honoured "for their outstanding bravery, compassion and humanitarian engagement in rescuing civilians from the destruction of the Syrian civil war".
- The White Helmets will share the prize with Russian activist Svetlana Gannushkina, Egypt's feminist leader Mozn Hassan and leading independent Turkish newspaper Cumhuriyet.
- Established in 1980, Right Livelihood Award is an international award that honour and support those offering practical and exemplary answers to the most urgent challenges facing us today.
- An international jury decides the awards in such fields as environmental protection, human rights, sustainable development, health, education, and peace.

3. BRICS Labour Ministerial meet

A **2-day BRICS Labour & Employment Ministerial Meet** will begin in New Delhi on September 27 to deliberate on the issues including jobs creation and social security for workers. **BRICS Labour & Employment Ministerial Meeting begins** (being held on September 27-28) in New Delhi, a Labour Ministry press release said. The ministers will deliberate on adopting the **BRICS Labour & Employment Ministerial Declaration**. The meeting will have dedicated sessions on employment generation, social security, inclusive development including formalization.

- **International Organisations such as ILO, ISSA** and Academia's are participating in the discussion and providing their research inputs to the deliberation. Following the tripartite model of dialogue, the national social partners of BRICS countries are also participating in the deliberations. At Valedictory Session, there would be Adoption of BRICS Labour and Employment Ministers' Declaration.
- The **first meeting of BRICS Employment Working Group (BEWG) was held on July 27–28 at Hyderabad**. During this meeting broad consensus was achieved in areas such as 'Employment Generation for Inclusive Growth', 'Possible Social Security Agreement among BRICS nations' and 'Networking of Labour Institutes of BRICS nations' to include in the BRICS Ministerial declaration for their subsequent discussion.
- **India has assumed the Presidency of BRICS in February, 2016** and hosting **8th BRICS Summit 2016 under India's Chairmanship scheduled to be held on October 15-16, 2016** at Goa.
  The theme of India's BRICS Chairmanship is '**Building Responsive, Inclusive and Collective Solutions**'.
- In the prelude to the final meeting of BRICS, a series of Meetings from participating Ministries are being held at various places in India following the recommendation of BRICS Labour & Employment Ministerial Meeting in Ufa, Russia under Russia Presidency.
- The **BRICS Employment Working Group has been constituted to deliberate on common issues and challenges facing the world of work in BRICS nations** and to formulate appropriate & coordinated policy reforms.

4. U.N. acclaim for Indian anti-hunger activist

Troubled to see the amount of food being wasted in the big, fat Indian weddings, management graduate **Ankit Kawatra** came up with the solution to redistribute it among the hungry. Mr. Kawatra, who left his corporate job to start '**Feeding India**', is among the **17 people selected for the inaugural class of U.N. Young Leaders for Sustainable Development Goals** for his initiative.

- The young leaders were **selected by the U.N. from more than 18,000 nominations from 186 countries**.
- This **led him to establish his own NGO Feeding India**, which now claims to have fed 1 million meals with a network of **2,000 volunteers across 28 cities of India**.

Redistribution of food

- They work towards **solving hunger and malnutrition in India** by redistributing excess food from **weddings, corporate, canteens, banquets and households**.
- As part of the initiative, Mr. Kawatra has undertaken several projects in the past two years. These include '**The Magic Truck**', a 24X7 refrigerated vehicle moving around the city collecting and donating excess food.

5. WTO trade outlook report

The **World trade Organization cut its forecast for global trade growth this year by more than a third** on 27 September 2016, reflecting a **slowdown in China** and **falling levels of imports into the United States**. The new figure of **1.7%, down from the WTO's previous estimate of 2.8% in April, marked the first time in 15 years international commerce was seen lagging the growth of the world economy**, the trade body said.

- The figures should be a **wake-up call for governments**, WTO director-general Roberto Azevedo said in the **six-monthly trade outlook report**.

Recently the

- The data underlined concerns that, **after a long period of growth through globalisation** and **reliance on global trade**, governments are increasingly seeking to protect their own industries during a period of **economic difficulty and economies are increasingly driven by domestic consumption**.
- Although all governments deny protectionism, **trade is no longer outpacing economic growth as it used to.**
- **Trade has grown 1.5 times faster than gross domestic product over the long term**, and twice as fast when globalisation picked up in the 1990s.
- This year **trade will grow only 80% as fast as the global economy**, the **first reversal of globalisation** since 2001 and **only the second since 1982**.
- The benefits of trade should be shared more widely, with a system that does more to include poor countries, small firms, marginalised groups and entrepreneurs - an apparent nod to anti-globalisation activists who say secretive trade talks are exclusively aimed at helping big business.
- The WTO also said it expected slower 2017 trade growth than in its previous forecast, with a rise of 1.8-3.1% rather than the 3.6% it had estimated in April.

6. Bratislava Declaration

members were participated in the summit. Currently EU is facing existential crisis, and exit of Britain from EU is the latest symptom of the fear and discontent that have spread across the continent, fuelled by the migrant crisis, Islamophobia, Eurozone woes and terrorist attacks. The summit was held to diagnose the *situation* and to forge a united path forward.

Bratislava Declaration-

- The Bratislava Declaration offers a road map for European Union countries for the next six months, on the issues like migration, border security, counter-terrorism, defence and economic and social development etc.
- The Bratislava Declaration identifies various areas where much needed action required, such as funding for strategic investments across the region, establishing a common capital market across the EU and acquiring advanced traveller information to secure borders.

Issues

- Each move in the European Union needs precision and care in order to preserve the integrity of an increasingly tenuous union..
- Though many areas identified in Bratislava declaration will find acceptance across the EU, but other areas like migration are more contentious.
- For example Hungary will organise a national referendum in October to decide whether they will accept the recommended share for providing asylum to migrants.
- Another contentious proposal is the European army. European Council has proposed that member-states move towards pooling and centralising their defence and diplomatic resources. Though it has advantageous, but member countries may oppose such move due to fear of overreach of EU on member states.

Suggestions

- With respect to refugees, the EU must find a creative, humane and effective solution to receive and resettle refugees.
- The EU should focus the big picture and on areas where it has a comparative advantage while letting national governments take the lead in others.
- The European Council should encouraging members to engage more rigorously with their citizens on EU issues, by explaining policies and their outcomes, collecting feedback, and inviting ideas.

Currently EU is facing various issues. These issues further exaggerated by Britain's decision to leave EU. In this background recent summit in Bratislava discussed on variety of aspects. There is acceptance on various issues by member countries, but there are some contentious issues which need to be addressed. In this background it the duty of European Council to bring the consensus among member countries and recent summit at Bratislava is first step in this regard.

7. Druzhba-2016

- **Russia and Pakistan** It is the first military exercise between , kicked off in Pakistan.
- It is named Druzhba-2016 (Friendship-2016).
- With this, Pakistani Army and Russian Ground Forces (RGF) have come together for the first time in military exercises reflecting growing military ties between two former Cold War rivals.

8. UN, Iraq sign agreement to tackle sexual violence

The **United Nations and Iraq signed an agreement** on 24 September 2016 **aimed at helping the Baghdad government tackle sexual violence in conflict**, an issue that made headlines following the capture and rape of Yazidi women by Islamic State extremists in 2014. Zainab Hawa Bangura, the UN special envoy for sexual violence in conflict, and Iraq's Foreign Minister Ibrahim Al-Jaffari, **signed the joint communique on the sidelines of the UN General Assembly's annual ministerial meeting**.

- The Islamic State group has inflicted "**unspeakable suffering**" on civilians, including the targeting of Yazidis and other minorities such as **Turkmen Shia**, **Shia Shabak** and **Iraqi Christians**.
- **UN-Iraq collaboration** will especially **focus on challenges Iraq faces with accountability for sexual violence** and bringing perpetrators to justice. To date, there have been no trials.
- The support envisioned under the agreement will include documenting and **collecting evidence of alleged sex crimes**, strengthening Iraq's legal framework to better address sexual violence and putting in place procedures for compensating victims.

9. Drones deploy over South, East China Seas

China plans to deploy **its indigenously built drones for surveying and mapping in the disputed South China Sea** and along the contentious islands with Japan. China is now capable of **deploying domestically-designed drones in the South China Sea** and **Senkaku islands** claimed by both Japan and China in the East China Sea for surveying and mapping," Li Yingcheng, General Manager of China TopRS Technology Co Ltd was quoted.

- The **drones can fully cover waters 80 nautical miles from the coastline**.
- They can also partially cover open sea up to 1,500 nautical miles from the coastline.
- China which claims almost all of South China Sea said it has a **total of 12,186 islands** and **reefs scattered across a total area of 3 million square kms**.
- Many are located up to 1,000 kilometres away from the mainland.
- China has designed drones to handle complicated surveying, **including the ZC-5B and Zc-10 unmanned aircraft systems (UAS)**.
- The ZC-5B has a maximum flight distance of 1,400 kilometers, and can stay in the air for up to 30 consecutive hours.
- China has pressed **air-patrols over the *South* China Sea** after the international tribunal quashed its claim of historic hold over the area.
- **Vietnam, Malaysia, Brunei, Taiwan and the Philippines have counter claims over the area**.

10. UN Security Council Backs Nuke Test Ban Implementation



The **UN Security Council** has approved a resolution **urging quick global implementation of a treaty** that would ban tests of such weapons. Universal adoption of the Comprehensive Test Ban Treaty would result in a "**safer, more secure, and more peaceful planet**," as **the United States and 18 other council members approved the resolution**, with none opposed and **Egypt abstaining**.

As **Russian ground forces contingent arrived in Pakistan** on 23 September 2016 for the **first-ever jo int military drills**, The Russian Embassy in India clarified that reports that the "anti-terror excercise" would be held in PoK are false. It said the drills were being held **only in Cherat**.

According to a Chinese newspaper Chinese

- Security Council approval comes as the **Comprehensive Test Ban Organisation set up to administer the treaty marks its 20th anniversary**.
- CTBO chief Lassina Zerbo welcomed the vote, telling The Associated Press that "it will remind the international community ... that we have to finish what we started 20 years ago."
- The **US remains one of the holdouts among the 44 countries** that are designated "**nuclear capable**", the United States, China, Egypt, India, Iran, Israel, North Korea and Pakistan that still need to ratify the treaty for it to enter into force.
- North Korean leaders appeared in **no mood to ratify any time soon**, with Foreign Minister Ri Yong Ho vowing his country will expand its nuclear capabilities in defiance of multiple UN Security Council resolutions.
- **Even without ratification, the UN's CTBTO already polices the world for any sign of nuclear tests with a global network of monitoring stations** that pick up seismic signals and gases released by such events.
- The White House has lobbied Congress for support since **anti-treaty minded Republicans rejected ratification 17 years ago under President Bill Clinton, with Senate approval falling far short of the required two-thirds majority**.
- But opposition remains strong, although advocates say that computer modeling and other cutting edge techniques make real testing obsolete.

Daily, China may slow down implementation of the $46 billion China-Pakistan Economic Corridor (CPEC) because of security

11. Russia-Pakistan anti-terror drills

- A mechanised infantry unit of the Russian Southern Military Command had reached Pakistan to take part in joint military drills in Pakistan. The military drills are **aimed at bolstering and building up military cooperation between both countries**.
- The military drills **increasingly reflect growing military ties between the two former Cold War rivals**.
- Russian troops will be in Pakistan for two weeks from September 24 to October 10. Around 200 troops from the two countries will take part in the two-week long military drills **dubbed as 'Friendship 2016'**.
- The strategic move comes amidst increasing **defence ties between Moscow and Islamabad** as the latter was also considering purchasing advanced Russian warplanes.
- The joint drill is seen as **another step in growing military-to-military cooperation**, indicating a steady growth in bilateral relationship between the two countries, whose ties had been marred by Cold War rivalry for decades.

12. Chinese daily warns of setbacks to China-Pakistan economic corridor

concerns.

What would be the reasons?



- The decision would be due to challenges such as a complex regional environment. The economic corridor, linking Kashgar in northwest China's Xinjiang Uygur Autonomous Region and Gwadar Port in southwest Pakistan, passes through some turbulent regions.
- Besides security challenges, there is serious concern about the economic value of the investments because the Pakistani economy is unlikely to provide a proper rate of return on investments.

Supporters of CPEC:

- Supporters view the CPEC as a project that can result in the emergence of a stable Pakistan. In turn, that would yield a major geostrategic prize, as it could disrupt the spread of extremism in the region, through which China's ambitious One Belt, One Road will pass.

About the CPEC project:

China-Pakistan Economic Corridor (CPEC) is a collection of projects currently under construction at a cost of $46 billion.

- The 3,000-km CPEC connecting Xinjiang with Pakistan's Gwadar Port through PoK is stated to cost $46 billion.
- This project will shorten the route for China's energy imports from the Middle East by about 12,000 kms.
- The project includes building of highways, railways as well as pipelines. It is among the six economic corridors conceived under China's Silk Road Economic Belt and 21st-Century Maritime Silk Road.
- It is intended to rapidly expand and upgrade Pakistani infrastructure as well as deepen and broaden economic links between Pakistan and the People's Republic of China.
- The corridor is considered to be an extension of China's ambitious One Belt, One Road initiative, and the importance of CPEC to China is reflected by its inclusion as part of China's 13th five-year development plan.

In recent months, Europe has been facing the most severe refugee crisis since the World War-II. In early 2015, around 3 lakh people

13. European Refugee Crisis

knocked its doors seeking asylum. It is in addition to the 6.25 lakh applications received in 2014.

As per an estimate of the Office of the United Nations High Commissioner for Refugees (UNHCR), the migrant influx is continue to grow as Syria, Iraq and Afghanistan are still reeling under compounded problems of terrorism, sectarian violence and civilian unrest.

Who are these refugees?

Though the African originated refugee problem is chronic for Europe, recent influx has many new sources.

Majority of refugees are from war-torn Syria. Since the beginning of civil war in 2011, around 2 million left the country to neighbouing Turkey, Jordan and Lebanon. They were given shelter and other basic facilities in the UN sponsored camps.

However, in recent times, as the refugee camps have becoming overcrowded and there is no end in sight to the ongoing conflict in Syria, refugees started heading towards safe heavens in Europe in search of greener pastures.

Besides Syria, Iran, Iraq, Turkey, Libya, Afghanistan, Eritrea, Egypt, Sudan, Ethiopia, and Somalia are other major source countries.

Why are they heading towards Europe?

Reasons for migrant influx towards Europe are many. They differ from country to country and can be categorized under two heads- Push factors and Pull Factors.

Push factors:

- Continuous terrorist activities in Syria, Iraq and Afghanistan
- Shia-Sunni sectarian violence in Syria and Iraq
- Gross human rights violations in the form of compulsory national service in Eritrea driving around 5000 people from the country
- Increasing lawlessness due to power vacuum in Somalia forcing the citizens to cross the Mediterranean

Pull Factors

- **Geographic proximity:** For majority of asylum seekers, only the Mediterranean Sea is standing between their trouble-ridden present and wishful future. Hence, the crisis has become synonymous with the phrase Mediterranean Migrant Crisis.
- **Faith in the European Administration:** The firm belief among the refugees that the rule-bound and humanitarian governments in Europe won't deny them the legitimate basic right to life which is evident from the fact that migrants are reluctant to seek asylum in the well-off Arab countries like Saudi Arabia, Oman, etc in spite of their cultural affinity.
- **Employment opportunities:** As the European labour market is more matured; the migrants see immediate employment opportunities for themselves to restart their lives.

Issued involved

The following issues are intertwined with the ongoing migration crisis in the Europe.

Dublin procedure: The Dublin procedure established that the first EU country where a migrant or refugees enters is responsible for processing asylum claim. This put tremendous pressure on countries like Greece and Italy where most asylum seekers arrived first.

As most asylum seekers want to go to Germany, Sweden or France questions are raised as to why register and house them in a country where they do not want to stay any way.

Fault lines within the EU: The crisis opened up structural fault lines within Europe. Majority of smaller countries with low financial resources, like Hungary, are not willing to share the burden.

Also, few of them advocated that the big countries like France and Germany should shoulder the burden as it is the result of their participation in the NATO-led war in the source countries.

Further, there is a growing disagreement among the larger nations on the formula to relocate refugees with the European Union.

Europe's moral dilemma: As many of the European economies are still under the shadow of the global financial crisis of 2008, how far they can accommodate the interests of migrants without resorting to austerity measures.

In addition, denying rights to legitimate asylum seekers is nothing but violation of the article 18 (Right to Asylum), Article II-78 and Article III-266 of the European Constitution on which the EU exists.

Schengen Agreement: In the past one month, countries like Germany and Hungary suspended the implementation of the agreement- in order to control migrant influx-whose sole purpose is to facilitate movement of people across international borders without undergoing mandatory checks.

Integration of migrants: The most pertinent problem related to migrant rehabilitation is how far their integration will be successful given the growing anti Islam sentiment in the European society.

Steps taken so far

At a summit level meeting on 23 September 2015, the European Union nations agreed to give an **additional 1.1 billion euros** to the UN agencies involved in rehabilitation of the migrants.

EU stepped up **funding to maritime surveillance** in order to avoid drowning incidents in the Mediterranean. As per an estimate, in 2014 alone, 3500 people found dead or missing in the sea while en route to nearby European islands.

The European Commission proposed internal relocation of 120000 migrants on the basis of a mandatory **distribution key using objective and quantifiable criteria**-40 percent of the size of the population, 40 percent of the GDP, 10 percent of the average number of past asylum applications, 10 percent of the unemployment rate.

Further, the formula applies to nationalities of applicants with an EU-wide average recognition rate of 75 percent or higher.

Besides Europe, **the USA** and **Australia** stated their willingness to accommodate 10000 and 12000 refugees respectively in next one year.

Lessons for India

Refugee problem is not new to India as it faced sudden migrant outburst from Bangladesh in 1971, Afghanistan following USSR's intervention in 1979 and Sri Lanka during the civil war between the armed forces and the LTTE.

Still, taking a cue from the ongoing crisis, India should step up its diplomatic engagement to bring out **a special convention on climate refugees**.

For India, the engagement is of prime importance due to the fact that half of **Bangladesh** lies in the Low Elevation Coastal Zone (LECZ)-within 10 meters above sea level-that is prone to submergence as sea levels are set to rise due to climate change.

Further, **Maldives**, another neighbor, is also facing the threat of extinction due to the same reason.

Road ahead

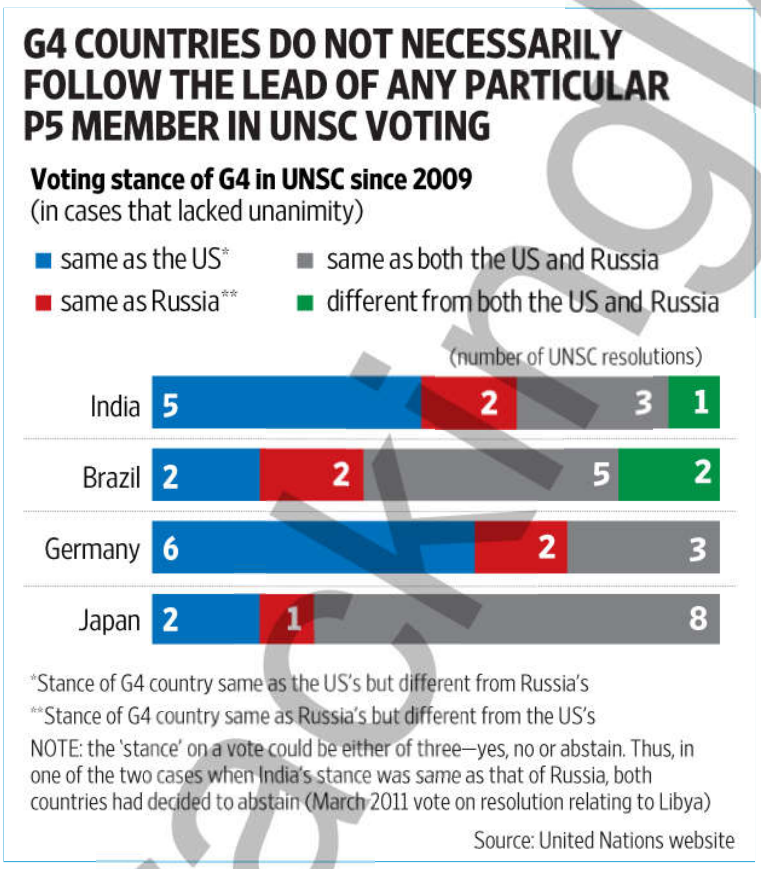
The ongoing crisis is a grim remainder of the fact that majority communities across the world still deprived of essentials due to chronic problems like hunger, poverty, terrorism, mal administration, sectarian violence, etc.

Though we came a long way in nurturing peace, security and socio-economic development, millions of people still struggle for basic necessities of life.

It is high time the world leaders should come together and fix the problem of migration once for all to ensure timely achievement of recently adopted Sustainable Development Goals.

14. G4 nations demand comprehensive reform of UN Security Council

Demanding comprehensive reform of the UN Security Council, the G4 nations of **Brazil, Germany, India and Japan** on 22 September 2016 asserted that they are legitimate candidates for **permanent membership in the top UN body** on account of the "**geopolitical realities**" of the 21st century. Minister of State for External Affairs M J Akbar, Federal Foreign Minister of Germany Frank-Walter Steinmeier, Foreign Minister of Brazil Jose Serra and Foreign Minister of Japan Fumio Kishida met at the G4 meeting on the **sidelines of the UN General Assembly session**.



- The **G4 ministers underscored their unwavering commitment to a comprehensive reform of the Security Council** which needs to take into account the geopolitical realities of the 21st century.
- They emphasised that the **G4 countries are legitimate candidates for permanent membership** and supported each other's aspirations.
- **More than 70 years after the founding of the UN**, the Security Council has to adapt in order to cope with the ever growing global challenges.
- The **G4 nations called upon all reform-oriented member states to join efforts and finally bring about meaningful reform**.
- The ministers added that substantial progress to achieve UNSC reform was still limited and efforts need to be intensified to build

The Chinese and Russian navies on 19 September 2016 concluded Joint Sea-2016, eight days of naval exercises, in the South China Sea.

The Joint Sea-2016 was launched as a sign of growing cooperation between their armed forces against the backdrop of regional territorial disputes.

The exercises was conducted following a spike in tensions after **Permanent Court of Arbitration** in The Hague rejected China's claims in the South China Sea and slammed it for causing environmental damage there.

Key highlights of Joint Sea-2016

• The Joint Sea-2016 included ships, submarines, ship-borne helicopters and fixed-wing aircraft, along with marines and amphibious armoured vehicles who will conduct live-firing exercises.

• Tasks included defensive and rescue drills, anti-submarine exercises and the simulated seizure of an enemy island by marines from both sides.

• Compared with previous years, the 2016 drill focused more on confrontational

further momentum and to arrive at real text-based negotiations.

- They **pledged to continue to work towards a comprehensive Security Council reform in the framework of the Inter-Governmental Negotiations**.
- The Ministers also expressed their support for **equitable regional representation**, **underscoring the need for Africa's representation in both the permanent and non-permanent membership** as well as adequate and continuing representation of small and medium sized Member States, including the Small Island Developing States, in a reformed Security Council.
- At present, **the Security Council has five permanent members**: China, France, Russian Federation, the UK, and the US, and **ten non-permanent members elected for two-year terms by the General Assembly**.

15. China and Russia conduct naval exercises Joint Sea-2016 to improve security

capacity such as surface warships, submarines and land-based defences. Use of an advanced command system made communication between the two navies smoother.

• It was also the first time the China-Russia joint exercise had been held in the South China Sea.

16. US, China ratify Paris climate agreement ahead of G20 summit

Ahead of the G20 summit in Hangzhou, China, the United States and China have ratified the 2015 Paris agreement to cut global greenhouse gas emissions.

Note

- China and the United States, the world's two biggest emitters account for 38% of global greenhouse gas emissions, with China alone accounting for 20% of emissions.
- Both countries have set a 2030 deadline for emissions to stop rising.
- According to the World Resources Institute, so far, 23 countries have ratified or otherwise joined the agreement, representing just 1% of global emissions.
- The Paris agreement, sealed last December after two weeks of intense negotiations, needs to be ratified by 55 countries, representing 55% of global emissions, in order to come into effect.

Features of the Paris Agreement

- The Paris Agreement acknowledges the development imperatives of developing countries.
- The Agreement recognizes the developing countries' right to development and their efforts to harmonize development with environment, while protecting the interests of the most vulnerable.
- The agreement's long-term goal is to keep global warming below 2 degrees Celsius (3.6 degrees Fahrenheit), compared with pre-industrial times. It has an aspirational goal of limiting the temperature rise to 1.5 degrees C (2.7 degrees F). Temperatures have already risen by almost 1 degree C (1.8 degrees F) since the industrial revolution.
- Under the Paris Agreement, countries are required to set national targets for reducing or reining in their greenhouse gas emissions.
- Those targets aren't legally binding, but countries must report on their progress and update their targets every five years. The first cycle begins in 2020.
- Only developed countries are expected to slash their emissions in absolute terms. Developing nations are "encouraged" to do so as their capabilities evolve over time.
- The developed country parties are urged to scale up their level of financial support with a complete road map to achieve the goal of jointly providing US $ 100 billion by 2020 for mitigation and adaptation by significantly increasing adaptation finance from current levels and to further provide appropriate technology and capacity building support.

17. China's BRICS trade pact idea finds no takers

India and three others in the BRICS bloc — Brazil, Russia and South Africa — have cold-shouldered China's attempt to bring to the negotiating table a proposal for a Free Trade Agreement (FTA) between the five major emerging economies.

'BRICS FTA'

- China has proposed for a 'BRICS FTA', which is aimed at boosting trade ties in the grouping through binding commitments on eliminating tariffs.

Not agreed

Except China, BRICS members are not keen on such a pact.

- While Russia and South Africa did not respond to the BRICS FTA proposal, Brazil pointed out that it participates in FTA negotiations as part of the 'Mercosur' – a trading bloc and customs union of Latin American nations

Why?

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- Their apprehensions about the plan include the fear that it could lead to a surge in imports of Chinese goods into their territory — in turn, hurting local manufacturing.

India's response

- India also raised concerns regarding a widening goods trade deficit with China. According to Indian government statistics, India's goods trade deficit with China has escalated from $1.1 billion in 2003-04 to $52.7 billion in 2015-16.

Road Ahead

- China is expected to take up this issue in the upcoming BRICS Trade Ministers Meeting, the first BRICS Trade Fair and the Eighth BRICS Summit. India is hosting these events as it currently holds the BRICS Chairmanship.

18. South-East Asia Regional Health Emergency Fund

India along with 10 other member countries of WHO's South-East Asian Regional Committee decided to set up a dedicated fund aimed at building preparedness for health emergencies in the region.

- In addition, the member countries also passed a resolution for promoting physical activity and expanding health workforces across the region. Insufficient physical activity is a major contributor to rising rates of non-communicable diseases in the region, with four-fifth of adolescents not getting enough of it.
- The decision was made at the 69th session of WHO Regional Committee Meeting held at Colombo, Sri Lanka.
- **South-East Asia Regional Health Emergency Fund (SEARHEF)**The joint funding stream will be established under the .

Significance of the decision

- The decision would help the member countries to invest in human resources and infrastructure at times of emergencies, as it is one of the most disaster-prone regions.

Note

- In the recent years, earthquakes, cyclones and floods have caused health emergencies in south-east Asian region and it has also been threatened by a range of emerging diseases, including SARS, MERS CoV, pandemic influenza and Zika virus.
- WHO South-East Asia region committee comprises 11 member states namely Bangladesh, Bhutan, South Korea, India, Indonesia, Maldives, Myanmar, Sri Lanka, Nepal, Thailand and Timor-Leste.
- The Regional Committee meeting is WHO South-East Asia Region's highest decision-making body.

19. International Democracy Day-15th September, 2016

- The International Democracy Day is observed every year on 15 September to .
raise public awareness about the democratic system
- The observance of the day provides an opportunity to review the state of democracy in the world. It focuses on essential elements of democracy i.e. values of freedom, respect for human rights and principle of holding periodic and genuine elections by universal suffrage.
- **"Democracy and the 2030 Agenda for Sustainable Development"**·2016 Theme:
- To mark this day various government agencies and non-governmental organizations (NGOs) across the world are holding various activities and events to promote democracy.
- United Nations General Assembly (UNGA) in November 2007 had decided to observe 'International Democracy Day' every year on September 15. It was observed for first time in 2008. In this regard a resolution was passed by UNGA in 2007 to strengthen national programmes devoted to the promotion and consolidation of democracy.

20. Pakistan-Russia military to hold first ever joint drills

Pakistan and Russia are set to hold their first-ever joint military exercises later this year, media reported on 12 September 2016, reflecting increased **military cooperation between the two former Cold War rivals**. Around 200 military personnel from the two sides would take part in the **joint military exercises**.

- The move comes amidst **increasing defence ties between Moscow and Islamabad** as the latter was also thinking to buy advanced Russian warplanes.
- **This is the first time that military personnel from the two countries would be taking part in joint military drills called 'Friendship-2016'**.
- This obviously indicates a desire on both sides to broaden defence and **military-technical cooperation**.
- **The joint military drill is seen as another step in growing military-to-military cooperation**, indicating a steady growth in bilateral relationship between the two countries.

Iran began b

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- **Islamabad decided to broaden its foreign policy options after its relations with the U.S. deteriorated** after secret CIA raid in Abbottabad killed al-Qaeda chief Osama bin Laden in May 2011.
- Pakistan's relations with the U.S. were soured recently when U.S. lawmakers blocked funds for the sale of eight Lockheed Martin Corporation's F-16 fighter jets to Pakistan.
- Pakistan decided to look at **alternative sources to purchase the aircraft including from Jordan**.
- The flurry of high-level exchanges between the two nations resulted in the signing of a deal for the sale of four MI-35 attack helicopters to Islamabad.
- **The formal agreement, which was signed in Moscow in August 2015**, was considered a major policy shift on part of Russia in the wake of growing strategic partnership between the U.S. and India.
- **Islamabad is eager to improve its ties with Moscow to diversify its options in the event of any stalemate in ties with Washington**

21. Iran, Russia start construction of new nuclear plant

follows **Tehran's landmark nuclear deal** with world powers last year.

- Iranian and Russian officials launched **ceremonies for the 10-year project** which will include two power plants with a total capacity of **more than 1,000 megawatts** after their completion.
- **Iran already runs one Russian-built nuclear reactor at Bushehr, its first**.
- **Russia signed a deal with Iran in 2014** to build up to eight more reactors in the country.
- A **report by the UN nuclear agency** has found that **Iran has kept to the nuclear deal it agreed with six world powers last year limiting its stockpile of substances** that could be used to make atomic weapons.
- The **confidential report by the International Atomic Energy Agency (IAEA)** seen by Reuters did not point to any violations in Iranian compliance with the deal under which Tehran is to restrict its nuclear activities in exchange for a lifting of many of the international sanctions weighing on its economy.

22. US, Russia seal Syria ceasefire deal

The United States and Russia on 10 September 2016 announced a **breakthrough agreement on Syria** that **foresees a nationwide ceasefire starting** on 12 September 2016, followed a week later by **an unexpected new military partnership targeting the Islamic State and the al-Qaeda** as well as the establishment of new limits on President Bashar Assad's forces.

- **After a day long final negotiating session in Geneva**, U.S. Secretary of State John Kerry said that **the plan could reduce violence in Syria** and lead to a long sought political transition, ending more than five years of bloodshed. He called the deal a potential "**turning point**" in a conflict that has killed as many as 500,000 people, if complied with by **Syria's Russian-backed government** and **U.S.-supported rebel groups**.
- The ceasefire begins at sundown September 12, coinciding with the Eid-ul-Adha holiday.
- **Mr. Kerry's negotiating partner**, **Russia's Foreign Minister Sergey Lavrov**, confirming the agreement, said **it could help expand the counter terrorism fight** and aid deliveries to Syrian civilians under U.N. auspices that have been stalled for weeks.
- **The deal culminates months of frenetic diplomacy** that included four meetings between Mr. Kerry and Mr. Lavrov since August 26, and a lengthy face-to-face in China between Presidents Barack Obama and Vladimir Putin.
- **The arrangement hinges on Moscow pressuring Assad's government to halt all offensive operations against the armed opposition in specific areas**, which were not detailed.
- **The military deal would go into effect after both sides abide by the truce for a week** and allow unimpeded humanitarian deliveries. Then, the U.S. and Russia would begin **intelligence sharing and targeting coordination**, while Assad's air and ground forces would no longer be permitted to target Nusra any longer; they would be restricted to operations against the Islamic State.
- **The arrangement would ultimately aim to step up and concentrate the firepower of two of the world's most powerful militaries against Islamic State and Nusra**, listed by the United Nations as terrorist groups.
- **After the Geneva announcement**, Pentagon secretary Peter Cook offered a **guarded endorsement of the arrangement and cautioned**.
- The Geneva negotiating session, which lasted more than 13 hours, underscored the complexity of a conflict that includes myriad militant groups, shifting alliances and **the rival interests of the U.S. and Russia, Saudi Arabia and Iran, and Turkey and the Kurds**.

23. BRICS Wellness Workshop

Union Minister of State for Ayush (Independent Charge) Shri Shripad Yesso Naik and Union minister for Fertilisers and

Chemicals and Parliamentary Affairs Shri Ananth Kumar inaugurated **the National Fair on comprehensive Indian Medicine system (AROGYA) in Bengaluru** on 10 September 2016. Addressing the gathering, Shri Naik said that **the fair has been organised to project the strength of Indian System of Medicines and Homeopathy alongside BRICS Wellness Workshop**.

- **The representatives from BRICS countries** are participating for the first time in Arogya exhibition for display of their traditional medicines and healthcare products.
- **All this has happened because of awareness building about the holistic principles of AYUSH for healthy living** and its inherent preventive strengths.
- The two days BRICS Wellness Workshop and AROGYA fair is **being organized by the Ministry of AYUSH**, in collaboration with **Research and Information System for Developing Countries (RIS)**.
- The Workshop is **designed to have sessions related to Traditional Systems of Medicine, Trade and Economy, Wellness and Sustainable Development Goals (SDGs)**, Wellness indicators for BRICS and Wellness and Tourism among others.
- It also includes a **session on WHO strategy for Traditional Medicine**.
- The Arogya fair **provides a good exposure for manufacturers/importers of Traditional Medicines/Raw Materials of the BRICS Countries** to have firsthand experience of Indian Traditional Medicinal products/manufacturing facilities.
- At the same time they got a good opportunity to showcase their products and services.

24. M&A markets in Asia-Pacific report

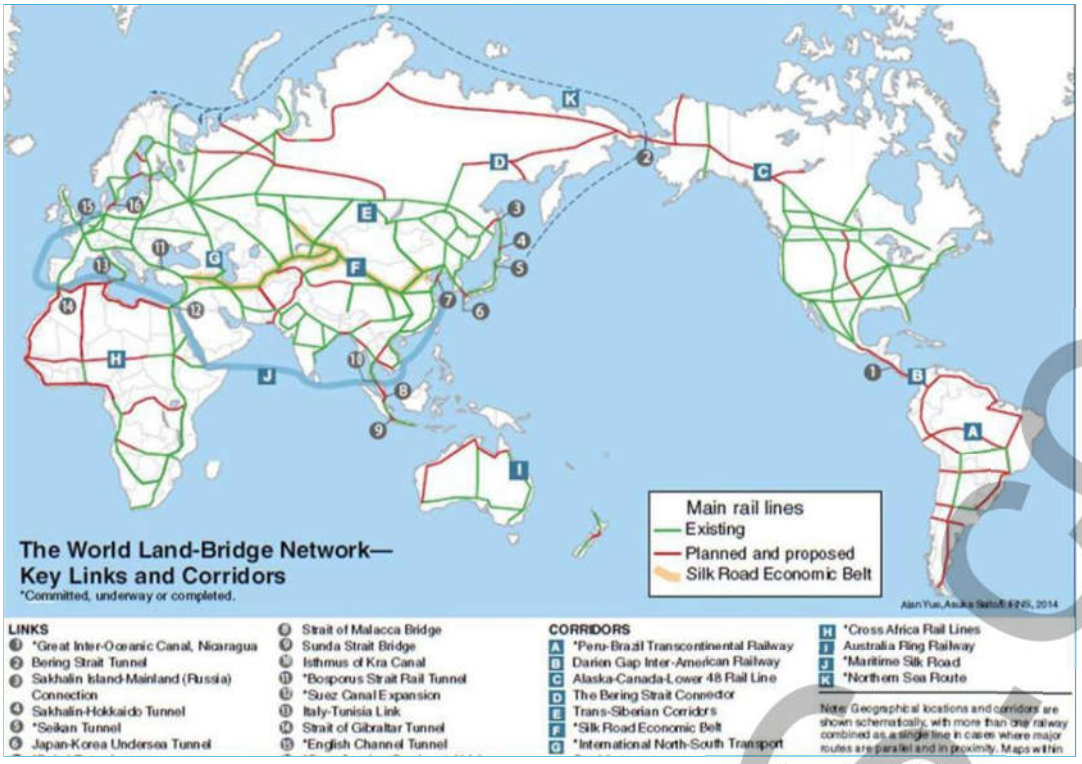
Favourable economic and demographic conditions, plus an encouraging regulatory regime, are **transforming India into an ideal target market for inbound mergers and acquisitions (M&As) in Asia-Pacific**, said a report. Since 2011, inbound transactions have trended up, and overall **foreign direct investment (FDI)** in the country reached a peak in 2015 that placed India as one of the leading destinations for global FDI, ahead of regional economic rival China.

As per report

- **India attracted six per cent of all US outbound M&A transactions (deal volume) in 2015**, surpassing the two per cent of outbound M&A directed at China that year.
- So far in 2016, **India has continued to attract US interest**, with $3.1 billion through 27 deals compared to similar US investment in China at $1.3 billion and 13 deals.
- General sentiment among foreign investors for Indian investment opportunities remains strong, creating a bright outlook for inbound M&A through the rest of this year and into 2017.
- As the pipeline of deals grows, foreign investors are reminded to deploy a due diligence process that is rigorous, comprehensive and truly independent — one that will assist them in making decisions with confidence and to be in a better position to protect such investments.
- **Against a backdrop of global volatility, widespread uncertainty** and a fragile geopolitical situation in many regions, inbound deal flow in India increased steadily since 2011.
- **In 2015, inbound M&A totalled 227 deals worth $19.6 billion**. In the first half of 2016, 82 deals worth close to $9 billion were announced, putting the country on track for another banner year of inbound investment.
- **Investment into India over the past two years has been led by the US, UK and Japan**, which should instill further confidence in India, given that all three countries are known for strong regulatory oversight, a culture of in-depth due diligence and a business environment that seeks growth in international markets, said the report
- **Numerous analysts suggest that India has potential to overtake China as India's growth** appears to be accelerating while China's growth continues to slow down.
- In addition, **India is expected to rebalance its growth from services driven sectors to export-oriented manufacturing** and this, combined with the ongoing removal of much of the bureaucratic red tape, will arguably drive further interest from foreign investors.

25. Concept of the World Land-Bridge

The concept of the World Land-Bridge developed out of the Schiller Institute's post-1989 proposals for concrete economic integration of the former Comecon states, called **The Productive Triangle**, which was expanded from 1991 to include Asia, then known as **The Eurasian Land-Bridge**.



Despite having all the scientific and technological means at hand to guarantee humane conditions of life, while there are over 1 billion people subject to hunger and malnourishment, while 25,000 children — a small city — die daily from hunger, while 3 billion live in poverty and are denied their human rights, is it not then our sacred duty to actually deploy those means? We need a large-scale development strategy, building on the ideas of the United Nations Development Decades of the 1950s and '60s, rejecting completely the paradigm change of the past 40-50 years as the wrong track, and thus reviving the idea of "Peace Through Development."

Such a vision could be the implemention of the World Land-Bridge with its many great projects like NAWAPA, the tunnel under the Bering Strait, the development of the Artic, expansion of the Eurasian Land-Bridge, above all into the Near and Middle East and the Indian Subcontinent, including linking Africa to the World Land-Bridge through tunnels, under the Strait of Gilbratar linking Spain and Morocco, and also between Sicily and Tunisia.

26. The Aviation Price Index

Online travel agency Kiwi.com has produced a ranking detailing countries of the world **which offer the least and most expensive flights**. The research, which took into account over 1 million international and domestic journeys, found that **India offered the least expensive flight prices per 100km of travel**, while **the United Arab Emirates (UAE) clocked in with the most expensive tickets**.

- , making it the best value location for international and domestic flights worldwide.**India is ranked number 1**
- **India offered the least expensive domestic flights on both low-cost and legacy airlines** , at $2.27 and $2.67, respectively, per 100 km of travel.
- India is calculated **to have an average flight cost of $3.25 per 100 km of travel**, factoring in both domestic and international journeys.
- **China offered the least expensive international flights on both low-cost and legacy airlines** , at $1.22 and $2.84, respectively, per 100 km of travel.
- **The UAE offered the most expensive domestic flights on both low-cost and legacy airlines** , at $181.38 and $202.36, respectively, per 100 km of travel.
- **Canada offered the most expensive international flights on both low-cost and legacy airlines** , at $43.70 and $94.66, respectively, per 100 km of travel.

How calculate the rankings

- **Kiwi.com analysed over a million flights to find an average price of domestic and international flights** on a low-cost and a legacy airline from each of the countries.
- Domestic flights were calculated **by finding an average of flight costs from the country's capital to up to five major cities within the country** (where available), or a major city in a neighbouring country where no domestic flights were available, while international costs were calculated from the capital of each country to up to five international hubs within the same continent.
- **All flights were checked for the same dates of travel (or neighbouring dates where necessary) on- and off-season** , taking into account the same destinations and travel scheduling.
- **The Aviation Price Index is a fascinating guide to the costs of air travel around the globe.**
- **The study revealed the 10 countries offering the least expensive and most expensive flights.**

27. Colombo declaration

South-East Asian countries recently adopted 'Colombo declaration' to manage the **growing epidemic of non-communicable diseases that kill 8.5 million people annually**. The declaration calls for strengthening delivery of services for these diseases at the primary health care level.

- Poonam Khetrapal Singh, the regional director, WHO South-East Asia, said, **This is a critical moment for health systems and the people they serve across the South-East Asia Region**. Non-communicable diseases (NCDs) are already taking an unacceptable toll on populations, with the burden projected to rise in coming years.
- To avert this possibility, services for these diseases must be made available at the primary health care level, and high-risk populations must be provided all opportunities to access screening and treatment."
- The members expressed serious concern at the unacceptable burden of such diseases, including **cardiovascular ailments**, **cancers**, **diabetes** and **chronic respiratory diseases**.
- As part of the declaration health ministers pledged to undertake targeted screening for early diagnosis, as well as to increase health guidance and counselling to promote healthy choices and self-care.
- Ensuring appropriate treatment, robust follow-up, management of referrals and focusing on and expanding NCD services to the high-risk population are key parts of the declaration.
- This is an important opportunity **to reaffirm commitment to the global goal of reducing NCD-related premature mortality by one-third by 2030**, and to actually map-out how we will get there. Implementing effective policy solutions is vital to addressing the personal and social tragedy caused by NCDs, as well as their impact on economic development.
- To fund the primary health care approach for addressing NCDs, which is foundational to the Declaration, health ministers committed themselves to advocating for innovative financing methods, including dedicated taxation of health damaging commodities such as tobacco, alcohol and unhealthy foods and beverages.
- This will **both reduce exposure to NCD risk factors as well as mobilize more resources for NCD prevention and control**.

The 'Colombo Declaration' was adopted on the opening day of the **five-day 69th WHO Regional Committee Meeting**, which was inaugurated in sri lanka by the Prime Minister of Sri Lanka, Ranil Wickremesinghe, in the presence of Margaret Chan, Director-General WHO, and health ministers and senior health ministry officials of the 11 member countries of the Region.

28. Chile Preferential Trade Agreement (PTA)

An agreement on the expansion of India–Chile Preferential Trade Agreement (PTA) was signed between India and Chile in a meeting held between Ms. Rita Teaotia, Commerce Secretary and Mr. Andrés Barbé González, Ambassador, Embassy of Chile on 6th September, 2016. **A Preferential Trade Agreement (PTA) between India and Chile was earlier signed on March 8, 2006** and came into force with effect from August, 2007. In the **original PTA concluded in March 2006**, India's offer list to Chile consisted of **178 tariff lines the Margin of Preference (MoP) ranging from 10%-50% at 8-digit level** and Chile's offer list to India consisted of 296 tariff lines with MoP ranging from 10% - 100% at 8-digit level.

- **Under the expanded PTA**, **Chile has offered concessions to India on 1798 tariff lines** with Margin of Preference (MoP) ranging from 30%-100% and India has offered concessions to Chile on 1031 tariff lines at 8-digit level with MoP ranging from 10%-100%.
- India's export basket with Chile is diversified and keeping in view the wide variety of tariff lines offered by Chile, the expanded PTA would immensely benefit India.
- **Among the LAC countries**, Chile was the third largest trading partner of India during 2015-16. India's bilateral trade with Chile stood at US$ 2.64 billion with exports at US$ 0.68 billion and imports at US$ 1.96 billion respectively during 2015-16(P).
- **India's exports to Chile are diverse which consist of transport equipment**, drugs and pharmaceuticals, yarn of polyester fibres, tyres and tubes, manufacture of metals, articles of apparel, organic/inorganic and agro chemicals, textiles, readymade garments, plastic goods, leather products, engineering goods, imitation jewellery, sports goods and handicrafts.
- Major items of Import from Chile are copper ore and concentrates, iodine, copper anodes, copper cathodes, molybdenum ores & concentrates, lithium carbonates & oxide, metal scrap, inorganic chemicals, pulp & waste paper, fruits & nuts excluding cashews, fertilizers and machinery.
- **India has friendly relations with Chile**. Chile has been cooperating with India at the International fora and expansion of India Chile PTA will enhance the trade and economic relations between the two countries. The expansion would be an important landmark in India-Chile relations and consolidate the traditional fraternal relations that have existed between India and LAC countries.

29. Pakistan gives nod for security pact with China

Alarmed by the growing **Indo-US defence ties**, Pakistan's cabinet has given the go-ahead for negotiating a long-term defence

agreement and security cooperation with its all-weather ally China. Pakistan's cabinet in a meeting chaired by Prime Minister Nawaz Sharif on July 15 at the Governor House in Lahore gave the go-ahead for negotiating a long-term defence agreement with China, The Express Tribune reported.

- The cabinet considered **the summary to initiate negotiations on a draft agreement between Pakistan and China** on a long-term strategic framework agreement for enhancing defence and security cooperation in diversified fields.
- The cabinet held detailed discussions on the proposed agreement before giving the nod of approval, the report said.
- **The cabinet was informed that the draft agreement was based on principles of mutual respect for each other's territorial integrity**, sovereignty, non-integration and non-interference in each other's internal affairs, equality and cooperation for mutual benefits, and peaceful coexistence for strategic gains in defence and security, including arms and technology transfers.
- It was also informed that input from ministries of foreign affairs, interior and defence production as well as the Joint Staff Headquarters had been obtained and incorporated in the draft agreement which was subsequently vetted by the law and justice division.
- In April 2015, when Chinese President Xi Jinping visited Pakistan, the two countries agreed that their relationship had acquired greater strategic significance against the backdrop of complex and changing international and regional situations.
- **They agreed to elevate the Pakistan-China relationship to the all-weather strategic cooperative partnership**.
- The reports of defence agreement surfaced a week after the US signed a key logistics agreement with India governing the use of each other's land, air and naval bases for repair and resupply.
- **Pakistan had called the Logistics Exchange Memorandum of Agreement between the US and India as an agreement between the two sovereign states**and hoped it would contribute to peace and stability.
- The US was probably upset with the multibillion-dollar China-Pakistan Economic Corridor (CPEC) project.

30. G20 summit warned of risks to economy

North Korea fired three ballistic missiles off its east coast on 5 September 2016 in a **defiant reminder of the risks to global security**, as world leaders including US President Barack Obama gathered at a G20 summit in China for the second day. North Korea has tested missiles at sensitive times in the past to draw attention to its military might. But launch risks embarrassing its main ally Beijing, which has gone to extraordinary lengths to ensure a smooth summit meeting in the eastern Chinese city of Hangzhou.

- The missile test was also an **unwanted distraction for the United States**, which has been trying on the sidelines of the summit to finalise a deal with Russia for a ceasefire in Syria.
- **The medium-range missiles flew for about 600 miles** (1,000 km) and landed inside Japan's air defence identification zone.
- The test prompted a quick meeting between South Korean President Park Geun-hye and Japanese Prime Minister Shinzo Abe in Hangzhou, and they agreed to cooperate on monitoring the situation, a Japanese statement said.
- **The leaders of South Korea and China met on the sidelines of the G20 summit** and Chinese President Xi Jinping reaffirmed Beijing's commitment to the denuclearisation of the Korean peninsula.
- **In 2003, North Korea tested an anti-ship missile during an Asia-Pacific Economic Cooperation (APEC) summit held in Bangkok**.

G20

- The **G20 summit, bringing together leaders of the world's major economies**, had largely focused in its main sessions on spurring the global economy, countering protectionism and removing trade barriers.
- With the summit taking place after Britain's vote in June to exit the European Union and before the US presidential election in November, observers expect G20 leaders to mount a defence of free trade and globalisation and warn against isolationism.
- **G20 countries are set to agree in a communique at the end of the summit that all policy measures** - including monetary, fiscal and structural reforms - should be used to achieve solid and sustainable economic growth.

Behind the Scenes

- **Western countries have been accusing China of not sticking to its own goals**.
- Before the summit, **European G20-sources doubted that the Chinese agenda would mark a real new chapter to create more sustainable growth for the global economy**.
- China, asking in public for more openness and steps to counter protectionism, is still giving Western investors only very limited access to their market, a European official said.
- A **big concern for foreign investors in China** is what they see as the increasing difficulty of doing business in China, driven by concern that new laws and policies are seeking to effectively shut out foreigners or make life very hard for them.

- **Several diplomats familiar with the summit** said China had resisted the idea of putting steel on the final communique, though it did make an appearance in the end with G20 leaders pledging *to work together to address excess steel capacity.*
- For countries like Britain, **whose steel industry crisis has been directly blamed on a flood of cheap Chinese imports**, the issue is key.
- Another **shadow over the G20 has been the rise of popular opposition to free trade and globalisation**, embodied by phenomenon like Britain's summer vote to leave the European Union and Donald Trump becoming the Republican presidential candidate in the United States.

ECONOMICS

1. Globalisation – Current Scenario

The rise of populist parties in Europe and the US, the UK vote on Brexit, the slowdown in the volume of global trade or the difficulty to get the Trans-Pacific Partnership Agreement (TPP) or the Transatlantic Trade and Investment Partnership (TTIP) – points toward the risk of globalisation having reached a standstill and how this would impact negatively the economies across the globe.

Globalisation – Current Scenario

- The bleak hopes around globalisation are largely due to more assertiveness of masses viz. their socio-economic rights. Today it is not just about business and other establishment elites.
- With the advent of ICT, increasing travel and tourism, greater inter-connection between economies, globalisation seems to be on recourse.
- This is evident from the BREXIT. What most people in Europe want is not the end of the European Union, but the reining in of a process gone berserk and completely oblivious to the voices of the people.

Bone of contentions

- **Single regulatory space**
  - It can cause imposition of rules on things in the name of free trade.
  - For instance, genetically modified organisms (GMO) can be imposed, which is not culturally or viscerally accepted in many areas.
  - Privacy infringement in another area of concern.
- **Investor-State Dispute Settlement (ISDS)** Besides these there are concerns over job security too, that the proposed TPP and TTIP are supposed to generate.

Road ahead

- This process would bypass/negate the legal authority of national courts.
- Although this ISDS system exists already in many investment treaties, the way the US would like to enforce it in the case of the TTIP is seen as a way for big business to trample national legal systems.

Annual increases of global trade are not likely to get back to the previous era when global trade growth was driving global economic growth, owing to:However, this is definitely not a sign, or evidence that globalisation is now in reverse.
What we are witnessing today is a new phase where business leaders and the global elites are painfully beginning to learn that globalisation has to be managed in a way that will really take into account national identities and cultures, that the pendulum cannot always swing towards more ease for doing business at the expenses of national sensitivities

- Slowdown of the Chinese economy
- Development of China's internal supply chains which means less imports from other Asian countries for the products it consumes and/or exports.
- MNCs are streamlining their global supply chains to reduce risks and costs as well as their environmental footprint.

- This is the crucial moment for those in power, to come to the full realisation of this reality and start adjusting policies and attitudes to it.

Source - **http://www.business-standard.com/article/opinion/claude-smadja-globalisation-is-alive-and-well-don-t-panic-116092801319_1.html**

2. India to invest $2 billion in Sri Lanka over 3-4 years

Commerce and Industry Minister Nirmala Sitharaman, during a recent meeting on the Economic and Technological Cooperation Agreement (ETCA), said that India will invest $2 billion in Sri Lanka in the next three-four years. The

Minister also called on Prime Minister Ranil Wickremesinghe to discuss the terms of the agreement.

Background:

- The ETCA initiative follows unfruitful negotiations, spanning nearly a decade, on a Comprehensive Economic Partnership Agreement (CEPA) between the neighbours. India and Sri Lanka already have a Free Trade Agreement since 1998.

About ETCA:

The Indo-Lanka Economic and Technology Cooperation Agreement better known as ETCA (formerly CEPA) is a trade agreement.

- The ETCA agreement seeks to boost cooperation in technical areas, scientific expertise and research amongst institutions, boost standards of goods and services able to compete on the global market and improve opportunities for manpower training and human resource development.
- The ETCA initiative follows unfruitful negotiations on a Comprehensive Economic Partnership Agreement (CEPA) between two countries.

Objectives of ETCA:

- Strengthen and advance the economic, trade, investment and technology cooperation.
- Promote further liberalization of trade in goods, trade in services and gradually establish transparent, fair and facilitative trading, investment and investment protection mechanisms
- Establish a cooperation mechanism and expand areas of economic cooperation.

3. India 39th most competitive economy in the world: WEF

India has been ranked 39th among the 138 countries in the 2016-17 Global Competitiveness Index (GCI).

- The index was released as part of the World Economic Forum's (WEF) Global Competitiveness Report for 2016-17.

Top rankings:

- The list is topped by Switzerland (1st), Singapore (2nd), United States (3rd), Netherlands (4th) and Germany (5th).
- th Among BRICS Countries, China is ranked 28, followed by Russia (43rd), South Africa (47th) and Brazil (81st).

India's performance:

- In the 2016-17 edition of GCI, India has jumped 16 places compared to 55th position in 2015-16 GCI.
- India has emerged as the highest rising economy due to improvement in goods market efficiency, business sophistication and innovation.
- India's overall competitiveness has increased due to improvements in institutions and infrastructure along with recent reforms such as opening the economy to foreign investors and increasing transparency in the financial system.
- Indian economy boasts the highest growth among G20 economies mainly due to improved monetary and fiscal policies, as well as lower oil prices which has stabilized economy.
- India's competitiveness has improved across the board, particularly in innovation (29), goods market efficiency (60) and business sophistication (35) indicators of GCI.
- India still needs remove labour market rigidities and the presence of large, public enterprises especially in the utilities and financial sector make the economy less efficient.

Challenges ahead for India:

According to the report, huge challenges lie ahead on India's path to prosperity.

- Despite significant improvements in infrastructure and social indicators such as health and education over the past decade, India lags other nations in various parameters.
- India's tax regulations, corruption, tax rates and poor public health are the most problematic factors for doing business.
- The labour market rigidities and the presence of large, public enterprises especially in the utilities and financial sector make the economy less efficient. The labour market is segmented between workers protected by rigid regulations and centralised wage determination, especially in the manufacturing sector, and millions of unprotected and informal workers.
- Lack of infrastructure and ICT use (where India is ranked 120th in the world) remain bottlenecks. Besides, progress in recent years has been slow and further investment is necessary to connect rural areas and ensure they equally benefit from and contribute to

India's development.

- The country's biggest relative weakness today is in technological readiness, where initiatives such as Digital India could lead to significant improvements.
- The efficiency of the goods market in India has also deteriorated over the past decade, and the WEF reckons this would change once the GST regime is implemented.

Global Competitiveness Index (GCI)

The GCI **released by the World Economic Forum (WEF)** is one of the major studies which indicate how a country scores in the scale of global competitiveness.

- The index is calculated by aggregating indicators across 12 pillars in the report which covers both business and social indicators.
- These 12 pillars or indicators directly or indirectly impact the competitiveness of the country in the global arena.
- The GCI measures 12 pillars which include institutions, macro-economic environment, infrastructure, health and primary education, higher education and training, labour market efficiency, goods and market efficiency among others.

Miles To Go Before True Competitiveness

It is notable that, in the World Economic Forum's Global Competitiveness Index for 2016-17,India is ranked a credible 39th, and has risen 16 places, the highest rise among all economies.

The report assesses the ability of countries to provide high levels of prosperity to their citizens. This in turn depends on how productively a country uses available resources. Therefore, the Global Competitiveness Index measures the set of institutions, policies, and factors that set the sustainable current and medium-term levels of economic prosperity.

Important facts

- India's competitiveness seems to have improved across the board, and in particular when it comes to goods market efficiency, business sophistication and innovation. However there are some concerns too:

  The current account deficit has been reduced to the tiny decimal points of national income, meaning that the Indian economy is unable to absorb foreign savings to boost domestic investments.

  Outward investments keep rising, suggesting that our corporates are somewhat keener to invest abroad than here

  Banks remain saddled with bad debt, state power utilities are financially moribund and there is scant growth in formal employment

  Besides, when it comes to the Networked Readiness Index, the WEF earlier in July, ranked India a lowly 91st on readiness to transition to a digitised economy and society

Road Ahead

This improvement in global competitiveness ranking is definitely commendable. Efforts of government in areas of governance, transparency, ease of doing business are paying its dividends.

We need to reduce infrastructural bottlenecks and improve digital access and skills to step-up productivity and boost innovativeness economy-wide.

And in tandem, we need transparency in electoral funding across political parties to purposefully stem corruption and the generation of unaccounted black money. It would rev up our competitiveness.
Source - http://blogs.economictimes.indiatimes.com/et-editorials/miles-to-go-before-true-competitiveness/

4. Cabinet panel approves Project Saksham to integrate CBEC IT systems with GSTN

The Cabinet Committee on Economic Affairs (CCEA) on 28 September 2016 approved **'Project SAKSHAM'**. It is a New Indirect Tax Network (Systems Integration) of the Central Board of Excise and Customs (CBEC).

It will help in integrating system of Central Board of Excise and Customs with the GST network before the roll out in April 2017. The total project cost involved is 2256 crore rupees which will be incurred over a period of seven years.

The project SAKSHAM will help in

• Implementation of Goods and Services Tax (GST)

• Extension of the Indian Customs Single Window Interface for Facilitating Trade (SWIFT)

• Other taxpayer-friendly initiatives under Digital India and Ease of Doing Business of Central Board of Excise and Customs

The implementation strategy for the project will be to ensure readiness of CBEC's IT systems by 1 April 2017, when GST is to be introduced. The upgrade of the IT systems will be carried out while keeping the existing Tax-payer services running.

As predicted, all taxpayers/importers/exporters/dealers under various indirect tax laws administered by CBEC, presently about 36 lakhs, are likely to go up to over 65 lakhs after introduction of GST.

CBEC's IT systems need to integrate with the Goods & Services Tax Network (GSTN) for processing of registration, payment and returns data sent by GSTN systems to CBEC, as well as act as a front-end for other modules like Audit, Appeal, Investigation. There is no overlap in the GST-related systems of CBEC and GSTN.

This IT infrastructure is also urgently required for continuation of CBEC's e-Services in Customs, Central Excise & Service Tax, implementation of tax¬payer services such as scanned document upload facility, extension of Indian Customs Single Window Interface for Facilitating Trade (SWIFT) initiative and integration with Government initiatives such as E-Nivesh, E-Taal, e-Sign.

Genesis

- Introduction of GST will result in a several-fold increase in the number of taxpayers and resultant document load on the system. CBEC's current IT system was set up in 2008. It cannot cater to the increased load under GST without an immediate upgrade of its IT Infrastructure.
- Further, CBEC has implemented the Indian Customs Single Window Interface for Facilitating Trade (SWIFT) and is integrating other partner agencies involved in Customs clearance in order to make the process simple and fast.
- The Customs EDI system which is currently operational at about 140 locations in India has to be extended to many more locations with improved response time and better service delivery. Taxpayers have to be given a facility for Upload of Digitally Signed Scanned Documents in order to reduce the physical interface with tax authorities and to increase the speed of clearance. CBEC also aims to introduce mobile services for taxpayers and departmental users to increase the outreach of its services.

5. India's fisheries subsidies may be targeted at WTO

The matter of “disciplining global fisheries” is being centre staged in the recent round of WTO talks. It includes illegal, unreported, unregulated (IUU) fishing and fishery subsidies among others.

Developed Countries Stand

The developed countries have pointed at the United Nations new Sustainable Development Goals for

- prohibiting certain forms of fisheries subsidies that contribute to overcapacity and overfishing
- elimination of subsidies that contribute to illegal, unreported and unregulated fishing
- refraining from introducing new subsidies

India’s concern

According to the 2010 Central Marine Fisheries Research Institute Census, the total marine fisherfolk population in India is about 4 million, of which nearly 61 per cent are under the BPL category. Hence India states that it provides subsidies for developmental needs, poverty reduction, livelihood and food security concerns.

It also states that out of global marine fishery production of over 83 million tonne, marine fish landings in India stood at 3.40 million tonnes and hencedoes not contribute to over fishing.

The subsidies that fall under the targeted subsidies list at the WTO are the subsidies provided for

- Motorisation of fishing boats
- Fuel rebates &
- Infrastructure support.

India, together with other WTO members, such as South Africa and other African, Caribbean and Pacific groups of countries, has been seeking effective Special and differential treatment (S&DT) for developing countries and least-developed country (LDCs).

Special and differential treatment provisions

The WTO Agreements contain special provisions which give developing countries special rights and which give developed countries the possibility to treat developing countries more favourably than other WTO Members.

The Doha Ministerial Conference mandated the Committee on Trade and Development to examine these special and differential treatment provisions. The Bali Ministerial Conference in 2013 established a mechanism to review and analyse the implementation of special and differential treatment provisions.

The special provisions include

- Longer time periods for implementing Agreements and commitments.
- Measures to increase trading opportunities for developing countries.

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- Provisions requiring all WTO members to safeguard the trade interests of developing countries.
- Support to help developing countries build the capacity to carry out WTO work, handle disputes, and implement technical standards &
- Provisions related to LDC Members.

6. MEIS of Foreign Trade Policy

In the backdrop of the continued challenging global environment being faced by Indian exporters, Department of Commerce has extended support to certain new products and enhanced the rate of incentives for certain other specified products under the Merchandise Exports from India Scheme (MEIS).

- 2901 additional products falling under different product categories have been added. These include items in the following areas:
- Many items of traditional medicines like Ashwagandha herbs and its extracts, other herbs, extracts of different items.
- Certain marine products, sea feed items.
- Onion dried, processed cereal products and other value added items of plastics, lather articles, suitcases etc
- Industrial products under different categories, including engineering goods, fabrics, garments, chemicals, ceramics, glass products, leather goods, newspapers, periodicals, silk items, made ups, wool products, tubes, pipes etc.

Merchandise Exports from India Scheme (MEIS)

MEIS was launched under Foreign Trade Policy of India (FTP) 2015-20.

- It is one of the two schemes introduced in FP 2015-20, as a part of Exports from India Scheme. The other scheme is Service Exports from India Scheme (SEIS).
- Objective of MEIS is to offset infrastructural inefficiencies and associated costs involved in export of goods and products, which are produced and manufactured in India.
- It seeks to enhance India's export competitiveness of these goods and products having high export intensity, employment potential.

7. Haryana to integrate 54 mandis with e-NAM

The Haryana State Agricultural Marketing Board (HSAMB) has decided to integrate 54 mandis with electronic-national agriculture market (e-NAM) in the first phase of the ambitious project.

National Agriculture Market:

National Agriculture Market (NAM) is a pan-India electronic trading portal which networks the existing APMC mandis to create a unified national market for agricultural commodities.

- This e-platform aims to provide more options to farmers to sell their produce and is part of implementation of the roadmap for doubling income of the farmers by 2022.
- National Agriculture Market (NAM) has been incorporated by the Department of Agriculture & Cooperation.

Objectives of NAM

- A national e-market platform for transparent sale transactions and price discovery initially in regulated markets. Willing States to accordingly enact suitable provisions in their APMC Act for promotion of e-trading by their State Agricultural Marketing Board/APMC.
- Liberal licensing of traders / buyers and commission agents by State authorities without any pre-condition of physical presence or possession of shop /premises in the market yard.
- One license for a trader valid across all markets in the State.
- Harmonisation of quality standards of agricultural produce and provision for assaying (quality testing) infrastructure in every market to enable informed bidding by buyers. Common tradable parameters have so far been developed for 25 commodities.
- Single point levy of market fees, i.e. on the first wholesale purchase from the farmer.
- Provision of Soil Testing Laboratories in/ or near the selected mandi to facilitate visiting farmers to access this facility in the mandi itself.

Need

Agriculture marketing is administered by the States as per their agri-marketing regulations, under which, the State is divided into several market areas, each of which is administered by a separate Agricultural Produce Marketing Committee (APMC) which imposes

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its own marketing regulation (including fees). This fragmentation of markets, even within the State, hinders free flow of agri commodities from one market area to another and multiple handling of agri-produce and multiple levels of mandi charges ends up escalating the prices for the consumers without commensurate benefit to the farmer.

NAM addresses these challenges by

- Creating a unified market through online trading platform, both, at State and National level and promotes uniformity,
- Streamlining of procedures across the integrated markets,
- Removes information asymmetry between buyers and sellers and promotes real time price discovery, based on actual demand and supply,
- Promotes transparency in auction process, and access to a nationwide market for the farmer, with prices commensurate with quality of his produce and online payment and availability of better quality produce and at more reasonable prices to the consumer.

8. PMO puts the brakes on rail tariff regulator plan

The PMO has asked the Railways Ministry to follow the legislative route to set up an independent regulator for freight and passenger tariffs rather than push it through an executive order.

- In a bid to bypass the parliament, the Ministry of Railways had proposed Rail Development Authority by issuing a notification through an executive order and subsequently strengthen its powers through the legislative process.

Implications of this decision

The legislative route may be a major setback for the Railways on this front, as it was banking on creating the independent regulator this year in order to perk up its worse-than-expected financial performance in the first half of this fiscal year.

About the proposed authority

The proposed Rail Development Authority would be an independent body, housed outside the Ministry of Railways.

Funding:

- The authority will be funded through the annual railway budget sanctioned by the Parliament. The approved Budget would be placed at the disposal of the regulatory authority.
- It would also be permitted to arrange funds through adjudication fees, penalties levied and any other source as specified in the proposed Act.

Functions

- The proposed Rail Development Authority will be mandated to set passenger and freight tariff, ensure fair play and level-playing field for private investments in Railways, maintain efficiency and performance standards, disseminate information such as statistics and forecasts related to the sector.
- The authority will set tariff based on cost recovery principle and “what the traffic can bear.”
- All the direct and indirect costs such as pension liabilities, debt servicing, replacements and renewals along with productivity parameters, market-driven demand and supply forces and future investments will be considered by the regulator before setting tariffs.
- The authority will be authorised to penalise cartelisation, abuse of dominance and other unfair market mechanisms.

Present Scenario:

- At present, the tariff is set by the Union government.
- Earlier, the revised tariff was usually announced by the Union Rail Minister in Parliament but this practice was discontinued after protests by the Members of Parliament over any proposal to hike tariff.

Background

- The proposal for setting up a regulator comes at a time when the estimated losses in passenger segment has ballooned from Rs 6159 crore in 2004-05 to provisional estimate of over Rs 30,000 crore in 2015-16, primarily due to sharp increases in input costs and no proportionate increase in fares over the same period.
- Keeping fares within affordable limits has led to cross-subsidisation of passenger services leading to erosion of railway’s market share in freight. The total share of railways in the total transportation of freight traffic has declined from 89% in 1950-51 to 36% in 2007-08.
- The full potential of the railway sector has not been tapped as “investors have generally been shy of investing in an industry where far too much is still being done or controlled by government and the risk or return trade-off is not always favourable.”

9. Lokpal Bill attacks NGOs

It has been heartening to note that the Centre’s call of ‘Minimum Government, Maximum Governance’ has manifested itself in several forms as well as forums. The progress on implementation of CSR laws has been laudable but certain amendments in existing Bills are being seen as questionable, in their efforts to counter the outliers.

The recent amendment of the Lokpal Bill requires NGO office bearers to declare all information, including their and their families' personal assets. The Government notification also stipulates that those handling day-to-day operations of NGOs will be treated as public servants if the organisation receives Government funding of more than ₹1 crore or foreign funding of ₹10 lakh a year.

Wrong rules

While the Government's concerns around transparency may seem valid, if taken in the right spirit, the mechanism it is trying to set out needs to be revisited. There is a need for robust processes to be in place for public organisations to be compliant, but it goes without saying that a country as diverse and big as ours will have challenges when it comes to regulation.

Recently, few NGOs were flagged by the Government for violating the Foreign Contribution (Regulation) Act, 2010, for engaging in activities outside their purview.

This amendment to the Lokpal Bill was proposed post this altercation between State and activist organisations, which seems rather knee-jerk in nature. The new law will lead to many passionate private sector individuals to sever their association with non-profits, which will hurt the larger social good.

Respect privacy

The Government should consider a different approach without violating a person's Right to Privacy; one that looks at strengthening governance at the institutional level without bringing its leaders and their families under public scrutiny.

For one, strengthening governance is essential to curb any corruption, the other is to benchmark performance through policy measures. Government agencies should probe further should there be any discrepancies in being transparent and accountable. Departments such as Income Tax can seek specific information from members of the NGOs where dubious links or activities are suspected. The Government can certainly look at engaging experts from the private sector to act as third party regulators or auditors to improve their oversight on non-profits.

Systems can be put in place to make information sharing, easier and more efficient.

Finally, the Centre needs to engage with both, private sector and non-profits to mutually decide upon the steps to be taken to develop adequate measures to tackle corruption rather than respond peremptorily on account of a few.

It is heartening to see that the Government has heard the concerns voiced by NGOs and civil society and has sent it back to the Standing Committee for review.

Hopefully, this will lead to an engaged debate with all stakeholders, resulting in a policy which is consistent and relevant to our need.

Source - http://www.thehindubusinessline.com/opinion/legal-overreach/article9146901.ece

10. Why a green budget is good for the economy?

Environmental concerns are increasing year after year and hence the Green Computing is increasinly beoming important. Every year government presents the Budget for future aspiration of country. With the increasing concern towards sustainable environment from the world fraternity, the countries worldwide have started the process of Green budget. The green budget is one area where governments can influence human's interaction with the environment by discouraging environmental destruction, and encouraging beneficial behavior. Through this process, the coalition of national conservation organizations and environmental group identifies some of the programs to be included in the Green Budget. This budget displays how the central funding for conservation can help, such as:

- To meet the environmental and climatic challenges of a changing climate,
- Sustain our nation's natural resources like lands, waters etc, and
- Develop our clean energy resources.

Green Budget or Green Accounting is one of the types of accounting tries to include all factoral environmental costs into the financial results of operations. It is been debated and argued that gross domestic product (GDP) ignores the environmental loss and degradation while calculating it, and therefore policymakers and government need a revised model that incorporates them through green accounting.

The main idea of having the green accounting is to help understand the advantages of achieving traditional and desired economics goals in respect with environmental goals. It also increases the related information which is available for analyzing key policy issues, especially when those vital and important pieces of information are often overlooked left unrecognized. The Green accounting/budgeting helps to promote a sustainable future for businesses as it brings green research and development and green public procurement into the big picture. Penalties and fines for polluters and incentives (such as tax breaks, polluting permits, Green points etc.) are also a major crucial part of this type of accounting.

Why it's Important?

Green budget gives us the assurance that not only the present but the future generations are also hazard free and safe. It gives us a sense of satisfaction that we not only care for the people, but for all the living beings, natural resources, flora and fauna etc. Hence making budget green is not only about how much fund is allotted for wildlife or forest protection. It is about integrating them into every aspect of our economy and to ensure that there is no wasteful and undesired use of natural resources.

For many past years, green issues in India are either hastily added or overlooked in FM's budget speech. But this year FM Arun Jaitley seems to have done better, but there are still miles to go to ensure that there is full integration of all the green concerns into every aspects of the economy or just to get a recognition by our ministers that investing and protecting the environment is good for the economy.

In today's world when many countries are on the verge of facing the wrath of nature with a possible climate change impact, India is also one of those countries. India is considered one of the most vulnerable countries with various climate change hazards like floods, drought, landslide, sea-level rise. In such scenario climate change will have a negative and disastrous impact on food security, farming, forests, water resources, marine biodiversity, and coastal areas and coastal livelihoods, and health cam effect Indian people severely. Climate change is said to have a strong influence on the overall economic development of India.

This is when Green Budgeting, an instrument that facilitates Integration of Environmental Policies, can be applied to solve this problem. Generally, Green Budgeting can be understood as a "process in which all the dimensions of sustainable development [ecological balance, social progress and economic growth,] are completely integrated in one single policy that is budget document." Further, the

Green Budget (GB) has the functions to comprehensively and consistently analyse government revenues and expenditures to bring absolute sustainable development. The major importance is given to non-economic targets such as percentage of reduction in carbon emission in a given year that the government expects to reduce.

The Green Budgeting system has its roots in the Green Economy Model and based on the concept of sustainable development. The first and solid impetuses for Green Budgeting came into the Agenda 21 and Brundtland Report that emphasizes the need to `ensure the coherence of economic, social, sectoral, and environmental policies, and plans instruments, including fiscal measures and the budget´. The process of Green budgeting can be also seen as being integrated into the Green Economy as economic development model, which is directly opposed to the current `black´ economy system which relies on fossil fuels. The Green Economy is based on the theory of ecological economics that focuses on the interdependence of human economies and natural ecosystem and the adverse impact of human economic activities on climate change under United Nations Environment Program-UNEP.

India's Step towards Green Budget

In this year budget, the allocation of around Rs.150 crore has been made for National Afforestation Programme. The attempts have also been to discourage the practice of "dirty coal" by increasing the clean energy cess to Rs.200 from Rs.100 per tonne of coal to finance clean environment initiatives. However, there is not much clarity on how this money will be spend to start the clean environment initiatives as previous funds allocated for the environmental cause too are lying unused and if implemented then through which department of the government.

The announcement to encourage organic farming, the government setting up of a Rs.400 crore fund. A separate programme would be started for sustainable groundwater management. However, the commitments done under the Paris climate summit for conscious transition to a low-carbon economy by India is missing from this year budget.
Apart from a above mentioned initiatives for protecting groundwater, the budget significantly assumes that growth can not happen without these natural resources.

Internationally, a strategy has been created for reallocating investments towards the green economy, which initially may lead to slower potential economic growth rate for a few years, as renewable natural resources are replenished (an effect that can be strong in some sectors, such as fisheries), but in the long run it will result into faster economic growth. The UNEP report on Green Economy also underlines other various benefits for the economy as it leads to reduction in the risks of adverse negative events associated with climate change, water scarcity and energy shocks while creating increased employment.

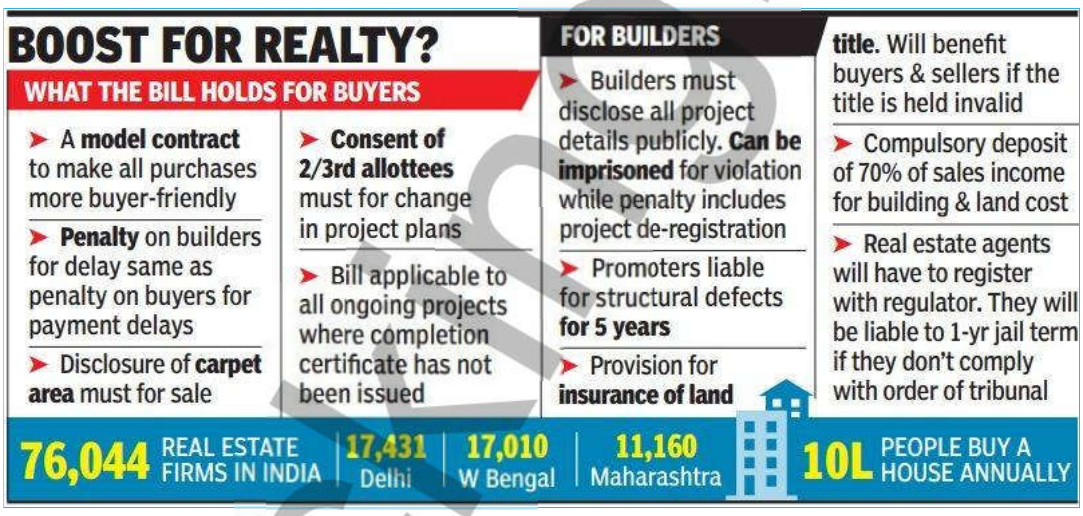
Why investment in Natural Resources?

There are various advantages associated with the investment made for natural resources. For example, the Center for International Forestry Research (CIFR) estimates that families living around forests or in forest earn an average of one-fourth to one-fifth of their income from forest-based resources. According to Food and Agriculture Organization (FAO) estimates in 2005 that the value of extracted non-timber forest products from worldwide forests amounted to $18.5 billion. In India along with many countries, local economies and livelihoods are thrived by non-timber forest products although their role is understated.

Way ahead:

Government should not merely proposed some law and consider it done. But efficient implementation of the laws is equally important. Further government can create a Green Protection Fund (GPF) which could be used to protect existing wildlife, front-line forest protection force with better equipped, forest belts, free flowing of rivers without garbage and sludge, and better biodiversity protection.

11. Decoding the real estate Bill



Real Estate Bill tries to regulate the Real Estate Sector in India. Real Estate means Land and anything fixed, immovable, or permanently attached to it such as appurtenances, buildings, fences, fixtures, improvements, roads, shrubs and trees (but not growing crops), sewers, structures, utility systems, and walls. Title to real estate normally includes title to air rights, mineral rights, and surface rights which can be bought, leased, sold, or transferred together or separately. Also called real property or realty.
Real Estate Sector which is mostly in the private hands is the one of the most important sectors of the economy which is the consumption sector for the Cement, Steel, Paint, Ceramic and the other related industry. It also employs different skilled man force such as plumbers, electricians, civil engineers, daily wages laborers. The Skill India Mission can be integrated with the real estate bill because most of the services taken by the real estate sector are in the unorganised hands. If the Government push for the Skill certification through the Skill India Mission and make those certification mandatory in the real estate services then a major chunk of the

unorganised sector can be institutionalised in a semi organised way. Aadhar Number can play a important role here. These are some of the aspects which can be worked out by the Government in the long run.

Background

India has largest population of middle class people. According to a research, a major chunk of their income is spent on Education, Housing and Health. The greed of having own house always drives people to earn more and save it. And this part of saving from the income plays vital role in India's growth. The idea of this part of saving from the household is generally driven by the dream of having own house. But, Real estate sector is one of those sectors which were highly unregulated despite it being most in demand in the country. However, overall demand has seen an upward trend, delays in completion of projects have punctured retail home-buyers' confidence. It also adversely impacted the sector's overall image. The additional cost on home buyers on account of prolonged bank interest has been adding to their existing pain. For years, home buyers have been the most exploited lot with flats and houses never delivered on time and people's hard earned money going down the drain many times, cheated by the builders and many other problems. All that is now supposed to change.

What it's all about?

In this backdrop, since the need for a regulatory authority has been felt since a long time in the real estate sector, the central government cleared the Real Estate (Regulation and Development) Bill which was originally brought in by the government in 2013. This bill has brought the amendments in the previous law which includes not only the residential properties for regulation but also the commercial one into the ambit of the regulator. This bill has suggested the various measures which aim to protect the rights of buyers and real estate investors, which is expected to boost domestic and foreign investment in real estate sector.

The significant importance of this is that India has been facing huge housing shortage, whereas buyers are put off to a sky high real estate prices and corrupt practices by many developers. In this backdrop, country required a law which would not only bring the transparency in this sector with more investment and efficient cost that make affordable housing for all. It would be very essential for the success of government's vision for the program 'Housing for all' by 2022 which was prominently presented in the budget by the government.

The Bill seeks to set up a regulatory mechanism which will supervise contracts between buyer and seller. Till date, the home buyers were taking anything from the builders under one sided contract terms, years of delayed project, cost increment, and abrupt change of plan etc. But the Real Estate (Regulation and Development) bill-2013 proposed to stop such malpractices by establishing of Real Estate Regulatory Authorities in all states, which would maintain the records of projects, its developers, agents and also a database for all violators. This information shall be made available to the house buyers. It would also have strict guidelines for developers to put up advertisement.

The Bill also has the provision for any project which is been launched, the promoter has to provide all the details like approvals, names of developer and promoter, roadmap of project, time frame for project completion on their website and register with the concern authority. The approvals must be taken before the project is being marketed. Two-third of customers must give their consent for any changes after project been sold off.

Developer must keep 70% of the amount in escrow account to be used in the same project. Contract violations complaints can be taken up with the regulatory authority and appellate tribunal and they will have powers to punish defaulters. Consumer courts as an option shall also be made available to the costumer. The fine could be 5-10% of project cost and also the cancellation of registration is possible with imprisonment. Buyers have the rights to get refunds and compensation in case of default. Quality can also be asked by buyers.

The Bill also covers real estate agents and commercial developments. To address promoter concerns of lengthy approval process causing delays, the Parliamentary panel is reported to have recommended single-window clearances by State governments.

The major highlights of this bill are:

1) All the projects must get the approval and the promoter has to provide all the details like approvals, names of developer and promoter, roadmap of project, time frame for project completion on their website and register with the concern authority.
2) The problem of builders diverting the funds collected from house buyers and use it for some other projects. And this is been tackled by asking the Developer to deposit 70% of the amount in escrow account to be used in the same project which shall be used for construction and land for that project. It would ensure that major part is completed in given time period. Monitoring and ensuring timely completion will be under the aegis of state-level Real Estate Regulatory Authorities.
3) Strict guidelines for developers to put up advertisement come under the scanner as promoter can no longer put superficial designs or photos of a uncompleted project to attract buyers if the final project does not match the photographs. In a scenario where both doesn't match, the builder has to return the payment with interest to buyers.
4) Home owners can verify the quality of the builders since the bill now makes it mandatory for developers to provide details of projects launched in the past five years, both completed or under -construction. These will also be available on the regulator's website.

Issues and Challenges

The approval of this bill makes it very clear that the real estate buyers stand to gain and shall be protected from any malpractices from developers in future. The required prior approval for starting the projects from the authority and after approval the monitoring powers with the authorities is a big relief for buyers. With all these strong features Real Estate (Regulation and Development) Bill-2013 is no sacrosanct. It too has some issues and challenges to deal with. Such as:

- One may question Parliament's jurisdiction to make laws related to real estate as "land" is in the State List of the Constitution. However, it may be argued that the primary aim of this Bill is to regulate contracts and transfer of property, both of which are in the Concurrent List.
- Some states have enacted laws to regulate real estate projects. The Bill differs from these state laws on several grounds. It will override the provisions of these state laws in case of any inconsistencies.
- The Bill mandates that 70% of the amount collected from buyers of a project be used only for construction of that project. In certain cases, the cost of construction could be less than 70% and the cost of land more than 30% of the total amount collected. This implies

that part of the funds collected could remain unutilized, necessitating some financing from other sources. This could raise the project cost.

- The Standing Committee examining the Bill has made several recommendations. These include: (a) the Bill should also regulate commercial real estate, (b) smaller projects should also be covered, and (c) all real estate agents must be required to register.
- The real estate sector has some other issues such as a lengthy process for project approvals, lack of clear land titles, and prevalence of black money. Some of these fall under the State List.

However even with all these issues and challenges the bill strongly seeks to and promises to safeguard the interest of buyers and developers in better way. The establishment of regulatory authority will make all stakeholders accountable towards the buyer. But, it is necessary to see how efficiently the proposed regulators would be able to perform their duties and how quickly do they address house buyers' complaints and grievances. However, enlarging the scope of the regulator without adequate infrastructure and resources could be a risky proposition as it might burden the authority with voluminous cases. State government's efficiency to ensure transparent and effective implementation of the law at the lower level would also play a vitol role in the overall success of this Bill. It would be too early to anticipate any such weaknesses of this bill at this level; it requires pro-active measures for a quick implementation of the Bill should be on the focus area of the government to ensure seamless execution later on.

12. Indradhanush can be a game-changer

Banking reforms in India is needed because resilient banking sector is a sine qua non for a strong economy. A Country's capacity to the internal as well as external shocks depends largely on maintaining a robust banking infrastructure. Banking sector has so long been strategic for supporting India' service sector led growth. However, as the country plans to shift its gear to create a robust manufacturing base to augment job creation and exports, the role of banks has become all the more critical.

The Indian banking sector after independence was insulated from the global economy due to the policies followed by the government during 1960's to 1980's. These policies later contributed into Balance of Payment crisis of 1991 and hence the reforms were undertaken. Since, then Indian economy has grown with leaps and bounds and so has its banking sector. In 1998 an expert committee was set up under the chairmanship of M Narsimahan with the task of properly laying down recommendations for `the Indian banking sector and its regulation thereof. The suggestions by Narsimahan committee were breakthrough and the most

Nonetheless, post-2007 Public Sector Banks did face problems. These were instigated by many factors, like the sinking of economy even after surviving the recession. The other reason for worry was inflation, which stressed the monetary situation further. Part of the mayhem was contributed by bureaucratic delays like permit delay for land acquisition that directly stalled many big projects concerning infrastructure. This affected the banks credit negatively, led due to increased defaults of loans, mounting NPA's and lowering of gross profitability of the PSB's.

Banking and Capital Adequacy

Capital or credit profile defines the success of bank. It highlights the strength of the bank to withstand shocks and failures. This is because **credit is core component of banking and therefore the most crucial risk factor**. Credit Risk means that a bank's borrower or customer is unable or shows unwillingness to meet its obligation towards the bank especially in relation to lending, trading and other transactions. For a bank this inability or unwillingness on part of the other party would accrue as a loss on its portfolio. **Loans advanced by most of the banks are largest contributor of credit risk** although there are other activities as well like inter-bank transactions, equities, foreign exchange transactions, swaps and other settlements of financial transactions.

The issue was addressed globally through the Basel Accord. These norms were passed after various round of deliberation between the countries. Basel I norms came into being in 1988 and talked about provisions regarding minimum capital requirement and risk weighted assets for banks. The major role of these norms has been to standardize banking practice across nations. Due to a few shortcomings in definition of earlier norms, Basel II were adopted which further laid guidelines for capital adequacy, disclosure requirements and risk management etc.

Despite these measures, the US Subprime Financial Crisis of 2008 brought to fore the deficiencies of financial regulation in Basel II norms. The norms allowed banks to take on certain other kind of risks that resulted into financial meltdown. Subsequently the Basel III norms were adopted in 2010. They create a voluntary global framework and were adopted to strengthen bank capital requirements, market risk etc. the implementation of these has been extended to March 31, 2019

Tier I and II Capital

Basel Accord creates primarily two category of capital for supervisory purpose in banking i.e. Tier I, II. They form **part of Capital Adequacy Framework meaning thereby that a bank has sufficient and stable resources to absorb losses arising due to risks.** The Tier I capital is the core capital; this is the highest form of capital and normally consists of equity or share capital and disclosed reserves. Core capital is necessary for purposes of lending, trading etc.it also reflects the financial strength of the bank because it is easily available to cover losses fully. Tier II or supplementary capital consists of certain reserves and types of subordinated debt. The capacity of Tier II to absorb losses is lower than that of Tier I capital

Indradhanush and its salient feature

Therefore, in Indian context, considering all these issues alongside recommendation of multiple committees important being Narsimhan (1998), Nayak (2014) Committee, measures were due.Stating, "For some years now, banks are facing challenging time but no cause of Panic" the Finance Minister launched the 'Indradhanush Scheme' for revamping the current state of affairs in public banking sector.

Touted as the most comprehensive Reform since 1970s that saw nationalization of major banks, the indradhanush scheme focuses upon bringing about a marked shift in the banking industry in realm of public sector banks. 'Indradhanush' stands for seven areas mainly, Appointment, Bank Board Bureau, Capitalization, De-stressing PSB, Empowerment, Framework of Accountability and Governance Reforms. The sector specific attention, aligning it with the global best practices, would ensure health of a bank and its

working in safe zone, safeguarding it against any possible fallout of loopholes.

Features

A Brief outline of the scheme and measures undertaken are as follows:

1.The **Appointment** stresses upon delinking of the position of Chairman and Managing Director in the banks. This reform was prompted partly due to the need for betterment of managerial efficiency, improved transparency, added expertise and to avoid situations of headless operating of institution in case of delay. As per the reform, the subsequent vacancy will be filled up, the CEO will get the designation of MD & CEO, and there would be another person who would be appointed as non-Executive Chairman of PSBs. The criteria for selection stands altered made more meticulous and vacancies are open for the private sector individuals too.

2.**Bank Board of Bureau** will look into the administrative operation of public sector banks. Replacing the Appointment Board, the Whole Time Directors and Non executive Chairman will be appointed by Bureau. Bank Board of Bureau will constantly engage with the Board of Directors of all the PSBs to formulate appropriate strategies for their growth and development. It will commence its function with the coming fiscal April 1, 2016.

3.**Capitalization** will bring the industry as per standards of Basel Norms III and help maintain Capital Adequacy Ratio/Minimum capital requirement. This will cushion against any shocks and will reduce the vulnerabilities. The total infusion required is Rs 180000 Crore. Government on its part will infuse Rs. 70000 Crore in public sector bank until FY 2019. The remaining, banks will raise from the market on the basis of improved value productivity.

Capitalisation will be pursued on y-o-y basis. Of the total 70000 Crore to be supplemented, the government will contribute 25000 Crore in the present Financial Year, followed next by 25000 Crore, 10000 Crore and 10000 Crore till FY 2019 respectively. The estimates are on y-o-y analysis of credit growth and requirement by various sectors. Government's first tranche disbursal of 40% of capital will be need based disbursal to the PSB's. In the next tranche remaining 40% the capital will be distributed amongst the six big banks including SBI, BOI, PNB, BOB, Canara and IDBI, considering their role and capacity will be included and the third tranche of 20% be performance based incentive. This move is in tune with the capital structure adopted for the banks globally.

4.**De-stressing** is a mandatory component of banking sector. Prompted by enhanced exposure of the bank credit to NPA's that had risen up to level of 6%, it became an alarming proposition. The buildup was due to bad performance of road, real estate, steel and power sectors. The core sectors were affected by permit delays, global markets etc. The major funding contribution in above areas was of PSB's. Consequently it led to stress for banks coupled with restructuring and other mounting bad loans. Therefore, Sector specific intervention is sought to help relieve the banks of increasing financial burden.

In addition, government will beef up risk control measures, NPA disclosure norms and legal capacity of the banks. Along with the functioning of Debt Recovery Tribunal and SARFESI, the RBI guidelines for taking prompt action in situation of early red flags have been roped in. An intervention at this stage has twin benefit; rescuing the value of the asset and fair recovery for lenders. A new category of Non-cooperative borrowers is created. This covers those who are unwilling to make credit disclosures. The bank as a result will have to make tighter provisioning as applicable to sub standard asset. Finally, the Asset Reconstruction Companies need to increase their minimum investment in Security Receipt; encouraging thereby banks to clear off their balance sheet.

5.A high degree of government interference was considered a major obstacle in banks commercial capacity. Under the scheme, the government has given a major thrust to severe tight managerial controls and help the **banks incorporate the commercial best practices**. However, government will not water down its equity below 50%. The option of intervention to maintain check and balance shall be retained. Manpower addition and nominations to the Board for more informed decision-making is desirable by government. Banks are to constitute a Grievance Redressal Mechanism, to provide solutions to customer problems in a time bound manner, all adding to bank **empowerment.**

6.**Framework of Accountability** has introduced new bank performance indicator called Key performance Indicator (KPI). It is divided in two, quantifiable and qualitative categories with weightage of 80 and 20 respectively. Quantifiable indicators include efficiency of capital use, diversification of business/processes, NPA management and financial inclusion. Qualitative indicators focus strategic initiatives taken to improve asset quality, efforts made to conserve capital, HR initiatives and improvement in external credit rating. Alongside, the timeframe for reporting of financial frauds to CBI, vigilance for quick response time in case of staff connivance and day-to-day monitoring with CBI and constitution of Risk Management Group is mandatory. CVO will be the lead officer for frauds exceeding 50 Crores.

7.The scheme in total aims at achieving the overall **governance reforms** in the public sector banks. The initiation started by launch of "no interference policy" by government of India was to give banks a free hand in their commercial decision-making. As stated above, PSB's were not able to compete in wholesome manner. Government will continue to engage with them on optimizing capital, digitizing processes, strengthening risk management, improving managerial performance and financial inclusion. Government will hold Gyan Sangam to strategize the functioning of the banks aimed towards helping economic growth and matching the changing financial landscape.

Indradhanush and Indian Economy

After 2007, not everything was pink. The sectors of the Indian economy started to slack, worsened with **non-hedged ECB's, increasing number of stalled projects, falling export and output in core areas.** The Indian economy finally had to deal with recession spillovers. The worst liquidity profile was suffered by PSB's, with huge exposure to the infrastructure projects. The total number of bad loans shot up, with increasing defaults, de valued restructuring and NPA's hampering the credit scenario.

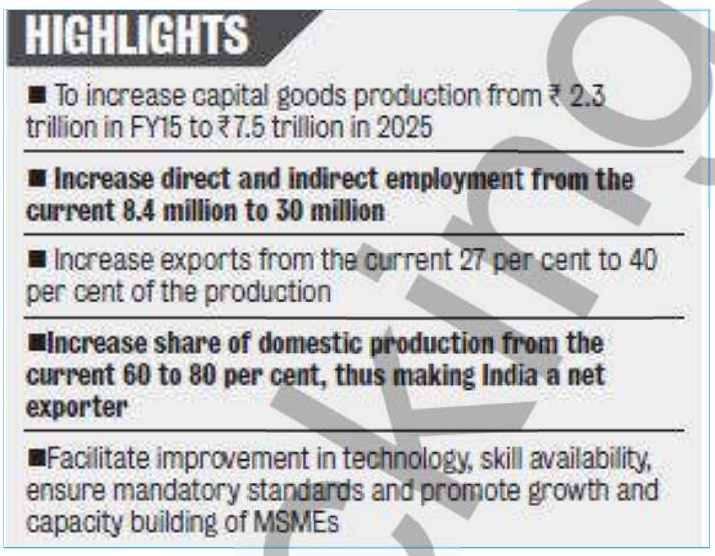
Slowing of corporate investments and reluctance of the banks to pass on the easy interest credit rates post NPA buildup, restrained the GDP of the country. Effects were visible, **PPP lost its flavour and private sector started to lose interest in infrastructure projects.** This further delayed acquisitions, implementation and completion of projects thus hampering Indian Economy at a global front. This was obvious as seen in **credit agency ratings, flight of portfolio investment and not so enthusiastic FDI participation.**

India is at cusp of a big world economic shift. Slump in Chinese economy and rise of other competitive nations warrants push to next level by India. Newer markets are opening up and older require new business solutions. To keep a sustained growth a healthy balance

is essential i.e. of traditionally strong and competitive service and certain industrial sectors, with exploring and venturing into new. However, this momentum cannot be sustained till investments and funds are mobilised to **critical infrastructure like roads, ports etc. and core sectors like coal, iron and steel, power generation.** They are the framework to support the sustainable, consistent growth with enough flexibility to cater to changes.

India needs to fix these loopholes of credit, strong capital base demands and resilient banking profile. The scheme therefore with other measures taken by RBI aims at resolving both of these issues. **Capital adequacy will reduce the risk associated to bank liquidity and meet aspirations of India.**

13. New Capital Goods Policy



The National Capital Goods Policy seeks to reduce the reliance on imported equipment by incentivising domestic production and in the process creating crores of jobs. The policy also aims to facilitate improvement in technology depth across sub-sectors, increase skill availability, ensure mandatory standards and promote growth and capacity building of MSMEs.

The Policy will also help in realizing the vision of 'Building India as the World class hub for Capital Goods'. It will also play a pivotal role in overall manufacturing as the pillar of strength to the vision of 'Make in India'.

Capital goods consist of plant machinery, equipment and accessories required, either directly or indirectly, for manufacture or production of goods or for rendering services, including those required for replacement, modernization, technological upgradation and expansion of manufacturing facilities.

Need of the New Capital Goods Policy

The Government of India announced the 'National Manufacturing Policy' in 2011 with the vision to increase the share of manufacturing in Gross Value Added (GVA) to 25% and create 100 million jobs. The Capital Goods industry is one of the key contributors to value added manufacturing and is significant for overall economic development of India.

In this regard, the Prime Minister"s Group constituted under the Chairman of the National Manufacturing Competitiveness Council (NMCC) identified Capital Goods as one of the strategic sectors for strengthening national capabilities in the long-term.Capital goods sector is a key contributor to manufacturing and currently contributing approximately 12% of overall manufacturing.

Moreover, the sector has a significant multiplier effect on overall economic growth as it provides the foundational building blocks for a large number of user industries by providing critical inputs, that is, machinery and equipment, necessary for manufacturing. Further, the development of domestic capabilities in capital goods sector is essential to ensure national self reliance, as the sector directly or indirectly influences core infrastructure development within India.

Moreover, a globally competitive and dynamic capital goods sector will induce the same characteristics into Indian manufacturing. The amelioration of capital goods policy also has potential to provide immense employment and export enhancement to India.

However, there has not been a fast catch up with the development of capital goods industries in India off lately. This sector still faces varieties of challenges and issues. These need to be rectified and presenting the new policy can very well address all such issues presented above.

Indian Economy and New Capital Goods Policy

In order to address the above mentioned aspects, The National Capital Goods Policy has been envisioned to have following effects on Macroeconomics of India:

It envisages to increase the production of capital goods from Rs.2,30,000 crore in 2014-15 to Rs.7,50,000 crore in 2025

It should raise direct and indirect employment from the current 8.4 million to 30 million

The policy envisages increasing exports from the current 27 percent to 40 percent of production.

It will increase the share of domestic production in India's demand from 60 percent to 80 percent thus making India a net exporter of capital goods.

The policy also aims to facilitate improvement in technology depth across sub-sectors, increase skill availability, ensure mandatory standards and promote growth and capacity building of MSMEs.

New Capital Goods Policy and Manufacturing

The National Capital Goods Policy has been envisaged to be a game changer for the manufacturing sector, promotion of exports, curtailing inflation, creating employment opportunities, developing human resources, enhancing the technological capabilities of India

and so on. Sector wise interaction of the National Capital Goods Policy can be observed through following paragraphs.

Capital goods sector is a key contributor to manufacturing. This currently contributes approximately 12% of the manufacturing sector, which translates to approximately 2% of GDP in overall terms. Moreover, the capital goods sector has a significant multiplier effect on overall economic growth as the foundational building blocks for a large number of user industries are provided by this with the help of providing critical inputs, that is, machinery and equipment, necessary for manufacturing.

This policy therefore, aspires to create an ecosystem for a globally competitive capital goods sector to achieve total production in excess of Rs. 500,000 Cr by 2025 from the current Rs. 220,000 Cr. The new policy envisages to contribute 20% of the manufacturing sector from current 12%.

New Capital Goods Policy and Employment

Capital Goods sector is also a major employment enabler, with almost 15,00,000 people as directly employed across various sub-sectors. It also creates indirect employment for a large number of people in a variety of user industries. A strong capital goods sector has the potential to generate significant employment opportunities across a variety of sub-sectors and user industries.

The new policy aspires to train 50 lakh people by 2025, and create institutions to deliver the human resources with the skills, knowledge and capabilities to fuel growth and profitability. In totality, this new policy has the potential to enhance the total employment up to 30 million.

Due to several loopholes in the current practices of Capital goods industries, cost-push inflation is prevalent. National Capital Goods Policy has been envisaged to break the deficiency in the production of capital goods in the country. With improvement in the technologies, enhancement in the skills and capacity building, capital goods production will surely surge diminishing the effect of cost push inflation in medium and long term.

New Capital Goods Policy and Inflation

However, increment in the employment and export promotion may lead to increase in the demand pull inflation, but this will be for short term and will be taken care of, in subsequent times because of the robust decline in cost push inflation.

Benefits of Capital Good Policy

National Capital Goods Policy can be a game changer for the Indian domestic industries. From employment to technological upgradation, from skill development to containment of the inflation and from export surge to enhancing manufacturing capabilities; all are set to have immense benefits from this disruptive policy. Following can be the various benefits of this policy for the end users, however the list is not exhaustive:

- It would enhance the export of Indian made capital goods, by Heavy Industry Export & Market Development Assistance Scheme (HIEMDA)
- It will integrate major capital goods sub-sectors like machine tools, textile machinery, earthmoving and mining machinery, heavy electrical equipment, food processing machinery etc as priority sectors under 'Make in India' initiative.
- This policy will create 'start up center' for capital goods sector to provide various technical, business and financial sources and services in the sector of manufacturing and services.
- It will enhance the skills of countrymen to reap the benefits of demographic dividend by comprehensive skill development plan/scheme with Capital Goods Skill Council and by upgrading existing training centers
- It will cause the massive direct as well as indirect employment creation
- It will lead in dilution of the inflation in long term
- The policy will also help in ameliorating the manufacturing capabilities of the country.

Limitations of the Capital Goods Policy

In spite of the endeavors taken up by the government, National Capital Goods Policy has not dealt with all the issues in capital goods. Some of the loop holes are evident from the following:

- Domestic productions are inhibited by the contractual clauses in public procurement policies. Hence these have only limited favor for the domestic value addition. These have not been addressed properly in this national policy.
- Domestic productions are also hurt by the permission to import second hand machinery
- Domestic producers remain at disadvantageous positions further because of zero import duty concession for several items imported under the 'project imports' category.
- India has had trade agreements with many countries, which have comparative advantage over it in capital goods production.
- This surely acts as a dampener in domestic capital goods production.

Comparative Analysis

Many countries across the globe have had successful policies to encourage the domestic goods industries and have been benefited immensely. Some of these policies have been highlighted as follows:

Capital Goods in Australia

Commonwealth Procurement Rules (2012): According to this rule, the Australian Government is committed to non-corporate Commonwealth entities sourcing at least 10 per cent of procurement by value from SMEs.

Indigenous Procurement Policy (2015): As per this policy, Commonwealth entities are required to award 3% of Commonwealth contracts to indigenous businesses by 2020, and the interim targets will be applied each year from 2015-16.

Capital Goods in China

Chinese Government Procurement Law (2002): This law directs the government to procure domestic goods, construction and services, except in one of the following situations:

a. where the goods, construction or services needed are not available within the territory of the People's Republic of China
b. where the items to be procured are for abroad use; and
c. where otherwise provided for by other laws and administrative regulations.

Capital Goods in Malaysia

As per the Malaysia's policy, the international tenders will be invited for supplies and services only if there are no locally produced supplies or services available. If local contractors do not have the expertise and capability for specific works, tenders may be called on a joint venture basis between local and foreign contractors to encourage the transfer of technology. International tenders for works would only be called when local contractors do not have the expertise and capability, and also a joint venture is not possible.

Capital Goods in Germany

- **Fraunhofer Society:** It was started in 1973. Fraunhofer is an integrated network of intermediate research institutions in Germany which supports industry and technology transfer as part of a national innovation ecosystem. Fraunhofer Institutes develop and exploit new technologies by creating an infrastructure bridging the needs of applied research with those of technology commercialization.
- **Steinbeis Foundation:** It was started in 1971. It is an institute set up for know-how sharing and technology transfer of academic research.

Capital Goods in Korea

- Korea Research & Innovation Center: started in 2013 as a collaboration between EU and Korea, It has been established to support Korea – EU Research & Innovation (R&I) collaboration, develop suitable policies and provide consulting to Korean start ups and entrepreneurs to enter the European market etc.
- Korea Institute of Industrial Technology: It was started in 1989 as a government research institute that helps to develop technologies for domestic industry, with a focus on SMEs.

Road Ahead

The importance of the Capital Goods sector as a key contributor to the manufacturing sector in India is well understood. However, due to plethora of issues and problems, the growth of this sector has been lagging in recent years which in turn is impacting the growth of manufacturing sector as well.

The National Capital Goods Policy has been brought in to proactively facilitate growth and development of the sector by immediately addressing the needs of the sector. The policy has laid out a vision and mission for the sector for the coming times, which would enable the achievement of the objectives of National Capital Goods Policy by following a comprehensive set of policy actions.

However, this national policy need to be reviewed and provided with appropriate feedbacks at regular interval as the capital goods sector operates in a dynamic local and global environment.

Therefore, the National Capital Goods Policy is slated to be reviewed and revised every five years to address the needs of the hour and to adopt the best international practices. Amidst the "Make in India", "New Manufacturing Polices" etc., the National Capital Goods Policy is surely a major step to unleash the potential of manufacturing sector and this will surely boost up the prospects of Indian manufacturing sector.

14. New Aviation Policy

India is one of the fastest growing aviation markets in the world. At present Indian aviation sector ranks 9th in the global market.

Open Sky Policy 1991

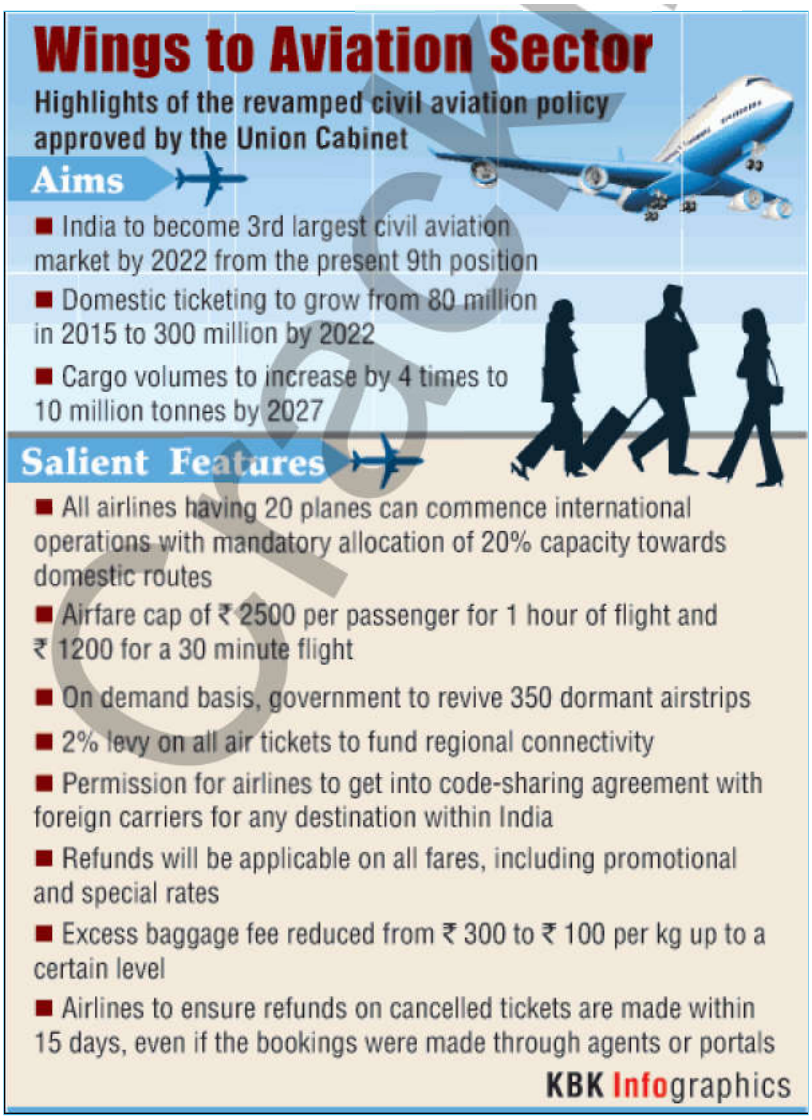
After independence very few steps were taken to bring reforms in this sector; One major reform which government took in 1991 was open skies policy where, government opened the skies to private players. It leads to the emergence of many private airlines on the scenes. This policy did not pay any attention towards infrastructure issues like number and size of airport. Maintenance repair and over hauling facilities were not developed in India.

New Avaition Policy

Recently government approved civil aviation policy to tackle such issues. It is for the first time that government introduced such a comprehensive and integrated policy. This policy aimed at increasing regional connectivity, boosting cargo operations and making it affordable.

MAJOR HIGHLIGHTS

1. Make India 3rd largest aviation market by 2022. It reduced the air fares 2500 rupees for 1 hour journey and 1200 rupees for half



an hour journey.

2. Increase domestic ticketing to 30 crores.
3. Increase cargo volumes to 10 million tonnes by 2027.
4. For starting international operations, need of 5 years of domestic flying experience is done away.
5. Focus on maintenance, repair and over haul (MRO) sector in order to develop India as a hub for south Asia.
6. Creation of 3.3 lakhs skilled personnel by 2025.
7. Development of green field airports and helipads.
8. Promote "make in India" in civil aviation sector.
9. Enhance ease of doing business.

Impact on rail and road transport

As the major objective of the policy is to increase regional connectivity and making it affordable, it will certainly effect railway and the road transport. People will prefer to go by air , as it will be more time saving .The load on railways and on road transportation will decrease. Major rail routes can now be used for cargo transportation. It will reduce the price of cargo transportation and ultimately it will affect upon the rising prices of commodities. But we cannot say that this policy will make a big impact on rail and road transport. As major sections of Indians consists of large number of low income group people who still prefer to go by bus or railways.

Impact on employment generation

The bright side of the policy is that it will largely contribute for the growth of our country. Government wants India to develop as a M.R.O hub for South Asia. By this not only we can utilize our skilled man force and provide new avenues of employment to our youngsters but also it can become a good medium to earn handsome amount of money. As our labour cost is low, foreign airlines which are dependent on other countries can utilize India's services at low cost.

5/20 rule

Policy is giving much stress on building of new airports and helipads in metros as well as in some cities. It will provide great boost to all sectors of economy. The policy has replaced of 5/20 rule by 0/20. Many new private airlines will appear on the scene. It will provide a big boost to start up airlines, which will lead to more competition and will bring more efficiency and quality in this sector. Tarrifs will be reduced. It will also provide a big boost to tourism. It will facilitate regional and international trade. Cost of export will decrease and exporters will be able to earn more foreign currency. Trade of perishable will increase.

Aviation Turbine Fuel

- Reduced service tax and excise duty is another important highlights of the policy.
- Reduced service tax on flights for one year and
- reduced excise duty at 2% on ATF will contribute in the reduction of air fares.
- It will create a conducive environment for new trade avenues.
- Domestic as well as international industries will show interest in investing in this sector.

Contribution to Economic Growth

As the government has planned to provide hassle free business environment and facilitative conditions for international flights, in long run air fares will become affordable and increased demand will generate more economic activity and result in increased revenue. Once India succeeds in becoming MRO hub for South Asia .It will be game changer for India. The MRO business of Indian carriers is around Rs.5000 crore, 90% of which is currently spent outside India we can save this amount and we can attract foreign investment too and employment will be generated in sub sectors .

Impact on local travellers

The Policy is going to benefit local travellers. Affordable cost will benefit the common man. They can avail airways which save effort and time and can enjoy the luxury of hassle free travel. We can travel distant states and countries frequently. This increased mobility will strengthens our cultural and social relationships domestically as well as internationally. It will make an impact on health and

education sector by promoting an access to quality medical and educational services.
Air travel is mostly confined to the one third of the urban population and is out of reach hundreds of millions of people. Only 70 million of India 1.2 billion flew domestically in 2014-2015 . The 300 million tickets a year by 2022 is not very ambitious. India has a ample scope where new airports and airstrips can be made in small towns which will benefit the local travellers and also boost economic activities in those areas.
No doubts this policy is quiet comprehensive and integrated covering all the aspects of this sector and promising for affordable and quality services. But the thing which is going to make a mark is how this policy is implemented. No compromise should be made in providing an infrastructure of international standards and train youngsters according to the demand of this sector. It will be vital for 'Transforming' India and make regional connectivity a reality.

15. CBDT Signs Five more Unilateral Advance Pricing Agreements (APAs)

Types of APA

Type	Nature
Unilateral APA	APA entered into between a taxpayer and the tax administration of the country where it is subject to taxation
Bilateral APA	APA entered into between the taxpayers, the tax administration of the host country and the foreign tax administration
Multilateral APA	APA entered between the taxpayers, the tax administration of the host country and more than one foreign tax administrations

The Central Board of Direct Taxes (CBDT) entered into five (5) unilateral Advance Pricing Agreements (APAs) today with Indian taxpayers.

- One of these Agreements has a rollback provision in it.

Key facts

- **103**With these signings, the total number of APAs entered into by the CBDT has reached .
- The five (5) APAs signed pertain to diverse sectors i.e. Information Technology, Sourcing services and Investment advisory services.
- The 103 APAs signed so far include 4 bilateral APAs and 99 unilateral APAs.

APA scheme

The APA scheme was introduced in the Income-tax Act in 2012 and the "Rollback" provisions were introduced in 2014.

- The scheme endeavours to provide certainty to taxpayers in the domain of transfer pricing by specifying the methods of pricing and setting the prices of international transactions in advance.
- Since its inception, the APA scheme has attracted tremendous interest and that has resulted in more than 700 applications (both unilateral and bilateral) having been filed in just four years.
- An Advance Pricing Agreement (APA) is a contract, usually for multiple years, between a taxpayer and at least one tax authority (CBDT) specifying the pricing method that the taxpayer will apply to its related-company transactions.
- These programmes are designed to help taxpayers voluntarily resolve actual or potential transfer pricing disputes in a proactive, cooperative manner, as an alternative to the traditional examination process.

Significance

The progress of the APA Scheme strengthens the Government's mission of fostering a non-adversarial tax regime.

16. RBI shifts issue date of Sovereign Gold Bond to Sept 30

With over two lakh applications for the Sovereign Gold Bond, the Reserve Bank of India has shifted the issue date by a week to September 30 for "smooth" uploading of the subscriptions in its 'E-Kuber' system.

About Sovereign Gold Bond (SGB) scheme

Under the scheme, gold bonds are issued in denominations of 5 grams, 10 grams, 50 grams and 100 grams for a term of 5-7 years with a rate of interest to be calculated on the value of the metal at the time of investment.



In a **big step towards the implementation of the goods and services tax (GST)**, the centre and the states on 23 September reached a consensus on most contentious issues under the **new indirect tax regime**, raising hope that they would be able to agree on the last remaining issue, the tax rates, by next month. The GST council, at its first meeting, **agreed on a revenue threshold of Rs20 lakh below** which **the traders will be exempted from GST. This limit will be Rs10 lakh for the north-eastern and hill states.**

The Union Government has issued model guidelines titled the **Direct Selling**

- According to Finance Ministry, the amount realised through the fifth tranche of the Sovereign Gold Bond scheme is expected to cross Rs 820 crore. This was mobilised through over 2 lakh applications representing around 2.37 tonnes of gold.
- The total subscription in first four tranches was Rs 2,239 crore corresponding to 7.85 tonnes of gold.
- The maximum amount which can be subscribed is 500 grams per person per financial year and the interest rate on the bonds are set at 2.75 per cent per annum, payable on a half-yearly basis.
- The government's plan behind the SGB scheme is to encourage those who use gold as a store of value to instead invest in the gold bonds as opposed to the physical yellow metal itself. The idea, among others, is to reduce India's substantial gold imports.
- The bonds, issued by the Reserve Bank of India on behalf of the government, have a tenor of eight years with an exit option from the fifth year onwards.
- The Bonds will be sold through banks, Stock Holding Corporation of India Ltd. (SHCIL) and designated Post Offices.

17. GST exemption limit set

- The **council also managed to reach middle ground on sharing of administrative powers between the centre and the states**. It decided that **states will get exclusive control over all dealers up to a revenue threshold of Rs1.5 crore—**thus addressing the issue of dual control over small traders.
- Given the lack of expertise among states to levy service tax, the centre **will get control over all the existing 1.1 million service tax-registered dealers**irrespective of their revenue levels.
- The new additions to the dealer base will be shared between the centre and the states at a later stage once the states develop the requisite expertise.
- **For traders with revenue above Rs1.5 crore**, a mechanism will be worked out wherein an assessee will be regulated either by the central government or the state government, based on risk evaluation.
- The **swift agreement on these contentious issues also raises hopes that the 1 April 2017 implementation date for GST will be met**.
- The next meeting of the GST council will be held on 30 September when **it will decide on the five categories of draft rules detailing the processes under GST** and on area-based and industry-wise exemptions. **The tax rates and the slabs will be decided at a meeting to be held between 17 and 19 October**.
- In the meeting held on 23 September, **the states agreed to keep 2015-16 as the base year for computation of compensation**. All items including cesses will be included in the revenue base.
- It has been agreed that **compensation to the states for potential revenue loss resulting from the transition to GST will not be bunched up** and either made bi-monthly or quarterly.
- However, the final procedure for computation of revenue projections is yet to be worked out. The options being discussed are to arrive at a growth rate for revenue projections, or take into account the revenue for the best three years in the last five years.
- The **exemption limit will make it administratively easier for the government and keep several small businesses out of the GST ambit**.
- The decision **to give centre administrative control over small traders** may mean dual control for companies that provide both goods and services.

18. Union Government issues model guidelines for states to curb Ponzi schemes

Guidelines 2016 framework for states to regulate direct selling and multi-level marketing businesses while prohibiting pyramid structures as well as money circulation schemes.

- The guidelines were issued to protect consumers from Ponzi frauds.

Key features of the guidelines:

- The direct selling has been clearly defined as marketing, distribution and sale of goods or providing of services as a part of network of direct selling.
- The legitimate direct selling is differentiated from pyramid and money circulation schemes in order to help investigating agencies identify fraudulent players.
- Money Circulation Scheme has the same meaning as defined under Prize Chits and Money Circulation Schemes (Banning) Act, 1978.
- It bars direct selling companies from charging any entry fee from agents or compelling them to buy back unsold stocks.
- These entities will have to enter into an agreement with direct sellers or agents, and give full refund or buy-back guarantee for goods and services sold to them.
- It also mandates direct sellers to constitute a grievance redressal committee to protect consumers' right.
- It lays down remuneration system for the person engaged in direct selling firms on sharing of incentives, profit and commission.
- Adds provision for appointment of monitoring authority at both Union and state level to deal with the issues related to direct selling.

What is the meaning of Ponzi schemes?

A Ponzi scheme is a fraudulent investing scam promising high rates of return with little risk to investors.

- The scheme is named after Charles Ponzi, who became notorious for using the technique in 1920.
- The Ponzi scheme generates returns for older investors by acquiring new investors.
- This is similar to a pyramid scheme in that both are based on using new investors' funds to pay the earlier backers.

Why do Ponzi schemes collapse?

- With little or no legitimate earnings, Ponzi schemes require a consistent flow of money from new investors to continue. Ponzi schemes tend to collapse when it becomes difficult to recruit new investors or when a large number of investors ask to cash out.

19. Infra pool to have separate funds for roads, clean energy

The government has tweaked the structure of the National Infrastructure Investment Fund (NIIF).

What will be the new structure?

- NIIF will now have two dedicated funds — one for roads and another for clean energy.

Aim of the move:

- This is aimed at getting long-term funds into these two crucial sectors of the economy.
- This will also reduce pressure on banks, which are the primary source of finance for long-term infrastructure projects.

Background:

- Originally, the government had planned to have NIIF as the mother fund which was to raise money from sovereign wealth funds (SWFs), pension funds and other long-term investors. But based on discussions with investors, the finance ministry has now changed the strategy.

National Investment and Infrastructure Fund (NIIF)

Proposed in Union Budget 2015, National Investment and Infrastructure Fund (NIIF) has been set up in last month of 2015.

- The objective of NIIF is to maximize economic impact mainly through infrastructure development in commercially viable projects, both greenfield and brownfield, including stalled projects, NIIF would solicit equity participation from strategic anchor partners.
- The Fund aims to attract investment from both domestic and international sources.
- The objective of NIIF is to maximize economic impact mainly through infrastructure development in commercially viable projects, both greenfield and brownfield, including stalled projects, NIIF would solicit equity participation from strategic anchor partners.
- The government's contribution would be limited to 49% of the subscribed capital.
- The government has budgeted to contribute Rs. 20,000 crores to the fund in the current fiscal year while another Rs. 20,000 crores are expected to be raised through sovereign wealth funds.

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- The government will seek participation from strategic investors such as sovereign fund, quasi sovereign funds and multilateral or bilateral investors, which can help leverage this fund to many times.
- Cash-rich PSUs, pension funds, provident funds, National Small Saving Fund will be able to pick up stake in the fund.

20. Unaccounted flow of funds to NGOs

The Supreme Court has expressed concern over lack of laws to regulate the mind-boggling funds Non-Governmental Organisations (NGOs) get annually.

- The Supreme Court indicated that it may ask the Law Commission to recommend a law to regulate the flow of funds to about 29.99 lakh NGOs functioning in the country.

Why a law to regulate the flow of funds of NGOs is needed?

According to the court, regulation of funds flowing to NGOs has become a major problem. NGOs in India are getting money from all over the world. Yet, there has not been any comprehensive law to deal with this.

- According to CBI reports, only 2,90,787 NGOs file annual financial statements of a total of 29,99,623 registered ones under the Societies Registration Act.
- In some States, the laws do not even provide for the NGOs to be transparent about their financial dealings.
- In the Union Territories, of a total of 82,250 NGOs registered and functioning, only 50 file their returns.
- New Delhi has the highest number of registered NGOs among the Union Territories at 76,566. But none of these organisations submit returns.
- In Kerala, which has 3,69,137 NGOs, there is no legal provision to submit returns. The same is the case for Punjab with 84,752 and Rajasthan with 1.3 lakh NGOs.
- Uttar Pradesh, which has the highest number of NGOs at 5.48 lakh among 26 States, has only about 1.19 lakh filing returns.
- Tamil Nadu has about 1.55 lakh NGOs registered, however, only 20,277 file returns.

Implications

- This could spell trouble for many NGOs as the Centre has initiated a process to examine which NGO received what amount from foreign sources and whether they had been permitted to receive monetary assistance from abroad under the Foreign Contribution Regulation Act (FCRA).

21. Universal basic income

UBI

The basic idea of a UBI is that everybody should be given a basic minimum income as an entitlement and not as compensation for work.

In most advanced countries, social security systems are in place, but caveats apply and many are excluded. The UBI would be completely unconditional.

Views on UBI:

Those on the left feel that the introduction of a UBI would help to partly offset the rapid rise in inequality observed in recent years.

Those on the right feel that if a safety net has to be in place, the UBI would be the simplest and most effective.

Why we need UBI?

As robots take over more and more of the tasks hitherto performed by human beings, robotized production systems will be capable of producing goods of mass consumption on an almost unlimited scale. On the other hand, human workers no longer required or paid to do most jobs would lack the purchasing power to buy these goods of mass consumption.

If mass consumers lack the purchasing power to buy the goods produced for mass consumption, whether for reasons of income inequality or work obsolescence, then the markets for mass consumer goods will collapse.

The only way out of this impasse of chronic under-consumption is to revisit the link between income and work, hence UBI.

Why US need UBI?

Experts have argued that the present American welfare system is a disaster. Federal and state welfare programmes together spend

around $1 billion annually, yet 16% of the population remains below the US poverty line.

One of the experts has proposed replacing all the existing programmes with an unconditional Basic Income Guarantee of $10,000 per year for every American over 21 years. He argues this would be cheaper, less paternalistic, less intrusive, and entail less bureaucracy and rent-seeking.

How is the global response to the idea of UBI?

Recently, the Swiss electorate voted against the idea of a UBI, but Canada, Finland and the Netherlands are now reportedly considering a referendum on the issue.

Is UBI appropriate for India?

Administrative and technical viability:

According to several official studies and surveys, most recently the Shanta Kumar committee report, nearly half the subsidized food grains distributed through the targeted public distribution system (TPDS) for BPL families do not reach the intended beneficiaries. In this scenario,

UBI would completely do away with targeting and all the challenges that come with it.

It would be simpler, easier to administer, prone to less discretion, hence less rent-seeking, and have zero misdirection since everyone would be an eligible beneficiary.

Leakages would also be minimized if UBI is administered using the JAM (Jan Dhan Yojana, Aadhaar and mobile connectivity) trinity, the IT-enabled technological innovation.

Why JAM trinity is useful here?

According to reports, Aadhaar has pretty much covered the entire population and the Jan Dhan Yojana extends to about one billion people. It is already being used for some direct benefit transfers, such as subsidies for cooking gas, and about half the bank accounts have already been linked to Aadhaar.

Once the entire JAM package is complete, administering direct UBI transfers will become much simpler and more transparent.

Fiscal affordability

Various experts claim affordability of UBI along with fiscal prudence. Although they propound different methodology to set the rate of UBI, they all share the common views that UBI would be fiscally quite affordable without any additional taxation.

Political feasibility

Political feasibility of UBI is indeed a tough call, particularly since their financing schemes involve elimination of existing benefits to some powerful interest groups.

22. International Poverty Line $1.90

The World Bank in October 2015 raised the international poverty line to 1.90 US dollars per day**from the existing 1.25 US dollars.**

Against this backdrop, **World Bank explained few pertinent questions** related to the international poverty line and its revision.

Why did the World Bank decide to update the International Poverty Line, and why now?

As differences in the cost of living across the world evolve, the global poverty line has to be periodically updated to reflect these changes. Since 2008, the last update, 1.25 US dollars had been used as the global line. As of October 2015, the new global line will be updated to 1.90 US dollars per day.

What is the new poverty line, and based on this new measure, how many people are living in extreme poverty in the world?

The new global poverty line is set at 1.90 US dollars per day using 2011 prices. Just over 900 million people globally lived under this line in 2012 (based on the latest available data) and it is projected that just **over 700 million are living in extreme poverty in 2015.**

Why raise the poverty line? What was wrong with the 1.25 US dollar a day line that we are all used to?

As **differences in the cost of living across the world evolve**, the global poverty line has to be periodically updated to reflect these changes. The new global poverty line uses updated price data to paint a more accurate picture of the costs of basic food, clothing, and shelter needs around the world. In other words, the real value of 1.90 US dollars in today's prices is the same as 1.25 US dollars in

2005.

How revision in global poverty line takes place?

In 1990, a group of independent researchers and the World Bank proposed to measure the world's poor using the standards of the poorest countries in the World. They examined national poverty lines from some of the poorest countries in the world, and converted the lines to a common currency by using purchasing power parity (PPP) exchange rates.

The PPP exchange rates are constructed to ensure that the same quantity of goods and services are priced equivalently across countries. Once converted into a common currency, they found that in six of these very poor countries the value of the national poverty line was about **1 US dollar per day per person**, and this formed the basis for the first dollar-a-day international poverty line.

After a new round and larger volume of internationally comparable prices were collected in 2005, the international poverty line was revised based on 15 national poverty lines from some of the poorest countries in the World. The average of these 15 lines was **1.25 US dollars** per person per day (again in PPP terms), and this became the revised international poverty line**since 2008.**

Similarly **in 2015**, poverty lines of those same 15 poorest countries from 2005 (holding steady the yardstick against which we measure) were used to determine the new global poverty line of**1.90 US dollars on the 2011 PPP basis**.

What is Purchasing Power Parity (PPP) and how is it determined?

PPP allows us put each country's income and consumption data in globally-comparable terms. The PPP is computed on the basis of price data from across the world, and the responsibility for determining a particular year's PPP rests with the International Comparison Program (ICP), an independent statistical program with a Global Office housed within the World Bank's Development Data Group.

What is the significance of revision in the international poverty line?

The global poverty line is used primarily **to track global extreme poverty,** and to measure progress on global goals set by the World Bank, the United Nations, and other development partners. A country's national poverty line is far more appropriate for underpinning policy dialogue or targeting programs to reach the poorest. For example, in a middle-income country, where the national poverty line is at 4 US dollars a day, the global poverty threshold may be less relevant than in a poorer country where the national line is at 1.65 US dollars or similar.

23. Govt appoints members to MPC

The **Appointments Committee** of the Cabinet has approved the **names of three outside experts as members of the Monetary Policy Committee** that will include Reserve Bank of India (RBI) officials and decide on the policy rates of the central bank. The experts are **Chetan Ghate**, professor at Indian Statistical Institute; **Pami Dua**, director at Delhi School of Economics; and **Ravindra Dholakia**, professor at Indian Institute of Management, Ahmedabad. The **three experts have been appointed for a period of four years**. The other members of the committee will **include RBI governor Urjit Patel**, deputy governor **R. Gandhi**, who is in charge of the monetary policy, and executive director **Michael Patra**.

- The **MPC is expected to sit for its first monetary policy review on 4 October**. The **RBI governor will only have a casting vote** in case of a tie in the six-member committee.
- The Monetary Policy Committee will strive to ensure that the inflation target decided by the government and the central bank is met.
- The **RBI has the mandate to contain retail inflation within a band of 4%, plus or minus 2 percentage points**.
- The idea of a Monetary Policy Committee was **proposed by an RBI-appointed committee led by Patel**, then a deputy governor of RBI, in February 2014.
- That panel had **recommended a five-member committee** on which three members would be from the RBI and two external members would be appointed by the RBI governor and the deputy governor.
- Last year, **the government and the RBI agreed to formalize the inflation-targeting framework** and set in **motion the constitution of the six-member committee**.

24. Adani Group launches world's largest solar power plant in Tamil Nadu

Adani Green Energy, part of the Adani Group, said **it has dedicated to the nation the world's largest 648-mw solar power plant in Tamil Nadu** entailing an investment of Rs 4,550 crore. The solar power plant, **producing 648 mw at a single location**, was formally dedicated to the nation.

- **The plant is set up at Kamuthi, Ramanathapuram, in Tamil Nadu** with an investment of Rs 4,550 crore. It is part of the state government's ambitious target of generating 3,000 mw as per the solar energy policy unveiled by the government in 2012.
- The entire **648-mw plant is now connected with Kamuthi 400 kv sub-station of Tantransco**, making it the world's largest solar unit at a single location.
- The plant consists of 3.80 lakh foundations, 25 lakh solar modules, 27,000 mt of structure, 576 inverters, 154 transformers along with 6,000-km cables.
- For setting up the factory, the company had sourced equipment and machinery from various parts of the world in a timeframe of eight months.

India will soon move a detailed concept note at the World Trade Organisation (WTO) to start discussions on trade facilitation

25. India to submit concept note on TFA

agreement in services. The note would seek suggestions and views of the WTO members countries.

- **India is pushing for a trade facilitation agreement (TFA) on services to promote trade in this sector along with goods**. The WTO has already concluded a similar *pact* for merchandise.
- **The TFA in goods will come into force once two-thirds of members have completed their ratification process**. It contains provisions for expediting the movement, release and clearance of goods, including goods in transit.
- It also sets out measures for effective cooperation between customs and other appropriate authorities on trade facilitation and compliance issues.
- On similar lines, **India has asked for an agreement to promote services trade as the sector contributes about 60 per cent in India's economy** and 28 per cent in the total employment.
- Commerce Minister Nirmala Sitharaman had raised the issue during an informal meeting with key members of WTO on the sidelines of the Organisation for Economic Cooperation and Development (OECD) ministerial council meeting in Paris.
- WTO Director General Roberto Azevedo had welcomed it and asked India to submit the proposal for discussion.
- **TFA in services means liberalised visa regime such as multiple entry visas**, visa-free travel for foreign tourists and long term visas for business community among other things.
- The move also **assumes significance as about a dozen countries are already negotiating Trade in Services Agreement (TISA) in the WTO**. India is not part of TISA.

26. Arvind Subramanian-led panel's recommendations

Pulses traders have appreciated the Subramanian committee's recommendations on measures needed for long term solutions to the commodity's inflationary problems.
The committee headed by Chief Economic Adviser Arvind Subramanian recommended immediate increase in the minimum support price (MSP) by at least 20% for major pulses with tur and urad at Rs 60 a kg from Rs 50.50 a kg each and chana at Rs 40 a kg from the existing Rs 35 a kg.

"Wheat output stands at four times that of pulses. This means, if a farmer harvests four tonnes of wheat on a piece of land, he would get only one tonne of pulses. Therefore, MSP for pulses (tur and urad) should be four times that of wheat which currently works out to around three times. Assuming that even 10 per cent farmers are diverting there crop from wheat to pulses, India would have enough pulses," said Pradeep Jindal, President,Pulses and Beans Importers Association.

India's pulses consumption is estimated at around 24 million tonnes as against its production at 16.47 million tonnes in 2015-16 and 17.15 million tonnes in 2014-15 because of two years of subsequent droughts. Following a more than 30% increase in acreage on favourable monsoon, India's pulses output is estimated to breach its previous record of 19.25 million tonnes in 2013-14 to achieve at 22 million tonnes for crop year 2016-17.

Further, the panel recommended that the Centre should encourage states to delist pulses from Agriculture
Produce Markets Committee (APMC) Act to allow farmers to sell their produce to consumers directly. The government has already adopted this practice in fruits and vegetables.

"The role of APMC is nothing beyond collecting 5.8 per cent of various taxes just to make pulsescostlier," said S P Goenka, Director, U Goenka Sons, a Mumbai-based pulses importer. "Today, farmers should be allowed to sell their produce to anyone who pay higher prices. If they feel, they can sell their output directly to consumers at the prevailing market price. The system which was set years ago as a vote bank for politicians, still continues. Today, APMC has become irrelevant. So, it should be abolished."

Pulses traders say that this is the first time ever that the government has received right policy recommendations. Some years ago, when pulses' export was banned, India used to be a hub forprocessing of varieties of *dals*. But when *dal* prices moved up, then Food Minister Sharad Pawar invoked the ban.

"The ban on pulses exports was just an eye wash. India used to import 3 million tonnes of pulsesabout a decade ago of which 10 per cent was processed locally for re-export which used to earn forex for India. Now, export of 10 per cent of imported goods makes no difference in its availability for domestic market as *dal* mills could have imported this exportable quantity extra. The ban on export not only killed our industry but also helped emerged many such processing units in the Middle East and Asian countries. It should be immediately revoked to make a market free from any hurdles," said a senior industry official.

Similarly, traders termed as wrong the stock limit imposed by the current NDA government to control pulses inflation, and have urged the government to intensify procurement to meet its buffer requirement and purchase more in case of distress sale from farmers.

"By imposing a stock limit, the government restricted stockists to hold limited quantity which means supply is restricted. Instead of taking all corrective measures, why the government has not convened a meeting of farmers to understand the problems faced by them

for growing less pulses. The increase in pulses area this year is the result of high prices during the last two years. The government, therefore, needs to take a long term measures to encourage farmers with adequate returns to their produce," said Jindal.

Apart from urging the government to allow genetically modified seeds in pulses for higher yield, traders called for immediate ban on futures trading due to excessive speculation by certain groups of traders.

"If all these measures adopted now, India will be self-reliant in pulses in the next five years," said Goenka.

TUNING WITH THE PANEL	
Major recommendations	**Traders' view**
Raise MSP by 20% to Rs 60/kg of tur & urad; and 10% to Rs 40/kg of chana	Urgently needed, wheat output four times of tur & urad; MSP of tur & urad also requires to be four times of wheat, MSP on chana justified at Rs 40/kg
Delisting pulses from APMC	APMC is just a tax collection centre, delisting would help cut 5.8% levies at APMC
Remove export ban	Exports contributed 10% of imported pulses but added to India's forex kitty, export an important tool for value added products
Withdraw stock limit	Stock limit restricted supply as importers restrained from holding higher quantity
Review futures trading in chana	Excessive speculation currently, a few speculators trade in groups resulting into wrong price signal
Encourage genetically modified seeds	Need of the hour

NOTE

- The prices of pulses have been rising and has been over 110 Rs per kg for most of them. Since the contribution of pulses is only fractional (0.72%) in the total weight of the WPI, the sharp increase in their prices has not been reflected in the overall inflation, which has been deflating and as it is a low cost imp protein rich resource ,it reduces affordability
- Government's will raise the minimum support price for pulses –> push up their output –> contain food inflation.
- Despite being the largest producer of pulses in the world, India has become the largest importer as domestic production has not kept pace with demand.
- The per capita availability of pulses declined steadily from about 69 grams per day in 1961 to 51 grams per day in 1971, and to about 43 grams per day in 2013 (GoI 2015), due to sluggish growth in production since the 1960s.

Reasons for Low Production of Pulses

- Substitution of pulses by other crops like high yielding varieties which gives more yield and on them government gives more proportionate MSP to farmers;
- Shift in pulses cultivation to less productive drylands– The improvement in area under cultivation during the late 1970s and 1980s was primarily on account of a shift in pulses cultivation to the drylands of central and southern regions of the country;
- Limited improvement in the yields of pulses compared to other food crops– yields have remained unstable and volatile as a majority of pulses have been cultivated under rainfed conditions, and are affected by uncertain rains. About 85% of pulses cultivation is still rain-fed.
- pulses are more susceptible to infestations of pests and disease compared to cereals.

HOW TO BOOST PRODUCTION

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Shift in pulses cultivation to l

Short-term Strategies

Under the current scenario of spiralling prices, the requisite step is to augment supplies through imports and distribute them through the public distribution system (PDS) to the poor and through open market sale to contain the rise in market prices.

Long-term Strategies:

Decrease imports as it leads to goregoing of precious Foreign exchange

Price Support and Procurement: Hike in MSP should be followed by active procurement operations.

Stabilise Supply via PDS: In view of the persistent shortages and volatile prices of pulses, a more focused PDS— with a widespread network of procurement and a steady supply through distribution arrangements—seems to be a holistic approach to bring stability to pulses markets.

Incentivising Cultivation: the government has not been providing any incentives to encourage cultivation of pulses, despite the need to raise the production levels and the advantages of cultivation like limited water requirement in their critical stages of growth, short crop cycles of three to six months, enrichment of soil nutrients through nitrogen fi xation, etc

Development of HYVs: There is scope for increasing yields of pulses with the latest advances in biotechnology.The scope for development of multiple resistant varieties has increased after recent advances in genomics.

Agricultural Extension

(i) Pulses-based cropping systems like rice–pulses instead of rice–wheat to augment soil nutrients and reduce input costs.

(ii) Cultivation of short duration pulses like urad and moong as catch crops in rice fallows.

(iii) Positive externalities of cultivating pulses such as the soil nutrient enhancing capabilities of pulses through nitrogen fixation and the

minimal water requirements at critical growth stages of pulses compared to other crops.

(iv) Distribution of good quality seeds for free.

(v) Facilitating inoculation of seeds with soil bacteria (rhizobium) before sowing to increase yield and reduce the requirement for fertilisers.

Steps Taken

creating a buffer stock

imposing stock limits

Providing tur dal at Rs.120 a kg through mobile vans.

Signing of pact with Mozambique to double pulses imports from that country.

Dal diplomacy with 46 countries

CONCLUSION

Immediate steps must be taken to shift pulses cultivation to more fertile and/or irrigated lands through input incentives and procurement support.

Efforts should also be taken to develop HYVs to overcome the stagnation in yields.

Agricultural extension systems should be utilised to popularise improved cultivars and better package of practices along with the complete merits of cultivation of pulses among farmers.

FAO of the United Nations has designated **2016** as the **year of pulses** to highlight their importance in curbing malnutrition. The Govt. has allowed 100 % FDI in food processing, dismantling the Agricultural Produce Marketing Committee (APMC)laws that hindere free trade for farmers could lay the way for them to deal directly with large traders and retailers, thereby creating the assured market they need and easing down consumer costs by getting rid of the numerous intermediaries.

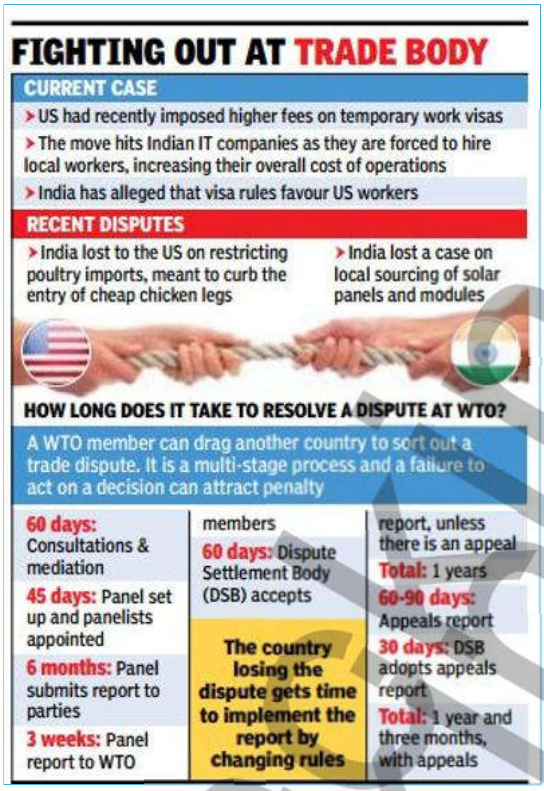
27. Information under domestic black money scheme confidential

Government on 15 September 2016 said information about **those who declare their black money under the compliance window**, ending September 30, will be kept confidential. As regards concerns regarding confidentiality of the information filed under the scheme, it is reiterated that information contained in a valid declaration is confidential and shall not be shared.

- **In respect of declarations filed with the Commissioner of Income-tax**, Centralised Processing Centre, Bengaluru, the declaration shall not be shared even with the **jurisdictional Principal Commissioner/Commissioner** and payments made under the Scheme shall not be visible to the jurisdictional officers.
- **The payments under the Scheme shall neither be reflected in 26AS statement** nor can be viewed by the Assessing Officer in the Online Tax Accounting System (OLTAS) of the Department in the interest of confidentiality.
- IDS scheme, launched by the government on June 1 to uncover black money, closes on September 30.
- Majority of culprit may be our elected representative or their relatives, babus , religious leaders. So if Govt reveal there name , the who;e system will collapse. So better dont publish it
- As per the IDS facility, **one can pay tax under the scheme by cash in a bank and no enquiry will be made by any bank official**.
- Under IDS one can come clean by paying tax, penalty and cess totalling 45 per cent of the undisclosed income.

28. India drags US to WTO over renewable energy

India has draged the US to the WTO over America's domestic content requirements and **subsidies provided by eight states in the renewable energy sector**. India has requested consultations with the US **under the dispute settlement system** regarding **alleged domestic content requirements** and subsidies provided by **eight US states** in the renewable energy sector.



The Union Cabinet on 12 September 2016 **approved the setting up of a GST Council**, which will **decide the rate of tax under the new Goods and Services Tax (GST) regime**, likely to kick in from April 1, 2017.

GST Council

Background

Natural gas

Scenario in India

Allocation and Supply of Natural Gas

Government's move

Coal Bed Methane

Compressed Natural Gas

Piped Natural Gas

India is on the path of becoming a "pivot" for high-tech world manufacturing even as global manufacturing growth is expected to **remain low in 2016 due** to weakened financial support for productive activities, a new UN report said. The quarterly '**World Manufacturing Production report**', published by the **UN**

- The eight states are – **Washington, California, Montana, Massachusetts, Connecticut, Michigan, Delaware and Minnesota**.
- **India has stated that the measures are inconsistent** with the global trade norms because they provide **less favourable treatment** to imported products than to like domestic products, and because the subsidies are contingent on the use of domestic over imported goods.
- The request for consultations is the **first step in a dispute at the WTO under its Dispute Settlement System**.
- Consultations give the parties an opportunity to discuss the matter and to find a satisfactory solution without proceeding further with litigation.
- After 60 days, if consultations fail to resolve the dispute, the complainant may request adjudication by a panel.

29. GST Council Created

- **The GST Council will consist of Union Finance Minister**, Minister of State in charge of Revenue Department and State finance ministers.
- **The Cabinet "approved setting up of GST Council and setting up its Secretariat**," an official statement said adding **the council will hold its first meeting on September 22 and 23**.
- **It will make recommendations on important issues related to GST**, including items and rates. Its secretariat costs will be

borne by the Central government.

- **GST implementation steps are ahead of schedule so far**. The steps required in the direction of implementation of GST are being taken ahead of the schedule so far.
- The Cabinet also decided **to provide adequate funds for meeting the recurring and non-recurring expenses of the GST Council Secretariat**, the entire cost for which shall be borne by the Central government.
- **The GST Council Secretariat shall be manned by officers taken on deputation from both the Central and State governments**.
- While the **GST Council will be created as per Article 279A of the amended Constitution**, the GST Council Secretariat will have its office in New Delhi.
- **The Revenue Secretary will be the ex-officio Secretary to the GST Council**, which will have Chairperson, Central Board of Excise and Customs (CBEC) as a permanent invitee (non-voting).
- Also, a **post of Additional Secretary to the GST Council in the GST Council Secretariat and four posts of Commissioner in the GST Council Secretariat** (at the level of Joint Secretary to the Government of India) will be created.
- **As per Article 279A of the amended Constitution**, the GST Council, which will be a joint forum of the Centre and the States, shall be headed by the Union Finance Minister.
- **Minister of State in charge of Revenue will be its member** and so will be minister in-charge of finance or taxation or any other minister nominated by each State Government.
- **The Council will make recommendations to the Union and the States on important issues related to GST**, like the goods and services that may be subjected or exempted from GST, **model GST Laws**, principles that govern Place of Supply, threshold limits, GST rates including the floor rates with bands, special rates for raising additional resources during natural calamities/disasters and special provisions for certain States.
- While **the Centre will have one-third vote in the GST Council**, states together will have a two-third say. To adopt a resolution, three-fourth majority would be required.
- **The Constitution (122nd Amendment) Bill, 2016, for introduction of Goods and Services tax in the country** was accorded assent by the President on September 8, 2016, and the same has been notified as **the Constitution (One Hundred and First Amendment) Act, 2016**.
- **As per Article 279A (1) of the amended Constitution, the GST Council has to be constituted by the President within 60 days of the commencement of Article 279A**.
- The notification for bringing into force Article 279A with effect from September 12, 2016 was issued on September 10, 2016.
- **Parliament on August 8 had passed the Bill**, which then went to the States for ratification. A Constitution Amendment Bill **needs to be ratified by the Legislative Assemblies of at least 50 per cent of the 29 states and 2 union territories**.
- **The Bill was sent to the President's secretariat after as many as 19 states —** BJP-ruled Assam being the first **—** ratified the Bill.
- The other States, which passed the legislation include Bihar, Jharkhand, Chhattisgarh, Himachal Pradesh, Gujarat, Madhya Pradesh, Delhi, Nagaland, Maharashtra, Haryana, Sikkim, Mizoram, Telangana, Goa, Odisha and Rajasthan.
- The States and the Centre are working overtime and talking to stakeholders to draft the Central GST, State GST and Integrated GST laws, which are to be passed in Winter Session of Parliament.
- **The CGST and IGST will be drafted on the basis of the model GST law. The states will draft their respective State GST (SGST) laws with minor variation incorporating state-based exemptions**.
- **The IGST law would deal with inter-State movement of goods and services**.

30. CBDT launches e-nivaran to resolve Income Tax grievances

- Central Board of Direct Taxes (CBDT) on 8 September 2016 launched e-nivaran (electronic resolution) facility for online redressal of taxpayers' grievances. The grievances can be related to refunds, Income Tax Returns (ITRs), Tax Deducted at Source (TDS), and Permanent Account Number (PAN) among others.

  It was started with an aim to reduce instances of harassment of the public when it comes to complaints related to the Income Tax (IT) department. It will be available on the e-filing portal (
-) of the department**http://incometaxindiaefiling.gov.in.**
- **Features**
- It will help taxpayers in registering their complaints through their computer and receive a special PIN number on their registered mobile number and email, which will help to keep track on the issues.
- It will also allow the complainant to track the progress of the complaint.
- People can lodge their complains and upload the documents related to the same in form od a PDF file and clubbed as a ZIP file.
- People who don't have a PAN can also access the e-nivaran facility and lodge their complaints in connection with their I-T case.
-

The 'e-nivaran' form will be available in a physical form at the Aaykar Sampark Kendras (ASK) (tax facilitation centre), located in over 300 cities. Later, the form will be fed into the system by tax officials.

31. Petroleum Ministry launches Gas4India campaign

Gas4India is a unified cross-country, multimedia, multi-event campaign to communicate the national, social, economic and ecological benefits of using natural gas as the fuel of choice to every citizen who uses, or will use in the near future, gas in any way- cook, travel, light their homes, and power their business.

The campaign includes social engagement via Twitter, Facebook, YouTube, LinkedIn, and its official blogsite, as well as hyper local, offline events to directly connect with consumers through discussions, workshops and cultural events.

Natural gas is a naturally occurring hydrocarbon gas mixture consisting primarily of methane, but commonly including varying amounts of other higher alkanes, and sometimes a small percentage of carbon dioxide, nitrogen, hydrogen sulfide, or helium.

It is formed when layers of decomposing plant and animal matter are exposed to intense heat and pressure supplied by existing under the surface of the Earth over millions of years.

Gas is one of the cleanest fuel with less carbon dioxide per joule delivered than either by coal or oil and far fewer pollutants than other hydrocarbon fuels.

The development of Natural Gas industry in the country started in 1960s with discovery of gas fields in Assam and Gujarat. After discovery of South Basin fields by ONGC in 1970s, Natural Gas assumed importance.

A huge mass of India's natural gas production comes from the western offshore regions, particularly the Mumbai High complex. The onshore fields in Assam, Andhra Pradesh and Gujarat states are also major producers of natural gas.

Natural gas available in India can broadly be classified into two categories, viz.

Domestic Natural Gas and

Imported Re-gasified Liquefied Natural Gas (R-LNG).

The government is working to increase the share of gas in the country's energy basket from the present 6.5%.

Government is taking steps to harness synthetic gas from Coal Bed Methane, and also promoting Bio-CNG and Bio-PNG.

Coal Bed Methane is a natural gas (Methane) absorbed in coal and lignite. It is called 'sweet gas' because of it does not contain hydrogen sulphide.

It is environment friendly. The Govt. has approved a comprehensive CBM policy in 1997 for exploration and production of CBM gas.

CNG is a readily available alternative to gasoline that's made by compressing natural gas to less than 1% of its volume at standard atmospheric pressure. It mostly contains methane.

CNG is odorless, colorless and tasteless.

PNG is more convenient, safe and economic friendly fuel.

32. World Manufacturing Production report

Industrial Development Organisation (UNIDO) said world manufacturing output is expected to **increase by only 2.8 per cent in 2016**. However, in contrast to recent years, there will be no breakout from the low-growth trap in 2016.

- **Growth performance was much higher in Asian economies**, where manufacturing output rose by 6.5 per cent in the second quarter of 2016.
- India's manufacturing output, which achieved **impressive growth rates in the last quarters**, experienced a second slight decline in a row but the prospects for India's manufacturing are conclusive, since India is on the path to becoming a pivot for high-tech world manufacturing.

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- According to the latest GDP data released in India, **the manufacturing sector grew 9.1 per cent** during April-June 2016, a slight decline from the 9.3 per cent clocked in January to March.
- UNIDO also warned that **lower industrial growth rates pose a challenge *for the* implementation of Sustainable Development Goal (SDG)** on promoting inclusive and sustainable industrialisation and foster innovation, as **encapsulated by Goal 9**, which also aims to significantly raise the share of manufacturing in the economies of developing countries.
- It further stated that **manufacturing production is likely to rise by only 1.3 per cent in industrialised countries and by 4.7 per cent in developing ones**.
- In terms of growth rates for countries, the growth rate performance of China, the world's largest manufacturer, is likely to further decline from last year's 7.1 per cent to 6.5 per cent this year.
- **Russia and the US recorded marginal rises of one per cent and 0.3 per cent**, respectively.
- In Europe, the uncertainty following the Brexit affected the growth rate performance in manufacturing in the second quarter of 2016, below one per cent for the first time since 2013.
- **Developing economies maintained higher growth in the production of textiles, chemical products and fabricated metal products**, while the growth performance of industrialised economies was higher in the pharmaceutical industry and in production of motor vehicles.

33. India faces Catch-22 on steel capacity at G20's China meet

Ahead of G20 summit on September 4 at Hangzhou (China) of the 20 major global economies, the U.S. has already mounted pressure on China to drastically reduce its steel capacity, claiming that the 'dumping' of the commodity in various countries has been hurting steel producers (domestic) across the world.

The U.S. at the G20 Summit will seek discussions on the reasons for excess capacity in steel as well as reforms & regulations in the global steel industry, including in China.

US says that excess capacity issue distorts markets and the environment, harms our workers and runs counter to our efforts to achieve strong, sustainable and balanced growth.

India's stand on excess capacity

- India may play a low-profile role in the discussions on the topic as it is aware of the growing needs of its user industries which currently depend on a mix of imported and locally-made steel to meet their requirements.
- Recent India-US Strategic & Commercial Dialogue highlighted the excess capacity problem and the need for regulation.
- Some countries are blaming nations including India, South Korea, Italy and Taiwan for supporting measures that have been leading to excess capacity in steel.
- India is in difficult situation as it is not only the third largest steel producing nation, but was also among the top 10 steel importers in 2015. This means, the interests of local producers and user industries will have to be kept in mind while taking a stance, the sources said.
- Centre needs more foreign investment in India including in the steel sector as part of the 'Make In India' initiative aimed at boosting local manufacturing and exports.
- India will tread a cautious middle path when a simmering battle over global ramifications of excess capacity in steel takes centre-stage at the G-20 Summit in China.

OECD Meet

- They had stated that attention must be given to subsidies and other forms of government-related support as they can lead to market distortions and global excess capacity.
- It was also decided that the G20 steelmaking economies will participate in the OECD Steel Committee meeting slated for September 8-9, 2016 to tackle the issue.

OECD

- Organisation for Economic Co-operation and Development (OECD) is an intergovernmental economic organisation with 35 member countries, founded in 1961 to stimulate economic progress and world trade.
- It provides a platform to compare policy experiences, seeking answers to common problems, identify good practices and coordinate domestic and international policies of its members.

India's initiatives

- To counter a surge in cheap imports of steel, which was hurting local steel makers, India had taken measures including anti-dumping duty, safeguard duty and Minimum Import Price.
- India had also brought out an order banning the manufacture and distribution of stainless steel products that do not comply with the the 'Bureau of Indian Standards' (BIS) mark.

Anti-dumping duty: is a tariff that a domestic government imposes on foreign imports that it believes are priced below fair market value.

Dumping is a process where a company exports a product at a price lower than the price it normally charges on its own home

market. To protect domestic players and markets, countries impose duties on products they believe are being dumped in their national market.

34. Incredible India Tourism Investment Summit (IITIS) - 2016

"Incredible India Tourism Investment Summit (IITIS) - 2016" is being organized by **the Ministry of Tourism in New Delhi's** Vigyan Bhawan from **September 21 to 23, 2016**. It is an initiative of the Ministry of Tourism, Government of India, **in association with Tourism Finance Corporation of India (TFCI)** and **Confederation of Indian Industry (CII)**. **IITIS is a platform for domestic and international investors to meet project owners from across Indian states and the private sector**.

- This summit will be **State Presentations encompassing all investible Properties**, Session on **Why Invest in India**, **MSME in tourism sector**, Panel discussions on core infrastructure for tourism, Session on Start-ups, digital India, Investing into Swadesh Darshan, PRASAD, MICE and Niche Tourism Products, B2B meetings and signing of MoUs.
- The Summit will have dedicated space for Seminars, Business to Business meetings and Round tables around focus themes. There will be participation from major stakeholders including States/UTs with their ready investible projects, Banks & Financial Institutions, Business Developers, Cruise liners, Domestic Investors, Entertainment Companies, Global Investors, Helicopter Services, Hoteliers, Infrastructure-Developers, International Associations, Restaurateurs, Spa and Yoga Centers, Tour and Travel Operators, Urban Developers, Venture Capitalist, Civic Amenity Providers.
- **The Confederation of Indian Industry and Tourism Finance Corporation of India Ltd are principal partners of this summit**. Four Knowledge Partners i.e. **Ernst & Young**, **KPMG**, **Yes Bank** and **Invest India** will assist States and UTs for identifying projects, Suggesting Tourism Policy updates and presenting these to the potential investors during the summit.

Highlights

- Participation from more than 27 Indian states
- Around 600 investable projects from across the country and from across various sectors of tourism
- Participation from 140 investors from 70 companies
- There will be 21 seminars across the two days with some leading industry leaders and covering states presentations and thematic sessions.
- B2B-B2G meetings pre-fixed online
- Event Road Shows done- USA, UAE, Thailand, Hong Kong, Shanghai, Singapore, Gujrat, Mumbai, Bhopal.

35. GST shuts down local IP firms

The whole country was delighted to receive the news of the **Goods and Services Tax (GST) Bill getting passed in the Rajya Sabha** recently. One aspect that the

reams of paper and hours of discussion around the GST regime seem to have **ignored is the area of Intellectual Property**. GST should help foster the **minuscule IP ecosystem in the country**. India has to produce world- class commercial and strategic IP. In the absence of such IP, **India becomes just a market and a cheap-labour destination.** India is dependent on foreign technology for excellence in sectors that are strategic, including in **defence, security, space programme, atomic energy** and the like.

GST vs VAT

- **Any business entity adding value to a product pays value added tax (VAT)**. Today, companies license the IP to a manufacturer or developer. Assume the revenue from licensing is about Rs. 150 lakh. In a state such as Maharashtra, VAT is 5 per cent which amounts to 7.5 lakh. Since no product is manufactured, no excise is applicable. No service tax is applicable either since no service is offered. In the GST regime, **the licence cost of indigenous IP will increase and at 20 per cent GST**, it would be Rs.30 lakh. In effect, GST will shut down indigenous IP companies.
- **The National Intellectual Property Rights Policy (NIPRP)** was released in May 2016 by the Department of Industrial Policy & Promotion.
- The objective in the Department's own words is to "Promote R&D through tax benefits available under various laws, through simplification of procedures for availing direct and indirect tax benefits."
- With April 2017 being the target date for the roll out of GST across the country, it is important that provisions are made for IP-generating entities.

The following can fit into this mandate:

- Exemption of GST on both purchase of tools or computers as well as on sale of IP by indigenous entities.
- Equipment or license purchased by a company recognised by the Department of Science and Industrial Research (DSIR) as a research company as per the Income Tax Act Section 80-IB (8A) and which are designed for use, and are used exclusively in research, education, instruction or investigation, and repair to be exempted from GST.
- Technology transfer or licensing of technology from universities, institutes and DSIR-recognised pure research firms, needs

exemption.

- The section of the I-T Act referred above allowed a 10-year tax break to non-service and companies that sell pure Intellectual Property.

Granting patents

- The latest Budget offered a welcome **flat 10 per cent as income tax on licensing any patented technology**. A delay in granting the patent allows for the date of filing to be taken into consideration for this provision. This should be persisted with.
- Reintroduction of the above-mentioned section along with a waiver of the **Minimum Alternate Tax (MAT)** fits in the said articulation.
- **When the section was introduced in 2002**, MAT was still applicable, which defeated the purpose of the provision. Based on the feedback from the R&D community, both the Secretary DSIR as well as the Niti Aayog have recommended an exemption from MAT for these entities.
- **The section was withdrawn in 2007**, though some companies will continue to enjoy the benefits till 2017. This provision has been considered by many as a profit-linked deduction. Such a view is incorrect.Building a sustainable organisation based on IP is tough. Chances of failure are high; the first field trials of a product can fail and iterative improvement till it succeeds can be time-consuming. This needs government support.
- Most countries that have GST have retained full exemption for IP-generating entities as in the case of Malaysia or have kept GST very low e.g. 6% in certain cases.

36. New schemes need approval of FM

In order to **ensure efficient management of government money**, the Finance Ministry has asked various ministries and departments to seek prior approval from it before initiating any new scheme. In an office memorandum on 'appraisal and approval of public funded scheme and projects', **Department of Expenditure** has mandated that for all new schemes a concept paper should be prepared while seeking in-principle approval, holding stakeholder consultations, conducting pilot studies, etc.

- For **projects or schemes involving cost of up to Rs 100 crore approval has to be sought** from the secretary of the administrative department. For project cost between Rs 100-500 crore, the Minister will have to accord approval.
- **For those schemes/projects between Rs 500-Rs 1,000 crore**, the projects have to be approved by the Minister in the administrative department and the Finance Minister. For those above Rs 1,000 crore, the clearance has to come from Cabinet.
- **The Expenditure Department said that over the years the Ministries have started operating small and multiple schemes** which spread resources too thinly to realise any meaningful outcomes.
- **This will, however, not apply to the project announcements made in any Budget speech**.
- In order to rationalise schemes, the government has brought down the number of central sector schemes to 300 and the number of centrally sponsored schemes to around 30.
- **The Finance Ministry has also asked the ministries and departments to merge, restructure or drop existing schemes** that have become redundant or ineffective with the passage of time.

37. Stability, continuity - URJIT PATEL AT RBI HELM

Urjit Patel will assume charge as the 24th governor of the Reserve Bank of India (RBI) this weekend, taking over from Raghuram Rajan who returns to academia after a three-year tenure with the central bank. During Rajan's tenure at the RBI, Patel worked rather closely with Rajan, who has added his voice in praise of Patel's capacities.

Beyond that, the market may know little about the policy measures that Patel may unfold. On the one hand, he has been the architect of the metamorphic transformation in the monetary policy framework that has made India officially an inflation-targeting economy. The report that brought this historic change is after all called the Urjit Patel Committee report. That signals stability, continuation and a building on the groundwork of the last few years under the leadership of Rajan.

But on the other hand, the vacancy that Patel fills was created following a controversy that was stirred up over these very policies, notably over the demand for lower interest rates at a time inflation remains a concern. In a strange way, Patel is the architect of a lot of the change that makes these years historic for the RBI but it is some these very changes that led to conditions under which Rajan was made not comfortable enough to continue as governor.

At the very least, the RBI will be in for some kind of culture change because unlike Rajan, the incoming governor is reported to be a man of few words and it will not be surprising if the market and the media once again get a taste of the classic (old-world?) adage that a "central bank governor is to be seen, not heard."

Some thinking of Patel can be drawn from his published papers or research articles. The thinking is probably only mildly indicative and may or may not hold as he takes charge at the RBI. But it does shine some light on ideas and perspectives that will be somewhere on the horizon during his tenure. The reading does open up some exciting new areas that go against conventional wisdom and have been followed in India as the norm, what Patel called "a longstanding feature of the Indian economic landscape", like the instrument of the

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Statutory Liquidity Ratio (SLR).

In a co-authored paper titled "Fiscal Rules in India: Are They Effective?" (with Willem H Buiter) published six years ago by the National Bureau of Economic Research, Massachusetts, Patel spoke on political trends and pressures seen in India. He wrote: "It is often said that the main reason for India's historic price stability relative to its peer group of developing countries has been the polity's intolerance of high inflation (hence, a conservative monetary stance for the most part)."

With regard to fiscal policy, the paper said, "it would seem that the preference is for high expenditure and low taxation. Political opportunism in India as elsewhere calls for postponement of expenditure cuts or tax increases and the prompt spending of revenue windfalls – there is always the chance that the political cost of painful fiscal retrenchment will be borne by the opposition, when its turn in office comes around."

In a more recent co-writing (published January 2016) as part of the
"RBI Working Paper" series, titled "Challenges of Effective Monetary Policy in Emerging Economies" (with Amartya Lahiri), Patel discussed the strains between the monetary authority (the RBI) and the fiscal authority (the government).

He wrote: "The question is who blinks between a monetary authority that is adhering to price stability…and the fiscal authority, who…is not keen to correct an unsustainable primary fiscal deficit through spending cuts or tax increases and prefers to have the monetary authority directly monetise (accommodate) the public debt."

Monetise the debts

The inevitable outcome is that the central bank will monetise the debts and deficits. This is called fiscal domination over monetary policy, a theme that should be playing high up as the new governor considers his policy moves and the road ahead.

Here, Patel puts the spotlight on an age old policy instrument, the SLR, which earmarks a fraction of liabilities of banks for investment in Central and state government securities. He went on to argue that policy-induced frictions are primarily on account of the SLR, which from early days, has had a prime place in the RBI tool kit and currently stands at 21%. Though the required ratio is 21%, many banks have higher than this prescribed minimum, locking in their funds at lower than market rates.

Patel argues in the paper that SLR actually blocks transmission of monetary policy. It is instructive as well as interesting to quote him in this regard: "...when the SLR constraint is binding, the monetary transmission mechanism becomes so scrambled that it can end up inverting the effects of changes in the policy rate on the key interest rate spreads – raising the policy rate could reduce lending spreads while lowering rates could raise the lending spread."

He then argues that in such circumstances, changing the SLR level itself is more likely to yield conventional effects of monetary policy, that is, a fall in SLR would act like a monetary expansion while an increase in SLR would be a monetary contraction.

If Patel tweaks the SLR, he will free up funds for lending but at the same time, the banks so liberated should be held to account for their performance and a better management of their portfolios. Of course, he will have to play his options amid a host of challenges. Inflation management, non-performing asset management, currency management and concerns on financial inclusion are among the top ones that will stare him in the early days.

38. Industry 4.0 - A briefing

Why in news?

'Industry 4.0' was the theme this year at the annual meeting of business and government leaders in Davos (World Economic Forum).

Both the United Nations Development Programme and the World Bank, in their annual global development reports, have focused on the impact that automation, in both manufacturing and services, is likely to have on jobs.

Meanwhile, the International Labour Organization (ILO) is completing its flagship project to understand what technology is doing to the 'future of work'.

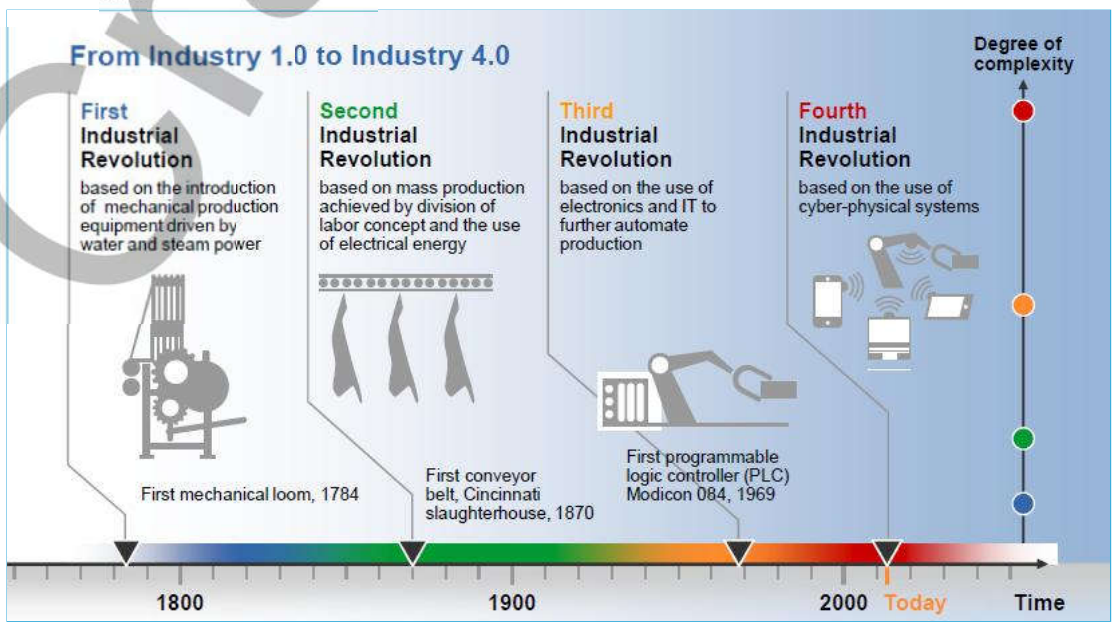
It is a collective term embracing a number of contemporary automation, data exchange and manufacturing technologies.
It is a value chain organization' which draws together **Cyber-Physical Systems, the Internet of Things and the Internet of Services.**

The term "Industrie 4.0" originates from a project in the high-tech strategy of the German government, which promotes the computerization of manufacturing. The term was first used in 2011 at the Hannover Fair.

Industry 4.0 facilitates the vision and execution of a "**Smart Factory**". Within the modular structured Smart Factories of Industry 4.0, cyber-physical systems monitor physical processes, create a virtual copy of the physical world and make decentralized decisions.

Over the Internet of Things, cyber-physical systems communicate and cooperate with each other and with humans in real time.

Via the Internet of Services, both internal and cross-organizational services are offered and utilized by participants of the value chain.



The first industrial revolution from the end of the 18th century saw the birth of **manufacturing using machines powered by water and steam.**

The second came at the beginning of the 20th century, when mass production lines were powered by electric energy.

The third came with the change from analogue and mechanical production to electronic and digital technology from the 1970s onwards.

The fourth industrial revolution, or Industry 4.0, uses s **mart technology and real-time data to increase productivity and reduce costs.**

8 Key themes of 2016 World Economic Forum

The rise of the robots, Terrorism and the migration crisis, Market turmoil, Climate change, Europe, Inequality, Medicine, and Cybercrime and civil liberties.

Key issues deliberated 2016 World Economic Forum

How the Fourth Industrial Revolution will transform the healthcare sector, financial services, mobile communications, education and many other industries.

How mankind can leverage technology in ways to promote growth for the poor as well as the rich.

How breakthroughs in science and technology help solve international public health crises and complex global issues like climate change.

How public- and private-sector leaders can better prepare their communities and constituencies for our rapidly changing global security and geopolitical landscape.

What does the latest global security picture truly look like in 2016 and beyond? And how can new technologies keep people safe from cyber attacks?

How government's role in this complex, fast-moving world should be redefined to promote transparency in economic, social and environmental reform.

Target of "Make in India" is to increase manufacturing GDP contribution to 25% and become the "smart factory of the world'.

- Indian manufacturing Industry has reached to an inflection point providing the best opportunity to synchronize with Industry 4.0.
- India is taking a building blocks approach to its industrialization, focusing on infrastructure and the development of specific industry sectors. But some observers wonder if smart manufacturing offers India and other emerging nations a chance to leapfrog the West by investing in the latest generation of production capacity.
- Manufacturing Industry with smart factory concept is adopting Internet 4.0 (also called as Industrial Internet) to bring together the

advances of two transformative revolutions: the myriad machines, facilities, fleets and networks that arose from the Industrial Revolution, and the more recent powerful advances in computing, information and communication systems. Enterprises are increasingly looking forward to leveraging the global Innovation capacities available to enable the Industry 4.0 vision.

- ER&D Enterprises from India has strengthened the India advantage for complementing Industry 4.0 vision through developing Innovative solutions on Software led scalable resources for Cyber –Physical system to help the global organizations bringing innovative products and solutions and cutting down the cycle time.
- With 58-60 million people (only 12% of working population) employed in the Indian manufacturing industry, representing about 12 percent of the country's overall working population, the Indian manufacturing landscape needs to undergo a massive revamp in order to remain competitive in terms of investment, infrastructure, and technology.
- Indian government invented a strategic initiative called 'Make in India' to reform the manufacturing industry in the country. Under this gov has laid out policy initiatives aspiring to expand economy's manufacturing footprint significantly. Some of the strategic goals of this programs are: enhancing job opportunities; minimizing imports ; expanding exports and creating a conducive environment for technological evolution
- India will have to take part in the development of a globalized manufacturing environment, and the Make in India initiative is a solid kick-off in this direction.
- Indian manufacturing industry ~ 16% of country's GDP (as compared to China's 30%) & ~2% of global manufacturing output.
- 250 MN people are expected to enter the workforce in next 15 years; which has mandated the adoption of Industry 4.0 to be an inevitable necessity for the Indian economy in realizing its plans of elevating its manufacturing industry to global levels of excellence.
- Four functional pillar of Industry 4.0 are: Big Data, Internet of Things, Internet of Services, and Integrated Industries; converging into three main aspects: Technology, Collaborations and Processes ultimately mapping suppliers, OEM's and production houses together.

How can Industry 4.0 be helpful in Make in India?.

- Connected factories
  – connecting Indian manufacturing enterprise back to principals for control and benchmarking against global standards
- Digital Supply Chain – Integrating and leveraging the Indian manufacturing SME sector through digital integration
- Flexible manufacturing – For facing mass customization challenges from global customers
- Better quality – To meet global quality benchmarks through big data and information infrastructure
- Collaborative Engineering – to ramp up India's knowledge data base and achieve steeper learning curves
- Skill India – Leveraging India's skilled technical workforce to become smart and connected
- A BCG study says that by 2025, manufacturing costs are anticipated to be 18%-33% lower in economies where robotics and automation are leveraged. (Robot in operation is $4 per/hr as compared to $25/ hr for human)
- Well –trained and skilled labor is Backbone of Make in India and thus Industry 4.0.
- India through it's Make in India strategy was a premier partner in HANNOVER MESSE where Industry 4.0 has been showcased in practical to world. Where around 400 companies showcased their good and services announcing India's intent towards Industries 4.0 using Make in India as a platform.
- Indian companies are signing MOUs with German counterparts to collaborate further on Industry 4.0.
- For India: Industry 4.0 is a meeting of real and virtual worlds in manufacturing and involves the full integration of manufacturing technologies and systems to make a 'smart factory'.
- According to a HIS Technology report
  , industrial automation accounted for more than half of the installed base for all Internet-connected devices in 2012. By 2025, the sector will account for nearly three-fourths of all connected devices; a CAGR of 36.3 per cent.

Grow its fledgling Internet of Things (IoT) industry:

- Without seamless data integration there can be no Industry 4.0 – its future is in the growth of the Internet of Things market.
- IoT is needed to connect all the heterogeneous devices in the industrial automation system and network them together to create the Smart Factory.
- India IOT industry, though nascent, is an important part of the Digital India imperative to transform India into a digital, knowledge-driven economy.
- India's IOT market: US $15 bn in 2020, less than 10% of global opportunity of $1.9 trillion.
- Indian companies has started recognizing and started adopting IoT for making smart factories.
- Need to invest in skill & technology development as well as in R&D to develop local market.

Develop a robust data security environment:

- While the Internet of Things forms the backbone of Industry 4.0, without a robust security infrastructure there can be no practical application of the Smart Factory.
- Steps to build more conducive environment: more stringent government regulations for data protection and security and a

developed Security Services industry.

Skill Development

- Need to make progress in areas as cognitive robotics, advanced automation, Industrial ICT, automation bionics and other streams of qualitative skills.
- Skill India initiative another step for Industry 4.0 and is closely link with success of it.
- In last 15-20 years Indian manufacturing industry invested immensely in manufacturing automation technologies.
- Adoption of automation technologies and best practices enabled India narrow the capabilities gap significantly and made India stand closer to advance manufacturing economy.

Arguments against INDUSTRY 4.0

Oxfam has released a report pointing out that, with a global trend towards increasing inequality since the 1980s, now only 62 people own as much wealth as the poorer half of the human population.

Inequality, technology and the need for jobs are three potent forces that are combining to shape economies and societies.

Industry 4.0 is creating new forms of enterprises. It will require different patterns of skills. It will create further tensions between owners of capital (and with it, technology and machines) and workers.

A study released WEF see as many as 7.1 million jobs being lost in 15 developed and emerging economies, mostly in white-collar office and administrative jobs, while 2.1 million jobs will be created in computer engineering and mathematics.

Women will be in the firing line of the changes, one of the reasons being that they are underrepresented in the technical fields where new positions are to be created.

SCIENCE AND TECHNOLOGY

1. A new handheld device to detect melamine in milk

Researchers at the Indian Institute of Science (IISc), Bangalore have developed a handheld melamine detector. With this detecting melamine in milk is expected to become easy, quick and inexpensive.

Technique of its detection:

In this method, leaf extract of a commonly seen weed parthenium along with silver nitrate is used for detecting the presence of melamine in milk.

What is melamine?

Usage of melamine:

Melamine is widely used in plastics, adhesives, countertops, dishware, whiteboards.

Why is melamine added into milk?

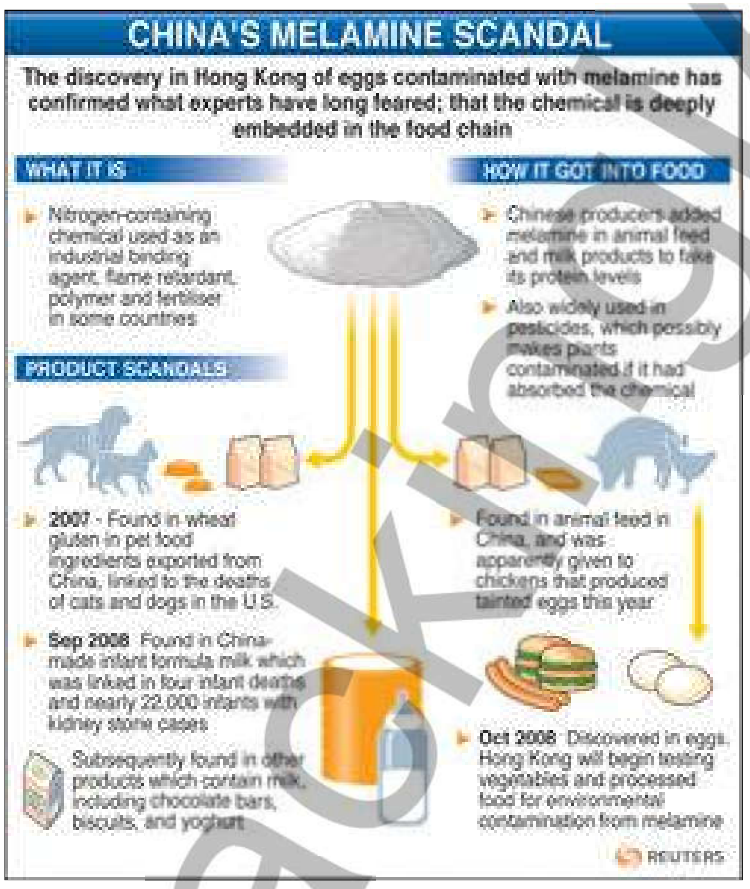
Minimum permissible level of Melamine content:

Is an addition of melamine into food approved?

Health effects of melamine consumptions in humans:

While there are no direct human studies on the effect of melamine data from animal studies can be used to predict adverse health effects.

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China on 25 September 2016 officially launched the **Five-hundred-meter Aperture Spherical Telescope** (FAST) in a mountainous region of Guizhou province.

The telescope was launched to hunt for extraterrestrial life and explore space.

Highlights

• The FAST is a radio telescope located in the Dawodang depression, a natural basin in Pingtang County, Guizhou Province, southwest China.

• It consists of a fixed 500 m dish constructed in a natural depression in the landscape.

• It is the **world's largest filled aperture (single dish) radio telescope**.

• It is the second largest radio telescope after the Russian RATAN-600.

• The final cost of the project is 180 million US dollars.

• Construction on the FAST project began in 2011 and was completed in July 2016.

- Prior to melamine detection, the milk is processed to remove fat and proteins as they tend to interfere with detection.
- With this technique, the presence of melamine in milk can be detected at room temperature within a few seconds through a change in colour.
- The change in colour depends on the amount of melamine present and, therefore, the extent of its interference with the synthesis of silver nanoparticles. The colour change can be directly observed by the naked eye and also recorded by spectral change.
- The silver nanoparticles are reddish yellow in the absence of melamine, while it becomes nearly colourless when melamine is present. Light absorption at 414 nm wavelength is a signature of silver nanopartciles. But when melamine is present the absorption of light is reduced as nanoparticle formation decreases.
- Melamine is an organic base chemical most commonly found in the form of white crystals rich in nitrogen.

• The chief scientist of the project is Nan Rendong.

• It has a fixed primary reflector located in a natural hollow in the landscape, focusing radio waves on a receiver suspended 140 m above it.

• The reflector is made of perforated aluminium panels supported by a mesh of steel cables hanging from the rim.

• Its surface is made of 4450 triangular panels, 11 m on a side, in the form of a geodesic dome.

• It is capable of pointing anywhere within ±40° from the zenith.

Mitochondrial Donation

Mitochondrial donation is a special form of in vitro fertilization in which the future baby's mitochondrial DNA comes from a third party.

· The two most common techniques in mitochondrial donation are:-

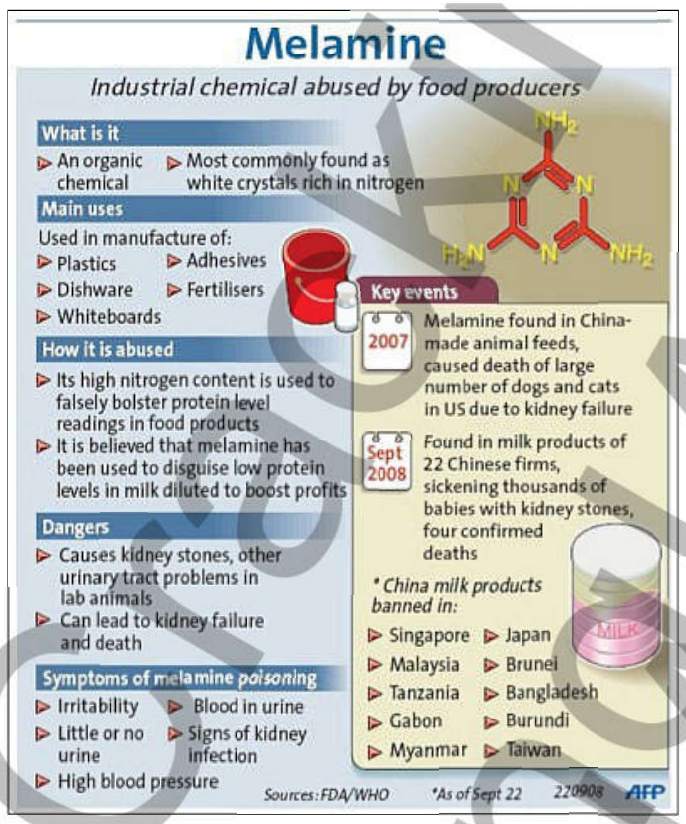
Using its Hubble Space Telescope, NASA has discovered more evidence that water erupts from beneath the surface of Europa, one of the many moons of Jupiter.

Europa:

Plumes on Europa:

Note:

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Indian Space Research Organization (ISRO) has successfully launched eight satellites in two different orbits in a single mission.

SCATSAT-1 satellite:

Pratham:

PISAT:

Pathfinder-1:

NLS-19:

Three smaller payloads from Algeria:

In view of the rising number of cases and reported deaths due to of Scrub Typhus in Himachal Pradesh, Shri J P Nadda, Union Minister of Health and Family Welfare had sought a detailed report from the State Government.

- The addition of melamine increases the nitrogen content of the milk and therefore its apparent protein content.
- Melamine content of more than 1 ppm in infant formula and more than 2.5 ppm in other foods should be viewed with suspicion of adulteration.
- Addition of melamine into food is not approved by the FAO/WHO Codex Alimentarius (food standard commission), or by any national authorities.
- Melamine alone causes bladder stones in animal tests. When combined with cyanuric acid, which may also be present in melamine powder, melamine can form crystals that can give rise to kidney stones.
- These small crystals can also block the small tubes in the kidney potentially stopping the production of urine, causing kidney failure and, in some cases, death.
- Melamine has also been shown to have carcinogenic effects in animals in certain circumstances, but there is insufficient evidence to make a judgment on carcinogenic risk in humans.

2. China unveils 500 meter Aperture Spherical Telescope in search for extraterrestrial life

3. World's first baby born from new procedure using DNA of three people

The world's first baby was born from a new procedure that combines the DNA of three people. The baby was born in Mexico.

The baby was born using the new and controversial technology, called **mitochondrial donation**, which incorporates DNA from three persons.

The five-month-old boy has the usual DNA from his parents, and a small amount of genetic code from a donor.

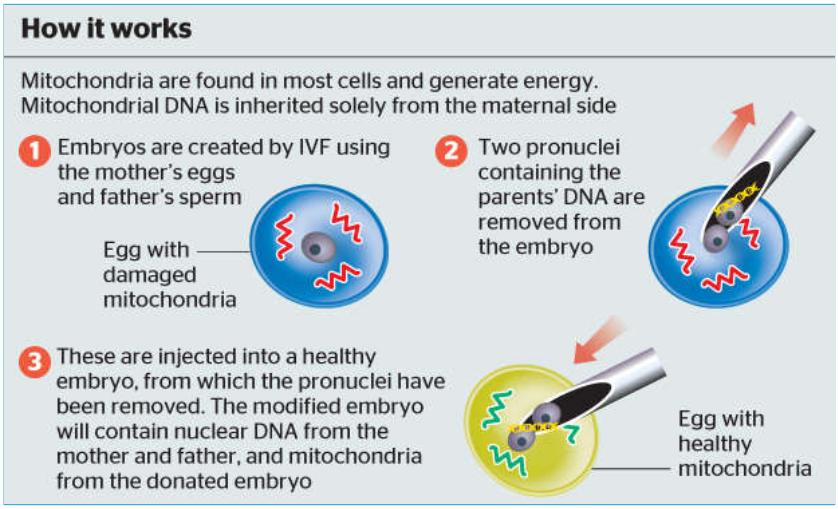
The baby's mother carried genes for the fatal Leigh Syndrome, which harms the developing nervous system.

The faults affect the DNA in mitochondria, the tiny battery-like structures that provide cells with energy, and are passed down from mother to child.

A team of doctors, led by John Zhang, decided to attempt the controversial procedure of mitochondrial transfer in the hope that it would give the couple a healthy child.

The doctors took the nucleus from one of the woman's eggs and inserted it into a healthy donor's egg that had had its own nucleus removed. Then, the egg was fertilized with the husband's sperm.

The team created five embryos but only one developed normally. This was implanted into the mother and the baby was born nine months later.



On August 28, The Indian Space Research Organisation (ISRO) conducted a 5-minute flight to test a scramjet engine, which takes atmospheric oxygen to burn engine fuel, developed at the Satish Dhawan Space Centre (SDSC), Sriharikota.

While many countries like Japan, China, Russia and Europe are in the initial or testing phase of supersonic combustor technology, NASA demonstrated scramjet propulsion in 2004. ISRO had previously carried out a ground test of a scramjet

Pronuclear transfer

Maternal spindle transfer

Due to the uncharted nature of producing a child with 3 sources of DNA, this subject is currently quite contentious in the field of bioethics, as is the case with many other gene therapies.

The treatment was legalized in the UK in 2015 but so far no other country has introduced laws to permit the technique.

In February 2016, a report was issued by the U.S. Food and Drug administration declaring that further research into mitochondrial donation is ethically permissible.

4. Proof of water plumes on Jupiter's moon

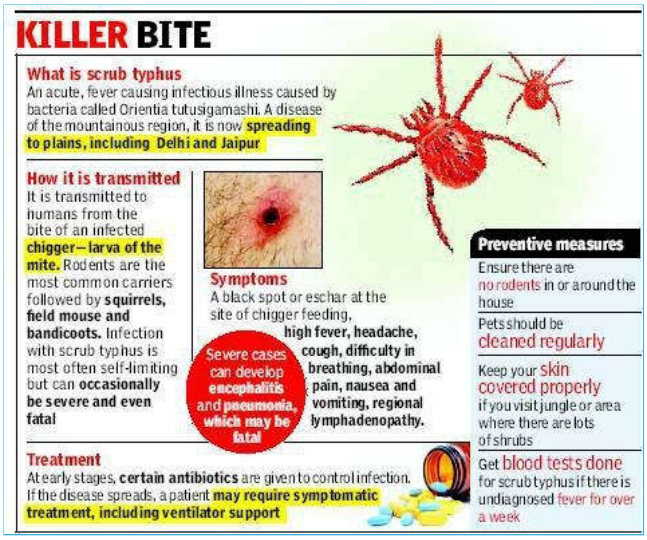
- Scientists estimate that the plumes rise about 125 miles (200 km) before, presumably, raining material back down onto Europa's surface.
- The findings might make it easier to investigate whether life exists in the warm, salty ocean believed to be deep beneath the world's icy surface.
- If the findings are confirmed, Europa would be the second moon in the solar system known to have water vapor plumes.
- Jupiter has 67 known moons. Europa is the sixth-closest to the planet and about 1,900 miles (3,100 km) in diameter, slightly smaller than Earth's moon.
- The plumes are estimated to rise about 125 miles (200 kilometers) before, presumably, raining material back down onto Europa's surface.
- Europa has a huge global ocean that contains twice water than Earth's oceans, which is protected by a layer of extremely cold and hard ice of unknown thickness.
- The plumes provide a tantalizing opportunity to gather samples originating from under the surface without having to land or drill through the ice.
- In 2012, Hubble detected signatures of water vapor erupting from Europa's frigid south polar region and reaching more than 100 miles (160 km) into space.
- In 2005, NASA's Cassini orbiter detected jets of water vapor and dust spewing off the surface of Saturn's moon Enceladus.

5. PSLV-C35 lifts off successfully

- **launched with the PSLV C35**These satellites were from the first launch pad of the Satish Dhawan Space Centre, Sriharikotta.
- Among the eight satellites launched, three satellites were from India, three from Algeria and one each from Canada and United States.
- SCATSAT-1 satellite of India weighing 371 kg was the primary payload and remaining other seven customer satellites were secondary payloads (5 foreign and 2 domestic satellite) weighing 304 kg in total.
- It is weather satellite that was placed in polar sun synchronous orbit of 730 kilometer height.

- It will provide weather forecasting services meant for ocean and weather forecasts, cyclone detection and tracking through wind-vector products. It will have life of five years.
- It is a 10-kg satellite developed by students from Indian Institute of Technology (IIT), Bombay.
- It will be used to study the total electron count in space with a resolution of 1km x 1km location grid.
- It is a 5.25-kg satellite made by students of Bengaluru's PES University.
- It will take pictures of earth for remote sensing applications.
- It is US satellite owned by BlackSky.
- It weighs 44 kg and has a high resolution imaging microsatellite.
- It is Canadian satellite developed by University of Toronto.
- It is a nano-satellite weighing 8 kg.
- It will be used for experiments for reducing space debris.
- Alsat-1B 103 kg, Alsat-2B 110 kg and Alsat Nano 7 kg.
- They are meant for earth observation, remote sensing and technology demonstration.

6. Health Ministry receives detailed report on Scrub Typhus from HP Govt



- The Union government has decided to send an expert committee to the State on its request.
- It is also very closely monitoring the situation and is ready to provide all logistical and technical support to the Himachal Government to strengthen their capacity to effectively manage the situation.
- Scrub Typhus is an acute illness caused by a bacterium Orintia tsutsugamushi, which is transmitted by the bite of an infected mite larva present in the soil having scrub vegetation.
- Himachal is an endemic region as it has a large scrub vegetation.

7. India test fires Scramjet engine, joins elite club of nations

engine in 2006.

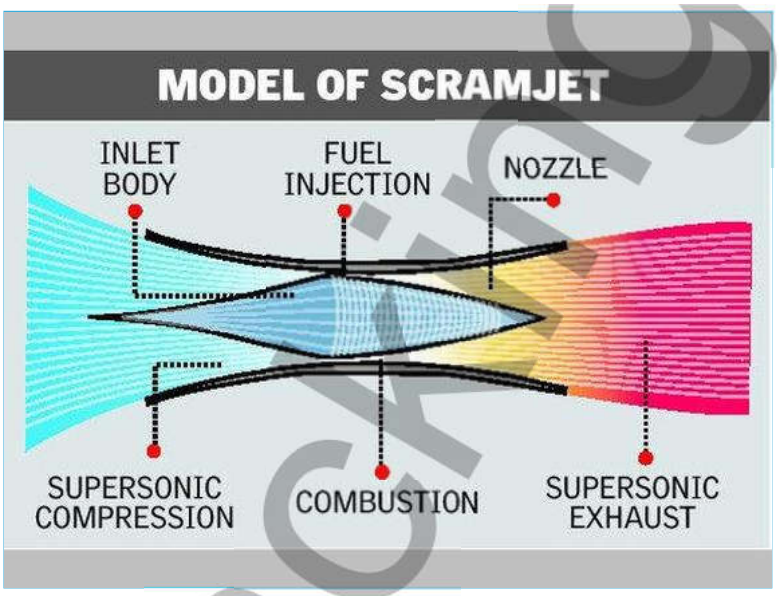
Advantages of Scramjet Engine

How does Scramjet Engine Works?

Unlike a typical jet engine, such as a turbojet, a scramjet does not use rotating, fan-like components to compress the air; rather, the achievable speed of the aircraft moving through the atmosphere causes the air to compress within the nozzle. In fact, no moving parts are needed in a scramjet, which greatly simplifies both the design and operation of the engine. In comparison, typical turbojet engines require inlet fans, multiple stages of rotating compressor fans, and multiple rotating turbine stages, all of which add weight, complexity, and a greater number of failure points to the engine. It is this simplicity that allows scramjets to operate at such high velocities, as the conditions encountered in hypersonic flight severely hamper the operation of conventional turbo machinery.Scramjet engines do not decelerate the flow of incoming air to subsonic velocities. A scramjet combustor is supersonic: the inlet decelerates the flow to a lower Mach number for combustion, after which it is accelerated to an even higher Mach number through the nozzle. By limiting the amount of deceleration, temperatures within the engine are kept at a tolerable level, from both a material and combustive standpoint. Even so, current scramjet technology requires the use of high-energy fuels and active cooling schemes to maintain sustained operation, often using hydrogen and regenerative cooling, a cooling technique used in space rockets.

Navigation System

A navigation system is an electronic system that makes use of either radio waves or satellite signals or combination of both to help in navigating by streamlining the correct geographical position of a place. However, as the name suggest the use of navigation system is not limited to just identification of a route. It goes further and includes locating a place, distance calculation, speed monitoring, traffic



signalling etc.

Generally navigation systems makes use of two devices, one could be located within the carrier or on board a vessel/vehicle or could be located some-place else, connected with the other through medium of radio signals or satellite communication or combination of either of these.

In the common parlance the navigation system is commonly known as GPS or the Global Positioning System. However it is not synonymous to it, as GPS which is a U.S. based navigation system accessible from around the corner is a part of Global Navigation Satellite System, but there could be specific navigation system designed for identified

- The engine will eventually be used to power its Reusable Launch Vehicle (RLV) at hypersonic speed.
- During the experiment in SDSC, the scramjet engine, affixed to a two-stage RH-560 sounding rocket developed in the 1970s, was ignited at an altitude of 20 km and allowed to burn fuel for five seconds before the rocket falls into the Bay of Bengal.
- The engine successfully test-fired its futuristic scramjet rocket engine using oxygen from the atmosphere that could cut the cost of the launches several fold and help in ISRO's bid to design advanced air breathing engines.
- The mission is a modest yet important milestone in ISRO's bid to design and develop advanced air breathing engines, including ones for its future space transport system.
- After a smooth countdown of 12 hours, the solid rocket-booster Advanced Technology Vehicle (ATV) carrying the scramjet engines lifted off at 6 a.m. and ending a 300 second-flight, touched down in the Bay of Bengal, about 320 km from Sriharikota.
- The important flight events—burn out of booster rocket stage, ignition of second stage solid rocket, functioning of scramjet engines for 5 seconds followed by burn out of the second stage—took place exactly as planned.
- The vehicle was successfully tracked during its flight from the ground stations at Sriharikota.
- It is the maiden short duration experimental test of Scramjet engine with a hypersonic flight at Mach 6, and the ATV, an advanced sounding rocket carrying the engines engines, weighed 3277 kg at lift-off.
- With this flight, critical technologies such as ignition of air breathing engines at supersonic speed, holding the flame at supersonic speed, air intake mechanism and fuel injection systems have been successfully demonstrated.
- Scramjet engine designed by ISRO uses hydrogen as fuel and the oxygen from the atmospheric air as the oxidiser. Usually rocket engines carry both fuel and oxidiser on board for combustion, but these newly developed engines with air-breathing propulsion system will use oxygen from the atmosphere thereby reducing the lift-off mass of the vehicle.
- It will also help in bring down launch costs substantially.
- ATV is a two-stage spin stabilised launcher with identical solid motors (based on Rohini RH560 sounding rocket) as the first as well as the second stage (booster and sustainer).
- The twin scramjet engines were mounted on the back of the second stage. Once the second stage reached the desired conditions for engine start-up, necessary actions were initiated to ignite the Scramjet engines and they functioned for about 5 seconds.
- This ATV flight operations were based on a pre-programmed sequence. The ignition of the engine, the building up of pressure and the duration for which the engine can sustain the flame was tested and monitored
- It does not have to carry its own oxygen, rather Scramjet picks oxygen from the atmosphere.
- Since, there are no rotating parts it is easier to manufacture than a jet engine.
- Scramjet has a higher specific impulse (change in momentum per unit of propellant expelled) than a conventional engine. Specific impulse is a way to describe the efficiency of rocket and jet engines. It represents the impulse (change in momentum) per unit amount of propellant used and its units are in seconds. Scramjets have specific impulse of 1,000 to 4,000 seconds, whereas rockets have about 450 seconds. The higher the specific impulse the greater the push generated by the same amount of fuel
- Since a scramjet carries no oxidizer tanks, it can be much lighter, faster, and ultimately cheaper than conventional rocket technology.
- Its only exhaust is water, released from combining hydrogen, the fuel, with oxygen, the oxidizer, and it needn't discard massive empty tanks as conventional rocket do.

8. Indian Regional Navigation Satellite System (IRNSS)

usages like for air traffic control and monitoring too and areas.

India's Navigation System

In the recent times, with increasing technological initiatives and development, India too has come up and deployed its own navigation systems. This includes GAGAN (GPS Aided Geo Augmented Navigation) system, safety navigation for the railways and the IRNSS that

is Indian Regional Navigation Satellite System also called NAVIC (Navigation with Indian Constellation), the newest member of Global Navigation Satellite Systems. With these systems India seeks to reap the benefits of seamless navigation for both civil and authorised purposes over air, land, inland and maritime. With the given triad India has joined the elite club of few countries which have operational navigations systems of their own.

The GAGAN project deployed for the Indian Airspace, ensures the safety of the civil aviation in India through additional accuracy, availability, and integrity necessary for all phases of flight, from departure, en-route to landing, to all suitably equipped aircraft and qualified airports within the GAGAN service volume. A joint effort of AAI and ISRO, GAGAN primarily provides an all-round air traffic management system along with other additional services. GAGAN works in consonance with other international SBAS systems like US-WAAS, European EGNOS, and Japanese MSAS etc. Its operation extends from Africa to Australia and has expansion capability for seamless navigation services across the region.

Of these, IRNSS is the most comprehensive navigation system by far put in place by India. The other countries with such navigation system includes USA's GPS, Russia's GLONASS, Europe's GALILEO and China's BeiDou. The entire system will become functional by June 2016, once India launches all the satellite payloads of IRNSS and position it to the required co-ordinate.

Evolution & Objective

For long India, like many other countries, had been dependent on the services that was being rendered by the foreign navigation systems. The usage and availability of satellite data depended largely upon how good a relations were maintained with said countries.

This technological dependency brought with it the grave vulnerability especially in the case of hostile situations. The immediate reason suggested by many, for India to initiate an indigenous navigation capabilities was Kargil War in 1999, when USA denied India access to vital satellite based information. Though the claim never substantiated it clearly highlighted the gravity of having an indigenously controlled satellite system in a tight-knit geo polity. However, officially the programme got government sanction only by 2006.

Secondly, the availability so far of the satellite data was without any contractual services obligation that gave an easy escape for such service provider to withdraw their services at any point of time.

Thirdly, the accuracy was a major issue. The data supplied lacked precision which was a major hindrance considering topography and varied geographical unit that existed in India.

All these issues brought up major challenges for both defence and civilian administration that were to be resolved deftly. ISRO commenced the project with the announcement that installation will be completed at the rate of one satellite per year on board PSLV's to provide navigation, position and timing services.

Technical Details

The IRNSS consists of three elements Space, Ground and End User. It's space component consists of 7 satellites, 3 in geostationary orbit (GEO) at 32.5° East, 83° East, and 131.5° East longitude and 4 in geosynchronous orbit (GSO) cross the equator at 55° East and two at 111.75° East for accurate real time positioning and timing. The satellites shall be placed at an altitude of 36000 km above earth's surface.

The ground station component of IRNSS consists of Master Control Centre that will run navigational software, eight reference stations and Indian Land Uplink Station. They together shall work upon tracking satellite orbits, collecting data and updating satellite navigation. With this infrastructure India seeks to provide the accuracy of +20 metres in navigation. The end user unit shall contain of antennas and receiver-processors.

The system has been designed in a manner to provide 'real time' positioning, navigation and timing covering India as well as region extending up to 1500 kms from its boundary, which is its primary service area. ISRO further clarifies that the project will have and Extended Service Area that lies between primary service area and area enclosed by the rectangle from Latitude 30 deg South to 50 deg North, Longitude 30 deg East to 130 deg East.

Utilities of this project

The navigation system has two categories of services provided. One is the Standard Positioning System (SPS) available to all the users based in India and the other will be Restricted Services, which are encrypted service available exclusively for the authorised users.

Science & Technology plays decisive role in building military strength of a country. In terms of Military Application, the project will be a force multiplier for the Indian Defence Unit. The wide spectrum of utility it serves from target fixing, missile and weapon delivery, avoiding civilian causalities, unit location and direction, vision clarity in bad weather etc. will enhance the capacity of defence both war and peace time.

As provided by ISRO few of the stated purposes include Terrestrial, Aerial and Marine Navigation, Disaster Management, Vehicle tracking and fleet management, Integration with mobile phones, Precise Timing, Mapping and Geodetic data capture, Terrestrial navigation aid for hikers and travellers and Visual and voice navigation for drivers. Government has recently marked 170 areas where the services of the system can be deployed.

Further with an extensive coverage, one of the stated future use of the project includes sharing of the project with the SAARC nations. This will help in integrating the regional navigation system further and a diplomatic goodwill gesture from India towards countries of the region.

9. Cissampelos pariera (Cipa)

India's largest pharmaceutical company Sun Pharma has signed deal with International Centre for Genetic Engineering and Biotechnology (ICGEB) for clinical development **Cissampelos pariera (Cipa)**, India's first vaccine (drug) for the treatment of dengue.

American researchers have developed a mechanism to convert greenhouse gas carbon dioxide (CO_2) into carbon monoxide (CO) that

10. Scientists developed mechanism to recycle CO2 into usable fuel

can be recycled into usable fuel.

The mechanism is based on the photosynthesis process that trees uses to convert CO_2 into sugars.

It was developed by US Department of Energy's Argonne National Laboratory and the University of Illinois at Chicago.

The study, "Nanostructured transition metal dichalcogenide electrocatalysts for CO_2 reduction in ionic liquid," was published in Science.

Mechanism

Although the reaction to transform carbon dioxide into carbon monoxide (CO) is different from anything found in nature, it requires the same basic inputs as photosynthesis.

Difference between scientific conversion and conversion in plants

Scientific Conversion	Conversion in Plants
• The researchers used a metal compound called tungsten diselenide, which was fashioned into nanosized flakes to maximize the surface area and to expose its reactive edges. • Here the ingredients were the same, but the product is different.	• To convert carbon dioxide from the atmosphere into a sugar, plants use an organic catalyst called an enzyme. • In photosynthesis, trees need energy from light, water and carbon dioxide in order to make their fuel.

The setup for the reaction is almost similar to nature in this case that the research team was able to construct an "artificial leaf" that could complete the entire three-step reaction pathway.

• **First step:** Incoming photons -- packets of light – are converted to pairs of negatively-charged electrons and corresponding positively-charged "holes" that then separate from each other.

• **Second step:** The holes react with water molecules, creating protons and oxygen molecules.

• **Third step:** The protons, electrons and carbon dioxide all react together to create carbon monoxide and water.

Although carbon monoxide is also a greenhouse gas, it is much more reactive than carbon dioxide and scientists already have ways of converting carbon monoxide into usable fuel, such as methanol.

11. Kendrapada sheep get rare status

The National Bureau of Animal Genetic Resources (NBAGR) in the first week of July 2016 formally accorded registered breed status on Kendrapara sheep.

As per the research of the Fisheries and Animal Resources Development (FARD) Department and researchers of Odisha Livestock Resources Development Society and College of Veterinary Science and Animal Husbandry of OUAT, the Kendrapara sheep carries a rare gene mutation during a year-long research.

The genetically rare status will help to boost conservation effort to protect the sheep. Earlier, Odisha's two buffalo and four cattle breeds were also registered at national level by NBAGR.

Kendrapara sheep

• Kendrapara sheep is an indigenous variety mainly found in Kendrapara, Cuttack, Jagatsinghpur, Bhadrak and Jajpur districts of Odisha.

• The Kendrapara breed was identified as the **second in India and sixth in the world to carry FecB mutation gene** responsible for multiple births such as twins and triplets.

• The research had recorded more than 80 per cent multiple births, 71 per cent twinning, nine per cent triplet and one per cent quadruplets in a period of 12 months.

• It is the 42nd sheep breed to have been registered in India.

• There are around 123000 Kendrapara sheep heads enumerated in Odisha.

• They are usually called **'deshi'** sheep.

• It is breed is of medium stature compact meat type docile animal with very coarse and little-curled hair as body coat.

• The average body weight of the sheep is 18 kg at one year of age and 28 kg at adult stage without any supplementation of feed except grazing.

12. China Completes Largest Radio Telescope In The World

China commissioned the world's largest radio telescope, a 4,450-panel reflector **as large as 30 football pitches**, which can help in better understanding the origin of the universe and **boost global hunt for extraterrestrial life**. Hundreds of astronomers and astronomy enthusiasts witnessed the official launch of the **500 meter Aperture Spherical Telescope's (FAST)** mission in a karst valley in Pingtang County in Guizhou Province.

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- **Work on the nearly 1.2 billion-yuan** (USD 180 million) project started in 2011, **17 years after it was proposed by Chinese astronomers**.
- The installation of the telescope's main structure — a 4,450-panel reflector as large as 30 football pitches was built at **unique valley in southwest China** where over 8,000 people have been evacuated as it requires quiet atmosphere.
- **FAST will require radio silence within a 5-kms radius**.
- Over 600 apartments have been built in two new settlements, about 10 kilometers to accommodate the displaced people.
- The telescope, which is **aimed at observing deep space** was stated to be most visible project of China's plans to transform into high-tech nation focussing on research in advanced science and technology moving away from cheap manufacturing.
- The project has the **potential to search for more strange objects to better understand the origin of the universe** and boost the global hunt for extraterrestrial life.
- The **radio telescope will be the global leader for the next 10 to 20 years**.

13. Intel unveils Project Alloy 'merged reality' headset

Intel on 16 August 2016 unveiled Project Alloy, an all-in-one virtual reality solution, in San Francisco, the USA.

Alloy delivers a set of new and immersive experiences thanks to Intel's RealSense technologies that are optimized for VR usages. It is a headset that uses the RealSense technology enabling people to use their hands to interact with elements of the virtual world. There is no need for cables to connect to the computer.

Key highlights of the Alloy

• The device can be operated without cords dangling from the VR headset connecting to the computer. The computing power is located in the Alloy Head-Mounted Device (HMD), which allows the user to experience VR untethered.

• The device uses **Intel RealSense** technology, which allows one to see elements from the real world. One can also use one's hands to interact with elements of the virtual world, merging realities.

• Alloy's merged reality is made possible by Intel RealSense cameras attached to the headset.

What is merged reality?

• The merged reality is more dynamic and natural, and allows people to do things that are now impossible.

• It digitises the real world and allows people to experience the virtual world without coming into conflict with the real world.

• One example is playing two musical instruments at the same time: a virtual piano with one hand and a cello with the other.

14. New species of pika found in Sikkim

A **new species of a small mammal in the rabbit family** has been discovered in the **higher altitudes of the Himalayas in Sikkim**, a study has claimed, saying **it is an important part of the ecosystem**. Identified as '**Ochotona sikimaria**' — the **new pika species** was discovered by the study based on genetic data and skull measurements. The study has been published in the journal 'Molecular Phylogenetics and Evolution'.

- These **members of the rabbit family look like tailless rats** and have been in the news in North America for their sensitivity to impacts of climate change, **like increasing temperature**, which has caused several of the populations in pika series go extinct.
- **Pikas are among the most fascinating mammalian species**. Unlike other mammalian species inhabiting such harsh environments, pikas do not hibernate. They **prepare for winter by collecting and storing hay piles for their winter food**.
- The **new species appears limited to Sikkim**. The **National Centre for Biological Sciences (NCBS)** team searched for Sikkim pika in other Himalayan regions including **Arunachal Pradesh**, **Central Nepal (Annapurna and Langtang)**, **Ladakh and Spiti** without success.
- Apart from genetic data, the **study also included morphological and ecological data of this species**. With its sisters as earlier, this pika was thought to be a subspecies of the Moupin pika.
- The **new NCBS research reveals that while it looks similar**, it is actually very distinct from the **Moupin pika from genetic and ecological perspective**. Such discordance between genetics and morphology has never been reported in pikas.
- **Pikas are ecosystem engineers**, and we must understand more about them so we can effectively protect them in the future, said Uma Ramakrishnan, whose laboratory at NCBS led the study.

15. MIT develops a spectroscopic technique to detect Martian life

Scientists at Massachusetts Institute of Technology (MIT) US have developed a spectroscopic technique that would help the 2020 Mars Rover to non-invasively identify sediments that are relatively unaltered, and maintain much of their original composition.

Such pristine samples will allow scientists to identify the signs of former life, if they existed, on the red planet.

The new technique is based on an improved way of interpreting the results of Raman spectroscopy, a common, non-destructive process used by geologists to identify the chemical composition of ancient rocks.

Raman spectroscopy

- It is a common, non-destructive process that geologists use to identify the chemical composition of ancient rocks.
- It is used to identify whether a sample contain carbonaceous matter.
- The presence of carbonaceous matter suggests that the sample may also have harbors sign of life.
- With the new improve spectroscopy techniques; researchers can now also estimate the ratio of hydrogen to carbon atoms in a sample.
- Hydrogen can be used as basis to determine if a certain sample is pristine or not.
- If the sample has low hydrogen, it is possible that it has experience more heating, altering its organic matter and losing hydrogen in a form of methane.
- Besides, the 2020 Mars Rover would be equipped with several scientific tools including Scanning Habitable Environments with Raman and Luminescence for Organics and Chemicals (SHERLOC). SHERLOC is an instrument that will acquire Raman spectra from samples on or just below the Martian surface. SHERLOC will be pivotal in determining whether life ever existed on Mars.
- Development of the technique at MIT was reported in the journal Carbon.

2020 Mars Rover

NASA has plans to launch a new Mars rover that will be tasked to probe the region on the planet believed to hold remnants of ancient microbial life. The rover will collect samples of rocks and soil, and store them on the Martian surface.

The collected samples would be returned to Earth sometime in the distant future so that scientists can meticulously analyze the samples for signs of present or former extraterrestrial life.

16. Isro's PSLV-C35 places SCATSAT-1 weather satellite in orbit, mission is on

Indian Space Research Organization (ISRO) on 26 September 2016 successfully launched eight satellites in two different orbits in a single mission. These satellites were launched with the PSLV C35 from the first launch pad of the Satish Dhawan Space Centre, Sriharikotta.

The satellites that was carried into space include the primary payload SCATSAT-1 of India, weighing 371 kg, and seven other customer payloads (five foreign and two domestic) together weighing 304 kg during lift off. The weather satellite SCATSAT-1 will be hurled into a polar sun synchronous orbit of 730 kilometer height.

The other seven satellites that will be injected into a different orbit as compared to the principal payload **are**

• **Three smaller payloads from Algeria:** Alsat-1B 103 kg, Alsat-2B 110 kg and Alsat Nano 7 kg. They are meant for earth observation, remote sensing and technology demonstration.

• **One from US:** Pathfinder-1 of 44 kg. It is a high resolution imaging microsatellite and is owned by BlackSky.

• **One from Canada:** NLS-19 of 8 kg developed at University of Toronto, Canada. It is a nano-satellite to experiment reduction of space debris.

• The other two satellites are from India and **they are**

a) Pratham: A student-satellite of the IIT, Bombay. It would estimate the total electron count with a resolution of 1km x 1km location grid.

b) PISAT: It is developed by a consortium-led by the PES University in Bengaluru. It would explore remote sensing applications.

SCATSAT-1 of India would serve as a continuity mission for the highly acclaimed Oceansat-2 that has completed its operational life. Its data to accurately predict the landfall of the Cyclone Phailin in Odisha coast recently helped avoid major loss of lives as precautionary measures could be taken in advance.

As per reports, this will be made possible by shutting down and restarting the fourth and last stage of the vehicle twice during the flight. The ISRO has gained valuable expertise on restarting the engine of the polar synchronous satellite launch vehicle PSLV in space during June 2016 and December 2015. Through them, the scientists of the space agency gained the expertise to use a single launch mission to inject multiple satellites in different orbits altogether.

So far, the PSLV has launched 39 remote-sensing satellites of ISRO including the Chandrayaan-1 of 2008 and the Mars mission of 2013-14. Apart from this, it has also launched 74 foreign commercial and university satellites.

17. Sugarcane based bagasse can be converted into anode grade porous activated carbon used in Li-ion batteries

Researchers from Pune's National Chemical Laboratory (NCL) and Indian Institute of Science Education and Research (IISER) have used a simple, cost-effective and quick process to convert sugarcane bagasse into anode-grade porous, conducting, activated carbon material for use in Li-ion batteries.

While making anode-grade carbon is currently very expensive and time-consuming, the Pune researchers were able to produce within minutes by using a low power microwave system.

high-quality carbon

The quality of carbon used for electrodes depends on the choice of precursors and the process used for converting the precursors into carbon. Anode-grade carbon is generally produced through decomposition at nearly 1000 degree Celsius.

By using a simple kitchen microwave oven we achieved local heating and combustion to realise high quality factory-grade carbon materials within a few minutes.

The process time to get anode-grade carbon is cut down dramatically. The electrical energy input is also reduced substantially.

18. GSAT-11 to be launched in early 2017

India's GSAT-11 communications satellite will be launched next year by the European Ariane launch vehicle.

GSAT-11- Key facts:

GSAT-11 is India's **advanced and heaviest communication spacecraft** to date at 5,700 kg.

- In 2009, Government of India had approved the development of GSAT-11.
- It is designed, assembled and integrated by ISRO.
- GSAT-11 has multi-spot beam coverage over the Indian mainland and nearby Islands, with a capacity of more than 12Gbps for users from a single platform.
- The satellite will carry 40 transponders in the Ku-band and Ka-band frequencies, which are three to six times more powerful than that used in existing Indian communications satellites.
- GSAT-11 has a mission life of about 15 years.
- The satellite is currently under development at Department of Space and ISRO facilities.
- The GSAT-11 satellite will provide a host of communications and broadcasting services, including direct-to-home (DTH) television.
- The GSAT-11 will not only link all the towns and villages in this country with quality high-speed Wi-Fi service, it will also integrate internet and television services.

19. NASA's Cassini to make final, closest observations of Saturn

After more than 12 years studying Saturn, its rings and moons, NASA's Cassini spacecraft has entered the final year of its epic voyage. The conclusion of the historic scientific odyssey is planned for September 2017.

Details:

- Beginning on 30 November, Cassini's orbit will send the spacecraft just past the outer edge of the main rings. These orbits, a series of 20, are called the F-ring orbits.
- During these weekly orbits, Cassini will approach to within 4,850 miles (7,800 kilometres) of the centre of the narrow F ring, with its peculiar kinked and braided structure.
- Cassini's final phase, called the Grand Finale, begins in earnest in April next year.
- A close flyby of Saturn's giant moon Titan will reshape the spacecraft's orbit so that it passes through the gap between Saturn and the rings, an unexplored space only about 2,400 kilometers wide.
- During the Grand Finale, Cassini will make the closest-ever observations of Saturn, mapping the planet's magnetic and gravity fields with exquisite precision and returning ultra-close views of the atmosphere.

About the Cassini Mission:

Cassini–Huygens is an unmanned spacecraft sent to the planet Saturn. Cassini is the fourth space probe to visit Saturn and the first to enter orbit.

- Its design includes a Saturn orbiter and a lander for the moon Titan.
- The lander, called Huygens, landed on Titan in 2005.
- The spacecraft was launched on October 15, 1997.
- This was the first landing ever accomplished in the outer Solar System.

Objectives of Cassini Mission:

Cassini has several objectives, including:

- Determine the three-dimensional structure and dynamic behavior of the rings of Saturn.

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- Determine the composition of the satellite surfaces and the geological history of each object.
- Determine the nature and origin of the dark material on Iapetus's leading hemisphere.
- Measure the three-dimensional structure and dynamic behavior of the magnetosphere.
- Study the dynamic behavior of Saturn's atmosphere at cloud level.
- Study the time variability of Titan's clouds and hazes.
- Characterize Titan's surface on a regional scale.

20. Scientists use stem cells to grow 3D lung-in-a-dish

Scientists in the United States including those of Indian origin have successfully grown three-dimensional (3D) lungs in the lab, using stem cells.

organoids The 3D lungs or was created by coating tiny gel beads with lung-derived stem cells and then allowing them to self-assemble into the shapes of the air sacs found in human lungs.

To show that these tiny organoids mimicked the structure of actual human lungs, researchers compared it with real sections of human lung.

Idiopathic Pulmonary Fibrosis (IPF) The laboratory-grown 3D lungs can be used to study diseases including which has been difficult to study using conventional methods and also test possible treatments for the lung diseases.

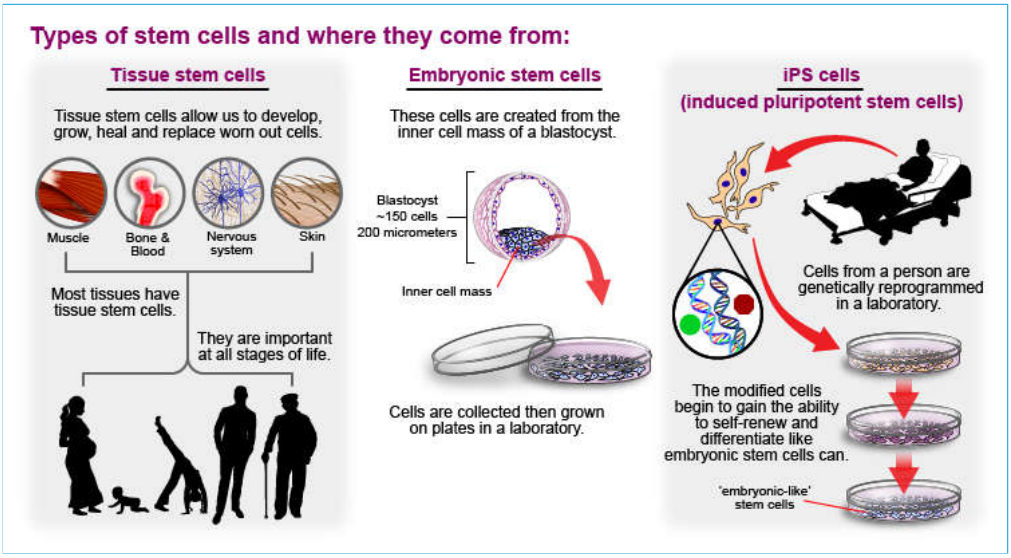
chronic lung diseasescarring of the lungs. IPF is a characterised by

The scarring makes the lungs thick and stiff. It results in progressively worsening shortness of breath and thus results in lack of oxygen to the brain and vital organs.

Though researchers do not know what causes IPF in all cases but cigarette smoking and exposure to certain types of dust can increase the risk of developing the disease.

What are Stem Cells?

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- Stem cells are primitive cells which, as they grow, differentiate into the various specialized cells that make up the different organs — the brain, the heart, the kidney, and so on.
- Commonly, stem cells come from two main sources:
- Embryos formed during the blastocyst phase of embryological development (embryonic stem cells) and
- Adult tissue (adult stem cells).
- Both types are generally characterized by their potency, or potential to differentiate into different cell types (such as skin, muscle, bone, etc.).

What are Adult Stem Cells?

- Adult or somatic stem cells exist throughout the body after embryonic development and are found inside of different types of tissue.
- These stem cells have been found in tissues such as the brain, bone marrow, blood, blood vessels, skeletal muscles, skin, and the liver.
- They remain in a quiescent or non-dividing state for years until activated by disease or tissue injury.
- Adult stem cells can divide or self-renew indefinitely, enabling them to generate a range of cell types from the originating organ or even regenerate the entire original organ.
- **limited in their ability to differentiate based on their tissue of origin.** It is generally thought that adult stem cells are but there is some evidence to suggest that they can differentiate to become other cell types.

What are Embryonic Stem Cells?

- Embryonic stem cells are derived from a four- or five-day-old human embryo that is in the blastocyst phase of development.
- The embryos are usually extras that have been created in IVF (in vitro fertilization) clinics where several eggs are fertilized in a test tube, but only one is implanted into a woman.
- Sexual reproduction begins when a male's sperm fertilizes a female's ovum (egg) to form a single cell called a zygote.
- The single zygote cell then begins a series of divisions, forming 2, 4, 8, 16 cells, etc. After four to six days – before implantation in the uterus – this mass of cells is called a blastocyst.
- The blastocyst consists of an inner cell mass (embryoblast) and an outer cell mass (trophoblast).
- The outer cell mass becomes part of the placenta, and the inner cell mass is the group of cells that will differentiate to become all the structures of an adult organism.
- This latter mass is the source of embryonic stem cells – totipotent cells (cells with total potential to develop into any cell in the body).

Differentiation of Stem Cells on the basis of Potency

Stem cells are categorized by their potential to differentiate into other types of cells. Embryonic stem cells are the **most potent** since they must become every type of cell in the body.
The full classification includes:-

- **Totipotent** – the ability to differentiate into all possible cell types. Examples are the zygote formed at egg fertilization and the first few cells that result from the division of the zygote.
- **Pluripotent** – the ability to differentiate into almost all cell types. Examples include embryonic stem cells and cells that are derived from the mesoderm, endoderm, and ectoderm germ layers that are formed in the beginning stages of embryonic stem cell differentiation.
- **Multipotent** – the ability to differentiate into a closely related family of cells. Examples include hematopoietic (adult) stem cells that can become red and white blood cells or platelets.
- **Oligopotent** – the ability to differentiate into a few cells. Examples include (adult) lymphoid or myeloid stem cells.
- **Unipotent** – the ability to only produce cells of their own type, but have the property of self-renewal required to be labeled a stem

cell. Examples include (adult) muscle stem cells.

- Embryonic stem cells are considered pluripotent instead of totipotent because they do not have the ability to become part of the extra-embryonic membranes or the placenta.

What is Stem Cell Therapy?

- **treat or prevent a disease or condition.** Stem-cell therapy is the use of stem cells to
- **restoring organ and/or tissue function** Regenerative medicine is an emerging branch of medicine with the goal of for patients with serious injuries or chronic disease in which the body's own responses are not sufficient enough to restore functional tissue.
- **Regenerative Medicines** New and current can use stem cells to create living and functional tissues to regenerate and repair tissue and organs in the body that are damaged due to age, disease and congenital defects.
- Stem cells have the **power to go to these damaged areas and regenerate new cells and tissues by performing a repair and a renewal process, restoring functionality.**
- **Bone marrow transplant** **most widely used stem-cell therapy** **from umbilical cord blood** is the , but some therapies derived are also in use.
- Research is underway to develop various sources for stem cells, and to apply stem-cell treatments for and conditions, diabetes, **neurodegenerative diseases** heart disease, and other conditions.

Ethical Issues in Stem Cell Therapy? **Respect for human life:**

- Respect for human life requires that we show respect for human embryos. Some people believe that embryonic stem cell research violates this principle, as an embryo is destroyed during the process of stem cell line derivation.
- Others argue that the potential benefits of stem cell research (e.g. alleviating human suffering) represents a way of showing respect for human life.

Status of the human embryo:

- This is a delicate question with various answers according to each individual's conception of the embryo. On the one hand, some consider embryos to be cell masses having no more value than any other biological cell or tissue. On the other hand, some confer the human embryo full personhood status; that is, they consider the human embryo to have the same moral status as a human being that has been born.
- Finally, many people hold a gradualist view; they consider moral status to be a continuous process; as the embryo proceeds through stages of development, it gradually gains moral value. This position emphasizes the embryo's potential to become a human being and, hence, affords the embryo "special respect".

21. Novel materials to make fuel cells cheaper and more efficient

· **Researchers** from **Pune's Indian Institute of Science Education and Research (IISER) and National Chemical Laboratory (NCL)** have come one step closer to making fuel cells that are cheaper and more efficient.

· **Two novel porous and crystalline hydrogen-bonded organic frameworks (HOFs)** that they synthesised could potentially be used as a proton exchange membrane in fuel cells. Nafion, the proton exchange membrane in use currently, has major drawbacks in terms of applicability at a high temperature range or low humidity, high production costs and gas leakage issues. **The proton-conducting materials** synthesised by the researchers address one critical issue achieving a high proton conduction value even at ambient conditions (low humidity of around 60 per cent and moderate temperature). The proton conduction value is greater at higher humidity.

· Among all known porous materials, this is the highest proton conduction value that has been reported at ambient condition. The research says these materials have the potential to be used as a **proton exchange membrane to improve the efficiency of fuel cells**. The cost of fuel cells will become cheaper as it is easy to make the membrane.

· The HOFs are promising materials for **gas separation and storage applications**. However, they have not been used for fuel cell applications. The team synthesised two organic compounds, and each compound has a proton donor site and a proton acceptor site. The donor-acceptor complementarity is distributed throughout the hydrogen-bonded framework. **The hydrogen bonding serves as a pathway for proton transfer from the donor site to the acceptor site. Water acts as a carrier and plays important role. When humidity is more the proton transfer becomes easy.**

· Additionally, the HOF compounds have the **potential to remove greenhouse gases** such as carbon dioxide.

22. Advantages of Mars Orbiter Mission for India

The Mars Orbiter Mission (MOM) on 24 September 2015 successfully completed one year of the mission life around Mars with a large data set acquired by all five payloads of MOM. On the occasion, Space Applications Centre of (ISRO), Ahmedabad launched a Mar Atlas.

The Atlas contains a compilation of images acquired by **Mars Colour Camera** (MCC) and results obtained by other payload results in a form of scientific atlas. The images from MCC provided unique information about Mars at varying spatial resolutions.

It has obtained Mars Global data showing clouds, dust in atmosphere and surface albedo variations, when acquired from apoapsis at around 72000 km.

India's first interplanetary probe through MOM

Mars is one of the closest celestial objects to the Earth and it has attracted humans towards itself since the time immemorial. A large number of unmanned orbiters, landers and rovers have been launched to reach Mars since early 1960s. These missions had provided

large amo entific aspects of the Mars.

In 2014, In ce faring nations to explore Mars by
or popular OM spacecraft, also known as M
Septembe NASA's **Mars Atmosphere and**

Mangalya craft in Sanskrit, was the first interp
mission is demonstration. The MOM spacecra
two years

Moreover ore Mangalyaan mission is the cheap
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Five Inst MOM
MOM car science instruments collecting
and atmo c escape process. These are:
• **Lyman- Photometer (LAP):** A photomet
alpha emissions in the upper atmosphe
• **Methane Sensor for Mars (MSM):** It
• **Mars Exospheric Neutral Composit**
composition of particles. The he
the Moon Impact Probe (MIP) in
• **Thermal Infrared Imaging Sp**
would map surface composition
• **Mars Colour Camera (MCC):**
Martian surface.

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23. T RDO

In a bi **test fired a new, long range surface**
air mis The long range missile, a product of a joint ventu
betwee **rated Test Range (ITR) in Chandipur.**

- The ducted shortly, the DRDO scientist sa
- Apa **and Threat Alert Radar (MF STAR)**
trac
- The **to neutralise any aerial threats.**
- Earl e medium range surface to air missile, jo
by **I** velopment Organisation (DRDO)
- The **st minute manoeuvring target.**
- Indi **ce to air missile (LR-SAM).**
- The December 30, 2015.
- These missiles would be i ervices after trials were completed.
- Many Indian industries L , L&T, BDL, and TATA group of companies besides other *private industries* have contributed to the development of a number of subsystems which have been put into use in this flight test.

The Guided Missile Destroyer, Mormugao, second ship of Project 15B,was launched on 17 September 2016 at Mazagaon Dock Ship

24. Guided Missile Destroyer Ship Mormugao launched in Mumbai

Builders Limited (MDL), Mumbai.

This marks a significant milestone in the annals of the Indigenous Warship design and construction programme of India.

About Project 15B Ships

• Project 15B ships feature cutting edge advanced technology and are comparable to the best ships of similar class anywhere in the world.
• These ships have been designed indigenously by the Directorate of Naval Design, New Delhi.
• Each ship spans 163 metres in length and 17.4 metres at beam and displaces 7300 tonnes.
• These ships will be propelled by four gas turbines to achieve speeds in excess of 30 knots.
• The P15B destroyers incorporate new design concepts for improved survivability, sea keeping, stealth and ship manoeuvrability.
• P 15B ships will be equipped to carry and operate two multiple role helicopters.
• These ships are packed with an array of state of the art weapons and sensors, including vertically launched missile system for long distance engagement of shore, sea-based and air targets.

Background

Four Guided missile Destroyers of Project 15B (P 15B) are under construction at Mazagaon Dock Shipbuilders Limited, Mumbai. The contract for construction of these four ships was signed on 28 January 2011.
Stealth has been a major thrust area in P15B design. Enhanced stealth features have been achieved through shaping of hull and use of radar transparent deck fittings which make these ships difficult to detect.
These ships have been designed for a complement of 50 officers and 250 sailors.

25. Super Computer PARAM-ISHAN

Union Human Resource Development Minister Prakash Javadekar on 19 September 2016 inaugurated the super computer PARAM ISHAN at IIT Guwahati campus. Students and faculty members of IIT Guwahati are expected to derive huge benefit from the facility.

PARAM ISHAN

• It is the fastest and most powerful computer in North East, Eastern and Southern region.

• It has been jointly developed by IIT Guwahati and Centre for Development of Advanced Computing, C -DAC.

• PARAM ISHAN has the power of 250 Teraflops and 300 terabyte capacity and can be used in the application areas like computational chemistry, computational fluid dynamics, computational electromagnetic, civil engineering structures, nana-block self assemble, optimization and others.

• It can also be used for weather, climate modeling and seismic data processing.

26. Self-interference Cancellation Technology

Indian-born researcher Dinesh Bharadia at the Massachusetts Institute of Technology (MIT) has won the prestigious Young Scholar award of the US-based Marconi Society for his contribution to radio waves.

He has been chosen for the 2016 Paul Baran Young Scholar Award for his contribution to send and receive radio (wireless) signals, including mobile telephony and data on the same channel (wave)

Named after Nobel laureate Guglielmo Marconi, who invented radio, and set up by his daughter Gioia Marconi Braga through an endowment in 1974, the Marconi Society awards annually outstanding individuals whose scope of work and influence emulate the principle of 'creativity in service to humanity' that inspired Marconi.

Introduction

Bharadia's research disproved a long-held assumption that it is not possible for a radio to receive and transmit on the same frequency band because of the interference that results.

The **radio spectrum** is the part of the electromagnetic spectrum from 3 Hz to 3000 GHz (3 THz). Electromagnetic waves in this frequency range, called radio waves, are extremely widely used in modern technology, particularly in telecommunication. To prevent interference between different users, the generation and transmission of radio waves is strictly regulated by national laws, coordinated by an international body, the International Telecommunication Union (ITU).

Different parts of the radio spectrum are appointed by the ITU for different radio transmission technologies and applications; some 40 radiocommunication services are defined in the ITU's Radio Regulations (RR).In some cases, parts of the radio spectrum are sold or licensed to operators of private radio transmission services (for example, cellular telephone operators or broadcast television stations). Ranges of allocated frequencies are often referred to by their provisioned use (for example, cellular spectrum or television

spectrum).

What's a Frequency Band?

A **band** is a small section of the spectrum of radio communication frequencies, in which channels are usually used or set aside for the same purpose.

Interference

In physics, **interference** is a phenomenon in which two waves superpose to form a resultant wave of greater, lower, or the same amplitude. Interference usually refers to the interaction of waves that are correlated or coherent with each other, either because they come from the same source or because they have the same or nearly the same frequency. Interference effects can be observed with all types of waves, for example, light, radio, acoustic, surface water waves or matter waves.

The Self-interference Cancellation Technology.

Principle

Let's say you are shouting at someone and they are shouting at you. Neither of you can hear the other because you are both shouting in the same frequency. The noise in your ears (interference) from your own shout prevents you from hearing the other person. That's a good analogy for why radios have needed to use two different frequencies to transmit and receive simultaneously

solving the challenge of developing 'full duplex radios' effectively doubles the amount of available spectrum

Problems he Overcame

The interference is extremely strong — nearly a hundred billion times stronger than the signal that the radio might be trying to receive.

The resulting interference depends on the environment and its reflectors, changing in real-time as people move around.

Typical radios (eg Wi-Fi) span many frequencies and use multi-antenna systems. Bharadia was able to demonstrate systems that overcame all these obstacles.

He turned full-duplex radios into a commercial reality by inventing new formulas that could in real-time, model the non-linear, time-varying self-interference as well as analog and digital self-interference cancellation circuits to apply the model to the known transmitted signal and cancel the self-interference.

Bharadia's work, which has direct connection to Marconi, culminated in making full-duplex radios a reality through self-interference cancellation technology.

The analog cancellation filter Bharadia developed has unleashed huge potential for more applications. Its architecture allows cancellation in all environments.

Applications

building novel wireless imaging that can enable driverless cars move in severe weather conditions and help blind people to navigate indoors.

can be used in India to build relays which can listen to signals from a cellular tower, transmit them instantly and extend the range across the country. This (technology) is needed as we have only a few towers; by deploying simple relay, we don't need to put in huge infrastructure for the cellular towers.

low-power Internet of Things connectivity and motion tracking are going to benefit.

27. Throughput communication soon for India(IMP)

India is on the cusp of a satellite-driven digital or broadband revolution, similar to DTH or direct-to-home broadcasting of the 2000s, with a plan to deploy five high-throughput communication spacecraft starting this year.

- ISRO will also test new technologies with its HTSs, such as the new flexible 'bus' or satellite assembly platform, electric propulsion, Ka band, lithium ion batteries, among others.

HTS

High-throughput satellite (HTS) is a classification for communications satellites that provide at least twice, though usually by a factor of 20 or more, the total throughput of a classic FSS satellite for the same amount of allocated orbital spectrum thus significantly reducing cost-per-bit.

- HTS reuses satellite 'beams' several times over smaller areas.

Significance of the HTSs:

- These HTSs have been game-changers in the West, providing Internet connectivity many times faster, smoother, easier and probably cheaper than now.
- HTSs provide at least twice the total throughput of a classic FSS satellite for the same amount of allocated orbital spectrum thus significantly reducing cost-per-bit.
- HTS are primarily deployed to provide broadband Internet access service (point-to-point) to regions unserved or underserved by terrestrial technologies where they can deliver services comparable to terrestrial services in terms of pricing and bandwidth.
- It will drive a next generation technology revolution. Individuals, planners in government, businesses like banks, ATMs, reservation systems, cellular and private networks and users in remote areas are expected to benefit from improved connectivity.

28. Indian scientists unlock preterm birth mystery

Indian researchers have made a major discovery by understanding the mechanisms by which preterm births (between 28 and 32 weeks of gestation) occur.

- At 35%, India accounts for the highest burden of preterm births in the world.

Discovery

The researchers found for the first time that

- **Gram-positive Group B Streptococcus (GBS) bacteria produce small balloons called membrane vesicles**, which contain toxins that kill both foetal and maternal cells and destroy the collagen that binds the cells together.
- The toxins present in the vesicles fragmented the collagen of the amniotic membrane. Fragmentation of the collagen leads to loss in elasticity and weakening of the amniotic membrane thus making it susceptible to rupture due to pressure from the growing foetus. This leads to preterm birth. The vesicles also degrade the collagen in the womb.

GBS Bacteria

Group B Streptococcus (GBS) bacteria are normally found in human vagina and their numbers can shoot up in some pregnant women.

- The GBS bacteria have been associated with premature rupture of amniotic membrane and preterm birth.

How the study was carried out?

- The scientists tested hypothesis by injecting vesicles into 15 pregnant mice. All the injected mice gave birth to preterm babies and nearly 40 per cent were born dead (stillborn). The preterm babies were much smaller and unhealthy. In mice, the babies were born two days preterm. This is equivalent to two months in humans as the gestation period in mice is 21 days.

What does “preterm” birth mean?

- Preterm refers to a baby born before 37 weeks of pregnancy have been completed. Normally, a pregnancy lasts about 40 weeks.

How do preterm births occur?

- Most preterm births happen spontaneously, but some are due to early induction of labour or caesarean birth, whether for medical or non-medical reasons.

Why do preterm babies need special care?

- Preterm babies are not fully prepared to live in the world outside their mother’s womb. They get cold more easily and may need more help feeding than full-term babies. Because their bodies are not yet fully developed, they may have problems breathing and can also suffer from other complications including infections.

29. Indian Medical Association sounds Zika alert

Is Zika virus infection a public health emergency?

On 1st February, 2016, the WHO declared the mosquito-borne Zika virus an international public health emergency due to its link to thousands of birth defects in Brazil. This coordinated international action was needed to improve detection and expedite work on a vaccine and better diagnostics for the disease; however, there are no curbs on travel or trade.

What is a public health emergency of international concern?

Formally, a PHEIC — pronounced "fake" — is defined as "an extraordinary event which is determined to constitute a public health risk to other States through the international spread of disease and to potentially require a coordinated international response." It’s a political tool used by the WHO to sound the alarm about a serious disease that has caught the world off guard and put people's health in danger. It is meant to draw countries' immediate attention to galvanize resources and stop the disease from spreading further across borders.

Who decides to declare a public health emergency?

The WHO convenes a panel of experts under the International Health Regulations (which are a set of laws that govern global

responses to pandemics involving 196 member countries). These experts — dubbed an "emergency committee" meet and assess the risk posed by a disease outbreak and then advise the WHO Director General about whether to declare a PHEIC, who then decides whether to take action.

How often does the WHO declare these emergencies?

Not very often. The WHO has only declared a public health emergency three times since the International Health Regulations were enacted in 2007. The first time was in 2009, with the outbreak of the H1N1 swine flu pandemic. The second time was in May 2014, when polio seemed to surge again, threatening the eradication effort. The third time, in August 2014, came as the Ebola outbreak in West Africa was growing out of control. Notably, the emergency committee decided not to declare the MERS virus a PHEIC.

Zika declaration is the fourth PHEIC in history. It is also the first time the WHO has issued such a warning over a mosquito-borne disease.

Why are these declarations so rare?

PHEIC is a political tool used to focus the world's attention on a health crisis. Using this declaration too often would weaken its significance. One of the key considerations in declaring a PHEIC is whether the disease threat is dire enough for countries to be forced into enacting travel and trade restrictions. These can be devastating to local economies.

Even if the WHO only warns people to limit or delay travel to affected regions (instead of outright travel restrictions), health emergency declarations are often associated with economic losses.

Because of the Ebola crisis, the World Bank Group estimated that the West African countries at the center of the outbreak — Guinea, Liberia, and Sierra Leone — lost out on about $1.6 billion in economic growth in 2015. Similarly, the South American countries hit by swine flu suffered economic losses ranging from 0.5 to 1.5 percent of their GDPs.

Zika does not even cause symptoms in most people. So why did the WHO declare a PHEIC?

It is really Zika's link with microcephaly that prompted the PHEIC. So, it's not the Zika virus itself that prompted the PHEIC, *per se*, but it's the virus' potential to harm newborns, even though this link is not yet fully established or understood.

Do these declarations have any impact beyond economic repercussions?

Naming a PHEIC does not mean the countries battling an outbreak will suddenly be flooded with funds and support from the WHO. In Ebola, the three worst-affected countries also happened to be some of the poorest on the planet. The emergency declaration escalated media attention and global focus on the disease. It helped wake up the world to the gravity of West Africa's outbreak. It helped bring resources from wealthier countries into West Africa, and slowly the global effort got the outbreak under control.

What will this health emergency mean for Latin America?

The WHO is not recommending any restrictions on travel and trade. This puts them at odds with the CDC, which advised pregnant women to avoid travel to Zika-infected countries.

For now, the WHO is alerting countries to the threat of Zika and advising health officials to coordinate a public health response. This involves taking measures to strengthen surveillance of Zika cases and associated birth and neurological complications, controlling mosquito populations that carry the virus, and expediting the development of a vaccine as well as improved diagnostic tests for the virus. A PHEIC also means the WHO will closely track and monitor the disease and issue regular media updates about the outbreak. It'll draw global attention to the disease, and probably encourage governments and health agencies in and out of Latin America to research Zika and send resources to places that need them in order to help stop the virus from traveling further

What are the guidelines from Ministry of Health & Family Welfare, Govt. of India regarding Zika virus infection?

The Ministry of Health has advised an Integrated Disease Surveillance Programme (IDSP) through its community and hospital-based data gathering mechanism to track clustering of acute febrile illness and seek primary case, if any, among those who travelled to areas with ongoing transmission in the 2 weeks preceding the onset of illness. The IDSP would also advise its State and District level units to look for clustering of cases of microcephaly among newborns and reporting of Gullian Barre Syndrome. The Maternal and Child Health Division (under NHM) would also advise its field units to look for clustering of cases of microcephaly among newborns

What is CDC advisory regarding travel?

CDC recently advised pregnant women to avoid traveling to parts of the Caribbean and Central and South America where Zika virus transmission is ongoing in a Level 2 travel alert 'Follow enhanced precautions for this destination'. But, the government did not ban them from traveling there.

What is Ministry of Health, Govt. of India advisory regarding travel?

- Non-essential travel to the affected countries to be deferred/ cancelled.
- Pregnant women or women who are trying to become pregnant should defer/ cancel their travel to the affected areas.
- All travelers to the affected countries/ areas should strictly follow individual protective measures, especially during day time, to prevent mosquito bites (use of mosquito repellent cream, electronic mosquito repellents, use of bed nets and dress that appropriately covers most of the body parts).
- Persons with comorbid conditions such as diabetes, hypertension, chronic respiratory illness, Immune disorders etc. should seek advice from the nearest health facility, prior to travel to an affected country.
- within two weeks Travellers having febrile illness of return from an affected country should report to the nearest health facility.
- Pregnant women who have travelled to areas with Zika virus transmission should mention about their travel during antenatal visits in order to be assessed and monitored appropriately.

What is the IMA advisory?

The IMA advises that pregnant women (0-12 weeks) visiting Zika affected countries at the time of visa application should ask for travel advisory with regard of Zika virus of that country and follow that.

Will Zika virus enter India and if yes, how will it behave?

It is not necessary. The Aedes mosquito is common in India but behaves differently here. Yellow fever is transmitted by the Aedes mosquito, yet yellow fever virus has never entered India. Dengue virus has entered and has spread like an epidemic; Chikungunya

virus too has entered but has remained sporadic. So Indians should not panic until cases are reported.

Which are the affected countries?

The 24 countries and territories at risk are: Brazil, Colombia, El Salvador, French Guiana, Guatemala, Haiti, Honduras, Martinique, Mexico, Panama, Paraguay, Suriname, Venezuela, Commonwealth of Puerto Rico, Barbados, Bolivia, Ecuador, Guadeloupe, Saint Martin, Guyana, Cape Verde, Samoa, U.S. Virgin Islands and Dominican Republic

What is Zika virus?

Zika virus is a member of the Flaviviridae virus family and the Flavivirus genus, transmitted by daytime-active Aedes mosquitoes, such as A. aegypti. The virus is related to dengue, yellow fever, Japanese encephalitis and West Nile viruses.

What is Zika virus infection?

Zika virus infection is similar to a mild form of dengue fever and is generally a mild illness in adults. Only one in five individuals who catch the virus develops symptoms, which usually disappear within a week. It is treated by rest and cannot yet be prevented by drugs or vaccines.

There is a possible link between Zika fever and microcephaly in newborn babies by mother-to-child transmission, and with neurologic conditions in infected adults, including cases of the Guillain–Barré syndrome. Newborn babies of mothers who had a Zika virus infection during the first trimester of pregnancy are at an increased risk of microcephaly. The fetus is apparent at highest risk when the mother acquires the infection during the 1st trimester.

Is the link with microcephaly confirmed?

As per WHO, it is "strongly suspected but not yet scientifically proven" that Zika causes microcephaly.

Is the aedes mosquito present in all parts of the world?

Aedes mosquitoes populate the entire region except for Canada and continental Chile.

What is microcephaly?

The abnormally small heads of these babies often are accompanied by incomplete brain development, which can lead to a lifetime of health problems. In severe cases, newborns do not survive for long.

Is Zika virus associated with Guillain-Barré syndrome?

It is not know conclusively if Zika virus infection causes Guillain-Barre syndrome. But, an association between the two has been observed.

Is amniocentesis recommended in women with suspected Zika virus infection?

While amniocentesis is a relatively safe test, the associated risk and benefits should always be considered. A positive RT-PCR result on amniotic fluid would be suggestive of intrauterine infection, which can help physicians to draw up a strategy for management of the patient. However, early amniocentesis (≤ 14 weeks of gestation) is not recommended.

What is the treatment of pregnant women with laboratory evidence of Zika virus?

Treatment is supportive and includes rest, fluids, and analgesics and antipyretics. There is no specific antiviral treatment.

Can Zika virus be transmitted through sexual route?

Yes. Though the CDC has made no recommendation regarding the possible sexual transmission of the virus, a statement issued by the CDC said that the best way to avoid Zika virus infection was "to prevent mosquito bites and to avoid exposure to semen from someone who has been exposed to Zika virus or has been ill from Zika virus infection ". How long? For a few weeks.

Zika can be transmitted through blood, but this is an infrequent mechanism. The usual recommendations for safe transfusions should be followed (e.g., healthy volunteer donors).

What is the difference between Zika, dengue and chikungunya?

All these diseases present similar symptoms, but certain symptoms suggest one disease or another:

Dengue usually presents with higher grade of fever and more severe muscle pain. There can be complications when the fever breaks; attention should be paid to warning signs such as bleeding.

Chikungunya presents with higher fever and more intense joint pain, affecting the hands, feet, knees, and back. It can disable people, bending them over so that they cannot walk or perform simple actions such as opening a water bottle.

Zika does not have clearly characteristic features, but most patients have skin rashes and some have conjunctivitis.

What measures should be taken to prevent Zika virus infection?

Prevention involves reducing mosquito populations and avoiding bites, which occur mainly during the day. Eliminating and controlling A. aegypti mosquito breeding sites reduces the chances that Zika, chikungunya and dengue will be transmitted. An integrated response is required, involving action in several areas, including health, education and the environment.

Recommendations to eliminate and control the mosquito

Do not allow standing water in outdoor containers (flower pots, bottles and containers that collect water) so that they do not become mosquito breeding sites.

Cover domestic water tanks so that mosquitoes cannot get in.

Avoid accumulating garbage; put it in closed plastic bags and keep it in closed containers.

Unblock drains that could accumulate standing water.

Use screens and mosquito nets in windows and doors to reduce contact between mosquitoes and people.

Recommendations to prevent mosquito bites,

People who live in areas where there are cases of the disease, as well as travellers and, especially, pregnant women should:

Cover exposed skin with long-sleeved shirts, trousers and hats

Use repellents recommended by the health authorities (and apply them as indicated on the label)

Sleep under mosquito nets.

30. Young Magnetar Likely the Slowest Pulsar Ever Detected | NASA

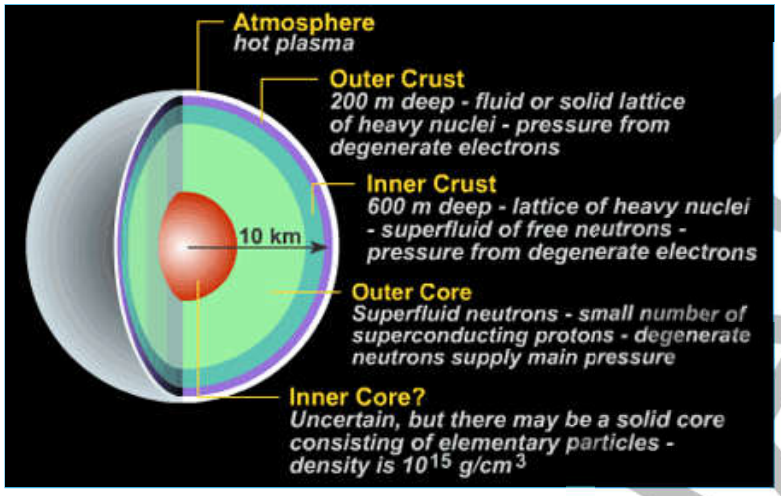
Astronomers working with NASA's Chandra X-ray Observatory have found evidence of an extremely dense, magnetised neutron star – or magnetar – that spins much slower than the slowest of its kind known until now, which spin around once every 10 seconds.

- The magnetar 1E 1613 – at the centre of RCW 103, the remains of a supernova explosion located about 9,000 light years from Earth – rotates once every 24,000 seconds (6.67 hours), the researchers found.

Magnetar

A magnetar is a type of neutron star with an extremely powerful magnetic field.

- The magnetic field decay powers the emission of high-energy electromagnetic radiation, particularly X-rays and gamma rays.
- Neutron stars are formed when the largest stars in the universe reach the end of their lives. When these stars run out of fuel, their core collapses causing outer layers to come crashing in towards the centre.
- As stars are so large the crushing forces created can be phenomenal. These pressures can squash the core of the star together and because of this, a neutron star – and hence a magnetar – is made of some of the densest material in the known universe.



Magnetar- key facts:

The Laser Interferometer Gravitational-wave Observatory (LIGO) project that was given the in-principle approval by the Union Cabinet may come up in Maharashtra's Hingoli district. Scientists needed a flat site to carry out the experiments, the four km strips that would require an unhindered straight and flat site for studying the lasers. So, Aundh in Hingoli district is a preferred site for the Ligo project.

- Magnetars are characterized by their extremely powerful magnetic fields of 108 to 1011 tesla.
- These magnetic fields are quadrillions of times stronger than any man-made magnet, and hundreds of millions of times more powerful than the field surrounding Earth.
- The magnetic field of a magnetar would be lethal even at a distance of 1000 km due to the strong magnetic field distorting the electron clouds of the subject's constituent atoms, rendering the chemistry of life impossible.
- Their material is so dense that one teaspoon of it contains the same amount of mass as 900 Egyptian pyramids.
- The active life of a magnetar is short. Their strong magnetic fields decay after about 10,000 years, after which activity and strong X-ray emission cease.
- Given the number of magnetars observable today, one estimate puts the number of inactive magnetars in the Milky Way at 30 million or more.

31. India's first LIGO laboratory

32. Indian scientists recycle fish scales into green energy

- **biodegradable energy harvester** A team of researchers at Jadavpur University here has developed a – from raw fish scales – **sustainable green energy source** which could be tapped as a for next generation self-powered implantable medical devices.
- **reduced e-waste elements.** It also has the potential for personal portable electronics with
- **ollagen fibres that possess a piezoelectric property,** Fish scales, a by-product that is usually thrown away, contain c which means electric charge is generated in them in response to mechanical stress. that an
- **bio-piezoelectric nanogenerator (BPNG)** The researchers have synthesised flexible from this bio-waste.
- They collected bio-waste in the form of hard, raw fish scales from a fish processing market, and then used a demineralisation process to make them transparent and flexible.

- They were able to make a bio-piezoelectric nanogenerator (or energy harvester) with electrodes on both sides, and then laminated them.
- The recycling of the fish by-products into the BPNG via one step process is a promising solution for the development of value-added products and also to reduce the e-waste.
- The nanogenerator also scavenges several types of ambient mechanical energies such as body movements, machine and sound vibrations, and wind flow which are abundant in living environment, and even repeated tapping with a finger.
- Repeatedly touching the BPNG with a finger can turn on more than 50 blue LEDs.The team's work is the first known demonstration of the direct piezoelectric effect of fish scales from electricity generated by a bio-piezoelectric nanogenerator under mechanical stimuli – without the need for any post-electrical poling treatments.

Uses

- The group's work could potentially be used in **transparent electronics, biocompatible and biodegradable electronics, edible electronics.**
- **self-powered implantable medical devices, surgeries, e-healthcare monitoring, in vitro and in vivo diagnostics,** It can also be used in as well as apart from its myriad uses for portable electronics.
- In the future, the goal is to implant a bio-piezoelectric nanogenerator into a heart for pacemaker devices, where it will continuously generate power from heartbeats for the device's operation.
- It will then degrade when no longer needed. Since heart tissue is also composed of collagen, bio-piezoelectric nanogenerator is expected to be very compatible with the heart.
- It will also help in controlling marine pollution as disposal of the fish bio-waste increases environmental pollution.

33. China deploys 2nd space lab into low Earth orbit

China successfully launched its second experimental space lab as part of an ambitious programme by the Communist giant **to build a manned space station by 2022**, the time when US-led International Space Station expected to go out of service. **The Tiangong-2 space lab** was successfully launched from the Jiuquan Satellite Launch Centre in northwestern China's Gobi desert.

- The mission is complete success and **the space lab reached its designated orbit.**
- **China's manned space program has now entered a new phase of application and development**.
- In a cloud of brown smoke, **Tiangong-2 roared into the air underneath** a mid-autumn full moon from the Jiuquan Satellite Launch Center on the back of a Long March-2F rocket, trailing a vast volume of flame.
- **China's ambitious space programme** aims for a manned space station by 2022.
- China's space station is expected to be sent into orbit just as the US-led International Space Station goes out of service -- making China potentially the only country with a permanent space presence.
- The 8.6-tonne space lab will manoeuvre itself into an orbit about 380 kms above the Earth for initial on-orbit tests.
- **It will transfer to a slightly higher orbit at about 393 kilometers above the Earths surface** by next month before a manned space ship called Shenzhou-11 would ferry two astronauts into space to dock with the lab.
- **The two astronauts will work in Tiangong-2** for 30 days including manual and automatic docking before reentering the Earths atmosphere.
- **In April 2017, China's first cargo ship Tianzhou-1**, which literally means "heavenly vessel," will also be sent into orbit to dock with the space lab and provide it with fuel and other supplies.
- **China, which conducted its first manned space mission in 2003** also plans to launch its Mars mission in 2020 to catch up with India, the US, Russia and the EU to reach the red planet.
- As it launched the second space station, China yesterday announced that its first space lab Tiangong-1 is expected to fall into the Earth's atmosphere in the latter half of 2017.

Note

- **Tiangong-1 was launched in September, 2011** and ended its data service in March this year, when it had "comprehensively fulfilled its historical mission.
- **The space lab is currently intact and orbiting at an average height of 370 kilometers**.
- **It was in service for four and a half years**, two and a half years longer than its designed life, and had docked with Shenzhou-8, Shenzhou-9 and Shenzhou-10 spacecraft and undertaken a series of tasks, making important contributions to Chinas manned space cause.
- China has always highly valued the management of space debris, conducting research and tests on space debris mitigation and cleaning.
- Now, **China will continue to monitor Tiangong-1** and strengthen early warning for possible collision with objects.

34. Bird flu now a thing of the past; India declares itself free from H5N1

The **Department of Animal Husbandry, Dairying and Fisheries in the Ministry of Agriculture and Farmers welfare** has declared **India free from Avian Influenza (H5N1)**. India had notified outbreak of Avian Influenza (H5N1) at **Humnabad, Bidar district, Karnataka**. There has been no further outbreak reported in the country thereafter. **The control measures adopted in the radius of one Km around outbreak location included following:**

- **Stamping out of entire poultry population including destruction of eggs, feed, litter** and other infected materials, restriction on movement of poultry and poultry products to and from the area of outbreak, disinfection and cleaning up of infected premises and the **Post Operation Surveillance Plan (POSP)** from 6th June, 2016
- **Surveillance was carried out throughout the country**. Surveillance around the areas of the outbreaks since completion of the operation (including culling, disinfection and clean -up)
- **Post the surveillance the state has shown no evidence of presence of Avian Influenza**. India has **declared itself free from Avian Influenza (H5N1)** from 5th September, 2016 and notified the same to OIE.

35. Grauer's gorilla

- **Grauer's gorilla** (Gorilla beringei graueri), a subspecies of eastern gorilla, the world's largest ape, and confined to eastern Democratic Republic of Congo, has been listed as Critically Endangered on the IUCN Red List of Threatened Species.
- The announcement was made at the IUCN World Conservation Congress currently underway in Hawaii.
- Critically Endangered status means that a species is considered to be facing an extremely high risk of extinction.

36. Ban on PET bottles for medicines questioned

A case related to phasing out of polyethylene terephthalate (PET) bottles for pharmaceutical packaging is set to come up before the National Green Tribunal.

Issue

- **Responding to an RTI application, the National Test House (NTH), based on whose tests the Drugs Technical Advisory polyethylene terephthalate (PET) bottles for pharmaceutical packagingBoard (DTAB) had taken a decision to phase out , has clarified the tests were conducted on samples provided to them by clients for their own use.**
- The controversy had threatened the Rs 4,000 crore PET pharmaceutical packaging industry in India.
- About 600,000 tonnes of PET is produced in India every year, of which the pharmaceutical industry uses 100,000 tonnes.

37. IoT technology

The digital space has witnessed major transformations in the last couple of years and as per industry experts would continue to evolve itself. The latest entrant to the digital space is the Internet of Things (IoT).

Several countries like US, South Korea, China among others, have already taken lead in their preparedness for taking advantage for IoT. However, this transformation is not limited to the developed world alone.

Even India, both the public and private sector is gearing up to acquaint itself with the technology so that the administrative practices and business processed can be improved in an efficient and effective way.

Internet of Things

• It is a seamless connected network system of embedded objects/ devices, with identifiers, in which communication without any human intervention is possible using standard and interoperable communication protocols.

• With this technology, each and every device that we use in daily life (including refrigerators, cars and even tooth brush) can be made intelligent and smart by using device specific operating systems and connectivity to the Internet.

• The large amount of data collected by in-built sensors in these devices will be fed to the remote servers through internet over cloud. This data will be used by different organizations, business and governmental, for decision making and dissemination of information.

• For example, a car insurance company can fore-warn its policy holder to not to travel in a particular stretch if the company finds out (through the data collected through sensors in the car) that he/she is the frequent traveler in a cyclone-prone area.

Stages involved in IoT technology

Internet of Things involves three distinct stages -

i. The sensors which collect data (including identification and addressing the sensor/device)

ii. An application which collects and analyzes this data for further consolidation

iii. Decision making and the transmission of data to the decision-making server. Analytical engines, actuators and Big data may be

used for the decision making process.

Business potential of IoT

The number of Internet-connected devices (12.5 billion) surpassed the number of human beings (7 billion) on the planet in 2011, and by 2020, Internet-connected devices are expected to number between 26 billion and 50 billion globally.

Against this backdrop, the IoT will drive new consumer and business behavior that will demand increasingly intelligent industry solutions, which, in turn, will drive trillions of dollars in opportunity for IT industry and even more for the companies that take advantage of the IoT.

Applications of IoT

This technology offers a range of applications including green building, smart grid, smart manufacturing, industrial monitoring, agriculture, smart cities, healthcare, connected homes, telematics and supply chain, safety and security, forest and wild life, automotive, natural disasters, etc.

Situation in India

• The Union Government released the Draft Policy on IoT in October 2014. However, the draft was revised and released again in April 2015 by bringing necessary changes in tune with the Digital India and Smart Cities Initiatives.

• The policy envisages creating an IoT industry of 15 billion US dollars by 2020.

• Besides, in July 2015, the Union Government announced to set up a Centre of Excellence on IoT as a joint initiative of DeitY, Education and Research Network (ERNET) and NASSCOM.

• Similarly, the Government of Andhra Pradesh approved India's maiden IoT policy in March 2016 with the prime objective of turning the state into an IoT Hub by 2020.

• Even in the private sector, in August 2015, Reliance Communication Ltd. entered into an agreement with the USA-based Jasper Technologies to offer IoT services in India.

38. OSIRIS-REx

The US space agency, NASA, on 8 September 2016 launched OSIRIS-REx (Origins, Spectral Interpretation, Resource Identification, Security-Regolith Explorer) spacecraft. The unmanned spacecraft, OSIRIS-REx, blasted off onboard a United Launch Alliance (ULA) Atlas V rocket from Cape Canaveral Air Force Station.

OSIRIS-REx is United States' first mission to collect samples from an asteroid and return to Earth. The 800 million dollar mission will travel for two years on a journey to Bennu, a near-Earth asteroid about the size of a small mountain.

NASA feels that the asteroid may hold clues to the origin of the solar system and the source of water and organic molecules found on Earth.

Scientists at NASA said OSIRIS-REx's main goal is to gather dirt and debris at least 60 grams (2.1 ounces) from the surface of the asteroid and return it to Earth by 2023 for further study.

39. World's first driverless bus service launched in French city of Lyon

The world's first driverless bus service began carrying passengers in the first week of September 2016 in Lyon, France.

Two electric minibuses with a capacity of 15 passengers each are now operating a 10-minute route with five stops in the city centre at an average speed of 10 Kilometres per hour.

Highlights

• The buses include features like LiDAR radar technology and motion sensors to help it avoid collisions.

• They're equipped with a range of detectors that allow them to know exactly where they are.

• It can hold up to 15 passengers.

• The bus is designed by French company **Navya**.

• The electric buses were tested in several French cites and in Switzerland before coming to Lyon.

• They are also set to undergo trials in Dubai.

LiDAR technology

• LiDAR is a surveying technology that measures distance by illuminating a target with a laser light.

• It is sometimes considered an acronym of Light Detection and Ranging.

• However, it was originally created as a portmanteau of light and radar.

• It is popularly used as a technology to make high-resolution maps, with applications in geodesy, geomatics, archaeology, geography, geology, etc.

40. Terahertz radiation could help us read closed books

- In the latest issue of Nature Communications, a group of researchers described a prototype of the system, which they tested on a stack of papers, each with one letter printed on it. The system was able to correctly identify the letters on the top nine sheets.It is done with the help of terahertz radiation, the band of electromagnetic radiation between microwaves and infrared light, and the tiny gaps of air between the pages of any closed book.
- This new system developed by researchers from MIT and Georgia Tech uses a standard terahertz camera to emit ultra short bursts of radiation and then measure how long it takes for that radiation to be reflected back. An algorithm then gauges the distance to each of the book's individual pages.
- Terahertz radiation can also be emitted in such short bursts that the distance it has travelled can be gauged from the difference between its emission time and the time at which reflected radiation returns to a sensor. That gives it much better depth resolution than ultrasound.
- The system exploits the fact that trapped between the pages of a book are tiny air pockets only about 20 micrometers deep. The difference in refractive index and the degree to which they bend light between the air and the paper means that the boundary between the two will reflect terahertz radiation back to a detector.

Terahertz radiation

• Terahertz radiation can distinguish between ink and blank paper in a way that X-rays cannot.
• It also offers much better depth resolution than ultrasound does.
• Terahertz radiation has been widely researched for use in security screening, because different chemicals absorb different frequencies of terahertz radiation to different degrees, yielding a distinctive frequency signature for each.

Terahertz Waves

In physics, terahertz radiation refers to electromagnetic waves propagating at frequencies in the terahertz range. It is synonymously termed submillimeter radiation, terahertz waves, terahertz light, T-rays, T-light, T-lux and THz. The term typically applies to electromagnetic radiation with frequencies between high-frequency edge of the microwave band, 300 gigahertz (3×1011 Hz), and the long-wavelength edge of far-infrared light, 3000 GHz (3×10^{12} Hz or 3 THz). In wavelengths, this range corresponds to 0.1 mm (or 100 μm) infrared to 1.0 mm microwave.

Potential Applications

- Non-destructive analysis of materials such as plastics and ceramics
- Analysis in pharmaceutical research and inspection on pharmaceutical manufacturing lines
- Security inspections of sealed packages and containers
- Food and agricultural product quality monitoring
- Biopsy of tissues such as skin

Medical imaging

- Terahertz radiation is non-ionizing, and thus is not expected to damage tissues and DNA, unlike X-rays. Some frequencies of terahertz radiation can penetrate several millimeters of tissue with low water content (e.g. fatty tissue) and reflect back. Terahertz radiation can also detect differences in water content and density of a tissue. Such methods could allow effective detection of epithelial cancer with a safer and less invasive or painful system using imaging.
- Some frequencies of terahertz radiation can be used for 3D imaging of teeth and may be more accurate and safer than conventional X-ray imaging in dentistry.
- Security:
- Terahertz radiation can penetrate fabrics and plastics, so it can be used in surveillance, such as security screening, to uncover concealed weapons on a person, remotely. This is of particular interest because many materials of interest have unique spectral "fingerprints" in the terahertz range. This offers the possibility to combine spectral identification with imaging. Passive detection of Terahertz signatures avoid the bodily privacy concerns of other detection by being targeted to a very specific range of materials and objects.

Scientific use and imaging

- Spectroscopy in terahertz radiation could provide novel information in chemistry and biochemistry.
- Recently developed methods of THz time-domain spectroscopy (THz TDS) and THz tomography have been shown to be able to perform measurements on, and obtain images of, samples which are opaque in the visible and near-infrared regions of the spectrum. The utility of THz-TDS is limited when the sample is very thin, or has a low absorbance, since it is very difficult to distinguish changes in the THz pulse caused by the sample from those caused by long term fluctuations in the driving laser source or experiment. However, THz-TDS produces radiation that is both coherent and spectrally broad, so such images can contain far more information than a conventional image formed with a single-frequency source.
- A primary use of submillimeter waves in physics is the study of condensed matter in high magnetic fields, since at high fields (over about 15 teslas), the Larmor frequencies are in the submillimeter band. Many high-magnetic field laboratories perform this work, such as the National High Magnetic Field Laboratory (NHMFL) in Florida.
- Submillimetre astronomy.
- Terahertz radiation could let art historians see murals hidden beneath coats of plaster or paint in centuries-old building, without harming the artwork.

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Communication

- Potential uses exist in high-altitude telecommunications, above altitudes where water vapor causes signal absorption: aircraft to satellite, or satellite to satellite.

Manufacturing

- Many possible uses of terahertz sensing and imaging are proposed in manufacturing, quality control, and process monitoring. These generally exploit the traits of plastics and cardboard being transparent to terahertz radiation, making it possible to inspect packaged goods.

Despite many valuable useful applications, the adoption of terahertz waves has been slow because of the limited output power from currently available sources. Terahertz waves lie between the optical and the microwave spectrum and cannot be efficiently generated by either scaling down optical sources like lasers or scaling up conventional microwave sources such as klystrons. Current moderate size terahertz sources can only generate a few milliwatts of average power and hence most require expensive and complicated schemes for detection. Therefore, the lack of commercially available sources and detector for this frequency region, other than the Advanced Photonix, T-4000, and the Bridge12 gyrotron, lead to what some have called the **"Terahertz Gap".**

41. ICGS 'Sarathi'

Indian Coast Guard Ship 'Sarathi', third ship in the series of six Offshore Patrol Vessels (OPV) was commissioned by the Home Minister Shri Rajnath Singh at Goa, in the presence of Defence Minister Shri Manohar Parrikar. **'Sarathi' meaning charioteer is a projection of Indian Coast Guard's** will and commitment '**To serve and protect**' the maritime interest of the nation.

- This 105 meters **OPV has been designed and built indigenously by GSL** and is fitted with most advanced state-of-the-art navigation and communication equipment, sensors and machineries.
- **The features include 30 mm CRN 91 Naval Gun**, **Integrated Bridge System (IBS)**, **Integrated Machinery Control System (IMCS)**, **Power Management System (PMS)** and **High Power External Fire Fighting System**.
- The ship is designed to carry one twin engine Light Helicopter and five high speed boats including two Quick Reaction Inflatable Boats for swift boarding operations, search and rescue, law enforcement and maritime patrol.
- The ship is also capable of carrying pollution response equipment to contain oil spill at sea.
- **The ship on joining Coast Guard Fleet will be based at Kochi** and will form part of the **Naval Training Squadron**.
- In addition, **the ship will be deployed for the EEZ surveillance** and other duties to safeguard the maritime interests of India. Presently, Indian Coast Guard has a fleet of 123 ships/boats, further 68 ships/boats are at various stages of construction at different shipyards.
- **The commissioning of ICGS 'Sarathi' will enhance the Indian Coast Guard's operational capability** to discharge the multifarious maritime tasks.

42. World's longest bullet train tracks completed

China's high-speed railway which is making a big pitch **to compete in India and global markets has completed over 20,000 kms of track network in the country**, becoming **world's longest bullet train network**.

- **A high-speed railway linking Zhengzhou in China's central Henan Province** with Xuzhou in eastern Jiangsu Province opened on 10 September 2016.
- With the operation of the new line, **China's high-speed railway lines have exceeded 20,000 km in total length**, the world's longest.
- The **360-km line connects high-speed railway in the west** with two major north-south lines, helping cut travel time between the west and east.
- The **travel time between Xi'an and Shanghai is cut to six hours from nearly 11 hours**.
- The line has nine stations and trains run at a speed of up to 300 kph in the initial period.
- **Construction of the line started in December 2012** and test operation started in April 2016.
- China is competing with Japan to market the bullet train network in India and various other countries.
- While **Japan bagged the contract to build Mumbai-Ahmedabad high speed train**, China is conducting feasibility study to build the **bullet train track between Chennai and New Delhi**.

43. HAL successfully conducts test flight of Light Utility Helicopter

The Hindustan Aeronautics Limited (HAL) has successfully conducted a technical flight of the new indigenous Light Utility Helicopter (LUH). The flawless test was conducted by HAL engineers and technicians in the air for 15 minutes inside the HAL complex in

Bengaluru, Karnataka.

- Light Utility Helicopter (LUH) is eight-seater chopper under development for the armed forces.
- It has a maximum All-Up-Weight (AUW) of 3,150 Kgs and fitted with Safran HE Ardiden-1U engine of 750 KW power.
- It has with a range of 350 Kms and service ceiling of 6.5 Kms. It can operate from sea level to high altitudes of Himalayas.
- It has been designed to carry out various utility roles such as reconnaissance, transport, cargo load, quick response and special operation.
- It can also be used for ferrying VVIPs, as air ambulance, for policing and to search, rescue and evacuate people.

HAL has already developed four highly popular models of helicopters under its belt. Its product range includes, Dhruv Advanced Light Helicopter (ALH), multi-role seven seater Chetak Helicopter, Light combat helicopter (LCH) Cheetah and Lancer, anti-insurgency, close air support chopper.

44. Indian scientists solve preterm birth mystery

- A team of Indian researchers unlocked the mechanisms by which preterm births occur. Preterm births signify the period between 28 and 32 weeks of gestation.
- The team was led by Professor Anirban Banerjee from the Department of Biosciences and Bioengineering, IIT Bombay, and Dr. Deepak Modi from Mumbai's National Institute for Research in Reproductive Health. The results were published on 1 September 2016 in the journal PLOS Pathogens.
- At 35%, India accounts for the highest burden of preterm births in the world.

Key highlights of the research

- For the first time, the researchers found that gram-positive **Group B Streptococcus (GBS) bacteria** produce small balloons called membrane vesicles. These vesicles contain toxins that destroy foetal and maternal cells. They also kill the collagen that keeps the cells together.
- The GBS bacteria are normally found in human vagina. Their numbers can shoot up in some pregnant women.
- The GBS bacteria have been associated with premature rupture of amniotic membrane and preterm birth.

Test on pregnant mice

- The team tested its hypothesis by injecting membrane vesicles into 15 pregnant mice.
- All the injected mice gave birth to preterm babies and nearly 40% were born dead.
- In mice, the babies were born two days preterm. This is equivalent to two months in humans as the gestation period in mice is 21 days.
- The preterm babies were much smaller and unhealthy.
- The researchers found that the toxins present in the vesicles fragmented the collagen of the amniotic membrane.
- Fragmentation of the collagen leads to loss in elasticity and weakening of the amniotic membrane thus making it susceptible to rupture due to pressure from the growing foetus. This leads to preterm birth.

45. First edition of IoT India Congress begins in Bengaluru

The first edition of IoT India Congress 2016 kick started on 7 September 2016 in Bengaluru, Karnataka.

The three-day event was inaugurated by Ravi Shankar Prasad, Union Information Technology (IT) and Electronics Minister, and JS Deepak, Secretary, Ministry of Telecommunications.

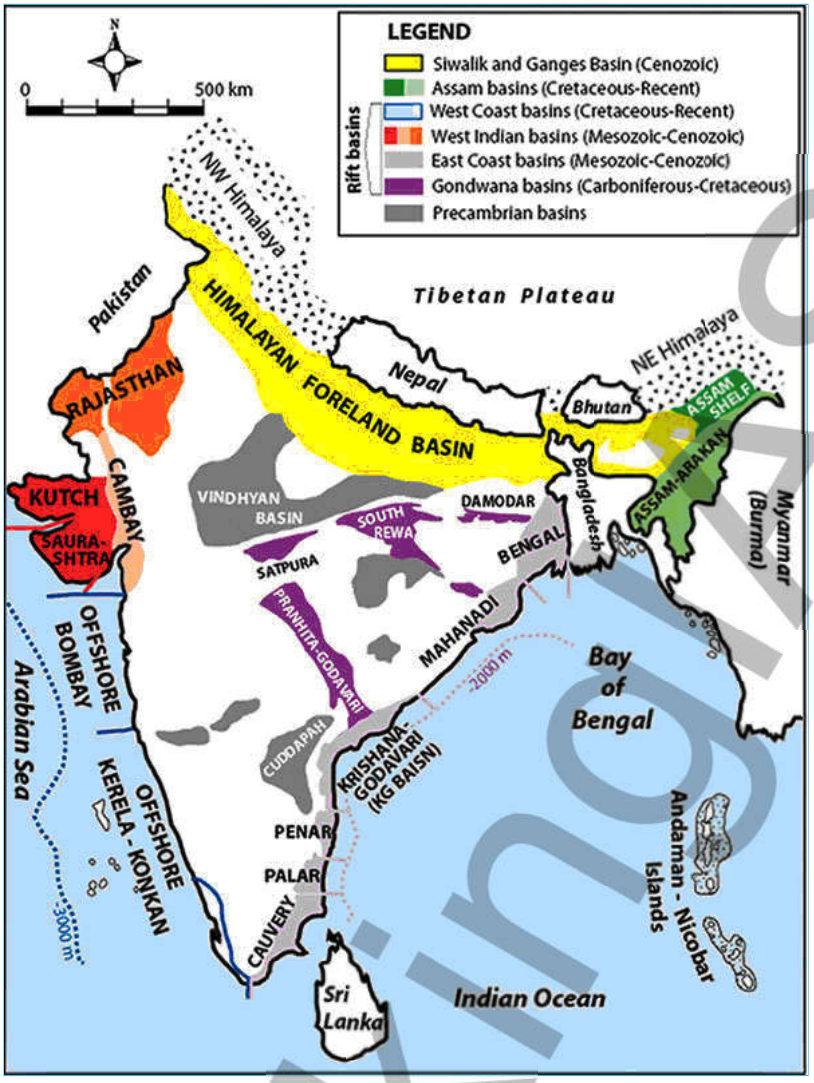
Key highlights of the event

- The IoT India Congress 2016 is one of the largest events of its kind in India.
- It will bring together stakeholders from various facets of the Internet of Things (IoT) ecosystem.
- It aims to bring together key stakeholders across the value chain and verticals to collaborate, ideate and share a common roadmap for IoT implementation.
- The event will also host the and the **IoT Thought Leadership Awards 2016 IoT Start-Up Awards 2016**

About Internet of Things

- The Internet of Things is a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers. They are provided with the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction.
- In 2013, the Global Standards Initiative on Internet of Things defined the IoT as the *infrastructure* of the information society.
- The IoT allows objects to be sensed and/or controlled remotely across existing network infrastructure.
- When IoT is augmented with sensors and actuators, the technology becomes an instance of the more general class of cyber-physical





Brian Greene at an atoll about 249 km from Kure.

• Researchers confirmed that the fish represented a new species, the first member of the genus Tosanoides found outside of the waters off Japan.

• This small maroon and gold fish species was discovered 300 feet deep in the waters off Kure Atoll in the Pacific ocean.

• It was discovered in June 2016 during a research trip to Kure, the world's northernmost atoll.

This is not the first fish to be named after Barack Obama. A species of darters found only in the Duck River and the Buffalo River in US was named Etheostoma Obama in 2012.

Health Ministry on 5 September 2016 launched the Leprosy Case Detection campaign (LCDC) in the country. Objective of the campaign is to detect the disease early so that those affected can be saved from physical deformity.

As per the Health Ministry release about 32 crore people across 149 districts of 19 States and Union Territories will be screened under the fortnight-long campaign.

Key highlights of the campaign

• It includes, the districts having a prevalence rate of more than one

Technological advance in horizontal drilling

Hydraulic fracturing

Increase in *natural* gas price in the global market.

Groundwater contamination: Use of sand/ceramic and high pressure water helps to fracture the shales and shale gas escapes out through there fractures. There is fear of, this injected mixture or the escaping gas contaminating the ground water.

Water requirement: Large quantity of water is required for the process of hydraulic fracturing. This water requirement should be met without affecting the local community's ability to meet its water needs.

Requires vast land cover: Many wells will have to be dug to sustain commercially viable production. Typically 100-500 sq.km land would be required.

Risk of earthquake: The fracturing mixture is injected at high pressure. This has been speculated to have potential to cause earthquake.

Resource assessment: In the recently approved Hydrocarbon Exploration Policy (HELP), a unified exploration regime has been envisaged, which will ease the exploration process and also do away with separate licenses for different types of Hydrocarbons.

Availability of Land and Water: India owing to its huge population, population density and dependence on agriculture, will face a challenge in this regard. Nevertheless, strong land acquisition laws protecting the interests of land owners and corporates will have to be put in place. Exhaustive and comprehensive discussions will have to be held with the local community to clear all apprehensions.

Environmental pollution: Adequate measures will have to be taken to minimize adverse impact on the surroundings. Transparency in operations will help in addressing trust deficit, if at all they exist.

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48. Newly discovered fish of genus Tosanoides named after Barack Obama

49. Union Government launches Leprosy Case Detection campaign

case per 10000 people in the last three years.

• Around three lakh teams will visit every house in their allotted area and screen all the family members for leprosy.

• The states and UTs to be covered in this campaign include Andhra Pradesh, Assam, Bihar, Chhattisgarh, Gujarat, Jharkhand, Haryana, Maharashtra, Nagaland, Odisha, Tamil Nadu, Uttar Pradesh, Karnataka, Uttarakhand, West Bengal, Delhi, Dadra and Nagar Haveli and Lakshadweep.

• Chhattisgarh has the highest number of districts to be covered, followed by Dadra Nagar and Haveli.

The first Leprosy Case Detection Campaign was launched in March 2016 in 50 districts of 7 states namely Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Maharashtra, Odisha and Uttar Pradesh. During the campaign, around 65427 suspected cases were identified out of which nearly 4120 were later confirmed.

Leprosy

• It is a chronic infectious disease caused by Mycobacterium leprae.

• It is a leading cause of permanent physical disability.

• It usually affects the skin and peripheral nerves, but has a wide range of clinical manifestations.

• The disease is characterized by long incubation period generally 5-7 years.

• The effective way of preventing disability due to leprosy is timely diagnosis and treatment of cases, before nerve damage has occurred.

As per records, leprosy cases in India was reduced to one lakh in 2005 from 30 lakh in 2003, but since then there has been no remarkable achievement in terms of its complete elimination.

50. GRSE hands over fast attack craft TIHAYU to Indian Navy

The Garden Reach Shipbuilders and Engineers Limited (GRSE) of Kolkata on 30 August 2016 handed over TIHAYU, the Water Jet Fast Attack Craft (WJFAC) to the Indian Navy. The warship was handed over by Rear Admiral (Retd) AK Verma, CMD of GRSE to the Commanding Officer Cdr Ajay Kashov. GRSE had earlier built and delivered 10 WJFACs to the Indian Navy during 2009 to 2011, which are proving well in service.

TIHAYU, the Water Jet Fast Attack Craft (WJFAC)

- Named after an island in the Andaman, Tihayu is fitted with three water jet propulsion systems powered by marine diesel engines generating 2720 KW of power.
- This Follow-on WJFAC ship is a further improved version of Fast Attack Crafts earlier built by GRSE for Indian Navy.
- The ship has an efficient hull form developed by the in-house Design Centre of GRSE and proved by extensive model testing to achieve speeds in excess of 35 knots.
- This warship measuring 48 X 7.5 M with a displacement of around 315 Tons, has an endurance of around 2000 nautical miles at 12-14 knots speed.
- It also boasts of modern habitability conditions with accommodation for 29 personnel.
- It is also fitted with CRN-91 indigenous 30mm Gun, to provide Artillery fire support during attack missions.

51. Newly discovered fish named

Scientists have named a **small maroon and gold fish species after the U.S. President Barack Obama** which was discovered 300 feet deep in the waters off **Kure Atoll in the Pacific ocean**.

- The fish, of **the genus Tosanoides**, was named in **honour of Obama** for his commitment to protecting nature through the expansion of the**Papahanaumokuakea Marine National Monument**, researchers said.
- It was discovered in June this year during a research trip to **Kure, the world's northernmost atoll**.
- **Atolls ring-shaped reef, island, or chain of islands formed of corals**.
- The fish is found only within the **Papahanaumokuakea Marine National Monument, a World Heritage site** encompassing 1,510,000 square kilometres of ocean waters, including ten islands and atolls of the Northwestern Hawaiian Islands.
- The **site is the largest swath of protected land or water on Earth**, and is home to millions of seabirds, endangered turtles, endangered monk seals, and more than 7,000 species.

- Richard Pyle, a marine biologist at the Bishop Museum in Hawaii, was underwater when he first saw a group of fish he did not recognise, the 'National Geographic' reported.
- Researchers confirmed that the fish represented a new species, the first member of the genus Tosanoides found outside of the waters off Japan.
- This is not the first fish to be named after Mr. Obama. A species of **darters** found only in the Duck River and the Buffalo River in U.S. was named**Etheostoma obama in 2012**.

52. WHO certifies Sri Lanka malaria free

Sri Lanka has been certified as malaria-free island country by World Health Organisation (WHO) on 5 September. In the mid-20th century **it was among the most malaria-affected countries**, but now it is malaria-free. This is testament to the courage and vision of its leaders, and signifies the great leaps that can be made when targeted action is taken. It also demonstrates **the importance of grass-roots community engagement** and a whole-of-society approach when it comes to making dramatic public health gains.

- Sri Lanka's road to eliminating the mosquitoes was tough, and demanded well-calibrated, responsive policies.
- **After malaria cases soared in the 1970s and 80s**, the country's anti-malaria campaign in the 1990s adjusted its strategy to intensively target the parasite in addition to targeting the mosquito.
- **The change in strategy was unorthodox, but highly effective**.
- Mobile malaria clinics in high transmission areas meant that prompt and effective treatment could reduce the parasite reservoir and the possibility of further transmission. Effective surveillance, community engagement and health education, meanwhile, enhanced the ability of authorities to respond, and mobilized popular support for the campaign.
- The adaptation and flexibility of strategies and support from key partners such as **WHO and the Global Fund to Fight AIDS, Tuberculosis and Malaria fast-tracked success**.
- **By 2006, the country recorded less than 1 000 cases of malaria per year**, and since October 2012, the indigenous cases were down to zero. For the past three-and-a-half years, no locally transmitted cases have been recorded.
- **Sri Lanka is the second country in the WHO South-East Asia Region to eliminate malaria after Maldives**. The announcement of Sri Lanka's victory over malaria was made at the WHO South-East Asia Region's annual Regional Committee meeting in the presence of health ministers and senior health officials from all 11 Member States.

53. GSLV-F05 / INSAT 3DR

An Indian rocket with an over two tonne INSAT-3DR advanced **weather satellite** blasted off from the Sriharikota spaceport in Sriharikota on 8 September 2016. The **Geosynchronous Satellite Launch Vehicle-Development 5 (GSLV-F05)** rose into sky with a deep growl, breaking free from the second launch pad at the **Satish Dhawan Space Centre**. The launch was delayed for 40 minutes due to a delay in fuelling the rocket's third stage. The 49.1 metre tall rocket, weighing 415.2 tonne rapidly rose towards the blue sky, spewing a thick orange plume.

- **The rocket would sling the INSAT-3DR satellite**, which can also aid in search and rescue (SAR) operations, into a **geosynchronous transfer orbit (GTO)** around 17 minutes into the flight.
- **The GSLV is a three stage rocket**. The **first stage is fired by solid fuel** and its four strap-on motors by liquid fuel. The **second is powered by liquid fuel** and the **third is the ISRO-developed cryogenic engine** that is more efficient as it provides more thrust for every kilogram of propellant burnt.
- ISRO is perfecting the **crucial cryogenic engine technology to save precious foreign exchange** by launching heavier satellites on its own.
- ISRO currently relies on the European Space Agency's Ariane rocket to launch its heavy communication satellites.
- ISRO can now launch satellites weighing around 2-2.5 tonnes till such time **it readies an advanced GSLV variant -- GSLV-Mark III** -- that can lug satellites weighing around four tonnes.
- **It was GSLV's fourth flight with the desi cryogenic engine CE-7.5**, with the first three being developmental flights. Isro called **the present one an operational flight** as the space agency was confident about the technology and its success.

INSAT-3DR

- **INSAT-3DR is the second heaviest satellite placed in orbit** by an **indigenous cryogenic engine propelled GSLV**. The 2,211kg satellite, which will **provide meteorological and search and rescue data services to the country**, was injected into the geostationary transfer orbit. The satellite, with the help of its propellant weighing 1255kg, was later raised to the final geostationary orbit.
- INSAT-3DR, **configured with an imager and two transponders**, will continue the services rendered by previous satellites and further augment the capability to provide both meteorological and search and rescue services. A data relay transponder **will provide meteorological, hydrological and oceanographic data** from remote uninhabited locations through automatic weather stations, rain gauges and agro met stations.
- The **other is a satellite aided search and rescue transponder that will pick up and relay alert signals** originating from the

distress beacons of maritime, aviation and land based users.

- The imager in the satellite will **generate images of the Earth disk from an altitude of 36,000km once in every 26 minutes** and provide information on various parameters including radiation, sea surface temperature, snow cover, cloud motion and fog.
- **India has six meteorological satellites** out of which three -- **Kalpana-1**, **INSAT-3D** and **INSAT-3DR** -- are exclusively for providing weather services.
- **Soon after its injection into GTO**, the **solar array of INSAT-3DR was automatically deployed and the Master Control Facility (MCF)** at Hassan in Karnataka took control of the satellite.
- **Like its predecessor INSAT-3D which is providing service from orbit since 2013**, **INSAT-3DR is an advanced meteorological (weather observation) satellite** built by India to provide a variety inputs essential for accurate weather forecasting.
- For this, it is equipped with three payloads (instruments), namely, a **Multispectral Imager**, **Sounder and weather Data Relay Transponder**.
- **INSAT-3DR also carries a satellite aided Search and Rescue Transponder** that picks up and relays alert signals originating from distress beacons of maritime, aviation and land based users.
- In the coming days, **INSAT-3DR's orbit will be raised from its present GTO to the final circular Geostationary Orbit (GSO)** by firing the **satellite's Liquid Apogee Motor (LAM) in stages**.
- The satellite will be commissioned into service after the completion of orbit raising operations and the satellite's positioning in its designated orbital slot of 74 degree East longitude in the GSO and in-orbit testing of its payloads.
- Today's flight of GSLV further highlights the success of ISRO in mastering the highly complex cryogenic rocket propulsion technology.

54. China has successfully launched world's first quantum satellite- QUESS

China has successfully launched the world's first quantum satellite dubbed as Quantum Experiments at Space Scaler (QUESS) satellite.

The satellite was launched on board of Long March-2D rocket from the Jiuquan Satellite Launch Centre in the remote northwestern province of Gansu.

The QUESS satellite has been nicknamed as Micius after a 5th century BC Chinese philosopher.

sun-synchronous orbit It will be located in at an altitude of 500 km and will circle the Earth once every 90 minutes.

The satellite will help China to establish hack-proof communications system by transmitting uncrackable keys from space to the ground.

Applications, range from highly secured military and government communications to online shopping.

Earlier, researchers around the world had successfully sent quantum messages on land. But this first of its kind satellite-based quantum network would make it possible to send quickly encrypted (hack proof) messages around the world. It also opens door to other possible uses of the technology.

Quantum communication

Quantum communication boasts ultra-high security communication. It uses subatomic particles to securely communicate between two points. In case intruder (hacker) tries to crack the message in Quantum communication, it will change its form in a way that would alert the sender and cause the message to be altered or deleted. **Quantum Science** - The fundamental problem of cryptography involves exchanging keys—secret alphanumeric strings—that enable people to encode and decode messages. When two parties swap keys, they normally have no indication whether anyone has intercepted them; an interloper with stolen keys can eavesdrop on correspondence or manipulate it. When quantum science is applied, the keys can be made to self-destruct or change if a third party interferes with their transmission. The keys are sent using pairs of entangled photons, or light particles that share a special bond, to carry the information.

55. Hague Code of Conduct

India has subscribed to an **international code of conduct** against indiscriminate spread of ballistic missile technology, once again reaffirming its commitment to **global non-proliferation objectives**. **India has joined the Hague Code of Conduct against Ballistic Missile Proliferation** (or HCoC in short) by notifying **Austria**, the designated "central contact" of the convention.

Note

- **The HCoC, adopted in 2002**, is a voluntary, legally non-binding international confidence-building and transparency measure that seeks to prevent the proliferation of ballistic missiles that are capable of delivering weapons of mass destruction.
- Its joining the HCoC signalled its "**readiness to further strengthen global non-proliferation objectives**.

- India's accession took the number of the nations subscribing **the HCoC against ballistic missile proliferation to 138**. China, Pakistan, Israel and North Korea are among the nations, which are yet to accede to the code despite having significant missile development capability.
- India, which did not sign the NPT, had been a pariah for **the global non-proliferation regimes till 2008**.
- The Nuclear Supplier Group, which controls global atomic material and technology trade, however granted an exemption to India in 2008, despite its "non-NPT" status.

Grouping/Agreement	Objectives & Features	India's Stance
Nuclear Supplies Group (NSG)	▪ Group of nuclear supplier countries based on Non-Proliferation Principle ▪ Mandate is to regulate nuclear exports & nuclear-related exports ▪ Set up in 1974 as a response to Indian nuclear test ▪ Being a signatory of NPT is an important criteria to join the elite club ▪ Has 48 members including P5 of the UNSC	▪ Applied for membership in May 2016 ▪ Sought exemption from NPT on grounds of clean track-record ▪ India's pledge of "no-first-use" policy will help in getting membership ▪ Got support from all major members; China poses hurdle ▪ Membership helps in lucrative global nuclear trade ▪ Will get access to sensitive nuclear material & technologies ▪ Big boost to domestic industries & clear energy initiatives
Missile Technology Control Regime (MTCR)	▪ An informal and voluntary partnership among 35 countries ▪ Set up in 1987 by the G7 countries ▪ Aims to limit the proliferation of missiles and missile technology ▪ Focus on those that carry minimum payload of 500 kg & minimum of 300 km ▪ Not a treaty and does not impose legally binding obligations on member ▪ Has 34 members & China is not a member	▪ Applied for membership but denied membership in October 2015 ▪ Major countries supported but Italy was reluctant ("due to rift on Marine case") ▪ Membership helps India in curbing global missile proliferation threat ▪ More of strategic concern and no additional benefit in terms of trade ▪ Because the group has no restrictions on trade with non-members

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Wassenaar Arrangement	▪ Set up in 1995 in Wassenaar (the Netherlands) & operation in 1996 ▪ Focus is on conventional arms & dual-use goods and technologies ▪ Seeks to achieve peace and security through export controls ▪ Has a 4-point criterion for membership ▪ 41 members including the USA and Russia	▪ Interested in joining this export control regime ▪ Meets 3 of the four conditions needed to join ▪ They are – Producer of arms; Adherence to non-proliferation policies ▪ Third - Fully effective export controls (announced a list of 16 in August 2015) ▪ Fourth - Yet to comply with SCOMET list criteria ▪ Benefits – participation in trade and Play key role in deciding export regulations
Australia Group	▪ Informal group set up in 1985 ▪ As a response to Iraq's use of chemical weapons in 1984 ▪ To control the export of chemical and biological weapons ▪ Key role in the conclusion of Chemical Weapons Convention (CWC) of 1997	▪ Willing to join the group with the USA's backing ▪ Ratified the CWC and set up a national authority in 2000 ▪ With membership, gets a chance in deciding export items list
Nuclear Non-Proliferation Treaty (NPT)	▪ To prevent the spread of nuclear weapons & weapons technology ▪ Binding treaty and came into force in 1970 for 25 years ▪ In 1995 extended indefinitely; Joined by 195 parties so far ▪ Two categories Nuclear Weapon States (NWS), which are also P5, & Non-NWS ▪ NWS are those that conducted tests before 1 January 1967	▪ Unwilling to sign the treaty as it is biased towards NWS ▪ NPT discriminatory because it enables development of weapons only by NWS ▪ India, Israel and Pakistan are the major non-signatories ▪ Signing of NPT is crucial as it linked to membership in other control regimes

Comprehensive Test Ban Treaty (CTBT)	▪ Seeks to ban all nuclear explosions in all environments ▪ Applicable to military as well as civilian purposes ▪ Adopted by UN General Assembly in September 1996 ▪ Signed by 183 and ratified by 164 ▪ Not in force because not ratified by all 44 Annex II countries including India	▪ Not a signatory to the convention ▪ Because the USA signed and not ratified so far ▪ Other non-signatories: Pakistan, North Korea & Myanmar
Biological Weapons Convention (BWC)	▪ Legally binding treaty that outlaws biological arms ▪ In force since 1975 & has 174 states-parties ▪ Non-signatory States – Israel and many African nations	▪ Ratified the convention and strongly committed to not to produce the biological weapons

SPORTS AND AWARDS

1. National Humanities Medal

Indian-American physician-author Abraham Verghese, whose work has emphasised empathy in medicine, has been selected for the prestigious 2015 National Humanities Medal. Inaugurated in 1997, National Humanities Medal bestowed upon individuals or groups whose work has deepened the nation's understanding of human experience, broadened citizens' engagement with history, languages, philosophy, literature and other humanities subjects.

2. Novel on Apatani tribe of Arunachal, Into the Hidden Valley, wins MM Bennetts Award

Novel, **Into the Hidden Valley** authored by Stuart Blackburn on 4 September 2016 won the 2016 MM Bennetts Award for Historical Fiction in the UK. The author was presented the award at the HNS Conference in Oxford.

The book published by Speaking Tiger narrates the story of the **Apatani tribe of Arunachal Pradesh** during British India. It also looks into a little-known episode in the colonial history of British India.

Into the Hidden Valley explores and portrays the impacts of the forces of colonialism on both sides when this settled civilisation forcibly collides with British Empire.

Into the Hidden Valley was chosen for the award ahead of Helena Page Schrader's **Defender of Jerusalem** and **Allegiance** by Kermit Roosevelt.

3. Swachh Survekshan for rural areas released, Mandi and Sindhudurg topped the charts

The results of the 2016 'Swachh Survekshan' (Cleanliness Index) for rural India was released on 8 September 2016. Mandi (Himachal Pradesh) and Sindhudurg (Maharashtra) were declared as the cleanest districts in India.



Mandi was judged as the cleanest district in "Hills" category and Sindhudurg as the cleanest in the "Plains" category.

Overall Ranking - Swachh Survekshan Gramin

Category	Rank	District & state	Score

Hills	1	Mandi, Himachal Pradesh	98.4
	2	West Sikkim, Sikkim	96.4
	3	Shimla, Himachal Pradesh	94.1
Plains	1	Sindhudurg, Maharashtra	96.8
	2	Nadia, West Bengal	95.0
	3	Satara, Maharashtra	92.9

The results were declared by the Minister, Ministry of Drinking Water and Sanitation, Rural Development and Panchayati Raj.

A total of 22 hill districts and 53 plain areas were assessed under the Gramin Swachh Survekshan launched in May 2016.

State wise, Sikkim and Kerala were ranked as top performing states in a Swachhta (cleanliness) survey conducted by the National Sample Survey Office (NSSO), while Chhattisgarh and Jharkhand were placed among the last on the table.

Assessment

The Ministry had commissioned Quality Council of India (QCI) to carry out the assessment. Each district has been judged on four distinct parameters. Maximum weightage was places on accessibility to safe toilets and water. The parameters to judge sanitation status include:

• Households having access to safe toilets and using them (toilet usage, water accessibility, safe disposal of waste) (40%)

• Households having no litter around (30%)

• Public places with no litter in the surrounding (10%)

• Households having no stagnant wastewater around (20%)

The assessors appointed by QCI individually visited all districts covered under the Survekshan to make a comprehensive analysis of the on-ground situation & progress.

4. Haryana bagged Best Horticulture State award

- Haryana has bagged 'Best Horticulture State' award for the concerted efforts made by the state government to increase the income of the farmers in horticulture.
- The award was received by Haryana Agriculture Minister OP Dhankar on 9 September 2016 at two-day 9th Agricultural Leadership Summit 2016. The summit was organized by Indian Council of Food and Agriculture (ICFA) in New Delhi.

Horticulture in Haryana

- At present, about 2.5 lakh hectares of land of the state is under horticulture and a target has been set to increase it up to nine lakh hectares. For this purpose, the state has decided to set a Horticulture University in the state.
- It also decided to set up centers of excellence in horticulture in every district of the state and create 340 horticulture villages in the state.
- In addition, it would also set biggest Horticulture Mandi of the country at Ganaur on the pattern of Rungis Mandi of France and Shenzhen Mandi of China.
- Besides, the **2016 best agriculture state award** went to Odisha. It was awarded with the award in recognition of the efforts towards development of agriculture and bringing rural prosperity.

5. Indians bag gold, bronze Paralympics

India's Mariyappan Thangavelu created history on 10 September 2016 **by winning a gold medal in the men's high jump T-42 event at the Rio Paralympics**. His compatriot **Varun Singh Bhati clinched the bronze** medal in the same event. While Thangavelu made a leap of 1.89 metres, Bhati jumped his personal best of 1.86 metres to finish third. **India's other medal prospect Sharad Kumar** finished at sixth. US's Sam Grewe bagged the silver medal.

- It was heartbreak for Kumar, who led the pack at one stage after clearing hurdles of 1.55 m and 1.60 m. His best jump, though, was only 1.77 m.

- **Gold medalist Mariyappan Thangavelu** celebrates with compatriot and **bronze medal winner Bhati Varun Singh** and of **silver medalist Sam Grewe**the United States after the event.
- The event witnessed huge competition as six out of the 12 para-athletes cleared the 1.74 m mark in their first eight attempts.
- In his 10th attempt, Thangavelu jumped 1.77 m successfully, along with three others - Poland's Lukasz Mamczarz, China's Zhiqiang Zhing and country mate Kumar.

6. India's first woman to get MCC membership

Cricket Club (MCC). **Virender Sehwag** and **Zaheer Khan** were recently awarded the MCC memberships too.

- A former **India captain and recipient of the Padma Shri in 2014**, Anjum was thrilled to share the communication from the MCC.
- **Her international debut at 17, Anjum went on to play 12 Tests, 127 ODIs and 18 T20s**.
- Anjum, who was honoured alongside Sehwag, was the **first Indian woman to hit an international century**.
- An Arjuna awardee in 2007, Anjum led India to a rare Test series win against South Africa in 2002.

7. Jan Shikshan Sansthan conferred with 2016 UNESCO Confucius Prize for Literacy

- The Jan Shikshan Sansthan (JSS) of Malappuram, Kerala was on 1 September 2016 conferred with the 2016 Unesco Confucius Prize for Literacy. The award was conferred on the JSS in recognition of its literacy-linked skill development activities among the underprivileged in rural areas.
- The JSS bagged the prestigious international award for its initiatives in applying new technology in literacy. Innovations such as Braille applications and the Talking Pen used by the JSS impressed UNESCO.
- The award sponsored by China consists of 20000 US dollars, a diploma, and a silver medal. Moreover, a JSS team will be given a free study tour to China.

Jan Shikshan Sansthan's Skill-Development Programme

- The JSS has reached out to the weaker sections, including widows and Adivasis, with its literacy and skill-development programmes.
- More than 53000 people from different sections have been covered since the project began in 2006.
- With JSS support, more than 40000 people improved their income through such means as stitching, mobile repairing, embroidery, choke-making and bag making.
- The talking pen introduced by the JSS to educate tribal women had won wide appreciation.

8. Bibhuti Lahkar wins Heritage Heroes Award of IUCN

Indian ecologist and conservation activist Bibhuti Lahkar on 4 September 2016 became the first Asian to be awarded the prestigious Heritage Heroes Award by the International Union for Conservation of Nature (IUCN).

Lahkar received the award at the IUCN's World Conservation Congress in Honolulu, Hawaii.

The Indian ecologist was among five conservationists across the globe to be nominated for 2016 Heritage Heroes Award.

The Heritage Heroes Award is aimed at recognising outstanding efforts around the globe in making a difference in the conservation of World Heritage sites in challenging situations.

Bibhuti Lahkar

• Bibhuti Lahkar has researched grassland ecosystems in the Indian state of Assam.

• He did his PhD on the grasslands of Manas National Park with special reference to Pygmy hog.

• His research work has covered diverse areas of grassland ecosystems of Manas National Park and Kaziranga National Park in Assam.

• He was the recipient of the prestigious grants from Rufford's Foundation for his work on community conservation in Manas World Heritage site and conservation of Hoolock Gibbon at Gibbon Wildlife Sanctuary.

• He also conducted the first GIS survey of the Royal Manas National Park.

• His research findings and recommendations are a critical component in the Manas Tiger Conservation Plan.

9. Lindsay Tuckett

South African Lindsay Tuckett, who was the oldest surviving former Test cricketer, passed away on 5 September 2016 in Bloemfontein.

ECOLOGY

1. Carbon-neutral tag for IGI Airport, first in Asia-Pacific

The Delhi International Airport Limited (DIAL) announced that the Indira Gandhi International Airport (IGIA) has become the first airport in the Asia-Pacific region to achieve carbon neutral status.

- DIAL is a GMR Group-led consortium which manages and operates IGI airport.
- The announcement on the carbon neutral status was made by Airports Council International (ACI) during the Airport Carbon Accreditation certificate presentation ceremony held in Montreal, Canada.
- The Airport Carbon Accreditation has upgraded Delhi Airport to 'Level 3+, Neutrality', which is the highest level of achievement available to airports across the world.



What is carbon neutrality?

Beekeepers concern

Honey industry

South Asia Technology centre

GM mustard

Genetic Engineering Approval Committee:

Safety assessment report

- Carbon neutrality, or a net zero carbon footprint, occurs when the net carbon emissions over an entire year is zero. This means the airport absorbs or offsets the same amount of emission that was generated.
- It is used in the context of carbon dioxide releasing processes associated with transportation, energy production, and industrial processes such as production of carbon neutral fuel.

2. Don't commercialise GM mustards, say bee cultivators

- Beekeepers from all over the country have opposed the government's proposal to introduce genetically modified mustard in India.
- They fear that the introduction of GM mustard could impact production and hit lakhs of livelihoods.
- The beekeepers argue that that bee-keeping has been hit in areas where GM cotton (Bt cotton) is grown.
- They demand government investigation in the issue before going on with GM mustard.
- India's honey industry has at least 5 lakh bee-keeping families and nearly one million livelihoods and enterprises are directly or indirectly dependent on it, according to industry data.
- About 90,000 tonnes of honey is produced annually in India of which about 35,000 tonnes is exported, with an estimated value of 750 crore.
- It is a not-for-profit scientific society.
- Giving a contradictory opinion it stated that the health and foraging ability of honey bee populations will not be affected by the pollen of GM mustard.
- Accordingly, GM mustard is likely to have beneficial effects on the honey bee population based on their relatively enhanced foraging behaviour resulting in increasing honey production and income of bee-keepers in mustard growing areas.
- The name of GM mustard is hybrid DMH-11.
- It is developed by the Centre for Genetic Manipulation and Crop Plants.

- It confers resistance to the herbicide Basta (Phosphinotricin).
- Once given a go-ahead by the Centre, it will be the first transgenic food crop to be released in India.
- Genetic Engineering Approval Committee (GEAC) established under Ministry of Environment, Forest and Climate Change (MoEFCC), is the apex body for approval of activities involving large scale use of hazardous microorganisms and recombinants in research and industrial production from the environmental angle.
- The GEAC is also responsible for approval of proposals relating to release of genetically engineered organisms and products into the environment including experimental field trials.
- The Environment Ministry has invited comments on a safety assessment report prepared by a subcommittee under the Genetic Engineering Approval Committee which stated that GM mustard technology has been found to be safe for food/feed and environment.

3. Phase Down HFCs - Kigali Summit

replacement of ozone-depleting substances.

What is Montreal Protocol?

The Montreal Protocol is an international treaty designed to protect the ozone layer by phasing out the production of numerous substances that are responsible for ozone depletion. It is a protocol to the Vienna Convention for the Protection of the Ozone Layer It was agreed on 26 August 1987, and entered into force on 26 August 1989.

What is to be discussed in Kigali Summit?

Countries are meeting in Kigali in Rwanda in the middle of next month to finalise a decision on the phasing out of a set of chemicals called hydro fluorocarbons (HFCs), which have very high global warming potential, through the existing mechanism of the Montreal Protocol.

What is HFC?

- Chlorofluorocarbons are the original set of chemicals used in the refrigerator and air-conditioning industry. When Montreal Protocol mandated the phasing out of all ozone-depleting substances like chlorofluorocarbons, HFCs came in as a substitute for CFCs because they were not ozone-depleting as they do not contain chlorine. The Montreal Protocol allows the inclusion, within its mandate, substances that are not ozone-depleting but harm the environment in other ways.
- HFCs, used mostly in the refrigerator and air-conditioning industry, are quantitatively insignificant when compared to the common carbon-based greenhouse gases like carbon dioxide or methane, but are much more potent in terms of their global warming potential (GWP)

Why is it important to include it?

- HFCs are thousands of times more potent than carbon dioxide. They contribute to less than 5% of global greenhouse gas emissions as of now, but since their demand is growing, they could comprise almost 20% of emissions by 2050 in the business-as-usual scenario.
- Elimination of HFCs by 2050 would prevent about 0.5 degrees of global temperature rise by the end of this century.

Therefore it is believed that putting HFCs in the Montreal Protocol now would lead to a swifter and more effective phasing out, since

- The Paris Agreement is still in its infancy.
- There is stronger consensus being built now on climate change as the countries are ratifying Paris Agreement.
- It would complete the global architecture in the fight against climate change.

India's Proposals

There are significant differences over the manner in which developed and developing countries would be asked to phase out HFCs, and how the developing countries would be compensated for the financial burden imposed on their industry. India has put forward its own proposal for amendment of the Protocol.

- The countries are expected to set a 'freezing year' to phase down production and consumption of the HFC. The 'freezing year' is the year when the use of HFCs will peak before being rapidly scaled down and finally phased out altogether.
- Developed nations want an early 'freezing year' of 2021 but India has been insisting on using HFCs till 2031. Countries might agree for different 'freezing years' for developed and developing countries, taking in view their consumption patterns.
- Research has shown that economy-wide costs of India completely eliminating HFCs by 2050 would be about Rs 90,000 crore if the timeline proposed by India is followed. Swifter timelines would require much more money. India wants developed countries to make these monies available to it from the Multilateral Fund, to enable the switch-over; for research and development of low GWP alternatives and capacity building so that the technological transition can be achieved.

Source - http://indianexpress.com/article/explained/straws-in-the-wind-phase-out-of-hfcs-is-low-hanging-fruit-kigali-likely-

to-deliver-a-deal-3053442/

4. National waterways project threatens Gangetic dolphins

According to the scientists and wildlife conservationists, the National Waterways (NW) project possesses serious environmental threat to Gangetic river dolphins.

Threats to survival of Gangetic river dolphins

- Construction of dams and barrages which hinders the natural flow of the rivers is the main reason considered for decline in the population of Gangetic river dolphin.
- Besides, pollution and lack of awareness also causes decline in their population.
- Loss of habitat due to increased developmental work, depletion of prey base, accidental mortality in fishing nets and accidents with vessel propellers are also some anthropogenic threats.
- The ships' noise-levels also disrupt the ability to navigate and find prey.

Significance of National Waterway 1

India has a huge untapped potential of inland waterways. To tap this potential, the Central Government has planned to develop National Waterway 1, World Bank-aided 1600-km waterway project in River Gangabetween Allahabad and Haldia for inland transportation.

- It has potential to emerge as the logistics artery for northern India and improve navigability of the River Ganga as it passes through Uttar Pradesh, Bihar, Jharkhand and West Bengal.

Solutions

- To tackle threat to dolphins, Union Ministry of Environment and Forest Conservation in 2016 had launched Endangered Species Recovery Plans for four species of global importance.
- During the development of NWs, some measures will be listed such as safeguards, mentioned issues like minimising dredging.
- Movement of cargo vessels will be restricted through protected habitat areas through river, monitoring systems and sound mufflers will be installed to reduce underwater noise.
- Nesting grounds, breeding and spawning grounds of dolphins will be identified and development projects activity will be minimised in those areas.

River dolphins

- River dolphins are found in Ganga and Brahmaputra and its tributaries.
- It is the National Aquatic Animal of India.
- It has been declared endangered species and isprotected under Schedule I of the Wildlife Protection Act, 1972.
- This fresh water dolphin species is practically blind. They rely on bio-sonar method to move around and catch their prey.

5. WHO Report on Air Pollution 2016

Air pollution is killing nearly 8 lakh people annually in the South East Asian Region with **India alone accounting for over 75 per cent of the casualties** caused by cardiovascular diseases and lung cancer, according to a **new WHO report** on 27 September 2016.

The report said

Nine out of 10 people globally are breathing poor quality air while **nearly 90 per cent of air pollution related deaths occur in low and middle-income countries**, with nearly **two out of three occurring in WHO's South-East Asia including India and Western Pacific regions**.

The report also called **for strengthening measures against inefficient modes of transport, household fuel** , coal-fired power plants and industrial activities – some of the major sources of air pollution.**and waste burning**

94 per cent are due to noncommunicable diseases – notably cardiovascular diseases, stroke, chronic obstructive pulmonary disease, lung cancer and air pollution also increases the risks for acute respiratory infections.

A WHO South East Asian Region (SEAR) statement said: "**Air pollution is the world's biggest environmental risk to health and must be addressed on a priority basis** as it continues to rise, causing long lasting disease and illness in addition to around 7,99,000 deaths annually in countries of the WHO SEAR."

WHO SEAR statement quoting the **WHO Report on Ambient Air Pollution 2016** said that 6,21,138 people died in India of air pollution due to **Acute lower respiratory infection (ALRI)**, **Chronic obstructive pulmonary disorder (COPD)**, **Ischemic heart disease (IHD)** and **Lung Cancer**.

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Report

- The report represents the **most detailed outdoor (or ambient) air pollution-related health data**, by country, **ever reported by WHO**.
- The **model is based on data derived from satellite measurements**, **air transport models and ground station monitors** for more than 3000 locations, both **rural and urban**.
- It was **developed by WHO in collaboration with the University of Bath in UK**.
- The report called for **dramatic action against pollution** that is blamed for more than six million deaths a year.
- The problem is most acute in cities, but air in rural areas is worse than many think and poorer countries have much dirtier air than the developed world.
- The report estimates **population exposure to PM 2.5 at country level through a new model** that relies on satellite data and ground measurements.

6. Norway becomes first country to prohibit deforestation

Norway in the first week of June 2016 became the first country to prohibit deforestation.

On 26 May 2016, the Norwegian Parliament had pledged to make government's public procurement policy deforestation-free. The step was taken after a committee of MPs recommended imposing regulations to ensure the state did not contribute to deforestation of the rainforest.

The step taken by the government means that the parliament will no longer award government contracts to any company that cuts down and destroys forests.

Norwegian lawmakers also committed to find a way to source essential products such as palm oil, soy, beef and timber so that they leave little to no impact on their ecosystems. Norway had pledged to do that at the U.N. Climate Summit in 2014, alongside Germany and the United Kingdom.

Importance of rainforests

- A natural rainforest emits and absorbs vast quantities of carbon dioxide.
- They are referred to as lungs of Earth.
- They help to stabilize Earth's climate. Scientists believe carbon dioxide is a major contributor to climate change. By absorbing carbon dioxide, rainforests help to reduce the effects of worldwide climate change.
- They are an important home to about half of the species of plants and wildlife on the planet. Many of the species found in rainforests are endangered and can only survive in rainforests.
- They help maintain the water cycle by producing large amounts of rainfall every year.

Why are rainforests disappearing?

- Tropical and temperate rainforests have been subjected to heavy logging and agricultural clearance throughout the 20th century.
- Biologists have estimated that large numbers of species are being driven to extinction due to the removal of habitat with destruction of the rainforests.
- Another factor causing the loss of rainforest is expanding urban areas.
- Almost 90% of West Africa's rainforest has been destroyed.
- Since the arrival of humans, Madagascar has lost two thirds of its original rainforest.
- Several countries, notably Brazil, have declared their deforestation a national emergency.
- As per a 2007 report from WWF, deforestation could wipe out or severely damage nearly 60% of the Amazon Rainforest by 2030.

7. The Rise of Environmental Crime Report released by UNEP and INTERPOL

- The report titled **The Rise of Environmental Crime** was released by the United Nations Environment Programme (UNEP) and INTERPOL on 4 June 2016. The report revealed that environmental crime grew up by 26 per cent larger than previous estimates of 2014.
- Environmental crime is the world's fourth-largest criminal enterprise after drug smuggling, counterfeiting and human trafficking.
- INTERPOL and UNEP have joined forces to bring awareness in the world about the environmental crime.
- The crime includes the illegal trade in wildlife, corporate crime in the forestry sector, the illegal exploitation and sale of gold and other minerals, illegal fisheries, the trafficking of hazardous waste and carbon credit fraud.

Highlights of the report

- The report finds that weak laws and poorly funded security forces are enabling international criminal networks and armed rebels to profit from a trade that fuels conflicts, devastates ecosystems and is threatening species with extinction.
- The vast sums of money generated from the environmental crimes keep sophisticated international criminal gangs in business, and fuel insecurity around the world.

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- The report recommends the world to come together to take strong national and international action to combat environmental crime.
- It includes measures targeted at disrupting overseas tax havens; an increase in financial support commensurate with the serious threat that environmental crime poses to sustainable development; and economic incentives and alternative livelihoods for those at the bottom of the environmental crime chain.
- The last decade has seen environmental crime rise by at least 5-7 per cent per year. This gives an impression that environmental crime is growing two to three times faster than global GDP.
- The report also looks at how money generated from the illegal exploitation of natural resources funds rebel groups, terrorist networks and international criminal cartels.
- The report notes that transnational organized criminal networks are using environmental crime to launder drug money.
- The report looks at the rise of white collar environmental crime, from the use of shell companies in tax havens to launder money generated from illegal logging to transfer mispricing, hacking and identity theft.

8. Bramble Cay melomys is first mammal declared extinct from human-caused climate change

Scientists in June 2016 declared Bramble Cay melomys found only on a tiny island on the Great Barrier Reef as extinct.

It is the first recorded extinction of a mammal anywhere in the world thought to be primarily due to human-induced climate change.

The news was revealed in the report of a survey led by Ian Gynther from Queensland's Department of Environment and Heritage Protection in partnership with the University of Queensland.

Key points of the report

• The root cause of the extinction was reported to be high tides and surging seawater, which has travelled inland across the island.

• As a result of rising seas, the island was inundated on multiple occasions killing the animals. The rising seas also destroyed their habitat.

Bramble Cay melomys

• The Bramble Cay melomys are also known as **Australian Great Barrier Reef rodent** or**Bramble Cay mosaic-tailed rat**.

• It was a species of rodent in the family Muridae.

• It was similar to the Cape York melomys except that it had some protein differences and a coarser tail caused by elevated scales.

• It was prominent in herdfields and strandline vegetation where it built burrows.

• It was Australia's most isolated mammal.

• The Bramble Cay melomys was first discovered by Europeans in April 1845.

• The species was then apparently in high densities.

• It was not until the first part of the following century that the species was formally described as **Melomys rubicola** based on a specimen collected by MacGillivray.

9. Endosulfan causes DNA damage in animals: Study by Indian researchers

Indian researchers, for the first time, have found that endosulfan, an organochlorine pesticide, causes DNA damages in animals. They have revealed that mice and rats exposed to endosulfan suffer from DNA damage and genomic instability, and impaired DNA damage response.

The results were published on 4 August 2016 in the journal, **Carcinogenesis**.

Key highlights of the study

• A team of researchers led by Professor Sathees Raghavan from the Department of Biochemistry, IISc, Bengaluru revealed that endosulfan breaks in DNA strands and disturbs the damage response mechanism found in cells, which leads to compromised DNA strand repair.

• Mice and rats exposed to endosulfan generated reactive oxygen species, a potent DNA damaging agent.

• The reactive oxygen species, in turn, caused DNA damage in the form of breaks in DNA strands.

• The broken DNA strands generally tend to repair themselves by rejoining. However, endosulfan treatment was found to cause extensive processing of broken DNA, which leads to increased and long deletion in the strands.

• Endosulfan also increased the damage by promoting erroneous repair of the broken DNA strands. Erroneous repair will lead to undesirable genome level changes leading to genomic instability, which may cause cancer and genetic abnormalities.

• Five animals per group were studied and the experiment was repeated many times.

• Three different concentrations of endosulfan were tested on animals and four doses of each concentration were given at 24 hours interval.

• Even the highest dosage of 3 mg per kg of body weight used in the experiments is well below the lethal concentration of 12 mg/kg

body weight.

• Lungs and testes of the animals were used for the study. These two organs show very proficient DNA repair mechanism.

Endosulfan

• Endosulfan is an off-patent organochlorine insecticide.

• Endosulfan sulfate is a product of oxidation containing one extra O atom attached to the S atom.

• Endosulfan became a highly controversial agrichemical due to its acute toxicity, potential for bioaccumulation, and role as an endocrine disruptor.

• Because of its threats to human health and the environment, a global ban on the manufacture and use of endosulfan was negotiated under the **Stockholm Convention** in April 2011.

• The ban took effect in mid-2012, with certain uses exempted for five additional years.

• More than 80 countries, including the European Union, Australia, the United States of America had already banned it or announced phase-outs by the time the Stockholm Convention ban was agreed upon.

• It is still used extensively in India, China, and a few other countries.

• It is produced by Makhteshim Agan and several manufacturers in India and China.

10. Ozone layer in Antarctic is healing: Study

Researchers in their study claimed that the hole in the Earth's ozone layer over Antarctica has begun to heal. They said that in September 2015 the hole was around 4 million square kilometers smaller than it was in the year 2000, an area roughly the size of India.

The gains in the protective layer can be credited to the long term phasing out of ozone-destroying chemicals which was adopted in the 1989 Montreal Protocol.

Findings of the Study

• Industrial chlorofluorocarbons that cause ozone depletion have been phased out under the Montreal Protocol.

• A chemically-driven increase in polar ozone (or "healing") is expected in response to this historic agreement.

• Fingerprints of September healing since 2000 was identified through

a) Increases in ozone column amounts

b) Changes in the vertical profile of ozone concentration

c) Decreases in the areal extent of the ozone hole

• Along with chemistry, dynamical and temperature changes contribute to the healing, but could represent feedbacks to chemistry.

• Volcanic eruptions episodically interfere with healing, particularly during 2015 (when a record October ozone hole occurred following the Calbuco eruption).

This is the first clear evidence of healing after the thinning of the layer was first reported in 1980s. The then report suggested a hole in the ozone layer above Antarctica every that was of an average of about 18 million square kilometers in September 1987 and widened to nearly 25 million square kilometers in September 2000.

The study was published on 30 June 2016 in the journal Science. Susan Solomon, the lead author of the study along with his team carried out detailed measurements of the amount of ozone in the stratosphere between 2000 and 2015.

What helped in finding the hole in Ozone in 1980s in Antarctica?
Extreme cold conditions and large amount of light helped the scientists to find thinning of the ozone over Antarctica. These two factors helped in producing Polar Stratospheric Clouds and the chlorine chemistry in these clouds helps in destroying the ozone.

Process
The ultraviolet (UV) light of the sunlight on striking the chlorofluorocarbons (CFCs) into the atmosphere breaks their chemical bonds and freezes chorine. These free chlorine atoms helps in striping oxygen from Ozone molecules (O3) to form chemicals, destroying the ozone itself.

The ozone hole reaches its peak size in October, and by November, the stratosphere heats up enough to break apart this polar vortex fill the hole.

Ozone

Ozone layer lies at the lower edge of the stratosphere at a distance of about 20 to 30 kilometer above the Earth's surface. The layer protects the planet from the Sun's ultraviolent radiation.

11. SC-appointed Green Panel recommends high pollution cess of 20-22% on diesel vehicles

The Environment Pollution (Prevention and Control) Authority (EPCA) on 5 July 2016 recommended a green cess of 20-22 percent on diesel vehicles. EPCA is a Supreme court-appointed Green Panel for Delhi-National Capital Region (NCR).

Highlights of the recommendations

- The vehicles need to be divided into three categories- up to 1200 cc, up to 2000 cc and 2000 cc and above.
- An Environment Compensation Charge (ECC) of 10 percent of the vehicle's cost be imposed on diesel cars with engines up to 1200cc.
- EPCA recommended ECC of 20 percent tax on diesel vehicles with engines smaller than 1500cc in size.
- It recommended a cess of 22 percent on vehicles with engines over 1500cc.
- It also recommended high pollution cess of up to 25 percent on the cost of diesel cars above 2000 cc.
- The authority's recommendation of 20 per cent (for less than 1500 cc) and 22 per cent (for over 1500 cc) green cess stands at 179766 rupees and 215883 rupees respectively.

- Diesel car users cannot pay less tax per litre of fuel compared to petrol car. This needs to be equalised to control growing use of low tax diesel fuel in cars that have cleaner substitutes.

Comment

- If the EPCA's recommendations are accepted, the cess for the present range of diesel vehicles in the national capital could translate to anywhere between 1-2 lakh rupees.
- The main reason behind EPCA's recommendation is to remove the existing incentive for buying diesel vehicles. Removing the fuel price differential, through the imposition of ECC will be a step in removing the incentive for diesel vehicles. This is needed to reduce public health risk.
- The committee's report is, however, not the last word on the environment cess on diesel vehicles as the Supreme Court is awaiting inputs of various stakeholders.
- In December 2015, the Supreme Court banned the registration of diesel-run SUVs and high-end cars with engine capacity of 2000CC and above in Delhi and NCR. The ban was initially instituted for a period of three months and was subsequently extended with no deadline.

12. IUCN declares Bornean Orangutan as critically endangered

The International Union for Conservation of Nature (IUCN) in the first week of July 2016 declared Bornean orangutan as a Critically Endangered animal.

As per the IUCN's findings, the combined impacts of habitat loss, habitat degradation and illegal hunting equate to an 86% population reduction between 1973 and 2025. This finding qualifies the species for listing as Critically Endangered.

In addition to loss of habitat, the survey also disclosed that 2000 to 3000 orangutans have been killed by hunters or villagers each year over the past four decades.

In addition, the IUCN also put the **whale shark, the largest fish in the world, on the Endangered list.**

Bornean orangutan

• The Bornean orangutan is a species of orangutan native to the island of Borneo.

• The species, along with the Sumatran orangutan, belongs to the only genus of great apes native to Asia.

• Like the other great apes, orangutans are highly intelligent and display advanced tool use and distinct cultural patterns in the wild.

• Orangutans share approximately 97% of their DNA with humans.

• The Bornean orangutan is the third-heaviest living primate after the two species of gorilla.

• They are also the largest truly tree-dwelling animal alive today.

13. Rare Marbled Map butterfly sighted in Eastern Ghats

Rare Marbled Map butterfly was sighted in Eastern Ghats near PM Kota village of Maredumilli mandal in East Godavari district of Andhra Pradesh. This is the first time that the Marbled Map butterfly species, usually found in the north-east, was sighted in South India.

The butterfly was found by a group of green enthusiasts including N. Chandramohan Reddy, an Indian Forest Service officer, while they were exploring the thick forest of the Eastern Ghats of the region.

At present, Reddy is working as the managing director of AP Urban Greening and Beautification Corporation Ltd.
A book by Issac Kehimkar titled 'The Book of Indian Butterflies' says that the Marbled Map (Cyrestis cocles) is listed as a rare butterfly species. Its availability is confined to forested hills in the region between Sikkim and Arunachal Pradesh, Jharkhand, Bhutan and Myanmar.

Marbled Map (Cyrestis cocles)

• The Marbled Map is a species of nymphalid butterfly found in parts of Asia.

• This species is pale green with faint vertical lines and rounded wings.

• Its wings span is between 50-60 mm.

The World Meteorological Organisation (WMO) on 21 July 2016 announced that global temperatures for the first six months of 2016

14. 2016 set to be world's hottest year on record: WMO

broke many records. It means that 2016 is on the track to be the world's hottest year on record.

The WMO stated that Arctic Sea ice melted early and fast, which is another indicator of climate change. In addition, Carbon dioxide levels have also reached new highs.

Key facts announced by WMO

• June 2016 marked the 14th consecutive month of record heat for land and oceans and the 378th consecutive month with temperatures above the 20th century average.

• Carbon dioxide concentrations have passed the symbolic milestone of 400 parts per million (ppm) in the atmosphere so far in 2016.

• Two separate reports from the **U.S National Oceanic and Atmospheric Administration (NOAA)** and **NASA's Goddard Institute for Space Studies (NASA GISS)** highlighted the dramatic and sweeping changes in the state of the climate.

• The average temperature in the first six months of 2016 was 1.3°C (2.4°F) warmer than the pre-industrial era in the late 19th century.

• NOAA said the global land and ocean average temperature for January 2016–June 2016 was 1.05°C (1.89°F) above the 20th century average.

• The El Niño event which developed in 2015 and was one of the most powerful on record contributed to the record temperatures in the first half of 2016.

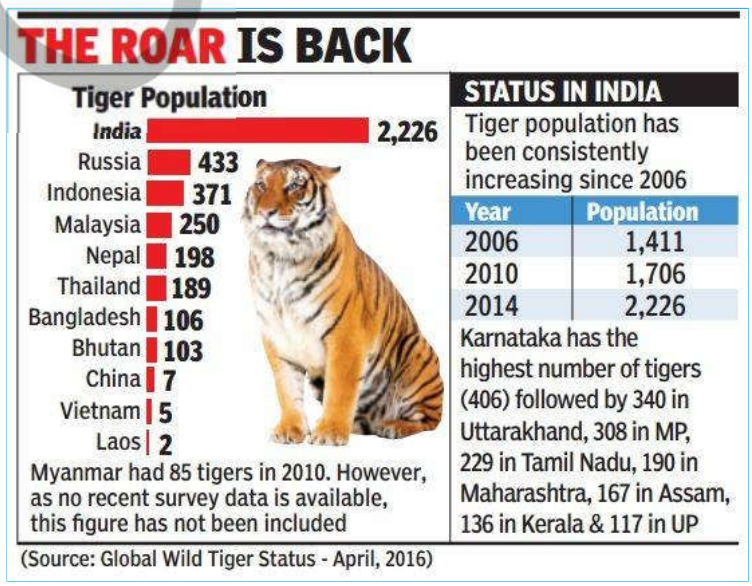
• The extent of Arctic sea ice at the peak of the summer melt season now typically covers 40 percent less area than it did in the late 1970s and early 1980s.

• Rainfall in June 2016 was notably drier than normal across the western and central contiguous USA, Spain, northern Colombia, northeastern Brazil, Chile, southern Argentina, and parts of central Russia.

• Wetter-than-normal precipitation was observed across northern Argentina, northern and central Europe, Australia and across central and southern Asia.

• Temperatures in the Coral Sea (including the Great Barrier Reef), and the Tasman Sea were highest on record for extended periods since late summer 2016.

15. India gets its first tiger repository



The Wildlife Institute of India (WII) in first week of August 2016 announced that it will house India's first repository on tigers, under its new **Tiger Cell**.

The Tiger Cell was inaugurated on 6 August 2016. It will be funded by the **National Tiger Conservation Authority** (NTCA), a statutory body under the Environment Ministry.

The Dehradun-based WII has about 23000 images of tigers, which will be maintained by the Tiger Cell.

Key highlights of the Tiger Cell

• The Tiger Cell will assist in population assessment of tigers, law enforcement, wildlife forensics, infrastructural development and mitigation, smart patrolling and advisory role in policy formulation.

• If a tiger skin is recovered at a place, then a properly maintained database can be used to check where the tiger might have come from.

• When a project needs environmental clearance, the spatial data can be used to overlay the project plan on the maps and check whether the project will interfere with wildlife habitats that must not be disturbed.

• **Y.V. Jhala**, a wildlife scientist at the WII, **will head the Tiger Cell**.

Wildlife Institute of India

• The Wildlife Institute of India is an autonomous institution under the Union Ministry of Environment Forest and Climate change.

• WII carries out wildlife research in areas of study like biodiversity, endangered species, wildlife policy, wildlife management, wildlife forensics, spatial modeling, ecodevelopment, habitat ecology and climate change.

• The founder of WII was V. B. Saharia.

• The first Director was Hemendra Singh Panwar who remained the director from 1985 to 1994.

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• The institute is based in Dehradun. It is located in Chandrabani.

16. Shashi Shekhar Committee on World Culture Festival of AOL submitted report to NGT

The Shashi Shekhar Committee was in news in the third week of August 2016 as the NGT directed Sri Sri Ravi Shankar's Art of Living (AOL) to submit its response within three weeks on the inspection report.

The report of the expert committee dealt with the damage caused to the Yamuna flood plains due to the World Culture Festival.

The festival was organised by the AOL in March 2016 along the River Yamuna in New Delhi.

The inspection report of the committee concluded that the event has caused damage to the riverbed.

Background

• The 5-member committee was formed by the National Green Tribunal (NGT) in the wake of allegations that the festival caused extensive damage to the biodiversity and aquatic life of Yamuna.

• The committee is headed by Shashi Shekhar, Secretary of the Ministry of Water Resources and consisted of expert members from the National Environmental Engineering Research Institute (NEERI).

• The committee was asked to quantify the damage and furnish a tentative cost for restoration of the area within 45 days.

• So far, the AOL foundation had deposited 4.75 crore rupees as "environment compensation" with Delhi Development Authority (DDA) as directed by NGT for damaging Yamuna's biodiversity during the festival.

17. IUCN lists Eastern Gorilla as Critically Endangered

- The International Union for Conservation of Nature (IUCN) on 4 September 2016 listed the eastern gorilla, the largest living primate, as critically endangered in its latest red list of threatened species.
- The eastern gorilla was listed in the latest update ofthat was released at the **The IUCN Red List of Threatened** taking place in Hawaii.**Species IUCN World Conservation Congress**
- The IUCN stated that the eastern gorilla has suffered a 70% population collapse over the past 20 years, primarily due to illegal hunting.
- The largest living primate's population is now estimated to be fewer than 5000. Grauer's Gorilla, one subspecies of Eastern Gorilla, has lost 77% of its population since 1994, declining from 16900 individuals to just 3800 in 2015. Hunting represents the greatest threat to Grauer's Gorillas.
- The second subspecies of Eastern Gorilla, the Mountain Gorilla, is faring better and has increased in number to around 880 individuals.
- Four of the six great apes, , , and**Eastern GorillaWestern GorillaBornean Orangutan Sumatran** , are now listed as . The Chimpanzee and Bonobo are listed as Endangered.**OrangutanCritically Endangered**

Eastern gorilla

- The eastern gorilla is a large hominid with a large head, broad chest and long arms.
- It has a flat nose with large nostrils.
- The face, hands, feet and breast are bald.
- The fur is mainly black, but adult males have a silvery saddle on their back.
- When the gorilla gets older, the hair on the saddle of the back becomes white, much like the gray hair of elderly people. This is why the older males are called silverbacks.
- Grauer's gorilla has a shorter, thicker, deep black fur, while the mountain gorilla has a more bluish color.
- Mountain gorillas are restricted to the mountain rainforests and subalpine forests of eastern Democratic Republic of the Congo, southwestern Uganda and Rwanda.
- Grauer's gorillas occur across the forests of the Albertine Rift in eastern Democratic Republic of the Congo.
- Eastern gorillas are herbivorous, with a heavily foliage based diet, due lack of available fruit in their habitats.

18. India takes R&D route to find alternatives to climate-damaging refrigerants HFCs

The Ministry of Environment, Forest and Climate Change (MoEFCC) on 15 September 2016 announced an ambitious collaborative R&D programme to develop next generation, sustainable refrigerant technologies as alternatives to HFCs.

This R&D initiative brings together Government, research institutes, industry and civil society to develop long term technology solutions to mitigate impact of currently used refrigerant gases on the ozone layer and climate. With this initiative, India reaffirms its commitment to working with all other nations to safeguard the Earth's natural ecosystem.

Some of the key players of the initiative include

• The Council of Scientific & Industrial Research and its allied institutions

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• Department of Science and Technology

• Centre for Atmospheric & Oceanic Sciences as well as key industry players in the sector

Members of this initiative have already had multiple rounds of consultation to reach a consensus on the contours and decide on the roadmap for this initiative.

India has a small carbon footprint at citizen level and its sustainable lifestyle results in low contribution of the country to overall emissions of greenhouse gases and ozone depleting substances, as compared with other developed countries. However, there is an urgent need for developing new technologies indigenously as alternatives available today are patented apart from being expensive. A research based programme to look for cost effective alternatives to the currently used refrigerant gases is, therefore essential.

The initiative is a significant step forward in line with India's national focus on research, innovation and technology development and Mission Innovation. The research initiative of the Ministry will be led by the CSIR's Indian Institute of Chemical Technology, Hyderabad.

The MoEF&CC, along with the Department of Science and Technology (DST), Council of Scientific & Industrial Research (CSIR) has also decided to create a corpus fund for this research programme, with Industry also committing to contribute to the effort.

The collaboration of research institutes as well as industry will create larger ecosystem for developing sustainable solutions, and eventually deploying low global warming potential - GWP HFCs on a national scale. By establishing an effective collaboration between all important stakeholders, the initiative is focused on prioritising areas of research in new refrigerant technologies and natural refrigerants. This shall help the country leapfrog from the current technology high GWP HydroFluoroCarbons or HFCs to technologies with lower climate impact.

The proposed initiative is an important step in the direction of enabling the country achieves national development goals, while continuing to maintain a sustainable environmental footprint.

What are HFCs?

HFCs are man-made greenhouse gases developed by the chemical industry to replace CFCs, HFCs' ozone-killing cousins, which were banned in 1992 by the Montreal Protocol. Unfortunately, despite their PR spin, HFCs are NOT an environmental alternative to anything. CFCs and HFCs are all part of a family of gases known as F-gases. F stands for fluorine, the chemical element shared by all of them. Their regulatory control is split between the Montreal Protocol (responsible for regulation of ozone depleting substances) and the Kyoto Protocol (responsible for regulation of greenhouse gases that cause climate change). The major applications that use F-gases are refrigeration, air conditioning, foam blowing agents, aerosols, fire protection and solvents. HFCs are used primarily in refrigeration and air conditioning, with these sectors accounting for 90% of F-gas use.

Are HFCs environmentally friendly?

HFCs are often misleadingly portrayed by their manufacturers and users to be 'environmentally friendly' because they do not deplete the ozone layer. However, they are highly potent greenhouse gases and contribute significantly to climate change.

Where are HFCs being used and emitted to the atmosphere?

Ninety percent of HFCs today are used in refrigeration and air conditioning units. So it is not surprising that these are the two main sources of global HFC emissions. Automobile air conditioning tops the list. Unlike CO_2 that is emitted as a product of burning fossil fuels to generate energy, most HFCs are contained within equipment. Any emissions are the result of old equipment, faulty maintenance, leakage during maintenance, or escape at the end of the product's lifetime.

What will be the overall impact of F-gases and HFCs to global warming?

The Montreal Protocol is often dubbed the most successful environmental treaty. However, despite its best efforts, the cumulative CFC, HCFC and HFC pollution now in the atmosphere was directly responsible for 17% of man-made global warming in 2005. Over the next 20 years, HFCs will make up 8.6% of global greenhouse gases emissions, according to a German research institute (see footnote xi). If HFCs are chosen as the Business-As-Usual replacement for the popular HCFC-22, HFC production will hit the equivalent of 6.85 billion tons of CO_2 in 2050. Production will peak at 7.97 billion tons of CO_2 in 2070, almost 10 times the projected CO_2 emissions of the US in 2010. If HFC 134a production alone is allowed to continue at the same rate as it is now, production will peak at approximately 1.83 million tons in 2070. That's the equivalent of 2.61 billion tons of CO_2, 5 times the projected CO_2 emissions of Australia in 2010. Carbon dioxide is the biggest piece of the climate puzzle. If we get the job done and do everything possible to reduce our carbon dioxide emissions, by phasing out coal, reducing oil consumption, investing heavily in renewable energy and increased energy efficiency, but continue to increase HFC-134a emissions as we do now, they will make up over 12% (12.56%) of our global carbon footprint in 2050.

19. Invasive Giant African Land Snails sighted at Goa University

The Giant African Land Snail (GALS) was spotted in the campus of the Goa University at Taleigao. GALS (Achatina fulica) is listed as one of the world's 100 most invasive species by the International Union for Conservation of Nature and Natural Resources.

This snail was spotted by Nandakumar Kamat, an Assistant Professor in the Department of Botany at the university.

Giant African Land Snail

• The species is a threat to agro-horticulture

• It is a threat to the public health as they act as a vector of human diseases like Eosinophilic meningitis, caused by Angiostrongylus cantonensis, a parasite that nematode commonly, resides in the pulmonary arteries of rats.

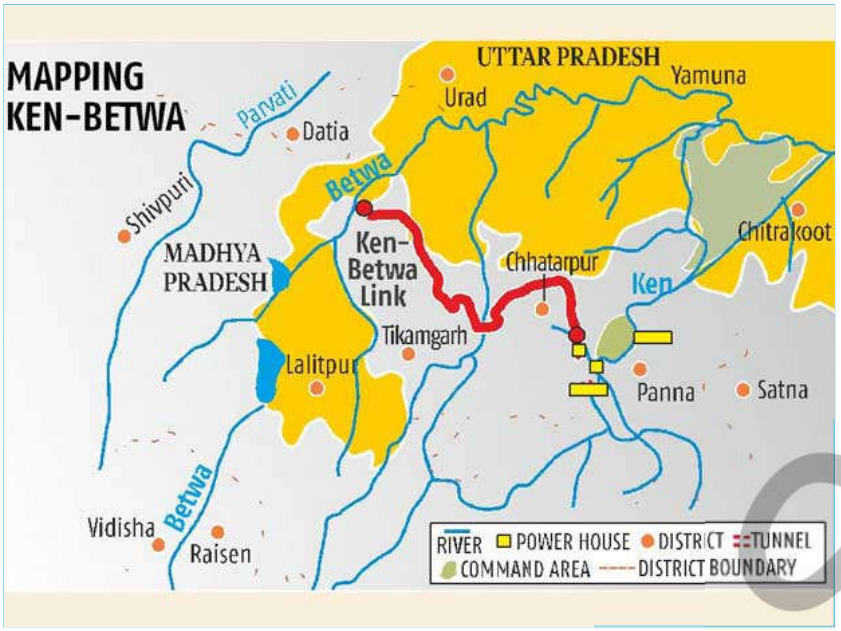
• They range from 7 cm to 20 cm in length and in case of specimens in Goa they were of 11 cm in length.

• They are known to be dangerous, as they can reproduce faster and take over entire ecosystems and become a menace to crops.

Invasive species are plants, animals, or pathogens that are non-native (alien) to the ecosystem under consideration and whose introduction causes or is likely to cause harm. They can harm the environment, the economy or even, human health.

20. Ken Betwa Phase 1 gets wildlife clearance

The National Board for Wildlife (NBWL) on 20 September 2016 approved 10000 crore rupees Ken-Betwa project, India's first inter-State river interlinking project. With this, India will have a river project will be located within a tiger reserve for the first time.



Ken-Betwa project

• It will irrigate the drought-prone Bundelkhand region but will also submerge about 10 percent of the Panna Tiger Reserve in Madhya Pradesh.

• The main feature of the project is a 230-km long canal and a series of barrages and dams connecting the Ken and Betwa rivers.

• It will irrigate 3.5 lakh hectares in Madhya Pradesh and 14000 hectares of Uttar Pradesh in Bundelkhand.

• The key areas are the Makodia and Dhaudhan dams, the latter expected to be 77 m high and responsible for submerging 5803 hectares of tiger habitat in the Panna tiger reserve.

• Chhatarpur, Panna, Tikamgarh, Raisen, and Vidisha districts of Madhya Pradesh and Mahoba, Jhansi and Banda districts of Uttar Pradesh will benefit from assured irrigation supply, water supply and power.

• On the other hand, about 6388 people in 10 villages will be affected due to the submergence by Daudhan reservoir.

• Around 13499 people living in the 28 villages will be affected due to the submergence by Makodia reservoir and will have to be resettled.

• Seventeen lakh residents of nearby towns and villages in both States will benefit from improved drinking water and irrigation facilities.

21. India to ratify Paris Agreement on climate change

Prime Minister Narendra Modi on 25 September 2016 announced that **the country would ratify the Paris Agreement on October 2**, Mahatma Gandhi's birth date. This **marked an end to uncertainty and flip flops that had gripped India's climate change diplomacy** ever since the failure to attain Nuclear Supply Group membership in June this year.

- The **ratification requires a simple cabinet approval** at a time of the Prime Minister's choosing and not a Parliamentary approval.
- The announcement comes after the government's **attempt to link country's ratification of Paris Agreement with** membership came to naught. After linking the **the US putting its weight behind India's bid to win a NSGratification to producing more nuclear power** , implying the need for NSG membership (and a more robust support from the US for it), the government changed its tone in September.
- **On the side-lines of G20 talks** the government claimed ratification would not be possible this year because of procedural concerns.
- Regardless of the reason proffered in public, the decision at the highest level in the government to not ratify the Paris Agreement left the rest of government to mull the consequences within the climate diplomacy arena.
- But within days the **Indian government re-calibrated its line in public yet again** , claiming it was making all the efforts to ratify but remained uncertain if it could do so in time for end 2016.
- The **diluted line was to deflect from the obvious reading** that India was playing a manoeuvre against the US in the hope of getting better support for its NSG membership.
- It was the **first sign of emerging understanding in the government that the gambit was failing**

Note

- The **agreement requires 55 countries accounting for 55% of the global greenhouse gas emissions to ratify** in order for the **pact to come into force**.
- **60 countries adding up to 48% emissions have already done so** and both the necessary thresholds would have been crossed by countries by October leaving India behind – risking global opprobrium.

- The **annual climate negotiations are to begin on November 7** and an informal meeting of environment ministers is planned for October – both in Morocco.

22. Paris climate goal will be 'difficult if not impossible to hit'

The global target to prevent climate catastrophe, crafted at a landmark summit last year in Paris, will be very difficult, if not impossible, to hit, said some of world's top scientists meeting this week in Oxford.

The first-ever climate pact to enjoin all nations vows to cap global warming at "well below" two degrees Celsius compared to pre-0Industrial Revolution levels – and under ***1.5C*** if possible.

Currently we only have a few scenarios that get us there, and they are outliers.All but a few of the hundreds of complex computer models plotting the rapid reduction of greenhouse gases that drive climate change, in other words, zoom right past it.

The question stretches back to the chaotic Copenhagen climate summit in 2009, which nearly derailed more than a decade of UN 0talks, set the threshold for dangerous global warming at ***2C***.

The effort was led by small island nations, some of which are likely to disappear under the waves within decades.

Major emerging economies, notably India, went along despite fears that the new threshold would be a brake on economic development.

0***at least 3C*** **On current trajectories, the world is set to warm** by the century's end, a recipe for human misery and species extinction on a global scale, scientists say.

The inclusion of0***1.5C***

– even as an aspirational goal – was hailed as a political victory, especially by poor, climate-vulnerable nations.

The bad news is that we are already two-thirds of the way there," he added, noting that average global temperatures in 2015 – the hottest year on record – were a full degree higher than 150 years ago.Indeed, the 2018 report is likely to make for grim reading.

00A ***2C*** cap on warming was already seen as hugely ambitious, both technically and politically.For many scientists, ***1.5C*** seems virtually impossible – at least not without "over-shooting" the target.

For some scientists, even setting the target is a bad idea.

The danger is that it will push us to look at geo-engineering solutions rather than how to achieve deep decarbonisation.Slashing the output of greenhouse gases that heat the atmosphere and oceans — decarbonisation, in other words — has long been the preferred solution to global warming.

0But despite a boom in renewables, emissions have continued to grow, putting even a ***2C*** target out of reach unless engineers find ways to suck CO_2 out of the air and store it underground — so-called "negative emissions."

Schemes that depend on biofuels, for example, would – if scaled up sufficiently to make a real dent in CO_2 levels – compete with food crops that scientists say must double in the next 30 years to keep up with an expanding world population.

And not just technically to be successful, we need new values and norms.

23. Environment Supplement Plan

Environment Impact Assessment (EIA)

- The EIA process has its origins in the 1992 Rio Earth Summit where over 170 countries committed to balancing environmental concerns and economic needs.
- The EIA was a tool to do this. In India, it has been in place since 1994 and is also called the environment clearance process.
- It is the law that mandates that detailed studies be carried out before implementing projects that carry social risks and could damage the environment.
- The studies are discussed at public hearings before being evaluated by a set of identified experts who then recommend a

decision to the Ministry or State government on the project.

Amendment

- It seeks to provide an Environment Supplement Plan (ESP) for projects that have already initiated construction activity and expansion before going through an EIA process.
- It ends up providing illegally operating project developers an ESP as a license to violate.
- The ESP will draw up an assessment and cost of damages which the project developer is expected to pay up.
- This sounds less like an environmental fine — an important component among a slew of mechanisms to deter projects from violating environmental norms — and more like a crude form of 'pay and use' service.

But, the recent decision of amending the EIA to allow law violators to continue with work alongwith a ESP is flawed because :

The impact that environment could have maynot be compensated through the plan.

With absence of any regulator and certain checks the plan would remain unsuccessful. Also, the proposers may comeup with a plan but would never implement it in absence of such checks.

ESP changes may take time to show its results but the harm done to the environment would remain as it is.

To implement a thorough ESP , there needs to a be a proper assessment for requirements of area which itself is a tedious task.

The amendments shows the ministries flawed approach and favouring investments over sustainability.

However, if ESP goes as per the plan it would serve a two way benefit. First help the growth agenda and second of protecting the environment.
But the implementation remains a tedious task. Also, setting up of a regulator to keep a check on such plans, certain deadlines to complete the same should be the prerequisites .

24. Wildlife panel clears first phase of Ken-Betwa project

India's first interState river interlinking project was given a go-ahead by the National Board for Wildlife (NBWL). This would be the first time that a river project will be located within a tiger reserve.

irrigate the drought-prone Bundelkhand region The Rs. 10,000-crore Ken-Betwa project will but in the process will also submerge about 10 per cent of the Panna Tiger Reserve in Madhya Pradesh, feted as a model tiger-conservation reserve.

The main feature of the project is a 230-km long canal and a series of barrages and dams connecting the Ken and Betwa rivers that will irrigate 3.5 lakh hectares in Madhya Pradesh and 14,000 hectares of Uttar Pradesh, in Bundelkhand.

The key projects are the Makodia and Dhaudhan dams, the latter expected to be 77 m high and responsible for submerging 5,803 hectares of tiger habitat in the Panna tiger reserve.

According to the NBWL, 6,221 hectares — 4,141 of which is core forest and located inside the reserve — will be inundated when, and if, the proposed reservoir were filled to the brim.

A key point of contention between wildlife experts associated with the impact assessment and dam proponents in the water resources ministry was
whether the height of the Daudhan dam could be reduced to limit the water overflow and contain its subsequent impact.

The Water Ministry had refused saying this would compromise the economic viability of the project and the records of the August meeting suggest the wildlife experts were convinced.

There were also concerns that vulture and ghariyal habitat in the region would be affected. Here too, the committee noted, that only "3% of the vulture habitat" would be affected.

No new mining leases would be allowed in the delineated tiger dispersal routes and existing mining leases extended only "if concretely justified" and a proposed hydro-power project would now be located outside the reserve.

25. IWAI signs contract with DST, Germany for designing Special Vessels for NW-1

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The Inland Waterways Authority of India (IWAI) on 21 September 2016 signed a contract with M/s DST, Germany to design vessels, especially suited to navigate the 1620 km stretch of National Waterway-1 (NW-1). Under the contract, DST will develop 150 to 200 low draft vessels.

The contract was signed with an aim to provide safe, environment friendly and economical mode of transportation through NW-1.

The objective of IWAI is to go along with nature and disturb the river minimally. The specially designed vessels will navigate on low drafts and will be of high carrying capacity, and most importantly, will be environment friendly.

Highlights

• DST will develop a combination of standardised vessels to meet the requirement of various types of cargo.

• One of the most important navigational challenges for NW-1 is the kind of vessels that will play on the Ganga-Bhagirathi-Hooghly stretch.

• Keeping in view the difficult hydro-morphological characteristics of the river in the upper reaches between Patna and Varanasi, it is important to have vessels which can ply on low draft, with high carrying capacity, and are economically viable and environment friendly.

Background

• Union Government is developing the National Waterway-1 under the Jal Marg Vikas Project, with assistance from the World Bank at an estimated cost of 4200 crore rupees.

• The project would enable commercial navigation of vessels with capacity of 1500-2000 tons.

• Phase-I of the project covers the Haldia-Varanasi stretch.

• The project includes development of fairway, Multi-Modal Terminals at Varanasi, Haldia, and Sahibganj.

• It also includes strengthening of river navigation system, conservancy works, modern River Information System (RIS), Digital Global Positioning System (DGPS), night navigation facilities, modern methods of channel marking, construction of a new state of the art navigational lock at Farakka etc.

List of National Waterways in India

Name	River
NW1	Allahabad-Haldia stretch of the Ganga—Bhagirathi-Hooghly Rivers
NW2	Sadiya-Dhubri Stretch of Brahmaputra River
NW3	Kollam-Kozhikode Stretch of West Coast Canal and Champakara and Udyogmandal Canals

26. Odd-Even Scheme and Pollution in Delhi

Delhi is the most polluted city in the world according to recent WHO report. Classified as the world's fifth megacity, it has a population of 25.8 million, which continues to grow. With this growth, according to a study, the number of road vehicles would increase from 4.7 million in 2010 to nearly 26 million by 2030. The total energy consumption in Delhi has risen 57 per cent from 2001 to 2011.

In order to curb this second phase of Odd-Even scheme started by the Delhi government on 15 April 2016 came to an end on 30 April 2016.

Riding high on the success of Phase-1 of the scheme from 1 January – 15 January 2016, the scheme aimed at curbing vehicular pollution and reducing traffic congestion on city roads.

Under the scheme four-wheelers with odd registration numbers will ply on odd dates and those with even numbers on even dates. Its rule will be in operation from 8 AM to 8 PM. However, the scheme will not be applicable on Sundays.

Further, under the scheme, President, Vice President, Prime Minister, Union Ministers and other VIPs have been exempted. Besides, vehicles driven by women, emergency vehicles, CNG vehicles and cars carrying school children in uniforms will be exempted.

However, the rules of the odd-even scheme will apply on Delhi Chief Minister and his cabinet colleagues. The violation of rule will attract a penalty of 2000 rupees.

In order to make the second phase a success, the state government has also roped in over 5000 Civil Defence Volunteers at various traffic points who will motivate the people to follow the rules of the scheme.

Is air pollution in Delhi reduced?

As per a study conducted by CPCB on the direction of National Green Tribunal (NGT), there was no reduction in air pollutants during the second phase of Odd-Even scheme.

Further, even the Supreme Court asked on 30 April why AAP government's much-hyped traffic rationing scheme has not been able to reduce pollution level in the Capital and steps taken to achieve ambient air quality standards seemed not to be working.

Let's see the relevant statistics in this regard

Ozone

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The levels of ozone, which scientists describe as the most critical summer pollutant in Delhi, between 15 April and 30 April, peaked at 88 parts per billion or 176 micrograms per cubic metre (µg/m³) on April 30, the last day of the odd-even scheme, according to SAFAR data. In comparison, during April 1-15, the levels peaked at around 60 parts per billion or 120 µg/m³ on April 6.

However, on 24 April, ozone levels hit 75 parts per billion or 150 µg/m³, which was the first sharp rise seen during the scheme, from around 62 parts per billion or 124 µg/m³ the preceding day.

According to the scientists, comparing this with data from April 2015, the trends are quite similar On April 24 last year, ozone levels had peaked at 90 parts per billion or 180 µg/m³, the highest between April 15-30.

Particulate Matter (PM) – 1

System of Air Quality and Weather Forecasting And Research (SAFAR) also monitored the finer PM 1 particles, or particles of size less than 1 micron, which are known to penetrate deep into the lung tissues and the cardiovascular tract. Between April 15-30, the data shows, PM 1 levels peaked on April 30 at around 78 µg/m³.

In comparison, between April 1-15, PM 1 levels peaked at around 70 µg/m³ on April 3.

PM 2.5

PM 2.5 is the pollutant most directly associated with combustion in vehicles, according to scientists. It includes all particles of size less than 2.5 microns. According to SAFAR data, between April 15-30, PM 2.5 levels peaked at 190 µg/m³ on April 30, almost double the level on the same date in 2015.

Between April 1-15 this year, just before the odd-even scheme started, PM 2.5 levels peaked at 137 µg/m³ on April 3.

PM 10

Delhi Pollution Control Centre (DPCC) data for larger particles of size less than 10 microns which are associated with vehicular and other types of pollution such as road dust, smoke emitted from garbage and other kind of fires shows levels showed the sharpest spikes during the last week of April 2016.

According to Dr B Sengupta, former Central Pollution Control Board (CPCB) member secretary, said PM 10 levels could also be associated with an increase in spontaneous fires observed in 2016 due to the spike in temperatures.

Air Quality Index (AQI)

According to the daily summary of the AQI from seven stations in Delhi, between April 23-28 2016, AQI increased consistently from 262 to 332. On April 29 and 30, the AQI dipped marginally to 314 and 316 respectively.

Why pollution not reduced?

- Firstly, care must be taken to compare the level of pollutants in 2016 with the 2015 data. As summer pollutant patterns as such are different from winter pollutants and not contributed by particulates alone. In 2015, there were also a lot of rainy days during this period, which could have led to the apparently low pollutant levels," said Anumita Roychowdhury from the Centre for Science and Environment (CSE).
- Secondly, the impact of the scheme should not be assessed on short-term basis. The impact of the scheme could be assessed scientifically only after comparing the 15 days with the whole summer season.
- Thirdly, as the experience worldwide as in China showed that, odd-even scheme in isolation cannot achieve the intended objective of reducing the pollution. It has to be supplemented with other measures like effective transportation policy with strict monitoring of the scheme.
- Fourthly, gained from the experience of first phase, many commuters in order to escape the Odd-Even booked cabs. This lead to increase in the number of cabs on the roads, which in turn choked the roads having little impact on air pollution.
- Fifthly, according to the study by IIT Kanpur, vehicles are number four in the hierarchy of pollution sources, accounting for 20 percent of PM 2.5 and 9 percent of PM 10 concentrations in Delhi's air. Road dust is the city's biggest polluter, accounting for 38 percent of PM 2.5 and 56 percent of PM 10 concentrations. Two wheelers, which are exempt from the odd-even rule, account for 33 percent of all PM10 and PM 2.5 emissions by vehicles.

Road Ahead

Irrespective of whether the odd-even scheme was effective or not, it has surely been influential not just in Delhi but all over India as well. For instance, Manali administration in April 2016 decided to implement the odd-even on the Manali-Leh highway to reduce the congestion.

Thus, the trial period of the odd-scheme had an impact on the nation in more ways than one.

27. Paris climate treaty clears first hurdle

Thirty one countries submitted their ratification instruments for the Paris climate treaty to the UN on 21 September 2016, bringing the total count of countries that have **endorsed the treaty to 60**, **accounting for nearly 48 per cent of global greenhouse gas emissions**. At a ratification ceremony for the Paris agreement held in the UN headquarters on 21 September 2016, the countries that **endorsed the treaty helped clear the first hurdle of 55 countries required for its early entry into force by 2016**. However, the total global emissions count currently falls **short of the requisite 55 per cent for the treaty to enter into force**. Fourteen more countries will join the agreement later in 2016, virtually assuring entry into force, an official statement from the UN said.

- Eager to leave behind a legacy of positive climate action, before he exits office next year, UN Secretary General Ban ki-Moon pushed countries to come forward and ratify the treaty at the earliest possible during the second day of the **71st UNGA underway now**. The U.S. government too has been keen to see through the treaty before President Barack Obama exits office next year.

- Mr. Ban observed that the continued strong global momentum for climate action was unprecedented. Most international treaties take several years to enter into force. The **Kyoto Protocol had entered into force eight years** after **it was first signed in 1997**.

28. International Day for the Preservation of the Ozone Layer 2016 observed across the world

The 2016 International Day for the Preservation of the Ozone Layer was observed across the world on 16 September 2016. The theme for the year 2016 is **Ozone and climate: Restored by a world united**.

The theme for the 2016 International Ozone Day recognizes the collective efforts of the parties to the Vienna Convention and the Montreal Protocol towards the restoration of the ozone layer over the past three decades and the global commitment to combat climate change.

The UN General Assembly in 1994 proclaimed 16 September as the International Day for the Preservation of the Ozone Layer to commemorate the date of the signing of the Montreal Protocol on Substances that Deplete the Ozone Layer in 1987.

Montreal Protocol

• Montreal Protocol on Substances that Deplete the Ozone Layer was signed on 16 September 1987.

• It has been recognized as the most successful international environment treaty in history, which has received universal ratification; all countries in the world have now ratified this landmark agreement.

• As of 1 January 2015, the production and consumption of key Ozone Depleting Substances (ODSs) like chlorofluorocarbon (CFCs), CTC halons, Methyl Chloroform and Methyl Bromide have already been phased-out globally.

• As per expert estimates, GHG emissions have been reduced by more than 11 Giga tonnes CO2 equivalent per year through the ODS phase-out activities of the Montreal Protocol.

Vienna Convention

• The Vienna Convention for the Protection of the Ozone Layer is a Multilateral Environmental Agreement.

• It was agreed upon at the Vienna Conference of 1985 and entered into force in 1988.

• In terms of universality, it is one of the most successful treaties of all time, having been ratified by all United Nations members as well as the Holy See, Niue and the Cook Islands and the European Union.

• It acts as a framework for the international efforts to protect the ozone layer.

• However, it does not include legally binding reduction goals for the use of CFCs, the main chemical agents causing ozone depletion.

29. Giant panda no longer endangered

A leading international group has taken the giant panda off its endangered list thanks to decades of conservation efforts, but China's government discounted the move on Monday, saying it did not view the status of the country's beloved symbol as any less serious.

International Union for Conservation of Nature The said in a report released Sunday that the panda is now classified as a "" **vulnerable**instead of "endangered" species, reflecting its growing numbers in the wild in southern China.

It said the wild panda population jumped to 1,864 in 2014 from 1,596 in 2004, the result of work by Chinese agencies to enforce poaching bans and expand forest reserves.

althoughforest protection has helped increase panda numbers, The report warned, however, that better potentially leading to climate change is predicted to eliminate more than 35 per cent of its natural bamboo habitat in the next 80 years,another decline.

China's State Forestry Administration said that it disputed the classification change because pandas' natural habitats have been splintered by natural and human causes. The animals live in small, isolated groups of as few as 10 pandas that struggle to reproduce and face the risk of disappearing altogether.

Another concern is if we downgrade their conservation status, or neglect or relax our conservation work, the populations and habitats of giant pandas could still suffer irreversible loss and our achievements would be quickly lost.

poaching and deforestation The panda population reached an estimated low of less than 1,000 in the 1980s due to until Beijing threw its full weight behind preserving the animal, which has been sent to zoos around the world as a gesture of Chinese diplomatic goodwill.

World Wildlife Fund Wolong National Nature Reserve in Sichuan The Chinese government and the first established the province in 1980.

Wild panda numbers have slowly rebounded as China cracked down on the skin trade and gradually expanded its protected forest

areas to now cover 1.4 million hectares.

International groups and the Chinese government have worked to save wild pandas and breed them at enormous cost, attracting criticism that the money could be better spent saving other animals facing extinction.

The IUCN drew attention on Sunday to the 70 per cent decline in the eastern gorilla population over the past 20 years.

But the WWF, whose logo has been a panda since 1961, celebrated the panda's re-classification, saying it proved that **aggressive investment does pay off "when science, political will and engagement of local communities come together."**

30. NGT grants nod to Vizhinjam International Seaport

The National Green Tribunal has given its go-ahead to the construction of the multi-crore Vizhinjam International Seaport Ltd (VISL), being developed by Kerala government in collaboration with Adani Group.

- NGT says that building of such port is crucial for the economic development for the State as well as the country, lack of port infrastructure is seriously hampering India's international trade, competitiveness and India's economic growth.

Project:

The Vizhinjam International Transhipment Deepwater Multipurpose Seaport is an ambitious project designed primarily to cater container transhipment besides multi-purpose and break bulk cargo.

- It's an ambitious project of the Kerala government and the Adani group commenced the construction on December 5 last year. The port is scheduled to be completed on December 4, 2019.
- The port is about 16 km from Kerala's capital Thiruvananthapuram and just 10 nautical miles from the International Shipping Lane.
- With both strategic and commercial importance, the under-construction Vizhinjam International Transhipment Deepwater Multipurpose Seaport is estimated over Rs 7,000 crore.

Advantages of Vizhinjam

- National security is also served in emergency because of proximity to international shipping routes.
- The Indian Navy and Coast Guard can make use of it.
- Cruise terminal of large cruise vessel at Vizhinjam will also boost tourism
- Availability of 20m contour within one nautical mile from the coast.
- Minimal littoral drift along the coast, hardly any maintenance dredging required.
- Links to national/regional road, rail network.
- Flexibility in design and expansion being a Greenfield project.

31. Wetlands in India: Significance, Threats & Conservation

- The Ministry of Environment, Forests and Climate Change on 31 May 2016 released **the Draft Wetlands (Conservation and Management) Rules, 2016replacing the Wetland (Conservation and Management) Rules of** for public comments. The new set of rules seeks to conserve and manage the wetlands across the country in a more effective way by **2010.**
- The release of draft rules became necessitated in the backdrop of growing concern regarding the health of wetlands as their deterioration led to large scale destruction of natural and manmade environment recently.
- For example, and **the Chennai flashfloods in November 2015Srinagar flash floods in September 2014** , according to experts, was largely caused by severe damage inflicted upon the network of lakes and water bodies spread across the two cities that used to act as natural buffers/storage points of seasonal rain water.

What are wetlands?

- **Ramsar Convention on Wetlands of 1971at low tide does not exceed six metres** defines wetlands as - "Areas of marsh, fen, peat land or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which ."
- In simple terms, a wetland is a land area that is saturated with water, either permanently or seasonally. This definition brings ponds, lakes, estuarines, reservoirs, creeks, mangroves and many more water bodies under the ambit of wetlands.
- Further, (coastal wetlands), **wetlands can be categorised** (including deltas, tidal marshes, and mangrove swamps), (lakes), (along rivers and streams), and **intomarine estuarine lacustarine riverine palustarine**

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('marshy'– marshes, swamps and bogs) based on their hydrological, ecological and geological characteristics.

What is the spread of wetlands?

- prepared by the Space Application Centre, Ahmedabad recognised around **National Wetlands Atlas 2011 201503 wetlands across the country.**
  The Atlas, which classified wetlands based on the Ramsar Convention definition, also estimated the areal extent of wetlands to be about 7.6 m ha.
- It is also estimated that India has about 757.06 thousand wetlands with a total wetland area of 15.3 m ha or 4.7 percent of geographical area, if open water, aquatic vegetation (submerged, floating and emergent) and surrounding hydric soils are also taken into account.
- The wetlands in India are **spread over all the 36 States/Union Territories** starting from Wular lake in Srinagar, Ashtamudi backwaters lake in Kerala, Loktak lake (only floating national park in the world) in Manipur and Nalsarovar in Gujarat.
- In terms of numbers **West Bengal (1.47 lakhs), Uttar Pradesh (1.2 lakhs)** are the two States in which wetlands are more than above 1 lakh. These States are followed by Odisha and Madhya Pradesh that have 78 and 62 thousand wetlands respectively.
- In terms of the proportion of the geographical area, **Gujarat has the highest proportion (17.5 percent)** and Mizoram has the lowest proportion (0.66 percent) of the area under wetlands.
- Among UTs in India, **Lakshadweep has the highest proportion (around 96 percent)** and Chandigarh has the least proportion (3 percent) of geographical area under wetlands.

What is the policy environment & associated schemes?

- **Ramsar Convention:** T
  he convention is named after Ramsar in Iran in which the convention was ratified in 1971. The convention is aimed at augmenting national action and international cooperation for the conservation and wise use of wetlands and their resources.
- India is a signatory to the convention. So far, **26-sites have been designated** as Wetlands of International Importance (Ramsar Sites) and 6 more are under the process of being designated.
- **National Wetland Conservation Programme (NWCP):**
  It was launched in 1985 to enable conservation and wise use of wetlands in the country so as to prevent their further degradation.
- **The Central Wetlands (Conservation and Management) Rules:** **Central Wetlands Regulatory Authority (CWRA)**
  They were notified for the first time in 2010 for better management and regulation of wetlands across the country. It saw the formation of
  whose term ended on 31 March 2015 and it wasn't reconstituted since then.
- **National Environment Policy 2006:**
  Recognising the importance of wetlands, it calls for developing a national inventory of such wetlands and implementing a wide spectrum of policies and plans for wetland conservation and their environmental impact assessment (EIA).
- **National Plan for Conservation of Aquatic Ecosystems (NPCA):**
  It was unveiled in 2015 to provide for policy framework and support to State Governments for integrated management of wetlands. This initiative was launched by merging two separate Centrally Sponsored Schemes (CSS), namely the National Wetlands Conservation Programme (NWCP) and the National Lake Conservation Plan (NLCP).
- **Capacity Building:** in order to increase the capacity of wetland managers, up gradation of the existing **Wetland Research and Training Centre of Chilika Development Authority** at Barkul, Odisha into the National Capacity Development Centre for Wetlands is under consideration.

What is the significance of wetlands?

- Wetlands are considered to have unique ecological features which provide **numerous products and services to humanity**. **Ecosystem goods** provided by the wetlands mainly include - water for irrigation, fisheries, non-timber forest products, water supply and recreation.
- The **major services** include carbon sequestration, flood control, groundwater recharge, nutrient removal, toxics retention and biodiversity maintenance.
- **Agriculture and allied sectors:** Wetlands such as tanks, ponds, lakes, and reservoirs have long been providing multiple-use water services which include water for irrigation, domestic needs, ground-water recharge, etc.
- In terms of growth in fish production in India, wetlands play a significant role. Around 61 percent of fish production in the country is from inland water bodies and it is also the second largest aquaculture farmed fish producer in the world.
- **Carbon sequestration:** Swamps, mangroves, peat lands, mires and marshes play an important role in carbon cycle. Wetland soils may contain as much as 200 times more carbon than its vegetation.
- In India, coastal wetlands are playing a major role in carbon sequestration. The total extent of coastal ecosystems (including mangroves) in India is around 43000 km.
- Overall, **mangroves** are able to sequester about 1.5 metric tonne of carbon per hectare per year and the upper layers of mangrove sediments have high carbon content, with conservative estimates indicating the levels of 10 percent.
- **Pollution abatement:** Wetlands act as a sink for contaminants in many agricultural and urban landscapes. In India too, wetlands are polluted through agricultural runoff and discharge of untreated sewage and other waste from urban areas.
- **Flood control:** Wetlands play an important role in flood control. Wetlands help to lessen the impacts of flooding by absorbing water and reducing the speed at which flood water flows. Further, during periods of flooding, they trap suspended solids and nutrient load.
- A large **network of lakes and ponds** in major cities like **Srinagar, Bhopal, Bengaluru, Chennai and Hyderabad** were constructed with the objective of flood control.
- Besides, the mangroves along the sea shores, especially on the western coast in West Bengal and Odisha have been playing a major role in protecting the coastal environment from the destruction of cyclones that frequently emanate in the Bay of Bengal.

- **Biodiversity hotspots:** Wetlands are important in supporting species diversity. Because wetlands provide an environment where photosynthesis can occur and where the recycling of nutrients can take place, they play a significant role in the support of food chains.
- In India lakes, rivers and other freshwater bodies support a large diversity of biota representing almost all taxonomic groups. For example, freshwater ecosystems of Western Ghats alone have 290 species of fish. Similarly, Loktak lake is famous for being the only refuge of the endangered Sangai (Manipur brow-antlered deer).
- Wetlands are also important breeding areas for **domestic and migrating bird species.** In many such wetland areas of India, like Bharatpur wild life sanctuary in Rajasthan, and little Rann of Kutch and coastal areas of Saurashtra in Gujarat, many migratory species of birds, including **siberian crane**, from western and European countries come during winter.
- Sarus cranes, black necked cranes, Gangetic river dolphins, the Indian mud turtle and numerous threatened species of birds and fauna, feed (off) and live in and around wetlands.
- As per an estimate, the approximate number of species of migratory birds recorded from India is between 1200 and 1300, which is about **24 percent of India's total bird species.**
- **Tourism:** Wet-lands such as coral reefs, beaches, reservoirs, lakes and rivers are considered to be a significant part of the tourism experience in the country.
- As per an estimate, every year, around 7 seven million tourist visit Kerala's backwaters, beaches and wildlife sanctuaries, 3 million visit Uttarakhand's lakes and other natural wetlands and one million visit Dal lake in Jammu and Kashmir.
- **Cultural significance:** Wetlands especially lakes and ponds (e.g. Pushkar lake in Rajasthan and Ramappa lake in Telangana) are intrinsically linked to the local culture. They are revered by the masses in recognition of the fact that they are the means of sustenance of their livelihood.

What are the threats to wetlands?

Since the advent of industrialization and urbanization the wetlands came under severe threat due to increased anthropogenic-pressures. As per an estimate, India has lost 38 percent of its wetlands between 1991 and 2001 alone.

- **Urbanization and land use changes:**
  During the 90 year period from 1901 to 1991, the number of urban centres doubled while urban population has increased eightfold. This magnitude of growth exerted tremendous pressure on wetlands and flood plain areas for meeting water and food demand of growing population.
- For example, , **the Kanwar lake in BiharAsia's largest freshwater oxbow lake,** has shrunk to one-third of its size due to encroachment, much like Jammu and Kashmir's Dal lake. And, about 34000 hectares of the water spread area of the Kolleru lake (Andhra Pradesh) have been reclaimed for agriculture in recent years.
- **Agricultural residues:**
  As a result of intensification of agricultural activities over the past four decades, fertilizer consumption in India has increased from about 2.8 million tonne in 1973–1974 to 28.3 million tonne in 2010–2011.
- As per estimates, 10–15 percent of the nutrients added to the soils through fertilizers eventually find their way to the surface water system. High nutrient contents stimulate algal growth, leading to eutrophication of surface water bodies.
- **Municipal and Industrial pollution:**
  Less than 31 percent of the domestic wastewater from Indian urban centres is treated, compared to 80 percent in the developed world, which is largely discharged in the natural water bodies such as streams and rivers.
- For example, **River Yamuna**, which passes through 6 Indian States, receives about 1789 MLD of untreated waste water from the capital city of Delhi alone. This is about 78 percent of the total pollution load that flows in to the river every day.
- Similarly, untreated industrial effluents have become a major threat to the survival of wetlands. For instance, **the Bellandur Lake in Bengaluru city** was 'on fire' in May 2015 due to the discharge of effluents (especially nutrient rich foams) by the surrounding industries.
- **Climate Change:**
  In 2007, the UNESCO estimated that Global climate change is expected to become an important driver of loss and change in wet-land ecosystem. These findings are important for India which has been experiencing the flood-drought-flood cycle for the last 2 decades.
- As per a study, wetlands located in high altitude as well as coastal areas, like mangroves and coral reefs, are some of the most sensitive classes that will be affected by climate change.
- For example, climate change caused rise in level of Tsomoriri Lake in Ladakh, a glacial fed high altitude lake, thereby causing submerged important breeding islands in the lake where endangered migratory birds like the Black-necked Crane and Bar-headed Goose would breed.
- As per an estimate, will **India lose about 84 percent of coastal wetlands and 13 percent of saline wetlands sea water rise of 1 metre.** with climate change induced

Apart from the above major threats, immersion of idols and religious ritual waste, introduction of exotic species, encroachments and unregulated aquaculture (e.g. Kolleru lake) backed by

- **Bureaucrats-Politicians-Businessmen nexus,** dredging, un planned urbanization and development projects are some of the other dangers threatening the existence of wetlands across the country.

What the Draft Wetlands (Conservation and Management) Rules, 2016 proposes to face these threats?

- The wetlands shall be conserved and managed in accordance with **principle of 'wise use'** for maintaining their ecological integrity.

'Wise use of wetlands' was defined as the maintenance of their ecological character, achieved through implementation of ecosystem approaches, within the context of

- **sustainable development.**

- It **prohibited**
  any diversion or impediment to natural water inflows and outflows of the wetland and activities having or likely to have an adverse impact on ecological character of the wetland.
- will be set up by **Wetland Authoritythe State Governments or UTs**
  to deal with wetland conservation, regulation and management. The authority, which will be headed by the Chief Minister, will replace the now defunct CWRA.

  For the purpose of managing wetlands having multiple issues, the concerned State Government or UT Administration may, if required, constitute a specific Wetland Authority. These steps towards
- **decentralization**
  are in tune with the powers bestowed on the State Government under the Entry 17 (water) of the Schedule VII of the Constitution.
- However, these provisions were **criticized**
  environmental activities on the grounds that they relinquished the primary responsibility of the Union Government in conserving the wetlands, non-inclusion of experts, vague terms like 'wise-use', absence of rules regarding the trans-boundary wetlands, etc.

Conclusion

Wetlands are amongst the most productive ecosystems on the Earth. Historically, they have been at the centre of evolution of human civilization for millennia as they are means of precious ecological goods and services. However, unfortunately, they are also **ecologically most sensitive eco-systems** and are under threat due to increased anthropogenic-pressures.

As the theme of 2016 World Wetlands Day (2 February) rightly suggested wetlands are our future and are the means for ensuring sustainable livelihoods. **Mahatma Gandhi's ingenious statement - "There is enough for everyone's need but not for everyone's greed" -** is in fact better suited to illustrate and guide India's wetland policies and conservation strategies.

32. Human – Wildlife Conflict

Human Wildlife Conflict is a serious threat to livelihoods of people and wildlife conservation. Human Wildlife Conflict is not restricted to a particular state (or) geographical region (or) climatic condition (or) a particular country. It is a fast growing global problem and has been reported in all areas where humans and wildlife (two dissimilar species) co-exist, compete and/or share natural resources.

In India, developing country, where around 70% of population lives in rural areas, competition between rural communities and wildlife over natural resources is intense and it leads to huge economic loss of livelihood and loss of this effect threatens the survival of endangered wild life populations and the co-existence of Human and wildlife.

Causes of Human Wildlife Conflict is multifaceted, varying over diverse demographic, economic health social and psychological circumstances. There is no easy solution, there are case – specific measures that can help mitigate the conflict in short term and prevent conflict in long term. Considering the current human population growth rate, increasing demand for natural resources, access to land, development needs and climate change, it is clear that Human Wildlife Conflict will be a serious concern in the near future. We need to increase the scientific research, improve accuracy of information, improve stakeholder commitment, identify innovative strategies, shift to community based natural resource management, insurance programmes to those affected and to have sustainable forest and wildlife conservation for better conflict resolution.

Causes

(i) Human population growth

Demographic and social changes place more people in direct contact with Wildlife, with expansion of their settlements. Along with it well capitalised agricultural enterprises, ranching lands, timber logging, Development projects etc. are acting as a driving force of deforestation and habitat destruction. Loss of wild habitat, food materials and living space force the Wild animal to move into human settlements as well.

(ii) Land use transformation

Increasing demand for land, food production, energy and raw materials has transformed the natural ecosystems into either agrarian areas (or) urban agglomerates. Change in cropping pattern has also led to Human Wildlife Conflict. For instance; people shifted their land use from cultivation of groundnut, millets to sugarcane and mango in the periphery of Gir National Park in Gujarat. The new cropping land use provided favourable habitats for predators, providing space for direct contact with human beings and thus the increase in Human Wildlife Conflict.

(iii) Habitat destruction

Deforestation, Habitat fragmentation, reduction in habitat quality are inter connected with population growth and land use change for instance. Human and elephant conflict has been increased in its intensity over the last two decades in India. Increase in fragmentation of forest, reduction in food availability for elephants due to habitat degradation and through grazing pressure from livestock, conversion of elephant corridors for agrarian and development activities has led to direct contact between the two dissimilar species (Man, elephant) competing for natural resources to survive. This has led to life loss. 769 human causalities were reported between 2012-2015 and atleast 100 elephant deaths in retribution every year. As the compensation to loss of their food material in forest, elephants raids agricultural lands which has resulted in loss of 1 million hectares of agriculture land and has resulted in loss of livelihood for 5 lakh cultivators annually.

(iv) Availability of prey organisms

Any animal move out of its natural habitat on account of two reasons, natural food and water availability majorly. Habitat degradation and fragmentation reduces the availability of basic produces (plants). Without food materials, the wild herbivore population cannot thrive and their population decline. To survive the herbivores like deers, nilgai, wild boar, elephants enter into nearby agricultural land. On other end, decline in herbivore population reduces food availability to carnivores and they enter into nearby human settlements. It

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creates a vicious circle. Unfortunately no one has taught this animals to pay money and then to eat.

(v) Competition from livestock population

Increase in livestock density in nearby areas of wild, poses major forage competition with wild herbivores. This results in overgrazing, spread of livestock diseases to wild and decline in wild herbivore population. In India, livestock out number wild herbivores within the forest and their density reaches upto 1500 / sq km. It has been ascertained livestock graze in 40% of protected area.

Decline in wild herbivores in one hand and huge density of livestock inside forest on other hand. Under such circumstances, livestock becomes an important food for carnivores.

(vi) Climate change and global warming

Global warming and climate change has made the weather trend erratic. Changes in seasonsal rainfall, failure of monsoon, increasing drought periods has altered the ecosystem functioning and the carrying capacity of ecosystem. The erratic weather changes has led to reduction in availability of vegetative cover, increase in intensity of livestock deprivation and increased the livestock predation intensity by carnivores. People lose their economic security with every single livestock predation by wild carnivore. Insecurity both personal and livelihood, results in volatile situation and the intolerance to wild animals. This worsens the situation and compounds the Human Wildlife Conflict.

(vii) Growing ecotourism

Human presence in protected areas have increased due to recreational activities and has raised concern about the ability to manage and regulate the public access and natural resources.

(viii) Stochastic events

Sporadic events like recent forest fire in Uttarkhand are difficult to forecast and prevent. These have an impact on Human Wildlife Conflict.

(ix) Increase in wildlife population due to government programmes and increase in habitat degradation due to human pressure. Programmes like project Tiger, project elephant, project lion etc. has resulted in successful recovery of the all major Indian wild animal populations. However the social organization, habitat quality, prey abundance are difficult to enhance in the human sharing forest habitat. This has also posed new concerns of Human Wildlife Conflict.

Management

Management of Human Wildlife Conflict situations requires different institutional approaches which should provide local solutions with global applications. Approaches should be of institutional focus on local level due to differences in ecological, social, cultural and economic realities. Approaches are of two ways,

- Mitigation strategies – attempts to reduce the level of impact and lessen the problem,
- Preventive strategies – prevents the occurrence of conflict and also addressing its roof cause to eliminate the conflict.

Mitigation strategies are short term and requires external inputs like finance etc. whereas preventive strategies are long term and are sustainable definite solution.

Mitigation strategies

(1) Compensation

Financial compensation alleviate conflict by reimbursing people for their significant economic losses. But in India due to budget constraints, compensation are usually paid on irregular basis and to a limited extent. Around 1/3 of losses are financially compensated. Well developed compensation with less bureaucratic constraint adjusted to inflation and measured by scientific methodologies will reduce the intensity of conflict.

(2) Insurance programmes

Crop and livestock insurance against Human-Wildlife Conflict will be an innovative solution to mitigate the impact. In Himachal Pradesh, a collaborative insurance programme is successfully implemented, where villages contribute monthly to the programme and receive compensation in proportion to the economic loss and to the insurance amount paid.

(3) Incentive programmes

Subsidies can be provided for programmes like adoption of conservation friendly practices, creating tolerance towards wildlife, exchange of benefits.

(4) Community Led Natural Resource Management

A system which will provide local economic benefits to rural community in order to motivate them protect wildlife, habitat and to discourage poaching.

(5)Translocation of problematic animals

The animals (Individuals) which became problematic beyond recovery are moved from the wild condition to manmade conservation zones like zoo's, biological parks, etc. It is the least used measure as the problem is exported to another site rather than preventing it. It is done as a short term measure to reduce the intensity of conflict and accepted as practical approach in rare cases.

Preventive measures

(1) Improving quality of forest habitat

Establishment and management of wild animal landscapes, corridor's will protect the habitats. Measure like soil conservation, water conservation, afforestation, increasing the vegetative density inside the forests will improve the quality of habitats and eventually increase the prey population. Awareness to local people who living in the fringes and outside the protected areas, participation of

indigenous people in Natural resource management, imparting training to them to rationally utilize the natural resources and for sustainable utilisation will improve the rapport, thereby making the implementation programmes successful. Protection, management and participation of local people will seek to alleviate conflicts, promote peaceful co-existence. These approaches has to be strengthened by legislative, institutional, management system and supported by scientific research to transform the intolerant human dominated landscapes into landscape of mutual peaceful co-existing landscapes.

(2) Voluntary Human resettlement

Relocation of local communities from the areas of overlapping between Human and Wildlife to areas offering better access to natural resources, socio-economic opportunities and also by providing Right to alternative land with financial incentives.

(3) Co-operative Management

- Every stakeholder (Local communities, farmers, NGO's, Scientist, Policy members, implementing officials and government) should be involved in dialogue to frame the local institution approaches to prevent to conflict at the root level.
- Thanks to cultural –social and religious traditions, in India, people love, worship animals and the natural ecosystems as long as they are not harmed (physical and economic) and deprived of their living due to Human Wildlife Conflicts and in the names of conservation programmes.
- Our Human Wildlife Conflicts management approaches should be built on the exiting traditional ever-hereditary foundation to eliminate the root cause of Human Wildlife Conflicts to provide win-win situation for consolidation and human development.
- "Turning landscapes of Human Wildlife Conflicts conflict zones into landscapes of peaceful Human Wildlife Co-existence is the need of the hour."

INDIA & WORLD

1. Global cost of India-Pakistan nuclear war

If India and Pakistan fought a war detonating 100 nuclear warheads (around half of their combined arsenal), each equivalent to a **15-kiloton Hiroshima bomb**, **more than 21 million people will be directly killed**, about **half the world's protective ozone layer would be destroyed**, and a "nuclear winter" would cripple the monsoons and agriculture worldwide. Talk of war began after a terrorist attack on **an army garrison in the Kashmir town of Uri** claimed the **lives of 18 Indian soldiers**.

- The **real costs would be higher** and **not just in India and Pakistan**, where **the first 21 million people–half the death toll of World War II–would perish within the first week from blast effects, burns and acute radiation**, according to the 2007 study by researchers from Rutgers University, University of Colorado-Boulder and University of California, Los Angeles, all in the USA.
- **This death toll would be 2,221 times** the number of civilians and security forces killed by terrorists in India over nine years to 2015, according to an**IndiaSpend analysis of South Asia Terrorism Portal data**.
- Another **two billion people worldwide would face risks of severe starvation due to the climatic effects of the nuclear-weapon use in the subcontinent**, according to this 2013 assessment by the International Physicians for the Prevention of Nuclear War, a global federation of physicians.
- **Pakistan has an estimated 110 to 130 nuclear warheads as of 2015–an increase from an estimated 90 to 110 warheads in 2011**–according to this report from the Bulletin of the Atomic Scientists, a global disarmament advocacy. **India is estimated to have 110 to 120 nuclear warheads**.
- It does not really matter if **India has fewer nuclear weapons than Pakistan**, IndiaSpend reported in April, 2015, **primarily because of the doctrine of "mutually assured destruction**.

Global cost of India-Pakistan nuclear war

- **66% Pakistan's nuclear weapons on ballistic missiles**
- As many as **66% Pakistani nuclear warheads are mounted on 86 land-based ballistic missiles**, according to Bulletin of the Atomic Scientists data estimates.
- Pakistan's Hatf (named after the sword of Prophet Muhammad) series of ballistic missiles has been developed–and is still under development–keeping India in mind.
- A major attack by **Pakistan's nuclear-tipped medium-range ballistic missiles (MRBMs)** would likely target India's four major metropolitan cities–New Delhi, Mumbai, Bengaluru and Chennai (depending on where the missile is fired from), according to Sameer Patil, fellow, national security, ethnic conflict and terrorism at Gateway House, a think tank in Mumbai.
- The MRBMs would also target "**the major commands of the Indian Army**".
- **Nearly half (40) of Pakistan's ballistic missile warheads could be mated to Ghauri** (named after 12th-century Afghan king Shahbuddin Ghauri, also known as Muhammad of Ghauri) MRBMs. The missile has a claimed range of 1,300 km and can target Delhi, Jaipur, Ahmedabad, Mumbai, Pune, Nagpur, Bhopal and Lucknow, according to this 2006 report on Pakistan's ballistic missile programme by the National Institute of Advanced Studies (NIAS), Bengaluru.

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- Pakistan has an **estimated eight warheads which could be mated to the Shaheen (Falcon) II**. This MRBM has a range of 2,500 km and can target most major Indian cities, including Kolkata on the east coast.

Pakistans-nuclear-arsenal-desktop

- **An estimated 16 warheads could be fired atop the short-range Ghaznavi** (named after the 11th-century Afghan invader Mahmud Ghazni) ballistic missile. With a range of 270 km to 350 km, it can target Ludhiana, Ahmedabad and the outer perimeter of Delhi.
- Pakistan has an estimated 16 nuclear-tipped Shaheen1 (falcon), short-range ballistic missiles (IRBM), having a 750 km range which can reach Ludhiana, Delhi, Jaipur and Ahmedabad.
- **Pakistan has an estimated six 60-km range Nasr missiles**, which could be mated to nuclear weapons. These tactical nuclear missiles could target "advancing battle formations of the Indian Army", according to Patil. These missiles could be what Asif referred to.
- Pakistan also has **eight nuclear-tipped 350-km Babur cruise missiles with nuclear warheads**.
- An estimated **36 nuclear warheads, accounting for 28% of Pakistan's total, can be delivered using aircraft**. US-made F-16 A/B aircraft can deliver 24 nuclear bombs while the French-made Mirage III/V can deliver 12.

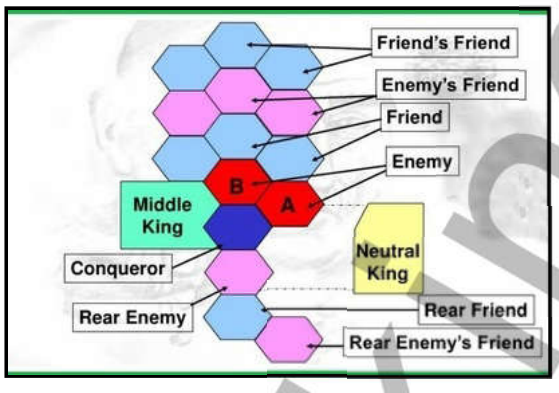
India's triad: Submarine, missile and aircraft

- **India has deployed 56 Prithvi (earth) and Agni (fire) series of surface-to-surface ballistic missiles**, which carry 53% of India's 106 estimated warheads, according to the Bulletin of Atomic Scientists.
- This doesn't take into account the estimated 12 warheads for the **K-15 Sagarika submarine-launched ballistic missiles (SLBMs)**, which India has possibly produced for the **nuclear-powered ballistic missile submarine INS Arihant**.
- Once commissioned, **Arihant would give India a strategic nuclear triad and second strike capability**, as this July 2015 IndiaSpend report notes.

India's-nuclear-arsenal-desktop

- **The 250 km-range Prithvi SRBM acts as a delivery system for 24 of India's warheads**. These are capable of hitting major Pakistani cities, such as Lahore, Sialkot, the capital Islamabad, and Rawalpindi, according to this May 2015 IndiaSpend analysis.
- **India has 20 nuclear-tipped Agni I SRBM** and **eight Agni II intermediate range ballistic missiles (IRBMs)**, with ranges of 700 km and 2,000 km, respectively. These are capable of covering **almost all Pakistani cities**, including Lahore, Islamabad, Rawalpindi, Multan, Peshawar, Karachi, Quetta and Gwadar.
- **Agni III, IV and V, with their longer ranges, might be able to reach all of Pakistan**, but it can be safely said that they are directed more towards China.
- India also possesses an estimated two ship-launched 350-km range Dhanush SRBM, which could be fitted with nuclear warheads.
- **India's aircraft can deliver an estimated 45% of 106 warheads**. The Indian Air Force's Jaguar fighter bombers can deliver about 16 nuclear warheads, while the French-built Mirage-2000 fleet can deliver 32.

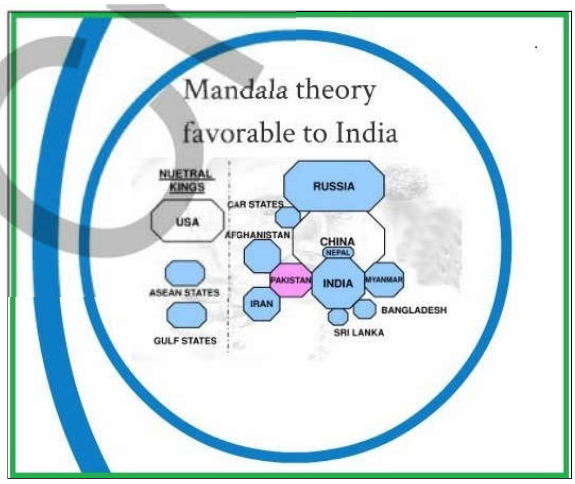
2. The Raja Mandala Theory



Kautilya lays out a theory of the international system called the "circle of states," or *rajamandala*. According to this theory, hostile states are those that border the ruler's state, forming a circle around it. In turn, states that surround this set of hostile states form another circle around the circle of hostile states. This second circle of states can be considered the natural allies of the ruler's state against the hostile states that lie between them. Put more succinctly, "the enemy of my enemy is my friend." Elements of this logic are found in India's foreign policy today, which sees states such as Japan and Afghanistan as natural allies against China and Pakistan, respectively.

The idea of the *rajamandala* also holds that relations between two contingent states will generally be tense, a fact that was definitely true of many regions, such as Europe, until fairly recently (this does not preclude the possibility of a neighbor being friendly or a vassal). This idea may explain the perception among India's smaller South Asian neighbors that India is an overbearing and dominating neighbor.

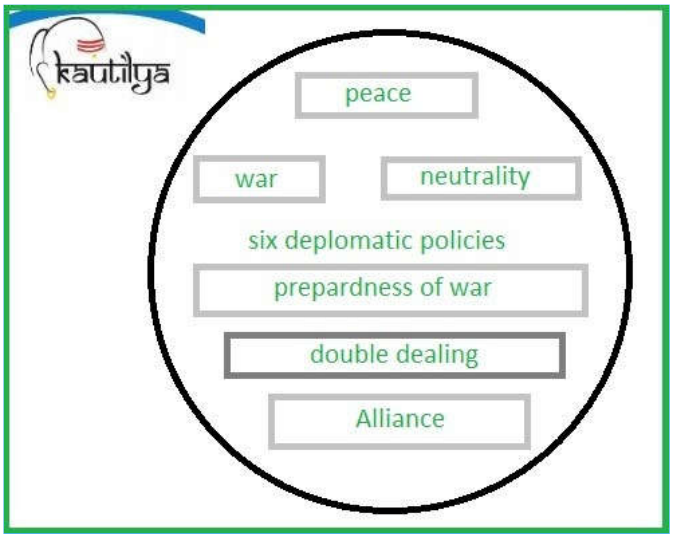
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The theory of a circle of states entails that every ruler within an international system will find his (or her) state at the center of its own circle of states. This ruler is described as a *vijigishu*, or would-be conqueror, whose power ought to gradually radiate into ever more distant circles. According to Kautilya's view of human nature, "the possession of power and happiness in a greater degree makes a king superior to another; in a lesser degree, inferior, and in equal degree, equal. Hence, a king shall always endeavor to augment his power and elevate his happiness." Thus, according to Kautilya, a ruler will always try to increase his (or her) power and territory to the greatest extent possible. Such a viewpoint is similar to offensive realism in International Relations theory, which depicts states as being power maximizers (although suggesting the drive for power is rooted in human nature is consistent with the kind of Classical Realism Kissinger is associated with). The ultimate strategy of a state is not to maintain a balance of power between states but to overcome this equilibrium in order to establish stability through hegemony.

Nonetheless, in the *Arthashastra*, the cardinal virtue is *realpolitik*, which emphasizes the state's self-interests and security above all else. This necessities policies and attitudes that subject the ultimate objective of a state—to maximize power—to temporary objectives such as the creation of various alliances, coalitions, and balances of power. This viewpoint fits with the idea that states only have permanent interests, and will do whatever necessary to pursue these interests. The attainment of these possibilities is a practical necessity and is the subject of Kautilya's discussion on foreign policy.

The *Arthashastra* speaks at significant length on the policies necessary to secure the goals of the state. There are several guiding principles that govern Kautilya's views on foreign policy. These include: a ruler ought to develop his state by augmenting and exploiting its resources and power, the state ought to try and eliminate enemy states, those who help in this objective are friends, a state ought to stick to a prudent course, a ruler's behavior must appear just, and peace is preferable to war in attaining a goal.



Under the framework of these principles, the *Arthashastra* describes six methods of foreign policy, all of which are designed to enhance the power of one's state relative to other states and, if possible, to conquer or dominate them. These six methods are interdependent but can variously be used as the circumstances dictate.

1. Making Peace (*samdhi*) Kautilya describes this method as one in which a state enters into an agreement with specific conditions for a period of time. This method is to be used when a state is in relative decline compared to other states. For example, the states that fought against Napoleon entered into various coalitions in order to defeat him. However, this did not necessarily entail cooperation after Waterloo. The Western allies and the Soviet Union likewise entered into an agreement to defeat Nazi Germany, but their partnership dissolved after that goal was achieved.

2. Waging War (*vigraha*) This strategy occurs when a state is more powerful than another state and can defeat it through military strength, strategy, tactics, or internal conditions in the enemy's country. Countless examples of this abound throughout human history.

3. Doing Nothing (*asana*) This method is used when there is nothing to be gained from either waging war or establishing a treaty with another state. It could also be a state of prolonged waiting in order to take into account the circumstances at hand before making a policy decision. Consider, for example, Japan's alleged period of isolation during the Tokugawa Era. While often described as a period of isolation, Japanese rulers during this time observed the changing world order around them and determined it was best to not get actively involved in hostilities or treaties with foreign powers during this time.

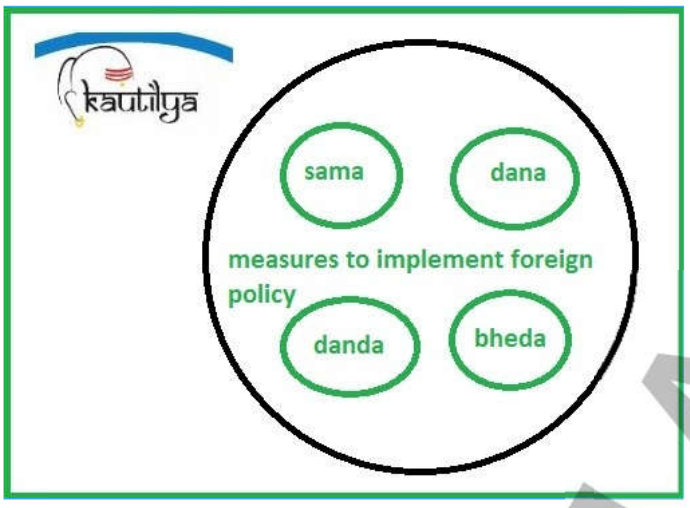
4. Preparing for War (*yana*) This method requires building up one's forces. This could entail intimidating the enemy or forcing them to use resources in order to build up their own forces. However, if not done right, mobilization and preparation of war could lead to the ruin of one's own country. American military build-ups during the 1980s hurt the Soviet economy. Germany relatively rapid mobilization during World War I compared to the speed of France and Russia's mobilization gave Germany an initial advantage on the battlefield.

5. Seeking Protection (*samsraya*) This strategy essentially entails bandwagoning with a stronger state for one's own security. Various small states in Europe, for example, derive security from allying with the United States.

6. Dual Policy/Alliances (*dvaidhibhava*) This strategy deals with multiple states at once, by binding some together with one's own state in an alliance to fight enemy states. For example, a British alliance with France and Russia before the First World War allowed it to stave off hostilities with these states while containing Germany.

The *Arthashastra* also contains foreign policy advice for special cases. Some of these deal with neutral states or potentially treacherous allies. Others deal with how to deal with oligarchies (or democracies), recommending sowing dissension among such states in order to weaken them. This policy has often been used by China and Russia in dealing with nomadic confederations in Central Asia. Kautilya also recommends using bribery or conciliation as necessary.

In short, the *Arthashastra* contains a wealth of



recommendations on a variety of situations that can be useful and practical in modern times. Implicit in it is a warning to avoid idealizations and abstractions while remaining pragmatic.

Get real on Russia- Raja Mandala

As Russia conducts its first ever military exercise with the Pakistan Army – named Druzhba-2016 (Friendship-2016) this week, Delhi has to reckon with the prospect that Russia might not necessarily remain India's "best friend forever".

The changing equations

Way Ahead and Conclusion

Until now India's Russian relationship seemed immune to change — internal and external. Governments — centrist, leftist and rightist — have come and gone in Delhi.

> The Soviet Union, which had such strong influence on the formation of modern India's worldview during the inter-war period, simply disappeared from the map in 1991. But Delhi and Moscow seemed to carry on after the end of the Cold War.

But by letting the sensitive Jammu and Kashmir question into its current play with Pakistan, Moscow might have dealt a big blow to the popular enthusiasm in India for the Russian relationship.That Russia was unwilling to postpone these exercises in deference to Indian sensitivities at this critical juncture suggests something fundamental is at work in Moscow's approach to the Subcontinent.

> At the heart of the Indian perception of Russia as the most reliable international partner was Moscow's attitude towards the dispute between India and Pakistan over Jammu and Kashmir

> The Russian embassy in Delhi stepped in to clarify that the exercises will not take place in Gilgit-Baltistan. But the damage had been done. The timing of the exercise was bad enough. It comes at a moment when India was trying to isolate Pakistan after the Uri attacks, coping with fresh political violence inside Kashmir, and drawing international attention to India's claims over Gilgit-Baltistan.

- That a sovereign has no permanent friends is part of traditional wisdom around the world. Nothing illustrates this more than the evolution of Russia's ties with China and Pakistan.
- The Chinese alignment with the West from the 1970s and the Pakistani jihad against Moscow in the 1980s were central to the defeat of the Soviet Union in the Cold War.
- That was then; Moscow now believes it can play the China card in enhancing its leverage with the US.
- At a moment of great turbulence in great power relations, Russia is rightly jockeying for position. This demands that Delhi must stop taking Moscow for granted. It must focus instead on reconstituting the partnership with a country that will remain a powerful force in Eurasia, on its own merits.

3. Options against Pakistan's proxy war

The pre-dawn fidayeen strike by Jaish- e-Mohammed terrorists on the Army administrative base in Uri on 18 September, which resulted in 18 fatalities, stands out as one of the most dastardly terrorist attacks in the last two decades. Its timing, planning and execution follow a well-established pattern. Fidayeen strikes (suicide squads) have emerged as a deadly tool in the terrorist kitty to wage proxy war.

The terrorist modus operandi to date remains the same, but for the greater use of technology by way of GPS, radio communications and night vision devices.

Ironically, the Indian response to such terrorist actions has basically been incidence-specific and tactical, without a strategic approach. It is time to draw out a calibrated response mechanism to defeat the proxy war unleashed by Pakistan.

What's Pakistan's strategy?

Hybrid warfare – It refers to a mix of conventional, low intensity, and cyber operations.

Low intensity warfare is being orchestrated through both regular forces and irregulars. Pakistan, after supporting the mujahideen to defeat then Soviet Army in Afghanistan in the 1980s at the behest of the United States, has gone on to master this art.

Why Pakistan has chosen the option of low intensity warfare?

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- Having repeatedly failed to defeat India in conventional war, the Pakistan Army has pursued the low intensity warfare option, with non-state actors as its strategic asset.
- It has employed terrorists belonging to various groups to wage proxy war to achieve its prime political objective of internationalising the Kashmir
- As a low cost option, this has also well served the interest of Pakistan's military to keep the Indian Army engaged in combating terrorism.
- The proxy war strategy suits the political bosses in Islamabad and the military brass in Rawalpindi.
- Given its internal turbulence, Pakistan is likely to continue to pursue this policy since they resort to anti India policies when they face political crisis. For example recently Nawaz Sharif was in the eye of the storm after his name propped up in the Panama leaks.

What are India's options?

- India's response ought to be at both strategic and operational levels.
- The strategic dimensions have to be driven through politico- diplomatic means to bring requisite pressure to bear on Islamabad to mend its ways. For example, India's attempt to bring a Comprehensive convention on terrorism which talks about cross border terrorism.
- India has to exploit opportunities across the border to pay back Pakistan in the same coin. For example raising the issue of Balochistan.
- With regard to the operational aspects, it should be best left to the field commanders. There are a number of tactical options, including
- Local punitive actions, surgical operations, upping the ante along the Line of Control (LoC), and precision air strikes against the terrorist infrastructure The counter infiltration posture along the LoC and the counter insurgency grid in the hinterland must be continuously reviewed and perfected.
- The security of vulnerable areas which have been repeatedly targeted needs to be revamped.
- There is an urgent need for force restructuring and modernization to enhance the operational efficiency of the armed forces, thus enabling them to undertake multiple missions across the spectrum.

What steps need to be taken further?

- It is imperative that operational actions has to be in sync and aligned with the strategic direction to achieve the desired results.
- There is a need for coordination between various internal security agencies and the armed forces to ensure seamless synergy.
- The roles of the two sets of forces (internal security agencies and the armed forces) need to be clearly defined. This remains a major lacuna due to narrow vested organizational interests and turf battles.

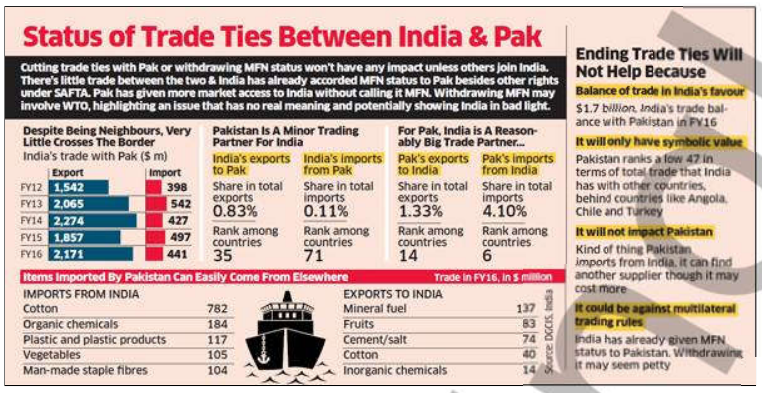
  This was visible recently when there was a turf battle between NSG and army regarding investigation of Uri attack.

  The tendency of the top political leadership and senior military commanders to rush to the scene of action needs to be curbed.

  This adversely impacts upon the efforts of the local commanders in handling the crisis at hand, with their focus shifting to VIP management.

Through a pragmatic strategy coupled with national will, India should undertake calibrated responses to defeat Pakistan's proxy war game plan with a view to making its misadventures prohibitively costly and unsustainable.

4. Pakistan's MFN tag may stay for now



The Centre has clarified that it is not considering any proposal to withdraw the 'Most Favoured Nation' (MFN) status accorded to Pakistan.

Most Favoured Nation is a treatment accorded to a trade partner to ensure non-discriminatory trade between two countries vis-a-vis other trade Under WTO rules, a member country cannot discriminate between its trade partners.

When did India grant MFN status to Pakistan?

- The MFN status was accorded to Pakistan in 1996 as per India's commitments as a member of the World Trade Organisation (WTO).

- It is important to note that Pakistan, a founding member of the WTO like India, is yet to grant the MFN tag to India (and Israel).

Volume of trade between India and Pakistan

Bilateral trade between India and Pakistan stands at $2.61 billion.

If Pakistan had reciprocated India's gesture in the past, both countries would have been required to reduce trade tariffs and open trade in commodities.

Pakistan is relatively closed in terms of trade. It will have to open trade in over a thousand commodities and India in at least 600.

- **What's MFN status?**
-
  - If a special status is granted to a trade partner, it must be extended to all members of the WTO.
  - The WTO rules allow discrimination in certain cases like in cases when a country signs free trade agreements in a region.
  - In that situation, a country may grant special favours and trade concessions to a country as compared to non-member countries of that group.
  - India granted MFN status to Pakistan in 1996, a year after the formation of WTO. Pakistan still hasn't granted India with MFN status.
  - On the other hand, it came up with a dissimilar but globally popular Non-Discriminatory Market Access (NDMA) agreement.
  - The reason Pakistan has chosen to adopt the NDMA with India is due to political mistrust and a history of border conflicts.
  - Pakistan, which is bound by WTO rules to extend the MFN status to India has not done so, using the provisions of Article XXI of GATT.

Advantages of MFN

- Access to a wider market for trade goods, reduced cost of export items owing to highly reduced tariffs and trade barriers.
- These essentially lead to more competitive trade.
- MFN also cuts down bureaucratic hurdles and various kinds of tariffs are set at par for all imports.
- It then increases demands for the goods and giving a boost to the economy and export sector.
- It also heals the negative impact caused to the economy due to trade protectionism.
- This irks the domestic industry. However, in the long run, it makes them more competitive and robust.

Disadvantages of MFN

The country is not able to protect domestic industry from the cheaper imports and in this price war, some domestic players have to face heavy losses or growth restrictions.

Implications of withdrawing MFN status to Pakistan

- It could roll back economic ties with Pakistan which is already weak
- It is uncertain whether it will have serious economic consequences for Pakistan. Pakistan's exports to India in 2015-16 was $441 million – 1.56 per cent of its total exports. On the other hand, India's exports through regular channels to Pakistan in 2015-16, despite the denial of MFN status, was $2.17 billion. Pakistan could retaliate by restricting imports of several items from India.
- This would hurt Kashmir apple traders who have a wider market in Pakistan.
- On the other hand, It will be a strong political message to Pakistan, but more importantly, to domestic public opinion that the government means business in facing up to the security challenges from the western frontier.

5. India inks pact with ISA

Government of India signed a **15-year contract with the International Seabed Authority (ISA)** for **exploration of polymetallic sulphides (PMS) in Indian Ocean**. The contract was signed by Dr M Rajeevan, Secretary, Ministry of Earth Sciences (MoES), and Dr Nii Allotey Odunton, secretary general, ISA. The **ISA is an institution set up under the Convention on Law of the Sea to which India is a party**.

- The **ISA earlier approved an application submitted by the Ministry of Earth Sciences** for allotment of 10,000 sq km area along with 15-year plan of work for exploration of PMS along Central Indian Ridge (CIR) and Southwest Indian Ridge (SWIR) region of the Indian Ocean.
- **Polymetallic sulphides -** containing **iron, copper, zinc, silver, gold and platinum in variable constitutions -** are precipitates of hot fluids from upwelling hot magma from deep interior of the oceanic crust, discharged through mineralised chimneys.
- **PMS in the Ocean Ridges have attracted worldwide attention for their long term commercial as well as strategic values**.
- **By signing the 15-year contract**, **India's exclusive rights for exploration of PMS in the allotted area in the Indian Ocean will be formalised**. Further, it will enhance India's presence in the Indian Ocean where other players like **China, Korea and Germany are active**.

- The program will be implemented by the Ministry of Earth Sciences with the participation from various national institutes and research laboratories & organisations.

6. South Asia Sub-regional Economic Cooperation (SASEC) releases its Operational Plan 2016-2025

The **South Asia Sub-regional Economic Cooperation (SASEC) programme** has released the SASEC Operational Plan for 2016-25 period.

- The SASEC OP 2016-25 is SASEC programme's first comprehensive long-term plan to promote greater economic cooperation among the member countries.
- Under this plan, the SASEC programme has identified over 200 potential projects, including 74 in India, which will require USD 120-billion investment in next five years.
- Majority of these projects are located in North East or Eastern part of the country.

SASEC Programme

- In 2001, Bangladesh, Bhutan, India, and Nepal formed the South Asia Sub-Regional Economic Cooperation (SASEC) programme, which the Maldives and Sri Lanka joined in 2014.
- Under SASEC programme, these countries have worked together to build power plants, highways, rail systems and fibre optic networks to expand and improve Internet access.
- It is a project-based partnership to promote regional prosperity by
- Improving cross-border connectivity,
- Boosting trade among member countries, and
- Strengthening regional economic cooperation.

The Asian Development Bank (ADB) is the secretariat and lead financier of the SASEC programme.

Till date, ADB has approved 40 SASEC projects worth almost USD 7.7 billion in transport, energy, trade facilitation, and information and communications technology.

7. SAARC security experts to discuss anti-terrorism mechanism

The 2nd meeting of the High Level Group of Eminent Experts to strengthen the SAARC Anti-Terrorism Mechanism concluded in Delhi. The two-day meeting was concluded with the participation of delegations from all SAARC member countries.

- During the meeting, the issues of terrorism and the measures to strengthen the SAARC anti-terrorism mechanism were discussed.
- Besides terrorism, the important issues discussed during the meeting included drugs trafficking, financing of terrorism and cyber crimes.
- The member countries shared their national experiences on various related legislations to counter terrorism.
- All member countries of SAARC agreed to move forward towards operationalizing the SAARC Terrorist Offences Monitoring Desk (STOMD) and the SAARC Drugs Offences Monitoring Desk (SDOMD) in order to strengthen the combat efforts against terrorism.

8. Brazil urges India to broaden MERCOSUR presence



Brazil has asked India to expand its commercial and multilateral footprints in South America. Brazil is also planning to take up this issue in the upcoming Goa BRICS summit.

Background

MERCOSUR

The **eighth edition of India-Russia Joint Military Exercise 'INDRA-2016' has begun in the Ussiriysk District in Vladivostok, Russia**. Main focus of this edition of the joint exercise is on '**Counter-Terrorism Operations in semi mountainous and jungle terrain under United Nations Mandate**'.

The Nuclear Suppliers Group (NSG) is a group of nuclear supplier countries that seeks to contribute to the non-proliferation of nuclear weapons. As per the NSG Guidelines a

- Prime Minister Narendra Modi and Brazilian President Michel Temer are scheduled to hold a bilateral meeting on September 17 where

Brazil is likely to push for greater presence of India in MERCOSUR.

- India at present has over 450 tariff lines with MERCOSUR (Southern Common Market). But, the plan now is to raise the tariff line to 4000.
- Both sides have already begun to take several steps to firm up India's involvement in MERCOSUR that covers apart from Brazil, Paraguay, Uruguay, Argentina and Venezuela.
- Mercosur is a sub-regional bloc.
- Its full members are Argentina, Brazil, Paraguay, Uruguay and Venezuela.
- Its associate countries are Bolivia, Chile, Peru, Colombia, Ecuador and Suriname.
- Observer countries are New Zealand and Mexico.
- Its purpose is to promote free trade and the fluid movement of goods, people, and currency. The official languages are Spanish, Portuguese and Guarani.
- It has been updated, amended, and changed many times since. It is now a full customs union and a trading bloc.
- Mercosur and the Andean Community of Nations are customs unions that are components of a continuing process of South American integration connected to the Union of South American Nations.

9. India-Russia joint military exercise Indra-2016 begins in Vladivostok

- **To achieve interoperability in joint operations**, troops from both sides would acquaint themselves with the respective approach to such operations.
- A **comprehensive training programme spanning eleven days has been drawn up for the purpose**.
- The troops of Indian Army marched smartly alongside the Russian Army in an impressive opening ceremony of Exercise Indra 2016.
- Both Contingents marched in unison, past the saluting dais, exhibiting their resolve to further the **Indo-Russian friendship**.
- 250 soldiers of the **KUMAON Regiment** are representing the Indian Contingent and the Russian army is being represented by 250 soldiers from the**59th Motorized Infantry Brigade**.
- **Indra series of bilateral exercises is one of the major bilateral defence cooperation** initiatives between **India and Russia since 2003**.
- The Indian contingent is scheduled to return to India on termination of the Exercise in the first week of October '16.

10. India & NSG Membership



supplier, authorizes a transfer of nuclear technologies to other nations only when satisfied that the transfer would not contribute to the proliferation of nuclear weapons. This treaty was signed among 48 nuclear supplying countries to ensure nuclear trade for peaceful purposes and non proliferation on response to India's nuclear test in 1974 at Pokhran. This treaty laid norms for nuclear materials and technology which could exported and imported and it also prevents proliferation by banning the sale of few materials used for weapon making. NSG is guided by the principle of Nuclear Non Proliferation Treaty (NPT) to prevent spread of nuclear materials, technology and weapons.

NSG guidelines govern the exports or transfer of nuclear material, nuclear reactors and equipment, non-nuclear material for reactors, plant and equipment for the reprocessing, enrichment, and conversion of nuclear material and for fuel fabrication and heavy water production, technology associated with each of the above items. Nuclear-related dual-use items and technologies (items that have both nuclear and non-nuclear applications) are also regulated and govern under NSG.

India and NSG Membership

India has been trying to get into NSG since 2008 and has been making immense effort since then. It indeed got substantial success in the form of NSG waiver in 2008 which led it to sign various nuclear agreement pacts with many countries including US. Since then almost all the countries of the world have been batting for India's unconditional entry into NSG. World powers like US, UK, Russia etc. have put all its weight behind India to get it the deserving membership. However, the main opposition is coming from China apart from Pakistan, Turkey, Switzerland etc.

The most critical eligibility condition for the NSG membership is to be a signatory of the NPT. It is the principle of NSG that a country

which is a non signatory of NPT, CTBT etc. Should not be given a NSG membership. Hence, the biggest hurdle remains that of the adherence to the procedure of NSG admission, which is being highlighted persistently with China.
However, India has already been getting the waiver to receive nuclear technologies through various civil nuclear agreements for last eight years and hence it can be considered as partial membership of NSG. Moreover, in 2011, NSG plenary was enacted to strengthen NSG guidelines on the transfer of sensitive enrichment and reprocessing technologies It meant that now India is not all free to conduct any trade of nuclear. Hence, this has triggered a need to get into this group and amend this rule.
India considers the signing of NPT as biased and discriminatory. India has been voluntarily adhering to various norms and principles of NPT, which can be definitely be considered to signing of NPT. These points are substantiated by following:

- India has declared a voluntary moratorium on further underground nuclear tests
- India effectively acts in sense and spirit of NPT
- India's No First Use Policy makes it a responsible nuclear power.
- India has pledged not to use its nuclear weapons unless faced with an attack of weapons of mass destruction.

Supporting Points for India

- India has accepted full-scale IAEA safeguards.
- It has already acquired high-level expertise in the peaceful use of nuclear energy in industry, power, agriculture and health care, research and nuclear reactors.
- India's membership shall not only benefit it but also encourage civil nuclear trade globally without compromising on world peace and harmony. Rather it will act as a force to reckon with in maintaining nuclear peace.
- India has received MTCR membership and is already adhering to NSG guidelines.
- India has also been adhering to the IAEA safeguards and has placed all its civil nuclear facilities under its safeguards.

Advantages for India

Although a nuclear capable state, India heavily lacks in the cutting-edge technologies and nuclear fuels. After NSG inclusion, the major difference will be evident in following areas.

- By becoming the NSG member, India can have better international trade in nuclear items, thereby boosting its export as well as enhancing technological imports.
- India lacks in the modern technologies as well as in the nuclear fuels sources. NSG membership will give it access to all these without any hiccups and interruptions. These will go a long way in strengthening the clean energy energy security of India.
- By becoming a member of NSG we will have access to sophisticated foreign technologies as all nuclear based programs of India is being run on indigenous technogoly.
- India will also have the authority and mandate to sell nuclear related products and technologies to other countries, thereby upping its ante. This will also be in consonance with India's 'make in India' initiative.

Indian Strategic Interest

Despite its dissonance to NPT, India has been trying hard to acquire the NSG membership. Apart from surge in the boost to domestic industries, energy security, accumulation of power vis-a-vis its adverse neighbors etc. Following are some of the strategic interests associated with NSG membership for India. These have further been enumerated by following points:

- India has aspirations to act as a bigger player in the international arena where nuclear commerce norms are laid.
- India as well as its strategic partners like US want it to possess various critical technologies like nuclear, missile, space, defense, so as to strengthened it. India has already gaining expertise in space technologies. It has been provided entry into MTCR, thereby enhancing its missile technological expertise as well. NSG entry may make it adroit in the nuclear technologies as well.
- India will have to enhance its excessive reliance on non-conventional sources like nuclear energy. NSG membership will ameliorate its strategic energy security in the times to come.
- India must have the access to the best of nuclear technologies available in the world today to cope up with its adverse neighbors like China and Pakistan.
- The access to such groups will empower India to raise the voice against nuclear proliferating country like Pakistan.

Indian inclusion and the Energy Security of India

India is a fast growing developing nation. The persistent rise in the energy demands is well evident in the present scenario. However, owing to its environment commitments, reliance on other countries for fossil fuels, fast depleting non-renewable sources of energy, deficiency in solar and wind energy technologies and its goal of sourcing almost 40% of its energy from non-fossil sources, Nuclear energy has been the panacea for the India of 21st centuries. The entry into Nuclear Suppliers Group can be a game changer for India to fulfill such energy needs. Entry into NSG group will provide efficient and ample access of nuclear technologies to India, thereby assuring it of the energy security for the future.

Countries Opposing India's NSG Membership

The main hurdle for India's NSG entry is the procedural flaws, which India can not overcome without signing the NPT in its present form. However, most of the countries have agreed for the India's inclusion based on India's clean and benign record and its Nuclear Doctrine. Unfortunately, counties like China, Turkey, Pakistan, New Zealand, South Africa, Brazil, Ireland and Austria, With the first three being the most vocal. However, China and Turkey being the members of NSG are most critical opposition for India's admission into NSG. Most of the opposition however has been because of the possible undermining efforts to prevent proliferation.

Opposition by China

China is opposing the India's entry into NSG by highlighting procedural hurdles, which says non-NPT signatory countries can not join NSG. However, this Chinese opposition is morally flawed as It has agreed for the inclusion of India if Pakistan is also admitted in NGS.

as both these countries are non-NPT signatories. Hence, China is actually playing Pakistan's card with India.
China being a strong allies of Pakistan, which in turn acts as a bulwark for India's progress, is actually paving the way for Pakistan into NSG rather than opposing India. However, no one is willing to give Pakistan an entry due to its pathetic reputation of being proliferator of nuclear-weapons technology to Iran, Libya and North Korea.
China may be opposing the India's entry into NSG to bargain its own entry into Missile Technology Control Regime (MTCR). Since, India has become a member of MTCR and China is not, hence China wants to push for its own membership into MTCR, if Indian NSG admission is to be allowed.

Opposition by Turkey

Turkey and Pakistan has always been all weather friend right from the creation of Pakistan. Turkey has supported Pakistan in Kashmir issue and in coping up with various natural hazards like earthquakes and floods. Indian Muslims of the area, currently known as Pakistani people, have helped Turkey in the Turkish war of independence immediately after world war I.
Pakistan was also one of the countries that offered the most assistance to Turkey after the 1999 Marmara Earthquake. Both these countries have deep cultural and religious ties. Hence, Turkey also wants the inclusion of Pakistan along with India into NSG. Turkey does not want to support only India and antagonizing its friend Pakistan.

Road ahead

Apart from India's continued efforts to get into the prestigious NSG, it is the Barack Obama's personal keen interest which has gathered the storm in recent times. Us president wants to deliver India's NSG admission, if not the permanent membership of UNSC, before he makes the way for a newcomer. In spite of India's deserving claim, its impeccable nuclear records, adherence to almost all the global treaties and policies and benign Nuclear Doctrine, India's entry into NSG is entangled into diplomatic games.
For China, the inclusion of India into NSG may not have much effect directly. However, it is the Pakistan which is being kept in mind by China as well as Turkey. The latter along with many other opposing countries can be soothed by US. However, the China's acceptance may be a tough nut to crack for Indian diplomacy. MTCR membership for China can act as a way out in the near future, but it will be easier said than done.
India will be looking for the NSG membership for its commercial, strategic and diplomatic needs and it should continue to make diplomatic endeavors to build consensus among all the present 48 members of NSG for its hyped entry.

11. EB-5 Programme

Many high net worth individuals the world over, including in India, are worried as the controversial immigrant visa programme of the US government, **EB-5 Programme** is set to expire this month-end.

What is EB-5 Programme?

- Also known as 'Green Card for greenback' scheme, the programme is named EB-5 as it is the fifth preference category under the Employment-Based (EB) immigration visas.

Aim of the programme:

- It aims to boost the American economy by attracting investment from foreign nationals and generating employment for locals. In 1992, its scope was widened through an Immigrant Investor Programme, or the Regional Centre Programme.

EB-5 Programme- Key facts:

- The programme grants rich entrepreneurs — as well as their spouses and unmarried children below the age of 21 — an opportunity to bag the coveted U.S. Green Card (or status of permanent residence) and Citizenship.
- All they have to do is invest in just over half a million dollars in the U.S. and ensure that the funds help generate at least ten full-time jobs for qualified U.S. workers.
- The visa, given in exchange for investments, grants the holder a conditional permanent residence status.
- After two years, the conditions may be removed, when it becomes permanent green card that can lead to citizenship, provided it has resulted in the creation of 10 jobs.
- According to U.S. government data, applicants from China managed to get 8,156 visas under this programme.
- This was followed by Vietnam (280), China/Taiwan-born (139), South Korea (116), India (111), Russia (88), UK (84), Mexico (77) and Iran (62).

Indians and EB-5

- In 2015, the U.S. authorities issued 111 EB-5 visas to Indians — that is 15 more than the previous year, and 74 more than the number of such immigrant visas issued in 2011.
- The rapid rise in the number of EB-5 visas to Indians in the last few years had led to the filing of over a thousand applications under that category from India this year.

Way ahead:

- In the backdrop of allegations of fraud and corruption — including against Indian-origin individuals — related to the programme, the U.S. Congress will soon have to consider whether to renew it or to pay heed to rising criticism and wind it up altogether.
- More stringent norms for fraud prevention, as well as steps to protect America's national security (through fool proof measures to prevent terror- and other illegal finance flowing into the programme) are in line.

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12. India's Asylum policy

UNHCR individuals who have sought international protection According to the , the UN refugee agency, asylum seekers are and whose claims for refugee status have not yet been determined, irrespective of when they may have been lodged.

Refugees **1951 Convention** are individuals recognised under the relating to the Status of Refugees, its 1967 Protocol, the 1969 OAU Convention Governing the Specific Aspects of Refugee Problems in Africa, those recognised in accordance with the UNHCR Statute, individuals granted complementary forms of protection, or those enjoying temporary protection.

At the end of 2015, according to the United Nations refugee body, there were 2,07,861 persons of concern in India, of whom 2,01,281 were refugees and 6,480 asylum seekers. India has, over the years, offered shelter to **Tibetans, the Chakmas of Bangladesh, Afghans and ethnic Tamil refugees from Sri Lanka.**

India has one of the largest refugee populations in South Asia, but is yet to enact a uniform law that addresses the issue of asylum. Neither is the term 'refugee' mentioned in any domestic law.

India has not signed the 1951 United Nations Refugee Convention on the Status of Refugees, or its 1967 Protocol that stipulates the rights and services host states must provide refugees.

informal refugee regime India does, however, have an broadly in line with international instruments. While it has no formal asylum policy, the government decides on granting asylum on an ad hoc and case-to-case basis.

The case of Brahumdagh Bugti

The son of the slain Baloch leader Akbar Bugti fled Pakistan to Afghanistan in 2006 and, in 2010, moved to Switzerland.

He now wants to apply for political asylum in India — which, he hopes, will enable him to get documents to travel and lobby for the Baloch cause at international fora.

Once he applies for asylum, the Ministry of External Affairs will refer the matter to the Ministry of Home Affairs, which will process the request.

In case the government takes a favourable decision, Bugti could be granted a long-term visa that would have to be renewed every year.

Exiled Bangladeshi writer Taslima Nasreen, who left Bangladesh in 1994 amid threats from fundamentalists for alleged blasphemy, has been given an Indian visa continuously since 2004.

The government has decided to exempt Bangladeshis and Pakistanis belonging to minority communities who entered India on or before December 31, 2014, from the relevant provisions of rules and order made under the Passport (Entry into India) Act, 1920 and the Foreigners Act, 1946, in respect of their entry and stay in India without such documents, or after the expiry of those documents.

13. Chabahar Port Deal and how India gains from it

The deal was signed at the recent visit of India's Prime Minister Narendra Modi visit to Iran. It was the maiden visit by an Indian Prime Minister after lifting of sanctions on Iran in the aftermath of the Joint Comprehensive Plan of Action (JCPA).

Deal's focal point

• The bilateral agreement between India and Iran gives India the right to develop two berths of the Chabahar port as agreed in 2015.

• Two firms: India's **India Ports Global Private Limited** (IPGPL) and Iran's **Ports and Maritime Organization** (PMO) have signed the agreement for the construction of the port. IPGPL will invest 85 million US dollars in developing two container berths with a length of 640 metres and three multi-cargo berths.

• The contract is for 10 years and extendable. It will take 18 months to complete phase one of the port construction.

• State run railway body IRCON International will set up a railway line at Chabahar to move goods right up to Afghanistan. The 500-km rail link between Chabahar and Zahedan will link Delhi to the rest of Iran's railway network.

• India has also offered to supply 400 million US dollar worth of steel towards the construction of a rail link between Chahbahar and Zahedan.

Where is Chabahar Port?

• Chabahar Port is a seaport in Chahbahar in southeastern Iran.

• Its location lies in the Gulf of Oman.

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• It is the **only Iranian port with direct access to the Indian Ocean**.

• Being close to Afghanistan and the Central Asian countries of Turkmenistan, Uzbekistan and others, the port has also been called as the Golden Gate to these land-locked countries.

• The port was partially built by India in the 1990s to provide access to Afghanistan and Central Asia, bypassing Pakistan under the Ashgabat Agreement.

Significance of Chabahar Port

• The port will provide an alternative access to trade with Afghanistan bypassing Pakistan.

• Reduced transportation costs will allow India to import crude oil, urea and dry fruits at lower prices.

• Besides, land-locked country Afghanistan's dependence on Pakistan for sea-access will be significantly reduced. It will ultimately lower Pakistan's strategic hold on Afghanistan.

• It will provide India access to the Middle East and Gulf countries increasing trade and ties.

• It is the nearest port to India on the Iranian coast. It will provide India access to the resources and markets of Afghanistan and Central Asia.

Why the deal is important for India?

• As a transit point, the Chabahar Port will be the centre of a regional trade, investment and transportation hub. For the first time, India will get access to the region through friendly nations. The port will make way for India to bypass Pakistan in transporting goods to Afghanistan using a sea-land route.

• From the port, the existing Iranian road network can link up to Zaranj in Afghanistan. The Zaranj-Delaram road constructed by India in 2009 can easily give access to Afghanistan's Garland highway. It will set up road access to four major Afghan cities: Herat, Kandahar, Kabul and Mazar-e-Sharif.

• The Chabahar-Zahedan-Zaranj corridor is a potential game-changer for regional connectivity because it provides an alternative access for Afghanistan to India via the sea. This connectivity will significantly boost the development nature of economic engagement between the two countries.

• On the other hand, China sponsored Road and Belt Policy is supporting a lot of connectivity projects in China. At this point of time, India's own initiative will help the country to avoid dependence on China sponsored Central Asian connectivity.

14. Hague Code of Conduct & India

India has subscribed to an **international code of conduct** against indiscriminate spread of ballistic missile technology, once again reaffirming its commitment to **global non-proliferation objectives**. **India has joined the Hague Code of Conduct against Ballistic Missile Proliferation** (or HCoC in short) by notifying **Austria**, the designated "central contact" of the convention.

Note

- **The HCoC, adopted in 2002**
  , is a voluntary, legally non-binding international confidence-building and transparency measure that seeks to prevent the proliferation of ballistic missiles that are capable of delivering weapons of mass destruction.
- Its joining the HCoC signalled its "**readiness to further strengthen global non-proliferation objectives**.
- India's accession took the number of the nations subscribing **the HCoC against ballistic missile proliferation to 138**. China, Pakistan, Israel and North Korea are among the nations, which are yet to accede to the code despite having significant missile development capability.
- India, which did not sign the NPT, had been a pariah for **the global non-proliferation regimes till 2008**.
- The Nuclear Supplier Group, which controls global atomic material and technology trade, however granted an exemption to India in 2008, despite its "non-NPT" status.

Grouping/Agreement	Objectives & Features	India's Stance
Nuclear Supplies Group (NSG)	· Group of nuclear supplier countries based on Non-Proliferation Principle · Mandate is to regulate nuclear exports & nuclear-related exports · Set up in 1974 as a response to Indian nuclear test · Being a signatory of NPT is an important criteria to join the elite club · Has 48 members including P5 of the UNSC	· Applied for membership in May 2016 · Sought exemption from NPT on grounds of clean track-record · India's pledge of "no-first-use" policy will help in getting membership · Got support from all major

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		members; China poses hurdle · Membership helps in lucrative global nuclear trade · Will get access to sensitive nuclear material & technologies · Big boost to domestic industries & clean energy initiatives
Missile Technology Control Regime (MTCR)	· An informal and voluntary partnership among 35 countries · Set up in 1987 by the G7 countries · Aims to limit the proliferation of missiles and missile technology · Focus on those that carry minimum payload of 500 kg & minimum of 300 km · Not a treaty and does not impose legally binding obligations on member · Has 34 members & China is not a member	· Applied for membership but denied membership in October 2015 · Major countries supported but Italy was reluctant ("due to rift on Marine case") · Membership helps India in curbing global missile proliferation threat · More of strategic concern and no additional benefit in terms of trade · Because the group has no restrictions on trade with non-members
· **Wassenaar Arrangement**	· Set up in 1995 in Wassenaar (the Netherlands) & operation in 1996 · Focus is on conventional arms & dual-use goods and technologies · Seeks to achieve peace and security through export controls · Has a 4-point criterion for membership · 41 members including the USA and Russia	· Interested in joining this export control regime · Meets 3 of the four conditions needed to join · They are – Producer of arms; Adherence to non-proliferation policies · Third - Fully effective export

		controls (announced a list of 16 in August 2015) · Fourth - Yet to comply with SCOMET list criteria · Benefits – participation in trade and Play key role in deciding export regulations
Australia Group	· Informal group set up in 1985 · As a response to Iraq's use of chemical weapons in 1984 · To control the export of chemical and biological weapons · Key role in the conclusion of Chemical Weapons Convention (CWC) of 1997	· Willing to join the group with the USA's backing · Ratified the CWC and set up a national authority in 2000 · With membership, gets a chance in deciding export items list
Nuclear Non-Proliferation Treaty (NPT)	· To prevent the spread of nuclear weapons & weapons technology · Binding treaty and came into force in 1970 for 25 years · In 1995 extended indefinitely; Joined by 195 parties so far · Two categories Nuclear Weapon States (NWS), which are also P5, & Non-NWS · NWS are those that conducted tests before 1 January 1967	· Unwilling to sign the treaty as it is biased towards NWS · NPT discriminatory because it enables development of weapons only by NWS · India, Israel and Pakistan are the major non-signatories · Signing of NPT is crucial as it linked to membership in other control regimes
Comprehensive Test Ban Treaty (CTBT)	· Seeks to ban all nuclear explosions in all environments · Applicable to military as well as civilian purposes · Adopted by UN General Assembly in September 1996 · Signed by 183 and ratified by 164 · Not in force because not ratified by all 44 Annex II countries including India	· Not a signatory to the convention · Because the USA signed and not ratified so far · Other non-signatories: Pakistan, North Korea & Myanmar

Biological Weapons Convention (BWC)	· Legally binding treaty that outlaws biological arms · In force since 1975 & has 174 states-parties · Non-signatory States – Israel and many African nations	· Ratified the convention and strongly committed to not to produce the biological weapons

15. India's mission Balochistan to contain Pakistan in Kashmir

Baluchistan is Pakistan's largest province which was a princely state annexed by it by force. Baluchistan is least developed region and home to 13 million people most of whom belong to Baloch community. India's ramping up of diplomatic pressure on Pakistan over Balochistan and calibrated escalation of support for Baloch freedom struggle point to New Delhi's growing confidence and a new steel in its foreign policy. It also indicates that Prime Minister Narendra Modi won't limit himself to using the Balochistan ***brahmastra*** only as a strategic deterrent.



Issue

After partition, Khan Abdul Gaffar Khan of NWFP actively protested annexation of NWFP, Baluchistan and certain areas into West Pakistan as a single polity. Baluchistan issue is independence movement of Baloch nationals who occupy south west Pakistan, south eastern Iran and southern Afghanistan against government of Pakistan and Iran in need of greater autonomy and higher share in revenve from natural resources.

Baluchistan is in news

Recently the issue of Baluchistan conflict got great momentum when prime minister of India endorsed the freedom struggle waged by the people of Baluchistan against Pakistan's seizure.

After all party meeting also Prime Minister Modi made statement that the issue of atrocities by Pakistan govt in the areas Balochistan, Gilgit and PoK will later brought up on the international stages.

India's Policy and Earlier stand

Since independence India under Nehru keenly followed Non alignment policy and Panchasheel. But in certain circumstances India has broken its shell in expressing its concern on other countries and also openly aided Bangladesh, Srilanka and Nepal with respect to freedom struggle movement or human rights movement.

India's stand in Baluchistan movement

In 2009 during shaem el sheikh joint statement where Pakistan was stressing on India to acknowledge its involvement in Baluchistan, government of the day was not able to cash that situation sternly and react.

PM's decision to save Baluchistan is unprecedented because we have always traditionally shied away from mediating the freedom struggle in Baluchistan.

But in last few days what we have witnessed a departure from the past Pakistan appeasing policy. India always tried to bring Pakistan on negotiation table to discuss the unresolved issues bilaterally. But unfortunately all effort have proved failure. There are many instances where Pakistan has broken our effort.

Statement which PM had made are indicating a logical change in the tone of India reaction to Pakistan.

Reasons behind India's Statement

To counter Pakistan interest in Kashmir

Recent crisis in Kashmir where Pakistan is instigating people of Kashmir against India with false propaganda of attributing India responsible for atrocities in Kashmir.

PM's statement shows that now water has crossed the threshold and now its time for Pakistan to explain on what ground it is doing atrocities on Baloch people.

To divert Pakistan attention from Kashmir

Recently India raises the concerns like

- Why they are not allowed to participate in the formation of government?
- Why they are not appointed in government posts etc

India wants to expose the hypocrisy of Pakistan and truth of its crocodile tears which it used in international arena making false allegations of human rights violations against India.

India's strategic interest in Balochistan

- Geostrategic location of Baluchistan
- Untapped mineral resources
-

Very close to oil lanes of Persian Gulf

- Common border with Iran and Afghanistan
- Iran- Pakistan- India pipeline

If situation in Baluchistan is improved it will also be beneficial for India. Baluchistan is mineral rich area which provides opportunity for trade relationship in future.
It will also aid the long awaited project of IPI pipeline, which is delayed due to instability in Baluchistan region. It will decrease the dependence of India on other countries for oil needs.

To counter China presence

- China is also trying to develop strong relation with Pakistan and planning for developing an economic corridor from Pakistan to Baluchistan.
- It is also investing to develop Gwadar port of Baluchistan which will facilitate import of oil and raw materials from Middle East and Africa and export goods through land corridor from Gwadar to Sinkiang province of China.
- China's string of pearls strategy to encircle India is of much concern to India.
- What would be consequences?
- Certainly if Pakistan is exposed for its atrocities in Baluchistan in international arena, countries which are aiding Pakistan in Kashmir issue will feel hesitant.
- China – Pak infrastructure development will also meet undoubted setback which will be in favour of India.

Conclusion

If we analyse the PM's statement on Baluchistan in the light of mentioned arguments we cannot say that India is adopting a carrot and stick policy against Pakistan or there is a major paradigm shift in India's policy towards Pakistan. But it is the first time that India offered offensive statement rather than defensive statement. Though it may seem like carrot and stick approach in short term perspective, but it can be determined only in long run whether it is paradigm shift based on India's stand in Baluchistan in International arena.

16. ASEAN Summit 2016 concludes in Vientiane, Laos

The 28th and the 29th Association of Southeast Asian Nations (ASEAN) Summit concluded on 8 September 2016 at Vientiane, Laos. The theme for the 2016 summit was **Turning Vision into Reality for a Dynamic ASEAN Community**.

H.E. Thongloun Sisoulith, Prime Minister of the Lao PDR, was the Chairperson of the summit that was held from 6 September 2016 to 8 September 2016.

The Summit was attended by the leaders of the 10-member Association of Southeast Asian Nations. They are Indonesia, Malaysia, Philippines, Singapore, Thailand, Brunei Darussalam, Viet Nam, Lao PDR, Myanmar and Cambodia.

Highlights of the Summit

• ASEAN leaders discussed the implementation of the **ASEAN Community Vision 2025** and enhancing cooperation with ASEAN's external partners.

• The leaders adopted the Initiative for ASEAN Integration (IAI) Work Plan III and the Master Plan on ASEAN Connectivity 2025, which form an integral part of the ASEAN Community Vision 2025.

• They also signed the ASEAN Declaration on One ASEAN, One Response: ASEAN Responding to Disasters as One in the Region and Outside the Region.

• They adopted several outcome documents aimed at realizing the 8 priorities for ASEAN Chairmanship 2016 and implementation of the ASEAN Community Vision 2025.

• They agreed to intensify ASEAN's cooperation with Dialogue Partners and External Parties through ASEAN-led mechanisms namely ASEAN Plus One, ASEAN Plus Three, ASEAN Regional Forum, ASEAN Defense Ministers' Meeting Plus, and East Asia Summit.

• Besides, the ASEAN Leaders had a candid exchange of views on regional and international issues of mutual interest and concerns, including traditional and non-traditional security challenges such as terrorism and extremism, natural disasters, climate change, irregular migration, human trafficking, etc.

• A diplomatic row between the Philippine President Rodrigo Duterte and U.S. President Barack Obama hung over part of the ASEAN meetings. During the summit, Duterte used foul language in relation to a planned meeting between them.

India's participation

• Prime Minister Narendra Modi represented India at the ASEAN summit. He addressed the**14th ASEAN-India summit**.

• He expressed deep concern over the **rising export of terror**, in an apparent reference to Pakistan. He said that it is a common security threat to the region and there was need for a coordinated response from the ASEAN member nations to combat the menace.

About ASEAN Summits and Themes

• ASEAN was established in 1967 by the five founding members namely Indonesia, Malaysia, Philippines, Singapore and Thailand. Brunei Darussalam, Viet Nam, Lao PDR, Myanmar and Cambodia joined later.

• The Summit is ASEAN's highest policy-making body.

• The chair of the ASEAN Summit rotates annually in alphabetical order of the English names of Member States.

• By virtue of holding the chair of the ASEAN for a particular year, the concerned member state also chairs the ASEAN Summit and

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related summits. Further, ASEAN Summits are held bi-annually but with a common theme.

• The 26th ASEAN Summit was held at Kuala Lumpur and Langkawi, Malaysia between 26 and 28 April 2015 with the theme **Our People, Our Community, Our Vision**. The 27th ASEAN Summit was held in Kuala Lumpur between 18 and 22 November 2015 with the same theme.

17. South-East Asia Regional Health Emergency Fund (SEARHEF)

India along with 10 other member countries of WHO's South-East Asian Regional Committee on 9 September 2016 decided to set up a dedicated fund aimed at building preparedness for health emergencies in the region.

The joint funding stream will be established under the South-East Asia Regional Health Emergency Fund (SEARHEF).

The decision was made at the 69th session of WHO Regional Committee Meeting held at Colombo, Sri Lanka. The decision would help the member countries to invest in human resources and infrastructure at times of emergencies, as it is one of the most disaster-prone regions.

In addition, the member countries also passed a resolution for promoting physical activity and expanding health workforces across the region. Insufficient physical activity is a major contributor to rising rates of non-communicable diseases in the region, with four-fifth of adolescents not getting enough of it.

In the recent years, earthquakes, cyclones and floods have caused health emergencies in south-east Asian region and it has also been threatened by a range of emerging diseases, including SARS, MERS CoV, pandemic influenza and Zika virus.

WHO South-East Asia region committee comprises 11 member states namely Bangladesh, Bhutan, South Korea, India, Indonesia, Maldives, Myanmar, Sri Lanka, Nepal, Thailand and Timor-Leste.

18. Exercise Yudh Abhyas - 2016

As part of the ongoing **Indo-US defence cooperation**, a **joint military training 'Exercise YUDH ABHYAS-2016**' would be conducted in the foothills of Himalayas at **Chaubattia in Uttarakhand from September 14 to 27**. Under the aegis of Headquarter Central Command, **the venture is a series of one of the longest running joint military training** and a major ongoing bilateral defence cooperation endeavours between India and US.

- **This will be the 12th edition of the exercise hosted alternately by both countries**.
- The **Exercise Yudh Abhyas-2016** will simulate a scenario where both nations are working together in counter insurgency and counter terrorism environment in mountainous terrain under UN charter, the statement said.
- It will witness participation of about 225 personnel of the US Army and similar strength of Congo Brigade of the Indian Army.
- Its curriculum is progressively planned where the participants are initially made to get familiar with each other's organisational structure, weapons, equipment and tactical drills, it said, adding subsequently, the training advances to joint tactical exercises wherein the battle drills of both the armies are coherently unleashed.
- The **training will culminate with a final validation exercise in which troops of both countries** will jointly carry out an operation against terrorists in a fictitious but realistic setting, the release mentions.
- The **exercise will witness a Brigade Headquarter based Command Post Exercise**, an Infantry company carrying out Field Training Exercise and discussions on issues of mutual interest by experts of both countries.
- Both armies have a vast experience in active counter insurgency/counter terrorism operations and sharing each other's tactics and drills in such diverse environment is of immense value, it said.
- The **joint venture is a great step for the armies of the two democratic countries to train together and gain together from each other's rich operational experiences**. The latest exercise will help further build interoperability between the forces of both the nations, the statement added.

19. India signs open skies pact with Greece

India signs open skies agreement with Greece. Greece is the **first country that has signed open skies with India after the aviation policy was cleared by the Cabinet. This will allow carriers from our country to launch any number of flights to any destination in Greece**. The key cities are **Delhi, Mumbai, Hyderabad, Bengaluru, Kolkata and Chennai**. At present, **there are no direct flights between India and Greece** and passengers travel one stop via Gulf states or Turkey to Greece. In fact, there was no air services agreement between India and Greece till now thus preventing the start of air services between two countries.

- The aviation ministry is also going to call **Indian airlines to discuss their demands for the Dubai**.
- The Indians carriers have exhausted the seat entitlements between India and Dubai and the government is looking at increasing it depending on the requirements of the Indian carriers.
- **Indian carriers have in the past complained that they do not get desired slots at Dubai**.

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- **India had entered into an open skies agreement with the US and Britain**. The open skies with Britain covers airports excluding London Heathrow.
- According to the civil aviation policy, **the government can enter into an 'open sky' air services agreement on a reciprocal basis with SAARC nations** as well as countries with territory located entirely beyond a 5,000 kilometre radius from New Delhi.
- **Open sky beyond 5,000-km**, even without any restrictions, will have very limited or no impact as there is very low demand for additional bilaterals on these routes.

20. Prabal Dostyk - 16

As a part of India's continued efforts to strengthen **Indo-Kazakhstan relations**, troops of Indian & Kazakhstan Army are presently **engaging in a joint exercise 'PRABAL DOSTYK – 16**. The Indian Army is being represented by a platoon strength. The Kazakhstan Army contingent comprise of platoon from Special Operating Force's Unit. A pioneering endeavor with the Kazakhstan Army, **the exercise is being conducted in Karaganda region of Kazakhstan and will conclude on 17 Sep 2016**.

- The **primary aim of the fourteen day exercise will be to enhance interoperability** while undertaking Counter Terrorism & Counter Insurgency Operations in rural & semi-urban environment under *the umbrella of* United Nations.
- The exercise will be **conducted in two stages**; **first stage will be to familiarize with each others tactics**, drills, weapons & equipment, whereas in the second stage troops of both the armies will graduate to jointly execute a helicopter borne operation in a simulated environment. Combat battle drills and physical fitness will be the focal point of the exercise.
- '**Prabal Dostyk' meaning 'Robust Friendship**' will be a significant step towards fostering military as well as diplomatic ties between both countries.

SOCIAL ISSUES AND DEVELOPMENT

1. India's Draft Bill On 'Passive' Euthanasia

The word 'euthanasia', which originated in Greece, literary means a good death but in this context it means mercy killing. Euthanasia encompasses various dimensions, from active (introducing something to cause death) to passive (withholding treatment or supportive measures); voluntary (consent) to involuntary (consent from guardian) and physician assisted (where physician's prescribe the medicine and patient or the third party administers the medication to cause death).

Classification of euthanasia

Euthanasia may be classified according to whether a person gives informed consent into three types: voluntary, non-voluntary and involuntary.

Voluntary euthanasia

Euthanasia conducted with the consent of the patient is termed voluntary euthanasia.

Non-voluntary euthanasia

Euthanasia conducted when the consent of the patient is unavailable is termed non-voluntary euthanasia.

Involuntary euthanasia

Euthanasia conducted against the will of the patient is termed involuntary euthanasia.

Passive and active euthanasia

Voluntary, non-voluntary and involuntary euthanasia can all be further divided into passive or active variants.

- Passive euthanasia entails the withholding of common treatments, such as antibiotics, necessary for the continuance of life.
- Active euthanasia entails the use of lethal substances or forces, such as administering a lethal injection, to kill and is the most controversial means.

International Position on Euthanasia

Country	Euthanasia	Physician Assisted Suicide
Netherlands, Belgium	Legal	Legal
Germany	Illegal	Legal
Australia, Canada, Israel, Italy, India	Illegal	Illegal

Arguments against Euthanasia

1. **Constitution of India:** 'Right to life' is a natural right embodied in Article 21 but euthanasia/suicide is an unnatural termination or extinction of life and, therefore, incompatible and inconsistent with the concept of 'right to life'. Supreme Court in **Gian Kaur Case 1996** has held that the right to life under Article 21 does not include the right to die.
2. **Neglect of Healthcare by State:** If euthanasia is legalised, then there is a grave apprehension that the State may refuse to

invest in health (working towards Right to life).

3. **Malafide Intention:** In the era of declining morality and justice, there is a possibility of misusing euthanasia by family members or relatives for inheriting the property of the patient. The Supreme Court has also raised this issue in the Aruna Shanbaug judgement.

4. **Commercialisation of Health Care:** Passive euthanasia occurs in majority of the hospitals across the county, where poor patients and their family members refuse or withdraw treatment because of the huge cost involved in keeping them alive. If euthanasia is legalised, then commercial health sector will serve death sentence to many disabled and elderly citizens of India for meagre amount of money. This has been highlighted in the Aruna Shanbaug Judgement.

Arguments In Favour Of Euthanasia

1. **Right to Die with Dignity:** 'Righttodie' supporters argue that people who have an incurable, degenerative, disabling or debilitating condition should be allowed to die with dignity.

2. **Care-givers Burden:** The caregiver's burden is huge and cuts across various domains such as financial, emotional, temporal, physical, mental and social.

3. **Encouraging Organ Transplantation:** Euthanasia in terminally ill patients provides an opportunity to advocate for organ donation. This in turn will help many patients with organ failure waiting for transplantation. Not only euthanasia gives 'Right to die' for the terminally ill, but also 'Right to life' for the organ needy patients.

Aruna Shanbaug Case

Shanbaug, a nurse at KEM Hospital in Mumbai, was raped and strangulated, leaving her in a vegetative state for decades till her "next friend", author Pinki Virani (who wrote a book on her) filed a case to allow her to be euthanized.

Supreme Court Judgment on Euthanasia

SC turned down a friend's plea for mercy killing of vegetative Aruna Shanbaug saying that only hospital could make such a request. The judgment of SC is based on the following logic:

- If we leave it solely to friends and relatives, there is always a chance that this may be misused by some unscrupulous elements who wish to inherit or grab patients' property.
- If euthanasia is legalised, then commercial health sector will serve death sentence to many disabled and elderly citizens of India for meagre amount of money.

Background

It was only with the story of Aruna Shanbaug (a woman who had been in a vegetative state for 42 years) that the issues of end of life and euthanasia came up for public discussion. Pinki Virani, a social activist, journalist and writer, filed a writ petition on behalf of Shanbaug and claimed that her right to life guaranteed by the Indian constitution had been violated.

- **In the Shanbaug case, March 2011,**
  the Supreme Court of India upheld that conditional passive euthanasia would be permissible in the rarest of rare circumstances.
- It clearly stated that a petitioner concerning passive euthanasia would have to move the high court, which would then be followed by the medical expert board enquiry.
- The Supreme Court opined that it could not be solely left to the discretion of the patient's relatives or the 'next friend' (like the nursing staff in the case of the Shanbaug case) to make decisions regarding the death of an individual.
- The court also stated that this judicial pronouncement would be valid till any further enactment on the subject by the legislature was set out. This case opened up a new dimension with regard to article 21, right to life. The prior judgments related to the issue of right to life require a special mention in any case concerning the issue of euthanasia.

One major judgment in this context is **the case of P. Rathinam, 1994** which struck down section 309 of Indian Penal Code (attempt to suicide) as unconstitutional and stated that it violated article 21.

- It held that fundamental rights have both positive as well as negative aspects. For instance, the right to freedom of speech and expression can also be said to include the right not to speak or express.
- This decriminalising of section 309 of the IPC could have worked in favour of individuals asserting their right to discontinue with unwanted medical treatment.
- However, in 1996, theGian Kaur case overruled the earlier decision, observing that article 21 speaks of life with dignity. Only aspects of life which make it more dignified can be read into this article, thereby pointing out that the right to die was inconsistent with it.

The Law Commission of India came out with two pertinent reports which dealt with the issue of euthanasia to some extent. **The 196th report of the Law Commission on Medical Treatment to Terminally Ill Patients (Protection of Patients and Medical Practitioners),**released in 2006, was the first report on the subject. The second was the 241th report in 2012, named **Passive Euthanasia: A Relook that**dealt with the same issue.

- The former report was the one which came up much before the Aruna Shanbaug verdict, making passive euthanasia permissible under the rarest of rare conditions.
- Although the report clearly stated at the outset that it did not deal with euthanasia but with a 'different matter of withholding life support measures', the Shanbaug case referred to it while coming up with its verdict on passive euthanasia.

The second report stated that it was in accord with the views of the judiciary on the Shanbaug verdict, where it legalised passive euthanasia and laid down a set of criteria to guide the framework of its working.

- It reiterated the views of the Shanbaug judgment and once again threw light on the issue of passive euthanasia and analysed the findings and recommendations of the Supreme Court verdict on the subject.

On February 25, 2014, a five judge bench was constituted by then chief justice P. Sathashivam who claimed that a clear law on the subject of euthanasia in India was mandatory. The constitutional bench was constituted for the purpose of providing a new set of guidelines on euthanasia. **The court acted due to a petition filed by an NGO named Common Cause, which argued in favour of the right to die with dignity.**

- It was stated that the procedure set in the Shanbaug verdict did not comply with article 21 of the Constitution, as the right to life guaranteed by the article did not include the right to die with dignity under the supreme law of the land.
- Despite this, the Supreme Court of India legalised passive euthanasia under certain circumstances and laid down a procedure for its

working.

Again on **July 16, 2014, the Supreme Court of India issued a notice to all states and union territories** on a plea for the legalisation of passive euthanasia by allowing the withdrawal of treatment from patients in a permanent vegetative state. States and union territories were asked to respond within the next eight weeks. The concept of a living will, which had been completely out of the discussion on euthanasia so far, also gained ground in the new stir caused by the Supreme Court's attempt. The Centre, however, opposed the petition and stated that it was a form of suicide which could not be permitted in the country.

Impact of Euthanasia:

- Legalizing euthanasia would damage the foundational societal value of respect for human life
- Health-care institutions are value-creating, value-carrying and consensus-forming for society as a whole. In a secular, pluralistic society, medicine and law are the principal institutions that maintain the value of respect for human life in society as a whole. Changing the law to allow physicians to carry out euthanasia — making an exception to the norm that we must not kill each other — would seriously damage these institutions' capacity to carry that value.

THE MEDICAL TREATMENT OF TERMINALLY ILL PATIENTS

After years of debate and legal battles, India will soon decide whether or not to pass a law to legalize "passive euthanasia". According to the draft Bill, a terminally ill patient above the age of 16 years can decide on whether to continue further treatment or allow nature to take its own course.

"Every competent patient, including minors aged above 16 years, has a right to take a decision and express the desire to the medical practitioner attending on her or him,"

Every competent patient, including minors aged above 16 years, has a right to take a decision and express the desire to the medical practitioner.

The Bill provides protection to patients and doctors from any liability for withholding or withdrawing medical treatment and states that palliative care (pain management) can continue.

Some of the suggestions from the draft Bill:

1. "When a patient communicates her or his decision to the medical practitioner, such decision is binding on the medical practitioner." However, it also notes that the medical practitioner must be "satisfied" that the patient is "competent" and that the decision has been taken on free will.
2. There will be a panel of medical experts to decide on case by case basis.
3. The medical practitioner has to maintain all details of the patient and ensure he/she takes an informed decision. He is also required to inform the patient whether it would be best to withdraw or continue treatment. If the patient is not in a conscious state, he/she needs to inform family members. In the absence of family members, the medical practitioner needs to inform a person who is a regular visitor.
4. The draft also lays down the process for seeking euthanasia, right from the composition of the medical team to moving the high court for permission.

The Bill only portends to legalise what is called "passive euthanasia", as discussed in the judgement pertaining to Nurse Aruna Shanbaug.

Active euthanasia (which involves taking specific steps such as injecting a terminally ill patient with a lethal substance to end suffering) **is not being considered "as it is likely to be used by unscrupulous individuals to attain their ulterior motives."**

PROBLEM AREA OF DRAFT BILL

- The draft has disappointed expertswho wanted complete clarity on the concept of a living will. A living will is defined as "a document in which a person states his/her desire to have or not to have extraordinary life-prolonging measures used when recovery is not possible from his/her terminal condition".
- Paragraph 11 of the draft Bill said that any "advance medical directive (living will) or medical power of attorney executed by the person shall be void and of no effect and shall not be binding on any medical practitioner".
- "It deals with legal details, but doesn't guide the doctor about how to handle a 90-year-plus patient with terminal complications from cancer or a patient suffering a third stroke.
- More burden on child as "he cannot sign a contract or marry before the age of 18, but he can decide to die? How can anyone allow a child to decide something as important as life and death?".

2. Cabinet gives ex-post facto approval for Varishtha Pension Bima Yojana

The Union Cabinet has given its ex-post facto approval for the Varishtha Pension Bima Yojana (VPBY) 2003 and Varistha Pension Bima Yojana (VPBY) 2014.

- Approval has also been granted for the expenditure incurred on subsidy amount released to Life Insurance Corporation during the period 2003-04 to 2014-15 for VPBY 2003.
- The Cabinet has also given approval to incur expenditure on VPBY 2003 and 2014 from the financial year 2015-16 onwards.

VPBY 2003 and VPBY 2014

- While VPBY was launched on July 14, 2003, the VPBY 2014 was launched on August 14.
- Both are pension schemes intended to give an assured minimum pension to the Senior Citizens based on an assured mirimum return on the subscription amount.
- **implemented through Life Insurance Corporation (LIC) of India**The Schemes are .

SCORE

- Under the scheme, the difference between the actual yield earned by LIC on the funds invested under the Scheme and the assured return committed by the Government is paid as subsidy to LIC.
- The pension is envisaged until death from the date of subscription, with payback of the subscription amount on death of the subscriber to the nominee.

Both the schemes VPBY – 2003 and VPBY – 2014 are closed for future subscriptions. However, policies sold during the currency of policy are being serviced as per the commitment of guaranteed 9% return assured by the Government under the schemes.

3. End oppressive practice of sterilising women

Recently Supreme Court of India of has directed the central government to finalise the National Health Policy by end of December 2016 and end mass sterilisation camps. In its order court observed that the poor and tribal men and women cannot be reduced to mere statistics in the country's population control campaigns. Court has ordered in the backdrop of the increasing number of sterilisation deaths in mass camps.

Issues

- A significant number of women have died due to the oppressive practice of sterilising women during mass sterilisation camps the past three years.
- Mass sterilisation camps were perverse products of the Centre's population control campaigns driven by informal targets and incentives.
- These camps infringe on the reproductive freedoms of the most vulnerable groups of society who's economic and social conditions make them easy targets to coercion.
- Without informing the impact and consequences of a sterilisation procedure, by only offering financial incentives and subjecting women to permanent contraceptives is regressive action by government in modern society.
- Even after many disasters states like Madhya Pradesh, Maharashtra, Rajasthan and Kerala did not take the question of mismanagement in sterilisation camps seriously.
- Similarly many times central government ignored its role in the issue of sterilisation as a mere public health issue coming under the States' watch.

What needs to be done?

- It is not coercion, but the improved access, education and empowerment should be guiding factor behind government's population control campaign.
- There should be mandatory explanation to the patient, in his or her local language, about the impact and consequences of a sterilisation procedure.
- As directed by apex court, governments need to prepare national health policy to end oppressive practice of sterilisation of women.
- With respect to sterilisation, government should publish the list of approved doctors at the State and regional levels and members of quality assurance committees, and details of compensation claims etc in public forum.
- Similarly compensation for losses, including deaths, should be raised substantially.
- In the whole process central and state governments should act in coordination with each other.

In the last few years various cases of deaths were observed in mass sterilisation cases. In this backdrop apex court has rightly directed centre to end oppressive sterilisation camps and finalise national health policy. Now buck stops with central government, hence it should finalise the national health policy soon. And it should take all steps to end this regressive practice and instead it should promote awareness, education, employment etc.

4. Gram Uday Se Bharat Uday Abhiyan - A Scan

The government has declared to initiate a new programme for strengthening the Panchayati Raj and to culminate the Panchayati Raj System to increase the social harmony between villages. The campaign for To inaugurate Gram Uday se Bharat Uday will kick start on 125th Birth Anniversary 125th Birth Anniversary of Dr. Bhimrao Ambedkar's.

This campaign will take place in association with- Central Government + States government + Local Government (Panchayats). It will be organized at various level.

Objectives

- To generate and escalates nation-wide efforts across villages to increase social harmony.
- Strengthening of Panchayati Raj System
- Promotion of rural development, and to foster and empower farmers for their collective progress.

The campaign program 'Gram Uday Se Bharat Uday Abhiyan' (Village Self Governance Campaign) will start with Dr. Bhimrao Ambedkar's 125th Birth Anniversary on 14th April 2016 and culminating in Panchayati Raj Day on 24th April 2016, in the period between 14th April to 24th April 2016, the Central Government, in collaboration with States and Panchayats The campaign aims to generate nation-wide efforts to increase social harmony across villages, strengthen Panchayati Raj, promote rural development, and foster farmers' progress. The Prime Minister will inaugurate the Gram

Gram Uday se Bharat Uday Campaign and address all the Gram Sabhas of the country.

From 14th April to 16th April, 2016 a 'Social Harmony Programme' will take place in all Gram Panchayats, supported collaboratively by the Ministry of Panchayati Raj and the Ministry of Social Justice and Empowerment and resolve to strengthen social harmony.

Subsequently to promote agriculture 'Village Farmer Assemblies' will be organized in Gram Panchayats. The aim of this programme isto provides the detailed information about schemes regarding agriculture such as the Fasal Bima Yojna, Social Health Card etc. to farmers and their suggestions for bringing about improvements in agriculture will be solicited. Preceding the main event of Gram Sabha meetings for Panchayati Raj Day, a National meeting of tribal women Gram Panchayat Presidents from Fifth Schedule Areas of 10 States will be held, which will be mainly focused on Panchayat and tribal development.

Gram Sabha meetings will be followed by this across the country. On this day, there will be a Prabhat Pheri (or morning walk) in the village, a programme on sanitation, a cultural programme as well as a sports programme. The topics of discussions in these Gram Sabhas will include :-

Gram Panchayat Development Plans for local economic development,

Optimum utilization of funds available with Panchayati Raj Institutions,

Clean drinking water and sanitation,

Role of women in village and rural development.

Social inclusion including welfare of Scheduled Castes, Scheduled Tribes, person with Disabilities and other marginalized groups.

Information regarding various schemes for socio-economic development will be provided.

5. Pradhan Mantri Krishi Sinchai Yojana

Agriculture schemes are always required for two reasons. Firstly to maintain the agriculture growth and secondly to provide a consistent employment to the rural population . India is primarily an agricultural economy, because more than 50 percent of its population still involves itself in agriculture and allied activities. Further, agriculture contributes around 14% to GDP of India. With these facts, we can easily understand the importance of agriculture and its contribution to Indian economy. But, agriculture has largely stagnated and scope for expansion is limited, hence the focus should be on how to improve agricultural production and productivity. One such focus area is irrigation where state intervention is required, irrigation has direct bearing on improved production and productivity as our agriculture profile is largely monsoon dependent or rain fed. Realizing the same launch of PMKSY is a move in right direction.

The major **Objectives** of PMKSY are:-

- To attract investments in irrigation,
- Expand cultivable area under irrigation,
- Improve on-farm water use efficiency to reduce wastage of water,
- Enhance the adoption of precision-irrigation and other water saving technologies (More crop per drop),
- Enhance recharge of aquifers and introduce sustainable water conservation practices by exploring the feasibility of reusing treated municipal wastewater for peri-urban agriculture, and attract greater private investment in precision irrigation system.

Under PMKSY the priority is accorded to conserving water, its management and also to expand the coverage of irrigation, which is aptly said as **'Har Khet Ko Pani'.** Water use efficiency is also of particular focus of the scheme i.e. '**More crop per drop'**

Features

I.PMKSY has merged a few already functioning schemes viz. Accelerated Irrigation Benefit Programme (AIBP), Integrated Watershed Management Programme (IWMP) and the On Farm Water Management (OFWM).

II.The nodal agencies for implementation of the scheme are Ministries of Agriculture, Water Resources and Rural Development dealing with their own sub-components. Like, Ministry of Rural Development is primarily concerned with rainwater conservation, construction of farm pond, water harvesting structures, small check dams and contour bunding etc.

The Min of Water Resources will concern itself with measures for creation of irrigation sources. Like, construction of diversion canals, field channels, water diversion/lift irrigation, including development of water distribution systems.
Ministry of Agriculture will promote water efficiency and precision farming devices like drips, sprinklers, pivots, rain-guns in the farm; it will also look after construction of micro-irrigation structures to supplement source creation activities.

III.The execution of PMKSY will be done in a decentralized manner with State level planning and project specific implementation. Hence, state can draw their own plans, basing them upon District Irrigation Plan (DIP) and State Irrigation Plan (SIP), and also according to their needs. It will club all water sector related activities and provide a common platform, including drinking water & sanitation, MGNREGA etc. this all will done through a comprehensive plan. State Level Sanctioning Committee (SLSC) is vested with the power to oversee its implementation.

IV.All States including North Eastern States and Union Territories are covered under the programme.

V.At national level, this Yojana will be monitored by an Inter-Ministerial National Steering Committee (NSC) constituted under the Chairmanship of Prime Minister with Union Ministers from concerned Ministries. To oversee programme implementation, allocation of

resources, inter ministerial coordination, monitoring & performance assessment, addressing administrative issues etc. A National Executive Committee (NEC) will be constituted under the Chairmanship of Vice Chairman, NITI Aayog.

Targets

The PMKSY will start with investment of 5,300 Crores for this fiscal. The total outlay of Rs.50000 Crores is for a period of 5 years (2015-16 to 2019-20) and is to achieve convergence of investments in irrigation at the field level. Definitely, the outlay for this fiscal is not enough to cover the remaining 65% of rain fed area, but the government has targeted to:

- **Provide artificial irrigation facility to 6 lakh hectares of arable land,**
- **Provide drip irrigation to 5 lakh hectares of arable land.**

With above two targets, the PMKSY will also focus on end-to-end irrigation and micro-irrigation as well. Apart from working on new irrigation facilities, the PMKSY also aims towards fixing the poorly implemented projects already in place. Thus, PMKSY will take control of these projects and:

- Rework on them with strict guidelines of quality control.
- Complete 1,300 incomplete watershed projects.

Indian Monsoon and the PMKSY

Of the total cultivable land, only 35% is well irrigated. The remaining 65% is solely rain fed, therefore delayed or low rainfall both play havoc on these farmers. Either of these two conditions is catastrophic as these results into crop failure, which contributes to slow down in economy, and the farmer is obviously the worst hit. A combination of factors—neglect of investments in agriculture, three consequent droughts during sowing season, followed by unseasonal rains, has created a situation of rural distress. The farmers primarily depend on the south-west monsoon for growing Kharif crops such as paddy, pulses, oilseeds and cotton.

The Indian agriculture has largely stagnated and to revive its growth PMKSY is a good start. PMKSY would double the central budget for irrigation; hence will help in drought proofing the agriculture, building resilience of the farmer and substantially increasing the crop productivity. PMKSY is a long-term solution to unpredictable rainfall pattern and is particularly important in the backdrop of climate change.

PMKSY and the Watershed Area of India

The watershed development projects focus on developing wastelands/degraded lands, drought-prone and desert areas on watershed basis. These projects also focus on mitigating the adverse effects of extreme climatic conditions such as drought and desertification on crops.

The idea of watershed development is in coherence with the objective of PMKSY as both provide sustainable solutions for long term.

Realizing this, watershed development is made the key component of PMKSY, hence one of the objectives of the programme is to "Ensure the integrated development of rain fed areas using the watershed approach towards soil and water conservation, regeneration of ground water, arresting runoff, providing livelihood options and other NRM activities." The integrated watershed management programme has been amalgamated with PMKSY in pursuance of the above objective.

The programme further provides, Converging MGNREGA activities for creation of water source to full potential in identified backward rain fed blocks including renovation of traditional water bodies. These also include water harvesting structures such as check dams, nala bund, farm ponds, tanks etc., nursery raising, afforestation, horticulture, pasture development, livelihood activities for the asset-less persons and production system & micro enterprises for small and marginal farmers etc. Effective rainfall management like field bunding, contour bunding/trenching staggered trenching, land levelling, mulching etc.

Pradhan Mantri Fasal Bima Yojana (PMFBY) and PMKSY – Interdependency and corollary

The idea of PMFBY is to protect the farmer from the losses occurring due to unprecedented weather conditions, provide him with the short term relief, save him from unprecedented volatility in the farm output and stop him from abandoning agriculture, this would also encourage him keep on investing more on inputs and crop protection techniques. On the other hand, PMKSY is a long term solution for dealing with agrarian distress in the country, as its objective is to expand irrigation which would reduce the dependence of the farmer on monsoon thereby insulating him from the vagaries of nature. Both of these schemes would provide a robust cushion to the farmer and would complement each other providing the farmer with necessary short-term relief in the form of compensation for crop loss and a sustainable long-term solution in the form of irrigation thereby reducing his dependence on monsoon.

Implementation Hurdles

- Converging three ministries of agriculture, water resources and rural development together for the purposes of PMKSSY is a major cause of delay, as initially there was indecision regarding which ministry would oversee implementation of the programme until it was awarded to Ministry of water resources.
- Add to it, the later confirmation by ministry officials that they do not have required expertise and data for implementing micro irrigation projects.
- The spatial data for existing water bodies is absent which tells us about the existing location of these water bodies, is another cause of delay.
- The ground level surveys and mapping of water bodies at village or panchayat level, a prerequisite for implementation of the scheme have not been conducted.
- What more can be done
- Unlike the PMGSY model, an agency to spearhead upon technical issues by experts is a necessity, which is missing in PMKSY; this mechanism would bypass routine administrative process.
- Experts suggest that the agriculture ministry has assigned no task under MGNREGA, to employ village residents for constructing irrigation channels under the micro-irrigation scheme. Such anomalies in the programme should be done away with by granting it the

right focus.

- The real potential of the programme would be achieved if the lengthy bureaucratic process were cut short, as for preparing District Irrigation Plan the DM is the key person, who might end up taking the programme preparation and its implementation as routine work.

6. Rain not enough to end drought

Droughts are outcome of variability of climate. Though drought causes little structural damage and has slow onset, it is considered as natural hazard. Drought in India is related to both scarcity of rainfall and water resource management.

Definition: IMD defines Drought as situation occurring in any area when mean annual rainfall is less than 75% of the normal rainfall.

Categories of Drought

Drought can be classified into three types according to National commission on agriculture in India. They are agricultural, hydrological and meteorological drought.

1.Meteorological drought: a condition when there is substantial decrease from usual precipitation over an area.

2.Hydrological drought: a condition when there is depletion of subsurface and surface water resources due to prolonged meteorological drought.

3.Agricultural drought: a condition when rainfall and soil moisture is deficient to support healthy growth of crop.

Based on the onset of monsoon, drought is also categorised as early season, mid season and late season drought.

Drought is not only confined to regions with deficient rainfall, it is also prevalent in regions of high rainfall. Himalayan regions are also prone to conditions of water scarcity. Worst drought in India was experienced in 2002. Probability of drought in India varies from region to region. Western Rajasthan experiences drought once in 2 years and Once in 15 years in Assam.

Distribution of drought in India

The distribution of drought in India can be classified under three heads

1. Conditions of extreme drought: It includes 12% of total drought prone areas i.e Gujarat, western Uttar Pradesh, north-west Madhya Pradesh, western Rajasthan.

2. Conditions of severe drought: It covers 42% of total drought prone area i.e leeward side of Maidan plateau, Rayalaseema and Telengana regions of Andhra Pradesh and Marathwada and Vidarbha regions of Maharashtra.

3. Conditions of moderate drought: It prevails over 46% of total drought prone area i.e Orissa, central-north Madhya Pradesh, Chhotanagpur, Jammu and Kashmir and central- east Tamil Nadu.

Irrigation facilities and drought:

India's irrigation is substantially groundwater and well based. Ground water contributes to 80-90% of water requirement and 50% of irrigation requirement.

In 2011

- Total cropped area – 159.6 million hectares
- Ground water equipped crop area – 39.43 million hectares
- Canal irrigation equipped crop area – 22.48 million hectares
- Total crop area actually irrigated - 58.43 million hectares

Ground water and drought

Rain water is the significant source of recharge for surface and ground water in drought prone areas. Area of concern related to groundwater in drought prone area is

- less exploitation of groundwater for irrigation
- high concentration of salts in the groundwater and soil profile
- fluorides and nitrates concentration in water
- reduced availability of drinking water for animals ponds, lakes etc.

Measures :

- following drip and sprinkler practices
- Recharging ground water by watershed construction

Cropping pattern and Drought

Continued drought reduces water table and lowers soil moisture and decreases out plant cover. Drought increases soil temperature and decreases its humidity. Crop diversification and modification of cultivated crops is a conventional adaptation measure to curtail the risk of crop failure due to drought. The following startegies are suitable in drought prone area:

- Crops that are drought resistant and require minimal irrigation
- Crops that exploit residual moisture from earlier cultivation,
- food crops for household food security,

- Crops that are marketable with high value
- Legumes that upgrade soils fertility and infiltration rate.

Drought and Social life in India

Drought impacts social life both positively and negatively.

- Migration to urban areas
- Disruption of life and human suffering
- Inter regional and inter social group frictions due to movement of people and animals
- Ethinic discrimination
- Transhumance of herders

Drought and Inflation

Drought is inegalitarian in its incidence. It affects farmers and animal raising people to large extent than any other socio economic groups. Droughts leads to increase in cost of food products and farm products which directly depend on water resources to large extent. In turn droughts causes increase in wage rates of skilled and educated. It widens differences in income and wealth.

Strategies to overcome drought

- Periodical review of water shortage
- Individual state specific drought proofing measures to be devised
- Crop diversification, farm ponds construction, adoption of microirrigation
- Promotion of water storage, conservation and rejuvenation
- Incentivise solar pumps for irrigation
- Harvesting rain water, recharging ground water, desiltation of irrigation tanks
- Check dams maintenece, prevention of leakage and pilferation of water from distribution network
- Reviving traditional and historical step wells
- Availing crop advisories to farmer through mobile app in their language
- Locating ground water resources using satellite technology and remote sensing
- Compulsory rain water harvesting in urban areas
- Promotion of alternate livelihood like dairy, poultry, beekeeping. Timber farming and floriculture
- Crop Insurance against drought

Drought Mitigation schemes of GOI

India has managed droughts through measures like Drought Prone Areas Programme (DPAP), Desert Development Programme (DDP), Integrated watershed Development Programme (IWDP) and the National Watershed Development programme for Rainfed Areas (NWDPRA) etc. The Integrated Watershed Management Programme (IWMP) is a comprehensive program which brings under it
DDP, DPAP and IWDP together.

Pradhan Mantri Gram Sinchai Yojana: is introduced so that more land is irrigated and ensure water supply to farmers round the year. **Read in Detail**

Krishi Amdani Beema Yojana: is introduced so that farmers don't bear any financial burden if their produce gets destroyed due to unexpected weather or for any reason.

Soil health card scheme: to determine current status of soil health and to determine changes in soil health and recommend nutrients for farms to improve productivity.

Pradhan Mantri Fasal Beema Yojana : The Central Government has approved a cheaper crop insurance scheme named Pradhan Mantri Fasal Bima Yojana (PMFBY) on 13th January 2016. The government's move came in an attempt to check the problem of rising cases of suicide by the farmers. **Read More in Detail**

Central water commission and central ground water board to monitor hydrological data, water storage and ground water level.

Strategies of state governments:

Maharastra model:

- Emphasis on promoting horticulture and floriculture under controlled water and temperature technology
- Cultivation of beetel leaves, Jerbera flowers, Turdal, oil seeds and biodiesel plants.

Gujarat model:

- The newly inaugurated Narmada-Mahi pipeline takes water to Ahmedabad and parts of Saurashtra
- To reduce migration of people Government has provided works under EAS scheme. The revenue from profession tax goes towards EAS wages.

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- The administration has pressed into service water tankers, when water scarcity led to riots in major towns and cities.

7. Women's Rights and Religious Liberty

Every Right has a corresponding duty and every duty comes from the legal statute or the moral obligation. The relation between the right and duties goes hand in hand. But sometimes both liberty and right become contradictory(in short term) and they lock horn at the societal platform.This is a matter of thorough discussion and we are giving the issue in its relevant detail.

Right to maintain Religious Institution

Article 26 of the Indian constitution gives freedom to manage religious affairs Subject to public order, morality and health, every religious denomination or any section thereof shall have the right –

(a) to establish and maintain institutions for religious and charitable purposes;
(b) to manage its own affairs in matters of religion;
(c) to own and acquire movable and immovable property; and
(d) to administer such property in accordance with law.

However, These guarantees are available to only Citizens of India and not to aliens.

These, however are constitutional provisions and are generally perceived to be applicable for men. Women in India, do not enjoy obvious freedom to participate, maintain and oversee religious institutions, even when guaranteed by Indian constitutions.

Right to Equality

Right to equality, in Indian constitution is exhibited from **Article 14 to Article 18**. It is considered as the foremost in Indian constitution.

- **Art 14** states that "The state shall not deny to any person equality before the law or the equal protection of the laws within the territory of India." This right not only applies to the citizens of India but also to all the people within the territory of India.Read more at
- **Art 15** states that "the state shall not discriminate against any citizen on grounds only of religion, race, caste sex, place of birth or any of them." This article applies only to
- **Art. 16** guarantees equality of opportunity in matters of public employment.
- **Art. 17** of the constitution says, "Untouchability is abolished and its practice in any form is forbidden." This is an absolute fundamental right.
- **Art. 18** forbid titles except military or academic distinctions. Title from foreign governments such as knighthood is forbidden.

Thus, our constitution places the **women right at the equal status** as that of their men counterpart. By **Article 15 and 16** government can even make provision of reservations for education and employment for women.

Looking at the above provisions, it can very well be said that women in India, have been provided with ample opportunities to match their male counterpart and ensure equality. Moreover, it is a gradually heartening sign that their participation in employment-government as well as private, in socio-political activities of the nation and also their presence at the highest decision making bodies is improving day by day.

However, we are still lagging far behind in achieving the equality and justice in true sense and spirit which the Preamble of our Constitution talks about. Even when, Indian women have been provided with enormous equality provisions and laws, they are pathetically way behind men in almost all the parameters, depicting those constitutional provisions only on the paper. The real problem lies in the patriarchal and male-dominated system of our society which considers women as subordinate to men and creates different types of methods to subjugate them.

The need of us is to educate and sensitize male members of the society regarding women issues and try to inculcate a feeling of togetherness and equality among them so that they would stop their discriminatory practices towards the fairer sex. For this to happen apart from Government, the efforts are needed from various civil societies, NGOs and from huge participation of citizens of the country. And first of all efforts should begin from our homes where we must empower, educate and equalize female members of our family by providing them equal opportunities of education, health, nutrition and decision making without any discrimination. India can surge on the path of progress only with the equal status to women.

Status of Women in Religious Activities

Women are considered only a second class citizens in almost all the religious practices, rituals, customs and orthopraxy, in most of the major religion. Religion and their practices are often dated back to ancient times. Naturally, such practices are not devoid of various superstitions and irrationality.

The plight of Indian women had always been denigrated in the history, barring in Buddhist society. Therefore, even when a modern society, by and large got developed by the weight of modernity, pragmatism and education, the women amelioration in religious activities could not be a reality. Position of women in religious activities are often tied to such hardcore rituals based on superstitions and exist in deplorable scenarios.

There is and underlying need to dismantle gender stereotypes within a religious framework and discuss various issues that affect the life of women female feticide, ordination, salvation, , marriage reform laws, exclusion of females from important memberships of religious institutions, their entry into temples and mosques, biased customs and rituals and so on.

The Point of Conflict

Women have not given equal liberty and rights in religious matters even in contemporary times. The basic point of conflict is included in vested interests and lack of rationality. Some of the obvious reasons for the existence of such scenario in the 21st progressive India can be:

- Patriarchism – Society has been dominated by men, so should be the religion and its affairs
- Superstitions – Gods may get angry in altering the centuries old practices and rituals.

- Electoral politics – Many political parties lend support against women being given equality status as they do not want to antagonize the particular religion.
- Corruption – Big temples and trusts do not want any new entrant in their stronghold administration of temples. Giving equal status to women may expose some of the corrupt priests and their descendants.

However, there have been ample reasons given in public or otherwise to keep away women from religious practices and affairs, as evident below:

- It was a "sin" for women to go near the grave when they were menstruating
- Worshipping and prayer in temples and mosques distract and create negative image for men at sacred places.
- Women are considered impure to touch and perform worship of some deities.
- Women should not touch the graves of mosque
- These are century-old rules that have come down to us and one must obey them

This is high time, amidst controversial, temple entry, uniform civil code and the frequently debates women empowerment, that the state should enact a robust law so as to bring women on the great platform of true equality. The enactment as well as their implementation in letter as well as spirit can provide the legitimate right and liberty in religion to Indian women.

8. Mission Parivar Vikas to be launched in seven states for improved family planning services

The Union Health Ministry has decided to launch Mission Parivar Vikas in 145 High Focus districts in seven states for improved family planning services. The Mission will be implemented in all the 145 districts at one go.

Its main objective is to accelerate access to high quality family planning choices based on information, reliable services and supplies within a rights-based framework.

These districts having the highest total fertility rates are in the states of Uttar Pradesh, Bihar, Rajasthan, Madhya Pradesh, Chhattisgarh, Jharkhand and Assam. These states constitute 44 percent of the country's population.

How these districts were identified?

These 145 districts have been identified based on total fertility rate and service delivery (PPIUCD and Sterilization performance) for immediate, special and accelerated efforts to reach the replacement level fertility goals of 2.1 by 2025.
Recent data suggests that these 145 districts have TFR of more than/equal to 3.0 (56% of the 261 districts in the 7 HFS) and are home to 28% of India's population (about 33 Crores).

However, only 22% of India's protected couples and 40% of India's couples with unmet need reside in these districts. These districts also have a substantial impact on maternal and child health indicators as about 25-30% of maternal deaths and 50% of infant deaths occur in these districts Moreover, 115 of these districts (79%) have high percentage of adolescent mothers.

Key Strategic Focus area

The key strategic focus area of this initiative will be on improving access to contraceptives through delivering assured services, dovetailing with new promotional schemes, ensuring commodity security, building capacity (service providers), creating an enabling environment along with close monitoring and implementation.

9. Mission Parivar Vikas

On the World Population Day this year, Shri J P Nadda, Union Minister of Health & Family Welfare had given directions to the Ministry to **develop a strategy within 3 months where vulnerable districts in the country** will be targeted for **intensive and improved family planning services**. In accordance with these directions, the Ministry of Health and Family Welfare will soon launch "**Mission Parivar Vikas**" in 145 high focus districts having the **highest total fertility rates in the country**. These 145 districts are in the **seven high focus**, high TFR states of Uttar Pradesh, Bihar, Rajasthan, Madhya Pradesh, Chhattisgarh, Jharkhand and Assam that constitute **44% of the country's population**.

- The ' will be **main objective of 'Mission Parivas Vikasto accelerate access to high quality family** , reliable services and supplies within a rights-based framework **planning choices based on information**
- These **145 districts have been identified based on total fertility rate and service delivery (PPIUCD and** and accelerated efforts to reach the replacement level fertility **Sterilization performance) for immediate,** · **specialgoals of 2.1 by 2025**
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Recently Supreme Court of India of has directed the central government to finalise the National Health Policy by end of December

- The **key strategic focus of this initiative will be on improving access to contraceptives through delivering assured services**
, dovetailing with new promotional schemes, ensuring commodity security, building capacity (service providers), creating an enabling environment along with close monitoring and implementation.
- The Mission will be implemented in all the 145 districts at one go.

10. End sterilisation camps, says Supreme Court

2016 and end mass sterilisation camps. In its order court observed that the poor and tribal men and women cannot be reduced to mere statistics in the country's population control campaigns. Court has ordered in the backdrop of the increasing number of sterilisation deaths in mass camps.

Issues related to mass sterilisation

- A significant number of women have died due to the oppressive practice of sterilising women during mass sterilisation camps the past three years.
- Mass sterilisation camps were perverse products of the Centre's population control campaigns driven by informal targets and incentives.
- These camps infringe on the reproductive freedoms of the most vulnerable groups of society who's economic and social conditions make them easy targets to coercion.
- Without informing the impact and consequences of a sterilisation procedure, by only offering financial incentives and subjecting women to permanent contraceptives is regressive action by government in modern society.
- Even after many disasters states like Madhya Pradesh, Maharashtra, Rajasthan and Kerala did not take the question of mismanagement in sterilisation camps seriously.
- Similarly many times central government ignored its role in the issue of sterilisation as a mere public health issue coming under the States' watch.

What needs to be done?

- It is not coercion, but the improved access, education and empowerment should be guiding factor behind government's population control campaign.
- There should be mandatory explanation to the patient, in his or her local language, about the impact and consequences of a sterilisation procedure.
- As directed by apex court, governments need to prepare national health policy to end oppressive practice of sterilisation of women.
- With respect to sterilisation, government should publish the list of approved doctors at the State and regional levels and members of quality assurance committees, and details of compensation claims etc in public forum.
- Similarly compensation for losses, including deaths, should be raised substantially.
- In the whole process central and state governments should act in coordination with each other.

Conclusion

In the last few years various cases of deaths were observed in mass sterilisation cases. In this backdrop apex court has rightly directed centre to end oppressive sterilisation camps and finalise national health policy. Now buck stops with central government, hence it should finalise the national health policy soon. And it should take all steps to end this regressive practice and instead it should promote awareness, education, employment etc.

11. Santhara ritual and Secularism

The ancient religious Jain practice of Santhara, which involves a voluntary fast-unto-death, is a ritual farewell to the body. It is an act of supreme renunciation and great piety.

Rajasthan High Court's Jaipur Bench on 10 August 2015, ruled on public-interest litigation (PIL) filed in May 2006 against the centuries-old Jain practice of starving to death. It held that Santhara would henceforth be treated as "suicide" and accordingly made punishable under the relevant sections of the Indian Penal Code (IPC), viz., Section 309 (attempt to commit suicide) and Section 306 (abetment of suicide).

The bench further directed the State — that the latter shall "stop and abolish" the practice "in any form" and register any complaint against it "as a criminal case".

Judgment predicated on two primary grounds

The judgment in the Nikhil Soni case is predicated on two primary grounds. First, that the guarantee of a right to life does not include within its ambit a promise of a right to die, and therefore, that the practice of Santhara is not protected by Article 21 of the Indian Constitution.

Second, that Santhara, as a religious practice, is not an essential part of Jainism, and is hence not protected by Article 25, which guarantees a person's right to religious freedom and conscience.

Thus, the bench stated "We do not find that in any of the scriptures, preaching, articles or the practices followed by the Jain ascetics,

the Santhara…has been treated as an essential religious practice, nor is necessarily required for the pursuit of immortality or moksha."

Further, it was argued that right to freedom of religion under Article 25 is subject to public interest, morality and health. And a practice, however ancient, cannot be allowed to violate the right to life of an individual.
The court held that extinguishing life, sacrificing it or effacing it cannot be considered as acts of dignity. A right to die cannot be a part of a right to life.

Difference between Suicide and Santhara
True, both acts suicide and santhara culminate in the self- extinguishment of a human life, but the motivations of the actors are poles apart.

While, suicide is an act of extreme desperation fuelled by anguish and hopelessness, a Santhara practitioner relinquishing food and drink as a ritual act of purification, done in consultation with a guru, and follows the most detailed of procedures. It cannot be an impulsive act or an egoistic one.

Impact of the Judgment
This decision in Nikhil Soni v. Union of India is likely to have far-reaching consequences, not only amongst the Jain community in Rajasthan but also across the country. Unfortunately, it conflates several important issues of constitutional law, and symbolises the confusion over the fundamental guarantee of religious freedom in our constitutional jurisprudence.
In a faith-based society like ours which accepts, and even encourages, public displays of religiosity the "social" and the "religious" are inextricably interlinked.

So the first social impact of the Rajasthan High Court judgment would be that Jains will balk at it and bristle against what they view as an unjustified encroachment by the state into the realm of religion, and particularly their religion. Many among them see it as a violation of the constitutional guarantee of the right to religious freedom and practice as it pertains to individuals (Article 25) and to religious institutions (Article 26).

Apart from being a faith-based society in a larger sense, we are also a society with multiple faiths. So Santhara judgment can have indirect effect on practitioners of rituals and practices of other religions—particularly those rituals and practices which seem to tread a fine line with respect to legal and constitutional provisions. Examples being practices like bal-diksha, the use of wine in church rituals in States where consumption of alcohol is prohibited, and so on.

Summing up
It is undeniable that Indian secularism — a form quite distinct from western conceptions of the term — envisages the intervention of the state in matters of religion, where general social welfare or substantial civil liberties are at stake. But, what our Constitution, properly interpreted, does not permit is the bestowal of any specific discretion on the courts to tell us which of our beliefs and practices are essential to the following of a religion.

Mob: The article explores the judgment and the ground on it was based from the constitutional viewpoint. It also analyses the impact of the decision in general.

12. First report card maps scope of SDGs progress

A **global study on a range of health indicators** released on 22 September 2016 has **ranked India 143rd among 188 countries**, citing various challenges, including **mortality rates**, **malaria hygiene** and **air pollution**. **Despite rapid economic growth, India was ranked 143rd, below Comoros and Ghana, the first annual assessment of Sustainable Development Goals (SDG) health performance** published in the Lancet and launched at a special event at the UN General Assembly in New York said.



One-third of the total deaths during pregnancy and childbirth in 2015 happened in India and Nigeria even as the total number of global maternal deaths has almost halved since 1990, a Lancet report revealed.

The government is planning to unveil a new scheme to provide mobile phone access to over 55,000 villages, particularly those in border states and in the Himalayan region, to push forward its flagship Digital India programme.

Present scenario:

As per the official data,

- which were **India was placed just ahead of Pakistan and Bangladeshranked 149th and 151st respectively**

- **India's poor performance on hygiene, air pollution mortality** are among factors that place it lower than countries like **Bhutan, Botswana, Syria and Sri Lanka**.
- **For malaria**, which was **one of the health indicators assessed**, India merely **scored 10 points** and remained in the red. Similarly for hygiene, the study gave **India just eight points** while **for PM2.5, it scored just 18 points**.
- For **under-five mortality India scored 39 points** while **for Maternal Mortality Rate (MMR) it scored 28 points**.
- India, however, **scored above 80 points for performing well in areas like Neglected Tropical Diseases (NTD)** which are a diverse group of communicable diseases, overweight and harmful alcohol consumption.
- **In 2015, the health-related SDG index was highest in Iceland, Singapore, and Sweden**, with the UK ranking fifth just ahead of Finland.
- The **Central African Republic**, **Somalia**, and **South Sudan** had the lowest values of the health-related SDG index.
- The study said **cross the world good progress has been made towards some of the health-related SDGs since 2000**, particularly in reducing under-five and neonatal mortality, family planning, and in the rollout of universal health care.
- However, **in areas beyond the Millennium Development Goals (MDGs)** which came to an end in 2015, few inroads have been made. For example, there have been **only minimal improvements in Hepatitis B incidence rates**, while childhood overweight, intimate partner violence, and harmful alcohol consumption have worsened.
- The **SDGs are 17 universal goals**, **169 targets** and **230 indicators set by the United Nations in 2015** to guide a range of pressing problems including food and water security, poverty, and climate change up to 2030.
- The **SDGs follow and expand on the Millennium Development Goals (MDGs)** which expired at the end of 2015.

13. India accounts for 15% of world's maternal deaths

- Worldwide, **the annual number of maternal deaths per 100,000 live births fell by 44% between 1990 and 2015**, from approximately 385 to 216.
- The **sub-Saharan African region accounted for an estimated 66% (201,000) of global maternal deaths**, followed by southern Asia at 22% (66,000 deaths).
- Basically, **only 5% of the world's countries accounted for over half of maternal deaths**. Nigeria with 58,000 deaths accounted for 19% and India at 45,000 deaths, accounted for 15% of the total deaths, according to the report—a series of six papers by an international team of researchers.
- **One of India's millennium development goals (MDG) was to reduce its Maternal Mortality Ratio by three quarters**. India did not reach this goal and its MMR stands at 174 and haemorrhages and infections still continue to be the leading causes.
- **According to the MDG mandate, India needs to reduce its MMR to 103**. Though India's MMR is reducing at an average of 4.5% annually, it has to bring down the MMR at the annual rate of 5.5% to meet the Millennium Development Goal.
- While births in the presence of skilled birth attendants rose from 57% to 74% between 1990 and 2013, the report warns that many women in poor and rural settings do not have access to such care, while the increase in coverage does not necessarily mean such care is of high quality.
- A **key strategy for reducing maternal mortality is to ensure that every birth occurred with the assistance of a doctor, nurse, or midwife**. The major challenge faced by India is lack of accurate information about births and deaths, particularly when women give birth at home.
- The government is working towards addressing the issue of maternal deaths and to accelerate the pace of reduction of MMR across all states under its flagship health programme National Health Mission.
- This includes **promotion of institutional deliveries through Janani Suraksha Yojana**, **operationalization of sub-centres**, **primary health centres**,**community health centres and district hospitals** for providing round the clock basic and comprehensive obstetric care.
- The report also said that globally,caesarean section rates are rising in nearly every country and region,with 40.5% of all births being by caesarean section in Latin America and the Caribbean, and increases in some low-income countries in sub-Saharan Africa.
- The past decade has seen India cross the WHO threshold (not to exceed 10-15%) for caesareans at an overall level, and leave it way behind in the case of births at private hospitals across several states and districts.

14. Mobile access scheme for remote areas soon

- The scheme will be funded by the Universal Service Obligation Fund (USOF).
- About 4,700 villages in Himalayan States (Jammu & Kashmir, Himachal Pradesh and Uttarakhand), and 2,138 villages in Border States (Rajasthan, Gujarat, Punjab and Haryana) are not yet connected.
- Further, 5,41,939 villages out of total 5,97,608 villages in the country are already covered with mobile services, leaving 55,669 villages,

i.e., 9.31%, without coverage.

- Among states, Odisha has the highest number of villages (10,398) which do not have mobile coverage, followed by Jharkhand (5,949) and Madhya Pradesh (5,926), Maharashtra (4,792) and Chhattisgarh. In states such as Kerala and Karnataka all villages have coverage.

Universal Service Obligation Fund

USOF, established in 2002, provides effective subsidies to ensure telegraph services are provided to everyone across India, especially in the rural and remote areas.

- It is headed by the USOF Administrator who reports to the Secretary, Department of Telecommunications (DoT).

Objectives of the USOF:

- Economic: Network extension & stimulate uptake of the ICT services
- Social: Mainstreaming the underserved & un-served areas/groups by bridging the Access Gap
- Political: to enable citizens exercise their political rights in an informed way and
- Constitutional: Equitable distribution of the fruits of the telecom/digital revolution and fair allocation of national resource (pooled USO levy) via targeted subsidies

Funds:

- Funds come from the Universal Service Levy (USL) of 5% charged from all the telecom operators on their Adjusted Gross Revenue (AGR) which are then deposited into the Consolidated Fund of India, and require prior parliamentary approval to be dispatched.
- As on date, the total available fund in USOF is more than Rs.47,411.56 crore. The total collection since the scheme was started in 2002-03 stands at about Rs.78,587.31 crore, while total amount disbursed for various initiatives to boost rural connectivity is about Rs.31,175.75 crore, according to government data.

How does it work?

- The USOF works through a bidding process, where funds are given to the enterprise quoting the lowest bid. However, the funds for NOFN were made an exception to this process since BBNL was the sole party involved in the implementation having being specifically created for it.

15. Task force on poverty submits report, moots new BPL panel

Task force headed by NITI Aayog Vice-Chairman Arvind Panagariya to prepare a road map for elimination of poverty submitted its report to the Prime Minister's Office (PMO).

Suggested

- The Task force has suggested setting up a committee to identify people Below Poverty Line (BPL).
- It also suggested participation from states in defining the BPL population.
- It asked for constitution of a new committee, which in participation with the states and other stakeholders should work on defining the BPL population and identify them.

Four options for tracking the poor

The Task force suggested four options for tracking the poor and they are:

- First- It asks to continue with the Tendulkar poverty line.
- Second- It asks to switch to the Rangarajan or other higher rural and urban poverty lines.
- Third- It calls to track the progress over time of the bottom 30 percent of the population
- Fourth- It asks to track progress along specific components of poverty such as nutrition, housing, drinking water, sanitation, electricity and connectivity.

Note

- The task force was constituted in March 2015 with an initial mandate to finalise its report by 30 June 2015. Its main task was to prepare a road map for elimination of poverty as well as suggest strategies and anti-poverty programmes. Its terms of reference included developing a working definition of poverty and coordinating and developing synergy with central ministries and state government task forces.

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POLITICAL ISSUES, HUMAN RIGHTS AND GOVERNANCE

1. Union Government launched Progress Panchayat to reach out to minority community

- The Union Government on 29 September 2016 launched Progress Panchayat. This Panchayat is aimed at reach out the minority community and publicize the various welfare measures taken by the NDA government for their betterment.
- The programme was kick started by Union Minister of State for Minority Affairs (independent charge) Mukhtar Abbas Naqvi from Mewat region of Haryana. The programme will be organized in 100 places across the country in the coming days where Union Ministers will interact with people about the several schemes.
- During the programme, the government will also seek feedback and suggestions from the people for better implementation of the welfare schemes.

2. Towards directly elected and empowered mayors

Each time an Indian city is hit by a major urban crisis, we hear exasperated queries about ***why our cities are so dysfunctional.*** While there are multiple reasons for India's urban woes, one of the underlying problems is the ***absence of powerful and politically accountable leadership in the city***. Our cities have a *weak and fragmented institutional architecture* in which multiple agencies with different bosses pull the strings of city administration. Understandably, the most touted urban governance reform is that of having a***directly elected Mayor.***

News

Mayoral reform has now made its way into Parliament with Shashi Tharoor introducing a private member's bill to amend the Constitution for strengthening local governments.

The passage of the 74th Constitution Amendment in 1992 resulted in Urban Local Bodies (ULBs) - Nagar Panchayats, Municipal Councils and Municipal Corporations, becoming a constitutionally recognised "institution of self-government". However, ***it did not prescribe the manner of election, tenure or powers of the Mayors/Chairpersons of ULBs.*** Mr. Tharoor's bill seeks to alter this. It mandates the *direct election of the Mayor*, fixes the Mayor's term to be coterminous with that of the municipality, and makes the *Mayor the executive head of the municipality.*

What are the challenges in getting there?

The first challenge is the *status quo itself* and the ***vested interests it has entrenched.*** State governments do not wish to delegate more authority to city-level institutions. Chief ministers winning from rural constituencies or political parties relying on rural voters firmly believe in transferring urban resources to rural areas. Even if the mayor is directly elected, the state governments can refuse to devolve power and resources, effectively reducing him to a figurehead. Any bill introduced in Parliament can do little in terms of delegation of power from the state to the office of mayor. Tharoor's bill accepts this fact when it says that the mayor "shall exercise such powers and discharge such duties of the Municipality as the Legislature of a State may, by law, confer upon him".

The second challenge is the ***post of municipal commissioner.*** Even if some powers are delegated to the municipality, the state governments have in place municipal commissioners to perform the executive functions, again cutting the mayor to size, the nature of mayoral election notwithstanding. Tharoor's bill rectifies this by making the mayor the executive head of the municipality. Additionally, his bill also gives the mayor the power to "authorise the payment and repayment of money relating to the Municipality".

Will it help?

Vesting the executive powers of the municipality with the Mayor would be a very positive move. Most Indian cities still follow the Commissionerate system of municipal administration, a British legacy, in which the State government-appointed Commissioner is the executive head of the city while the Mayor has a largely ceremonial role. This is an anomaly. ***In a democracy, executive power should vest with a person or a body that is democratically accountable.*** However, this does not necessitate the Mayor to be directly elected. After all, we do not directly elect the Prime Minster or the Chief Minister. Still they enjoy wide powers and are democratically accountable. Mayors do not enjoy similar powers not because they are not directly elected, but because *State governments exercise enormous control over ULBs* — politically, administratively and financially.

What is needed?

- ***powerful political executive*** For responsive urban governance, we need a in the city with more autonomy, whether directly or indirectly elected.
- ***Mayor-in-Council"*** An empowered executive at the city can also be achieved through an indirectly elected "system in which, much like the cabinet system in Parliament, the Mayor has to maintain the support of the majority of the council.
- There is little evidence to suggest that directly elected mayors are better. In fact, States like Rajasthan and Himachal Pradesh which introduced directly elected Mayors reversed the decision due to the difficulties posed by such a system.
- A fundamental issue with a directly elected Mayor is that instead of enabling efficiency, especially when the Mayor and the majority *it might actually result in gridlock in administration,* of elected members of the city council are from different political parties.

- Notably, Mr. Tharoor's bill gives the Mayor veto powers over some of the council's resolutions and also lets the Mayor nominate members of the Mayor-in-Council and vest it with powers. Essentially, it centralises power in the hands of the Mayor and his nominees and creates a political executive which neither enjoys the support of the elected council nor needs its acquiescence for taking decisions.

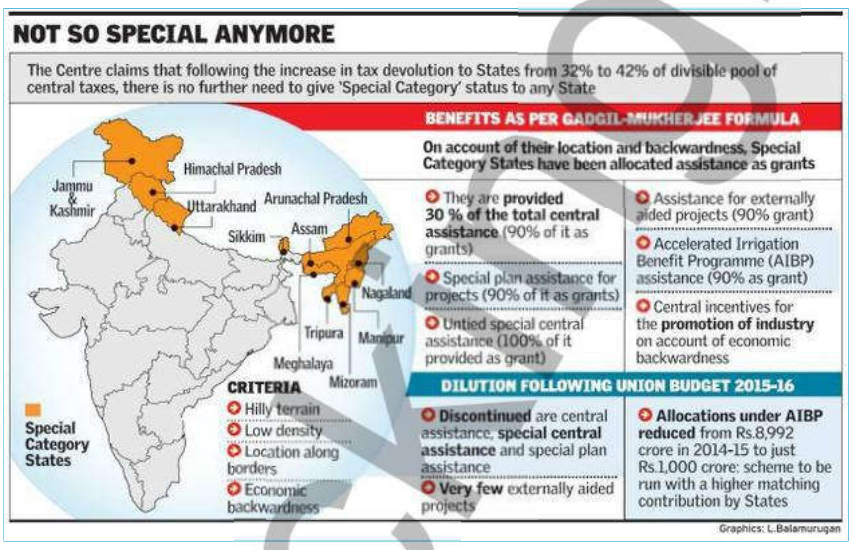
Devolution is the key

A more fundamental question to consider is this: even if a directly elected mayoral system is a relatively good reform, should it be made mandatory for all municipalities under the Constitution? India is one of the few countries where the powers of the local government are laid out in the federal Constitution. However, local government is still under List II of the Seventh Schedule of the Constitution. Hence***only*** the ***State is empowered to make laws on this subject.*** In such a federal system, constitutional provisions should only lay down the broad institutional framework for local governments. But since States are often reluctant to devolve functions to local government, it makes sense to mandate such devolution in the Constitution. However, the Constitution may not be the ideal instrument for prescribing the manner in which the head of a local government is elected.

Road Ahead

More cities should perhaps institute a directly elected mayor. But making it the only way through which Mayors can be elected limits the options of cities and States. Perhaps Mr. Tharoor should first make efforts to have it introduced in Thiruvananthapuram, his constituency, before attempting to institute it in ULBs across India. An empowered political executive for the city can be achieved in multiple ways, including a directly elected mayor. When the U.K. sought to reform local governments, a directly elected mayor was only one of the three options given to the local governments. India's stagnating urban governance system needs major reform, but it shouldn't be driven by using a sledgehammer. Creating an empowered and accountable political executive for cities is important, but a directly elected mayor should be a political option, not a constitutional decree.

3. Special Category status for Andhra Pradesh



Special Category Status

A growing clamour for Special Category Status in Andhra Pradesh has led to State-wide protests, and heated debates in Parliament. Chief Minister of Andhra Pradesh, under immense pressure, met Prime Minister seeking a resolution of this issue by the end of the Parliament session.

What is SCS?

The Constitution does not include any provision for categorisation of any State in India as a Special Category Status (SCS) State.

But, recognising that some regions in the country were historically disadvantaged in contrast to others, Central plan assistance to SCS States has been granted in the past by the erstwhile Planning Commission body, National Development Council (NDC).

The NDC granted this status based on a number of features of the States which included:

Hilly and difficult terrain,

Low population density,

The presence of sizeable tribal population,

Strategic location along international borders,

Economic and infrastructural backwardness

Non-viable nature of State finances.

What kind of assistance do SCS States receive?

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The SCS States used to receive block grants based on the Gadgil-Mukherjee formula, which effectively allowed for nearly 30% of the Total Central Assistance to be transferred to SCS States.

Following the constitution of the NITI Aayog and the recommendations of the 14th Commission (FFC), Central plan assistance to SCS States has been subsumed in an increased devolution of the divisible pool to all States (from 32% in the 13th FC recommendations to 42%) and do not any longer appear in plan expenditure.

The FFC also recommended variables such as "forest cover" to be included in devolution, with a weightage of 7.5 in the criteria and which could benefit north-eastern States that were previously given SCS assistance.

Besides, assistance to Centrally Sponsored Schemes for SCS States was given with 90% Central share and 10% State share.

What are the other States seeking SCS status?

Apart from Andhra Pradesh, Bihar and Odisha had recently demanded SCS status but they have not been granted the same as they did not meet the criteria.

What is the basis of A.P.'s claim for SCS status?

Following the bifurcation of A.P., Andhra lost a large volume of its revenue due to Hyderabad remaining the capital of Telangana.

In a debate in the Rajya Sabha on the A.P. Reorganisation Act on February 20, 2014, then Prime Minister Manmohan Singh had said that SCS would be "extended to the successor State of Andhra Pradesh … for a period of five years."

This oral submission by the then PM has been the basis for A.P.'s claim to the status.

What has been the Centre's response?

The Centre had no proposal to modify the criteria for SCS status.

The increased devolution as recommended by the FFC (which included revenue deficit grants following the bifurcation) is already flowing to the State.

4. Disparity between States growing

According to a report in Economic and Political Weekly, regional disparity has been growing over the years in India.

- The study evaluates the governance performance of 19 major States.
- Highlights of the report:
- 5 of the 6 best-performing States in 2001 — Gujarat, Tamil Nadu, Andhra Pradesh, Kerala and Punjab — continue to be the top performers in 2011.
- 4 of the 6 worst-performing States in 2001 — Odisha, Jharkhand, Uttar Pradesh and Bihar — remained at the bottom in 2011.
- This led the researchers to conclude that "development clusters" — combinations of quality service delivery and high per capita income — are emerging among the more developed States in the south and west of the country, leaving behind the less-developed States, especially in the eastern region.
- The study shows that development legacy seems to have a strong impact on the quality of governance (when measured as service delivery).
- Some of the less developed States like Bihar and Madhya Pradesh moved up significantly in the modified ranking.
- Bihar jumped eight positions from the 18th in standard ranking to the 10th in development-adjusted ranking.
- Madhya Pradesh jumped from the 13th to second position.
- Chhattisgarh, placed at the eighth position, was the top performer in the modified ranking.

Measurement criteria

- While there are various approaches to evaluating performance of the State governments, the researchers use "output" — the quality of service delivery — as a measure of governance quality.
- Five sets of criteria were used to rank the States: infrastructure, social services, fiscal performance, justice, law and order, and quality of the legislature.
- Only official government data were used.
- The study covers 19 States which account for 96% of the population, for which requisite data was available from 2001-02 to 2011-12.

5. Geospatial Information Regulation Bill

Ministry of Home Affairs recently released the Draft "Geospatial Information and Regulation Bill". This Bill has come under a lot of fire from all stake holders within the digital space – service providers, end consumers included, internet activists and academicians. It's important to understand the features of the bill in order to grasp its implication and why it has come under so much criticism.
What does Geospatial Information mean?

It means geospatial image or data taken from space, aircraft, unmanned aerial vehicle, balloon, satellite. Also includes digital data depicting man made and physical features. Maps, surveys, charts tagged with a coordinate system are also a part of the definition. For example, Google Map is an example of Geospatial Data.

What does the Bill intend to "Regulate"?

- The Bill intends to regulate Geospatial information related to India i.e. acquisition, dissemination, publication and distribution of Geospatial Information will be regulated by this bill in order to safeguard security, sovereignty and integrity of India.
- Now if a person or company wishes to acquire, disseminate, and use geo-spatial information of India it would need a license from the Security Vetting Authority to be established under this Bill.
- The bill will have retrospective affect as well. Those companies already in possession of such data will have to acquire the said license within a year of the enactment of the Act.
- It also prohibits wrongful depiction of the Indian Map and boundaries through online or physical mediums
- This act also regulates acquisition, dissemination, publication and distribution of Geospatial Information of India outside India as well.
- Violation of the various clauses of this law may result in heavy penalty ranging from 10lakh to 100 crores and/or imprisonment up to 7 years

Authorities to be established under the Act

1. Apex Committee: to oversee the implementation of this act, issue guidelines for licensing, prescribe fees and charges.
2. Security Vetting Authority: Will carry out the security vetting of the Geo Spatial Information of India in accordance with guidelines from the Apex Committee. It will also issue, suspend, revoke licenses.
3. Enforcement Agency: Monitoring and surveillance
4. Appellate Authority: Can be appealed to, in order to challenge decision of the Enforcement Agency

Need of Such Bill

1. Companies like Google failed to mask military locations in their geospatial apps risking India's security
2. Intelligence agencies say that terrorist in Pathankot Attack and 26/11 Mumbai attack all made use of such readily available geospatial information.
3. Also, in recent past some international agencies have depicted parts of Kashmir and Arunachal as territories of Pakistan and China respectively in spite of vociferous objection from India.

Criticism

1. The bill, though well intentioned, if implemented in its current form will seriously impede development in various technology sectors
2. Several location app based companies such as Ola and Uber cab services will have to pay hefty licensing fee to offer their product, making the cost higher for the end user.
3. There is not much clarity on who all will come under the ambit of this law. A teenager sharing his location with friends on Whatsapp, will he need a license too?
4. It may discourage the Start Up culture that has taken India by storm. Most of these new ventures are based on location and geospatial data. Bigger companies like Google and Ola can pay the hefty fees but it may act as an entry barrier for younger firms.
5. Geospatial data is very dynamic and keeps changing almost on a daily basis. A new restaurant, ATM, new road pops very frequently. According to the act permission will be required to incorporate every such small change. This will prove to be massive burden for the implementing agencies.
6. Many government schemes such as Smart Cities, AMRUT, Digital India etc. require high definition geospatial data for implementation to be used by private sector stakeholders. This act will add another red tape to the process and delay these schemes.
7. The Bill also goes against the spirit of the National Geospatial Policy 2016 recently uploaded by Department of Science and Technology which in fact encourages the use of Geospatial Data Products, Services and Solutions (GDPSS) by government departments, research institutes, businesses and academicians.

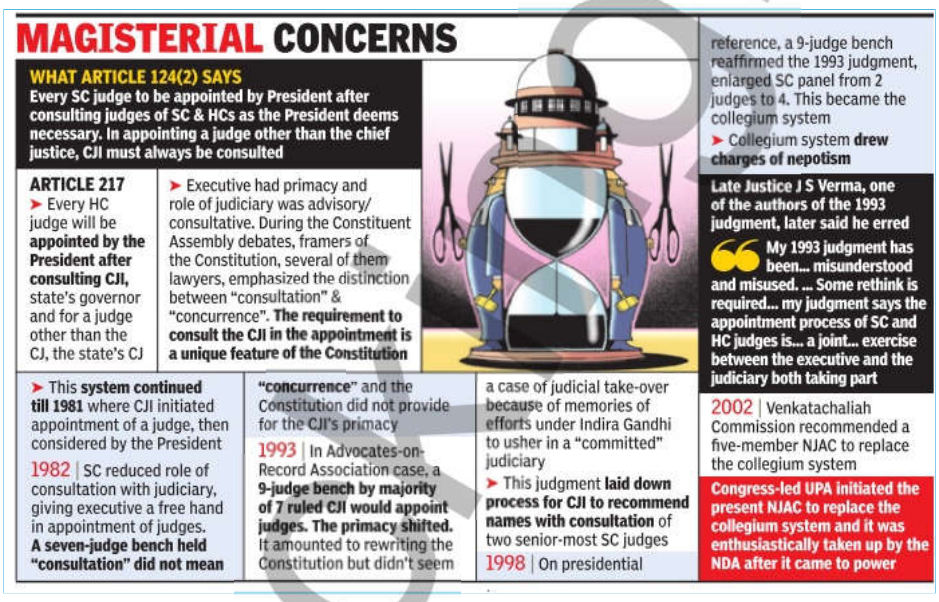
Way forward

1. Bill in its current form may do more harm than good.
2. At the stage when the world is speeding on the digital highway, such additional red tape can drag Indian Companies especially Start Ups behind
3. Bill can be brought in with a different form i.e. instead of licensing, companies using geospatial information can register with the government and there can be random audits to monitor whether rules are being followed.

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4. Licensing Fee as a feature will add to the cost of start ups and in turn end cost for the customer will rise. Hence charging hefty licensing fee should be reconsidered.

6. Rethinking judicial appointments



The Judiciary, at all levels, is overburdened with the pending cases and the irony is that the Judicial appointments are delayed due to the delayed approval from the Union Executive. Moreover the Executive is party in the largest number of cases which is also a cause of concern for the Judiciary.

Judiciary and Union Executive

Separation of power signifies the autonomy and independence of three organs of the government, i.e. legislative, executive and judiciary. Indian constitution has provided ample checks and balances to envisage the proper functioning of all these organs with our having any sort of pressure and fear of the others. There has been some friction between the executive and judiciary in India off lately, evident in the form of excess judicial activism by the judiciary and the appointments of judges by the judiciary itself. However, it is the appointment of judges, which has been in limelight in recent years and has been discussed under subsequent sub headings.

Process of Judicial Appointment

The judges of the Supreme Court and High Court in India are appointed by President as per article 124(2) and 217 of the constitution. The President is required to hold consultation with such of the Judges of the Supreme Court and of the High Courts in the States as he may deem necessary for the purpose.

In this regard, Article 124 (2) says: Every Judge of the Supreme Court shall be appointed by the President by warrant under his hand and seal after consultation with such of the Judges of the Supreme Court and of the High Courts in the States as the President may deem necessary for the purpose and shall hold office until he attains the age of sixty-five years. Provided that in the case of appointment of a Judge other than the Chief Justice, the Chief Justice of India shall always be consulted.

In the above description, the word to look for is "consultation". For the president to make appointment, consultation with these judges is must. Initially, the Chief Justice of India used to initiate the proposal for appointments, very often in consultation with his senior colleagues and his recommendation was considered by the President and, if agreed to, the appointment was made. However, President, as the constitutional head, acts upon the aid and advice of Union Council of Ministers.

Hence, practically, the proposal of the Chief Justice was to be acceptable to the government. There seemed to be a balance between the executive and the judiciary on the matter of appointments of judges of the higher judiciary during those times.

However, it all changed with the famous Three judges case (1982, 1993, 1998), which has ultimately defined the process of judicial appointments in at least last two decades. The court held that a Supreme Court judge can be appointed by the President only on the recommendations of the collegium system — a closed group consisting of the Chief Justice of India and the four most senior associate judges of the court. This has resulted in a Memorandum of Procedure laying down the process which is being presently followed for appointment of Judges to both the High Courts and the Supreme Court.

Executive say in the appointment

The Union Cabinet and Parliament have almost no role to play in the appointment of judges to the Supreme Court or to any of India's twenty-four high courts The position of Chief Justice of India is attained on the basis of seniority amongst the judges serving on the court. For the appointment of other judges of the Supreme court and the high court, The president is bound to appoint a judge as have been referred by the collegium of the judiciary. Hence, the core executive, i.e. the Prime minister and the council of ministers have no role to play in the appointment of judiciary. In fact, India is the only place where judiciary appoints itself.

Reasons of the Loggerhead

NJAC was a proposed body for recommending persons for appointment as Chief Justice of India, Chief Justice of high courts and other judges of Supreme Court and high courts.

The NJAC was to replace the old collegium system for the appointments of judges.

The Constitution (Ninety-Ninth Amendment) Act, 2014 was passed by the parliament, and came into force from 13 April 2015. (121st) Constitutional Amendment Bill, 2014)

On 16 October 2015 the Constitution Bench of Supreme Court upheld the collegium system and struck down the NJAC as unconstitutional.

The proposed NJAC act, the commission would have six members.

Chief Justice of India (Chairperson),

Two other senior judges of the Supreme Court next to the Chief Justice of India,

Union Law Minister

Two eminent persons chosen by the committee formed of CJI, Prime Minister and the leader of Opposition.

- NJAC shall not recommend a person for appointment if any two of its members do not agree to such recommendation.
- The President may require the NJAC to reconsider the recommendations made by it.
- If the NJAC makes a unanimous recommendation after such reconsideration, the President shall make the appointment accordingly.



Recent developments

Memorandum of Procedure (MoP): Memorandum showing the procedure for appointment of the chief justice of India and other judges of India.

Latest MoP draft

Governments says

This has led to a debate of authority between executive and the judiciary.

Way forward

The Supreme Court had rejected the NJAC citing the new act to interfere with the primacy of the judiciary. However, "Primacy of the judiciary" does not mean unilateralism or dictatorship of the judiciary. Even if primacy in appointments is given to the judiciary, there is nothing that prevents the executive or the legislature to have their say in the appointment of judges. Hence, it would be highly prudent for these two organs of the government to work in tandem and coherence for the welfare of this country.

This loggerhead of the judicial appointment between executive and judiciary can be resolved by owning the responsibility by both. The government at the Centre on its part should dilute its stand on NJAC and inform the Chief Justice of India that despite its reservations, it accepts the recent verdict of Supreme Court, and hence will faithfully implement the memorandum of procedure (MoP) as suggested by the court order of December 2015.

At the same time, Judiciary on its part can enable the collegium of judges headed by the CJI to inform the government at the Centre that it will in

- The Bench then went on to invite public opinion on ways to improve the opaque collegium system of judicial appointments.
- After receiving views from the public, the Bench had summarised them and tasked the government to draft a new MoP on December, 2015.

The draft is currently with Chief Justice of India and awaiting the judges' approval.

The past months have seen a stalemate with the judiciary raising objections against the earlier government drafts of the MoP.

Latest MoP draft wants all Supreme Court and High Court judges to be able to recommend names to their respective collegiums.

Chief Ministers should also have the right to recommend names to the respective High Court collegiums. Similarly, the Attorney General should be allowed to recommend the names of judges to the Supreme Court at the Centre and Advocate-General of States to their respective State High Courts.

The draft also details a mechanism for an elaborate selection process of names recommended for High Court judgeship through appraisal committees to be set up in High Courts.

The government wants these appraisal committees to be made up of sitting or retired judges, jurists and academicians.

The appointments to these appraisal committees would be made by the Chief Justice of the High Court.

The government reasons that the two-fold selection process one by the respective High Court appraisal committee and then by the Supreme Court committee would ensure transparency in judicial appointments.

The government has further asked the judiciary to fix an age for High Court judgeship and make it "non-flexible."

It also wants the mechanism for redressing complaints against judges to remain within the judiciary.

The government has reiterated that it should have the power to reject any name recommended by the Collegium on grounds of "national security" and "public interest".

future recommend names of persons to be appointed as judges (of high courts and of the Supreme Court) as a united body, either unanimously or by majority and without discord.

Appointment of judges to the highest court in different jurisdictions

Country	Method of Appointment to the highest court	Who is involved in making the appointments
UK	SC judges are appointed by a five-person selection commission.	It consists of the SC President, his deputy, and one member each appointed by the JACs of England, Scotland and Northern Ireland. (The JACs comprise lay persons, members of the judiciary and the Bar and make appointments of judges of lower courts.)
Canada	Appointments are made by the Governor in Council.	A selection panel comprising five MPs (from the government and the opposition) reviews list of nominees and submits 3 names to the Prime Minister.
USA	Appointments are made by the President.	Supreme Court Justices are nominated by the President and confirmed by the United States Senate.
Germany	Appointments are made by election.	Half the members of the Federal Constitutional Court are elected by the executive and half by the

		legislature.
France	Appointments are made by the President.	President receives proposals for appointments from Conseil Superieur de la Magistrature.

7. Centre against imposition of Hindi

The government has recently clarified that it was against imposing Hindi on other regional languages like Tamil, Kannada or Telugu, and the Centre will continue to promote Hindi as it was the official language as envisaged in the Constitution.

- There were 38 proposals pending for inclusion in the VIII Schedule of the Constitution with the ministry.

Background:

- The proposal to include English along with 37 other regional languages like Bhojpuri, Chattisgarhi, Khasi and Bundelkhandi in the VIII Schedule of the Constitution, granting it an official status, has been pending with the Centre for 12 years now.
- The government had instituted an official group to look into the inclusion of these languages in the VIII Schedule. The committee has given its report and the government is examining it.

Any time limit for taking decision regarding inclusion of languages in the Eighth Schedule?

- No time frame can be fixed for consideration of the demands for inclusion of more languages in Eighth Schedule to the Constitution of India.

Sitakant Mohapatra Committee:

- A Committee was set up in September, 2003 under the Chairmanship of Shri Sitakant Mohapatra to evolve a set of objective criteria for inclusion of more languages in the Eighth Schedule to the Constitution.
- The Committee submitted its report in 2004.
- The report of the Committee is under consideration in consultation with the concerned Minorities/Departments of the Central Government.

Constitutional provisions relating to the Eighth Schedule:

The Constitutional provisions relating to the Eighth Schedule occur in articles 344(1) and 351 of the Constitution.

Article 344(1):

- According to Article 344(1), the President shall, at the expiration of five years from the commencement of this Constitution and thereafter at the expiration of ten years from such commencement, by order constitute a Commission which shall consist of a Chairman and such other members representing the different languages specified in the Eighth Schedule as the President may appoint, and the order shall define the procedure to be followed by the Commission.

Article 351 (Directive for development of the Hindi language):

- Article 351 of the Constitution provides that it shall be the duty of the Union to promote the spread of the Hindi language to develop it so that it may serve as a medium of expression for all the elements of the composite culture of India and to secure its enrichment by assimilating without interfering with its genius, the forms, style and expressions used in Hindustani and in the other languages of India specified in the Eighth Schedule, and by drawing, wherever necessary or desirable, for its vocabulary, primarily, on Sanskrit and secondarily on other languages.
- It would thus appear that the Eighth Schedule was intended to promote the progressing use of Hindi and for the enrichment and promotion of that language.

8. Special Category of Punishment

The Supreme Court has moved away from death penalty (capital punishment) after it commuted the death sentence of a youth for raping and killing a seven-year-old girl with the Special Category of Punishment.

- The apex court in its judicial innovation awarded the convict 25-year jail term considering it appropriate punishment between death sentence and life imprisonment in heinous crimes.

Court's rulings:

- The court has said that the offence did not come within the ambit of rarest of rare case but also held that life imprisonment of 14 years

would not be sufficient punishment for the crime committed.

- Holding that innovative approach is needed to award sentence in such cases, the court directed that the convict must spent 25 years behind the jail.
- The court has also held that judicial innovation for bridging the gap between death sentence on the one extreme and only 14 years of actual imprisonment in the name of life imprisonment on the other, serves a laudable purpose and does not violate any law in the Indian Penal Code or in the Code of Criminal Procedure.

Significance of this judgment:

- The innovative approach reflected in this case, on the one hand helps the convict in getting rid of death penalty in appropriate cases, on the other it takes care of genuine concerns of the victim including the society by ensuring that life imprisonment shall actually mean imprisonment for whole of the natural life or to a lesser extent as indicated by the court in the light of facts of a particular case.

What is Special Category of Punishment?

- Special Category of Punishment is judicial innovation that will be veering away from capital punishment. It will be limited to a "very few cases".
- In this case capital punishment will be shifted to life imprisonment without the benefit of release on remission for prolonged periods ranging from 25 to 30 years, if not more.
- It was formalised by a Constitution Bench of the Supreme Court in the Rajiv Gandhi killers' case in December 2015.
- It helps "get rid of death penalty" and addresses the genuine concerns of the society to see justice done.

Significance of the Special Category of Punishment:

- The judicial innovation of the special category of punishment bridges the gap between death sentence (capital punishment) on the extreme and only 14 years of actual life imprisonment on the other.
- It may be considered as endeavour of the Supreme Court to make no party (convict or the society) a loser. Thus, it can be said that with judicial innovation of special category sentence the apex court may have found alternative to capital punishment.

Evolution of Special Category of Punishment:

- This special category of Punishment for the first time was mentioned in the Swami Shraddananda versus State of Karnataka judgment of the Supreme Court in 2008.
- Later in 2016, the apex Court had given itself the authority to tweak the sentencing laws and evolve a special category of sentence in its judgment in Union of India versus Sriharan alias Murugan.

9. What, why & how of Section 377?

Chapter XVI, Section 377 of the Indian Penal Code (IPC) 1860 was introduced during the British rule of India. It criminalises sexual activities "against the order of nature." It says whoever voluntarily has carnal intercourse against the order of nature with any man; woman or animal shall be punished with imprisonment for life, or with imprisonment of either description for term which may extend to ten years, and shall also be liable to fine.

The ambit of Section 377 extends to any sexual union involving penile insertion. Thus, even consensual heterosexual acts such as fellatio and anal penetration may be punishable under this law.

The Beginning

The movement to repeal Section 377 was initiated by AIDS Bhedbhav Virodhi Andolan in 1991. Their historic publication Less than Gay: A Citizen's Report, spelled out the problems with 377 and asked for its repeal.

As the case prolonged over the years, it was revived in the next decade, led by the Naz Foundation (India) Trust. The activist group filed a public interest litigation (PIL) in the Delhi High Court in 2001 seeking legalisation of homosexual intercourse between consenting adults.

Delhi High Court historical judgment

In a historic judgement delivered on 2 July 2009, Delhi High Court overturned the 150-year-old section there by legalising consensual homosexual activities between adults. While striking down the section the Court stated that the essence of the section goes against the fundamental rights of citizens in the Constitution.

In a 105-page judgement, a bench of Chief Justice Ajit Prakash Shah and Justice S Muralidhar said that if not amended, section 377 of the IPC would violate Article 14, 15 and 21 of the Indian Constitution. However, the court clarified that "the provisions of Section 377 will continue to govern non-consensual penile non-vaginal sex and penile non-vaginal sex involving minors."

Further it was argued that the right to live with dignity and the right of privacy both are recognised as dimensions of Article 21. Section 377 IPC denies a person's dignity and criminalises his or her core identity solely on account of his or her sexuality and thus violates Article 21 of the Constitution.

Supreme Court's December 2013 Judgment

However, on 11 December 2013 this judgment of the Delhi High Court was struck down by the Supreme Court in Suresh Kumar Koushal v. Naz Foundation case and, consequently, Section 377 was reinstated with full force.

The Supreme Court was further very specific that this was not the end of the debate and it asked parliament to take a decision on whether Section 377 should be repealed or not.

In response, the Union Government filed a review petition on 21 December 2013 stating that the judgement was violating rights under article 14, 15 and 21 of the Constitution.

Besides, Naz Foundation also filed a review petition against the Supreme Court order on Section 377.

While responding to the litigation, the Supreme Court on 28 January 2014 dismissed the review petition. The petitions were dismissed on the ground that Section 377 is Constitutional and applies to sexual acts irrespective of age or consent of the parties.

New impetus

On 15 April 2015, the Supreme Court in National Legal Services Authority v. Union of India case recognized the right to identity of transgender persons. The Supreme Court also specifically noted that Sec 377 is used to harass and physically abuse transgender persons.

Following the NALSA verdict, Tiruchi Siva, a member of parliament introduced a private member's Bill titled Rights of Transgender Persons Bill, 2014 in the Parliament. The bill was passed by the Rajya Sabha and is pending before the Lok sabha.

Both the NALSA decision as well as the Rights of Transgender Persons Bill, 2014 have shown the determination of both the Supreme Court and parliament to protect the rights of all citizens including transgender persons. Another state institution, the Law Commission of India as early as 2000, has in its 172 Report recommended that Section 377 be deleted.

5-member Constitution Bench to review Section 377

On 2 February 2016, the final hearing of the curative petition was submitted by the Naz Foundation and others came for hearing in the Supreme Court.

The three member bench headed by the Chief Justice of India TS Thakur said that all the 8 curative petitions submitted will be reviewed afresh by a 5-member constitutional bench for a possible back-to-roots, in-depth hearing.

The open court hearing was the result of two years of waiting since the batch of eight curative petitions was filed in March 2014 by parents, civil society, scientific and LGBT rights organisations against the 28 January 2014 apex court verdict.

Against the repealing of Section 377

- Apostolic Churches Alliance opposing the petitioners argued that homosexuality was an abomination in the Bible.
- It is contended that decriminalising homosexuality would make the Prevention of Immoral Trafficking Act, 1956 redundant.
- If the section is allowed then sexual transmitted diseases like AIDS would further spread and harm the people.
- It would lead to a big health hazard and degrade moral values of society.

Road ahead

Section 377 continues to have a profound impact on the dignity and self esteem of LGBT persons and poses a continuing threat to the peaceful enjoyment of family life of LGBT persons across the country. Therefore all the stakeholders should work in coordination for the dignity and rights of LGBT.

Furthermore, Section 375 of the IPC should be amended so that protection from rape is extended to all persons regardless of gender or sexuality in line with the Justice Verma Committee recommendations.

10. Railway Budget, Presented For 92 Years, Merged With Union Budget

The Cabinet has **cleared merger of Railway Budget with General Budget and that will end the 92-year long journey of separate budget for Railways**. The cabinet has also given an in-principle approval for **advancing of presentation of budget dates in Parliament** from the existing last day of February. However, the cabinet did not decide the new date. "Budget date will be decided depending on state assembly polls," Finance Minister Arun Jaitley told.

- The government **wants finance bill to be passed before March 31**. This will set in motion the process of the biggest overhaul in the budgeting process in 15 years.
- The Modi government is likely to present the Union Budget in the last week of January or the first week of February. This will **ensure the Finance Bill is passed before the start of the financial year, on April 1**, so that all central government departments get their full allocations to work with right from the first day.
- In the existing system, the **Lok Sabha passes a vote-on-account for the April-June quarter**, under which departments are provided a sixth of their total allocation for the year. This is done by March. The Finance Bill is not passed before May. Advancing the date would enable the government to do away with the vote-on-account.
- Rail minister Suresh Prabhu was the **one who initiated the process of scrapping the Railway Budget**. Except India, **no other country in the world has a Railway Budget**.
- Certain key issues such as pension liabilities, dividend, gross budgetary support and other sticking points between the finance and rail ministries are yet to be decided.
- A call on these points will be taken closer to the Budget. The Rail Ministry is expected to continue to have full financial autonomy on matters such as fare, tariff revisions and market borrowings.
- Once passed, the **finance ministries and various government departments will actually get down to the modalities of the changes being planned**. Advancing the Budget also means that the Budget session of Parliament will have to be held earlier than usual.
- The last time such a major change occurred in the Budget was when Atal Bihari Vajpayee's finance minister Yashwant Sinha presented the 2000-01 Budget at 11:00 am instead of 5:00 pm, which had been the practice till then.

Vajiram & Ravi IAS.com

History

- Separate Railway budget in India started in the year 1924 by colonial ruler based on the recommendation of Acworth report headed by **William Acworth**.
- In earlier times funds entailed by railways more than the India's expenditure on all other aspects of administration combined.
- In that case separate railway budget had made sense. But the situation has been changed now.
- Now Railways' outlay is just 6% of the total expenditure proposed in the Union Budget for this year.
- In fact revenue from other departments like defence, road transport etc are more than the railways since many years.
- In this background separate presentation of railway budget has been stopped.

Reason

- The main reason behind continuation of railway budget for so long is India's fractured polity, where government in charge were not in position to take tough decision.
- Similarly the tendency of coalition partners to demand Railways as a juicy portfolio with its possibilities for populist posturing and patronage has made to continue this colonial era practice.

How scrapping will help

- Now minister in charge of railways will no longer need to make illogical and irrational promises to gain popular support through budget.
- Similarly hiking railway fare was major issue, ministers used get feared to increase the fare, which affected in service improvement.
- The pressure to hold railway passenger fares has skewed the railway fares year after year.
- Now based on the rationality railway department can hike the charges, in turn it will help to improve the services provided by railways.

Suggestion

- Central must consider setting up an independent tariff regulator to keep fares aspect away from politicians.
- New railway lines and trains should be determined by economic viability rather than the constituencies covered by powerful politicians.
- here is need to bring new initiatives such as demand-driven clone trains, flexible pricing to boost earnings.
- Similarly the Railways' accounts need to be cleaned up and made bankable to ensure accountability.

11. UIDAI bans sharing of Aadhaar details

In a step to ensure that the details of Aadhaar is not misused, the Unique Identification Authority of India (UIDAI) asked agencies in possession of Aadhaar number of an individual to not publish or post the information publicly.

It said that the agencies will have to ensure security and confidentiality of the 12-digit resident identification number under the Aadhaar Act.

Regulations

• The core biometric information, collected by the Authority, cannot be shared with anyone for any reason.

• Any violation of the Aadhaar Act will constitute an offence and is punishable under the Act.

• The agencies that collect the Aadhaar number will also have to specify whether submission of the number or proof of Aadhaar is mandatory or voluntary.

• The regulations also provide for obtaining consent of the Aadhaar number holder for collection, storage and use of the same for specified purposes.

12. T.N. Assembly passes resolution against Siruvani dam

A special resolution moved by Tamil Nadu Chief Minister Jayalalithaa, opposing Kerala's Attappady Valley irrigation project on the Siruvani River, was unanimously passed by the State Assembly

Siruvani River

- Flows near to Coimbatore in Tamil Nadu
- A tributary of Bhavani River, which in turn is a tributary of Kaveri River
- Tourist attractions: Siruvani Dam, Siruvani waterfalls

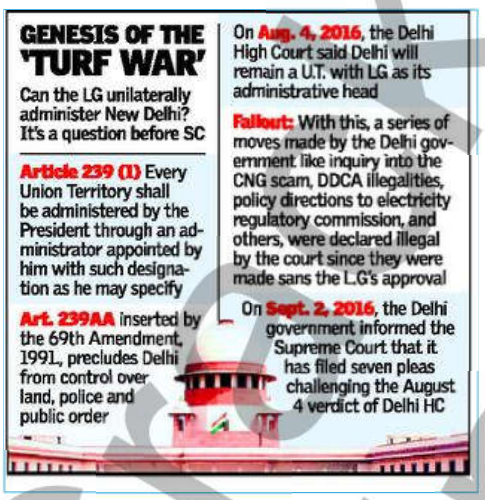
Kerala's Siruvani Check Dam Project

- A part of the river flows through Palakkad in Kerala where Siruvani Dam is located and it supplies water to Coimbatore city in Tamil Nadu
- Kerala government constructed the dam with funds from Tamil Nadu government
- In 2012, Kerala government decided to build a check dam to ensure the state's allocation of water awarded through the Kaveri tribunal
- TN opposes it since it will disrupt water supply to Coimbatore, and affect inflow to Bhavani River which in turn affects agriculture in

downstream areas.

13. Supreme Court agrees to lay down law on Lieutenant Governor's power to run Delhi

Supreme Court today sought the centre's response on six appeals filed by the Delhi government challenging the High Court judgment which held that the Lieutenant Governor, and not the chief minister, is the administrative head of Delhi.



- The Supreme Court has refused to stay the HC judgment, despite submissions by Delhi government that the verdict "affects all future governments and all future relationships between the Centre and the State".
- The HC had upheld the LG's power not only over the police, land and public order but also in "services". The judgment had effectively shrunk the Delhi Cabinet's girth.
- Earlier, the High Court had held that Delhi will continue to remain a Union Territory under the constitution with the Lieutenant Governor as its administrative head.
- The High Court had in its August 4 verdict said that the special constitutional provision Article 239AA dealing with Delhi does not "dilute" the effect of Article 239 which relates to Union Territory and hence, concurrence of the LG in administrative issues was "mandatory".
- It did not accept AAP government's contention that Lieutenant Governor was bound to act only on the aid and advice of the Chief Minister and his Council of Ministers with regard to making of laws by the Legislative Assembly under the Article 239AA and termed it as "without substance".

14. Union Cabinet approves formation of GST Council

Background:

The Union Cabinet on 12 September 2016 approved the process, formation and functioning of the Goods and Services Tax (GST) Council.

The council will consist of the Finance Minister and State Finance Ministers. It will make recommendations on important issues related to GST, including items and rates.

The GST Council and its Secretariat will be set up as per the following details:

• Creation of the GST Council as per Article 279A of the amended Constitution

• Creation of the GST Council Secretariat, with its office at New Delhi
• Appointment of the Secretary (Revenue) as the Ex-officio Secretary to the GST Council
• Inclusion of the Chairperson, Central Board of Excise and Customs (CBEC), as a permanent invitee (non-voting) to all proceedings of the GST Council
• Create one post of Additional Secretary to the GST Council in the GST Council Secretariat and four posts of Commissioner in the GST Council Secretariat

As per Article 279A of the amended Constitution, the GST Council shall consist of the following members:

Union Finance Minister	**Chairperson**
The Union Minister of State, in-charge of Revenue of finance	Member
The Minister In-charge of finance or taxation or any other Minister nominated by each State Government	Members

Background

• On 8 September 2016, President Pranab Mukherjee had given his assent to the 122nd Constitutional Amendment Bill. The Bill will pave the way for rollout of GST.

• The new tax regime will do away with the indirect taxes. It will usher in one tax for the entire country.

• Over 18 States have ratified the bill.

• The GST is a single indirect tax, which will subsume most of the central and state taxes such as VAT, excise duty, service tax and

central sales tax.

15. First state to roll out 'Twitter Seva'

Uttar Pradesh became the first state in the country on 8 September 2016 to **roll out the "Twitter Seva" project**, when in **one go 122 Twitter handles** were unveiled in the state capital. The live customer services resolution solution, senior officials of the micro-blogging site said, was by far the biggest engagement by them with any department of any government in India.

- **The idea behind the service was to provide the UP police**, among other things, strengthening of its primary relationship with the citizens by providing fast, efficient and real time response to complaints and SoS's raised by the 220 plus million population in the state.
- It is the next level of public engagement wherein we have facilities like time stamping so that the whole process is not only transparent but also accountable.
- **The state police force, which is the biggest in the world**, has been at the receiving end for spiralling crime and poor law and order but the police has received some good reviews for its proactive action on complaints that were posted on its Twitter handle.
- Officials explained that from now on, with the launch of the Twitter Seva, citizens can simply tweet their query, complaint to the police account (@uppolice) and the request will be tackled real time by the concerned district or other officials according to the issue raised.

16. Interstate Council & Internal Security

Internal security was an important topic of discussion in the 11th Interstate Council meeting held in July.
Over the last few decades, the dividing line between internal and external security has blurred considerably
, for example Pakistan sponsored terrorism is both an internal security threat as well as external security threat.

Centre state coordination

Insurgents and terrorists do not recognise state boundaries and have exploited the lack of synergy amongst the States and between the States and the Centre. A case in point is the current version of Left Wing Extremism, which thrives in the central eastern tribal belt by exploiting the gaps along inter-state boundaries.

In view of the above, coordination between the Centre and the States as well as amongst the States has often been acknowledged and deliberated upon.

'Law and Order', which is a subject in the State list, can no longer be exclusively left to the States.

Evolving and deepening nexus between crime and terrorism/insurgency bears testimony to the fact that 'law and order' issues have wider pan-Indian ramifications with obvious connections to external security, given India's inimical neighbourhood

lack of trust between the Centre and the States.The basic challenge has been the

Lack of security perspective Interference in the domain of states by centre on the part of states on the pan Indian ramifications of terror incidents.

Road ahead

Interstate Council chaired by the Prime Minister which is the best constitutional forum for joint deliberations should be used.

National Security Policy (NSP) consultation with the States,Finalizing the and the machinery for its administration, in in a non-partisan way.

This would involve a law for dealing with identified federal offences and establishing a central agency which would have the authority to take cognisance of, and investigate, crimes that have serious inter-state and nationwide ramifications for national security.

Central Government to consider inducting even if on a rotational basis.
representatives of the States in the National Security Advisory Board (NSAB) and in the National Security Council (NSC),

Joint Terrorism Task Force (JTTF)Joint mechanism on the lines of established by the United States after 9/11.

The JTTF, located in various cities across the US, includes representatives from the federal, state and municipal enforcement

agencies and perform several important roles including the clearing of all terrorism-related information.

Intelligence sharing between the States.

Functioning through joint institutions will enable the States to, gain a well-informed perspective about the complex and sensitive issues concerning national security defuse their perennial complaints about the Centre's interference with the powers of the States while undertaking internal security management.

Establish an atmosphere of mutual trust through deliberations in the Interstate Council.

17. Disturbed Area Act extended in entire Nagaland

Through a Union Home Ministry Notification of June 30, 2016, the Government of India hasextended the coverage of the Disturbed Areas Act (DAA) to the entire State of Nagaland by six more months until December 31 this year, thereby extending AFSPA to the entire State. The NSCN (Khaplang) unilaterally abrogated the ceasefire which it entered into in 2001. Naga Peace Accord concluded by the Union Government with NSCN (IM) on August 3 last year (though a comprehensive agreement is yet to be consummated).

Critique

- hostilities have remained suspended Nagaland continues to be designated as disturbed despite the fact that (at that time) for more than a decade and no security personnel killed during that period.
- In contrast, in Tripura, State Government has withdrawn AFSPA from the entire State.

Is the extension justified?

- political scene is uncertainThough the security situation in Nagaland is normal, the . This can be seen from factors like defections (from Congress and the BJP) to the ruling Naga Peoples' Front (NPF), Factionalism within the NPF.
- The present lone Lok Sabha member of Nagaland and former three-time Chief Minister has been expelled from the NPF.
- administrative and financial constraintsMore importantly the State administration is facing and is to assimilate and unify the various unable to reinforce the Union Government's efforts insurgent groups as well as civil society organizations towards a completion of the peace process.
- All the factors result in a situation where Nagaland continues to be in a vulnerable state unless development process kicks off.

Road ahead

- In the above-mentioned environment, while a complete roll-back of AFSPA and restriction in the ambit of DAA may not have selective applicationbeen warranted, a of these statutory provisions would have been more purposeful.
- areas of Nagaland bordering Myanmar Application of the provisions to, say the frontier, (since NSCN (K) is capable of striking such border areas) would have helped to shore up public confidencefor an overall settlement of the Naga issue since AFSPA and DAA still create a certain unfavourable impact on the North-Easterners' psyche.
- work with a friendly government at MyanmarAlso there is scope to to goad the Myanmarese Nagas and the NSCN (K) (its leader, Khaplang, is a citizen of Myanmar) to restrict their political activities within that country since Myanmar is trying to achieve with various ethnic groups there.

18. Right to Privacy is a fundamental right.

In the second week of October 2015, a five-member Constitution Bench of the Supreme Court (SC) was formed **under the Article 145 (3) of the Constitution** to debate and decide upon two important questions-

1. Whether there is any "right to privacy" guaranteed under our Constitution?
2. If such a right exists, what is the source and what are the contours of such a right as there is no express provision in the Constitution delineating it?

Why the issue came into limelight now?

The Supreme Court (SC) decided to take up the matter while hearing **the Justice K S Puttaswamy (Retd.) & Vs Union of India & Others** case that dealt with **Aadhaar Card Scheme.** Under this case, it was contended that making the Aadhaar enrolment as a precondition to avail social security benefits is unconstitutional as it encroaches upon citizens right to privacy. As per the petitioners, Aadhaar enrolment requires submission of demographic and bio metric information and thus, it violates individuals to right to privacy.

Contradictions with respect to Right to Privacy

The Supreme Court took up the matter as it came to its observation that there is an **apparent unresolved contradiction in the law** as declared by this Court in relation to the Right to Privacy.

While a nine-member judge bench of the Supreme Court led by the then Chief Justice MC Mahajan in 1954 held that Right to Privacy is not recognised by the Constitution makers as a fundamental right, and so there is no need to strain to make it one.

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This judgment was delivered in the **MP Sharma Vs Satish Chandra case** which was further reinforced in the Kharak Singh Vs State of U.P. case in 1963

However, in later judgments, the SC pronounced that the Right to Privacy is a fundamental right as enshrined in the Constitution.

The most important of such cases are **R Rajagopal Vs State of Tamil Nadu (1994)** that is popularly known as **Auto Shanker's case** and **People's Union for Civil Liberties (PUCL) Vs Union of India** case of 1997.

While in R Rajagopal's case it was held that the "right to privacy" is implicit under **Article 21** of the Constitution, in PUCL's case it was stated that the "right to privacy" insofar as it pertains to speech is part of fundamental rights under **Articles 19(1)(a)** and 21 of the Constitution

In favour of Right to Privacy

1. Right to Privacy is an inalienable part of the Article 21 of the constitution. Further, as India is a signatory of the Universal Declaration of the Human Rights of the UN, in which the right to privacy is a part, she should respect it.

2. Its breach is an anathema to Democracy as the privacy is a sine qua nun for self expression.

3. Since the state agencies are equipped with powerful surveillance apparatus, the personal data (like bio metrics) is prone to be misused by the 'elite' in the political and administrative set up against their opponents.

4. Though the intent of the policy makers to 'know' their citizens better is bona fide, the lower level bureaucracy may misuse the data for petty monetary gains. Frequent news of BPO operators selling information of clients to fraudsters is a case in point.

Against Right to Privacy

1. The right has no legal standing as it is no where mentioned in the Constitution of India.
2. When citizens/residents have nothing to hide, what is the problem in subsuming their privacy to legitimate institutions for greater good of the country?
3. Instead of terming it as a breach of privacy, the initiatives should be understood as the government's genuine effort to know their citizens in a better way which is essential for efficient allocation of scarce resources to the needy population in a diverse country like India.

Why the re-look?

Ambit of right to privacy is no more limited to search and seizure at the physical level as construed a few decades ago **(1954 MP Sharma Case).** With the growing presence of individuals and the corporate in the digital sphere, coupled with the 'monopoly' of the government over the internet it is high time to define the role of the state vis-à-vis citizen in matters of privacy.

Though such instances of abuse of administrative powers or extreme encroachments on citizen privacy have not reported in India so far, taking a cue from **the international experiences like-**NSA's surveillance of citizens as revealed by **Edward Snowden** in the post 9/11 period, **Rupert Murdoch-**led tabloids snooping in the UK and European Court's order to Google on **Right to be forgotten** show how vulnerable citizens privacy in the modern society.

Summing up

The Constitution of India begins with and represents **We the People**. Nevertheless, **citizens**should understand that, even in democracy, no right is absolute and they have to subsume a part of their rights to enable the government to function in an effective manner. On the other hand, **the government** should show restraint while dealing with citizens' private space and must establish credible procedures to deal with instances of breach of privacy for illegitimate reasons.

19. Simultaneous Elections

Simultaneous elections to Panchayat, Assembly and Lok Sabha

- The present Prime Minister's recent suggestion that elections to the Lok Sabha, Vidhan Sabha and local bodies should be held simultaneously has brought to centre stage an issue that has been raised intermittently, for years.
- Leaders of several parties also raised the issue, leading to a Parliament committee examining it.

Why the issue has resurfaced again?
The reasons that have prompted the proposal are

- Frequent elections bring to a standstill normal functioning of the government and life of the citizens and bring a heavy recurring cost.
- It is true that normal work comes to a standstill to a considerable extent.
- Typically, elections to the Lok Sabha are spread over two and a half months.

- As soon as the Election Commission announces the poll dates, the model code of conduct (MCC) comes into operation. This means that the government cannot announce any new schemes, make any new appointments, transfers or postings without EC approval.
- Ministers get busy in the election campaign, the district administration machinery gets totally focused on elections.
- The cost of election, which is a major issue.
    - The costs of election have gone up enormously.
    - It has two components, the cost of management to the EC/ government. And the cost to candidates and political parties.
    - Though there are no exact estimates, one guesstimate puts it at Rs 4,500 crore.
    - The bigger problem is the havoc played by the money power of political parties and contestants.
    - Though the law prescribes a ceiling on the expenditure of candidates, the fact is that it is violated with impunity.
- Another consequence of frequent elections is the aggravation of vices like communalism, casteism, corruption (vote-buying and fund-raising) and crony capitalism. If the country is perpetually in election mode, there is no respite from these evils.

Is there any benefit from frequent elections?

Frequent elections have some benefits too:

- Politicians, who tend to forget voters after the elections for five years have to return to them. This enhances accountability, keeps them on their toes.
- Elections give a boost to the economy at the grassroots level, creating work opportunities for lakhs of people.
- There are some environmental benefits also that flow out of the rigorous enforcement of public discipline like non-defacement of private and public property, noise and air pollution, ban on plastics, etc.

An issue that needs attention if the elections are held simultaneously

Voting for the same party

- It is a widely held belief among political observers and politicians that the Indian voter is astute and distinguishes between voting for her State government vis-a-vis the national government.
- As with most such electoral narratives, this too is devoid of any evidence.
- The analysis shows that on average, **there is a 77 per cent chance that the Indian voter will vote for the same party for both the State and Centre when elections are held simultaneously.**
- **This trend of choosing the same party has gone from 68 per cent in 1999 to 77 per cent in 2004 to 76 per cent in 2009 and 86 per cent in 2014.**
- Contrary to the popular notion that the average voter is acutely discerning of the difference between voting for her State representative and national, there is very little actual evidence of it.

Constitutionally not feasible

The idea of simultaneous elections clearly goes against the constitutional structure of the Indian Parliamentary system. The Parliamentary Standing Committee Report on Personnel, Public Grievances, Law and Justice in its report stated that: “In India, the Executive derives its legitimacy from the legislature and remains in power as long as it enjoys the confidence of the latter.”

In the case of a hung assembly, imposition of President’s Rule is a temporary solution and it should not be extended for the full term of the Legislative Assembly. Moreover, in case of President’s Rule, the ruling government will implement the central government’s policy in the state, which essentially goes against the mandate of the people who voted for a state government based on a different set of promises as opposed to the central government.

Road ahead

- Simultaneous elections would also help in keeping down expenditure for both the government and the political parties. It would make political parties come out with distinct strategies for addressing national and local issues, making it easier for the voter to choose suitable candidates.
- The switch will also help leaders to devote time and energy towards good governance and development instead of bothering too much about electoral strategies.
- It will be a huge task in terms of numbers and logistics. But there would not be a need to deploy security and election personnel time and again. Similarly, the need for duplication would be avoided when it comes to transporting polling material, EVMs and setting up polling booths, if the elections are held simultaneously.
- We must have a fixed timeline and wrap up all elections to the Lok Sabha, state assemblies, municipalities and panchayats within a month. Besides, the law should be amended to ensure that nobody has the right to postpone elections except under extraordinary circumstances like a threat to national security or an unprecedented natural calamity.

- Holding elections at the grass-roots level should not be left to the whims and fancies of state governments. There have been numerous instances in states when municipal and panchayat elections were not held on one pretext or the other for several years. If democracy has to flourish, this kind of situation should not be allowed.
- We need to readily acknowledge that in a complex plural democracy such as India's, electoral outcomes are a manifestation of various factors.
- Whether elections to Lok Sabha and state legislature happen separately or together, what is important is to curb the role of money and muscle power during elections, as it undermines the democratic setup of the country.

An analysis - Reference The Hindu (September 28, 2016)

The question of cost

- No one can deny that a huge amount of money is spent in conducting elections in India, both by the candidates themselves and political parties as well as the government (the Election Commission of India).
- However, the argument in favour of simultaneous elections does not seem to be based on saving the money spent by political parties and candidates, but by the Election Commission – which is meagre compared to our GDP.
- It is highly undesirable, because it privileges monetary concerns over democratic principles.

- **Better Governance**

The contention is that with multiple elections, the Model Code of Conduct is in force for much of the time, which prevents the government from initiating new projects and ultimately slows down development work.

While this is true, in order to overcome this problem, it may be more useful to make changes in the Model Code of Conduct to allow the government to initiate projects and programmes till a reasonable period (maybe till the notification of elections) instead of the existing scenario where the code comes into force the day the elections are announced.

Besides, such policies which are not likely to impact the election outcome are permitted by The EC.

Also, in the normal course, the code should apply only to the State where Assembly elections are to be held.

- **Undermining the federal structure**

The argument, or slogan, of "one country, one election" is misleading- it overlooks the presence of 29 states.

India has a federal structure and a multi-party democracy where elections are held for State Assemblies and the Lok Sabha separately; the voters are better placed to express their voting choices keeping in mind the two different governments which they would be electing by exercising their franchise.

This distinction gets blurred somewhat when voters are made to vote for electing two types of government at the same time, at the same polling booth, and on the same day. There is a tendency among the voters to vote for the same party both for electing the State government as well as the Central government.

- **Empirical Evidences**

If we consider elections from the 1989 general election onwards, there have been 31 instances of holding simultaneous elections for State Assemblies and the Lok Sabha in different States.

In 24 elections the major political parties polled almost a similar proportion of votes both for the Assembly and the Lok Sabha, while only in seven instances was the choice of voters somewhat different.

During the same period, when in many States the Assembly and Lok Sabha elections were held at different times, the electoral outcome (votes polled by different parties) of the two elections has been different.

http://www.thehindu.com/opinion/lead/jagdeep-s-chhokar-and-sanjay-kumar-write-on-concurrent-elections-to-state-and-lok-sabha-elections-the-case-against-simultaneous-polls/article9150753.ece

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QUESTIONS

1. Could India abrogate "Indus Waters Treaty"?.

With India saying that **there have been differences over the implementation of the 1960 Indus Waters Treaty**, a dispute that was **referred to an international tribunal under the aegis of the World Bank**, the issue has come back into focus because of the current tension with Pakistan following the **September 18 cross-border terror attack on an army base at Uri in Jammu and Kashmir** that claimed the lives of 18 Indian soldiers. India raised the issue saying a **treaty could not be a "one-sided affair"**.



Indus Waters Treaty

Why was the *agreement* signed?

What is the Indus Waters Treaty and can India abrogate it?

Is there a dispute?

Could India abrogate the agreement?.

It suffices to say that India has given a most magnanimous water-sharing pact, hailed as a success model, world over. But it is a bad bargaining chip for India, which has got other tools.

1. India is a lower riparian state when it comes to Himalayan rivers like the Brahmaputra

India has always cited how responsible it has been as an upper riparian state when it comes to the water-sharing agreement. Indus water treaty has remained the most demonstrable evidence of it.

Pakistan's all weather ally China is the upper riparian state in the Brahmaputra, a river which flows into India's northeast. Making any precedent in which an upper riparian state is overbearing can give hints to Beijing on the water-sharing issue

- The Indus Waters Treaty is a **water-sharing arrangement signed by then Indian Prime Minister Jawaharlal Nehru and then President of Pakistan Ayub Khan on September 19, 1960, in Karachi**.
- It covers the **water distribution and sharing rights of six rivers** -- Beas, Ravi, Sutlej, Indus, Chenab and Jhelum. The agreement was **brokered by the World Bank**.
- The agreement was signed because the **source of all the rivers of the Indus basin were in India** (**Indus and Sutlej, though, *originate* in China**).
- It allowed **India to use them for irrigation, transport and power generation**, while laying down precise do's and don'ts for India on building projects along the way.
- Pakistan feared that India could potentially create droughts in case of a war between the two countries.
- A **Permanent Indus Commission set up in this connection has gone through three wars between the two countries** without disruption and provides a bilateral mechanism for consultation and conflict-resolution through inspections, exchange of data and visits.
- The **treaty gave the three "eastern rivers" of Beas, Ravi and Sutlej to India for use of water without restriction**.
- The three "western rivers" of **Indus, Chenab and Jhelum were allocated to Pakistan**.
- India can construct storage facilities on "western rivers" of up to 3.6 million acre feet, which it has not done so far.
- **India is also allowed agriculture use of 7 lakh acres above the irrigated cropped area as on April 1, 1960**.
- Although the two countries have been managing to share the **waters without major dispute**, experts say that the **agreement is one of the most lop-sided with India being allowed to use only 20 percent of the six-river Indus water system**.
- Pakistan itself in July this year sought an international arbitration if **India sought to build hydro power projects on the Jhelum and Chenab rivers**.
- Though the agreement has been seen as **one of the most successful water-sharing pacts**, the current tension between the two South Asian neighbours might well lead to a flashpoint. Strategic affairs and security experts say that future wars could well be fought over water.

which doesn't augur well for India.

And in any conflict situation, Beijing siding with its close friend is a forgone conclusion.

2. Kashmir issue will get another dimension

Water was at the centre of the Kashmir issue between the two neighbours as well. After Independence, India used water as a penalising measure but it didn't yield much result. India did that in April 1948 but restored water flow soon enough.

In 1951, Pakistan mounted an accusation that India water not releasing water to it, subsequently the two sides painstakingly put together the Indus water pact. The process for a water-sharing pact began in 1954 and ended with the Indus water treaty in 1960.

Any tampering with the pact would give Pakistan another propaganda to link it with Kashmir issue, which will further complicate the situation.

3. Pakistan won't mend ways with punitive measures

Any punitive measure from India such as turning off the Indus tap or tampering with the pact will be fodder for Pakistan to whip up anti-India feelings among people.

Pakistan as a state never learnt from three war defeats from India. Instead of mending ways, it went on an offensive to target India through radicalisation and raising a bunch of non-state actors.

India needs to think beyond such measures to make Pakistan see reason. As a mature country with a robust market and strong institutions, India has many other ways to put across its point.

4. Spillover impacts on other water-sharing pacts in South Asia

Water sharing accords are tough to arrive at. India is a part of three of the seven water-sharing pacts between countries in the region — the Ganges treaty with Bangladesh that took 20 years to hammer out, the Indus water treaty with Pakistan and the Gandak treaty with Nepal.

Unlike Indus, Teesta water sharing agreement of 2011 envisages a 50:50 water-sharing formula for the water of the river that is crucial to both north Bengal and the northwestern districts of Bangladesh. The pact has not been signed yet.

It is better not to create bad precedents on water-sharing pacts when arriving at such pacts is becoming an increasingly onerous task.

2. What are Polymetallic Nodules?

• Polymetallic nodules are also known as manganese nodules.

• They are potato-shaped, largely porous nodules found in abundance carpeting the sea floor of world oceans in deep sea.

• Besides manganese and iron, they contain nickel, copper, cobalt, lead, molybdenum, cadmium, vanadium, titanium.

• Out of the minerals found in it, nickel, cobalt and copper are considered to be of economic and strategic importance.

3. India and France sign Rafale fighter jet deal

After several twists and turns, the Indian Air Force is reportedly set to get its share of the French Rafale aircraft. Rafales aretwin-engine Medium Multi-Role Combat Aircraft (MMRCA) manufactured by **Dassault Aviation, a French firm.**
Rafale fighter jets are positioned as 'omnirole' aircrafts that capable to perform a wide-range of combat roles such as air supremacy, interdiction, aerial reconnaissance, ground support, in-depth strike, anti-ship strike and nuclear deterrence.
Rafale is a multi-role fighter aircraft capable of undertaking all types of missions with a capability to simultaneously perform both air defence and ground attack role in a single mission. Sources said that Rafale would be able to do five missions per day as compared to three for other aircraft because of high turnaround time. For example, the engine of the Rafale can be replaced in 30 minutes as compared to 8 hours for the Su30.
The features that make the Rafale a strategic weapon in the hands of IAF include its Beyond Visual Range (BVR) Meteor air-to-air missile with a range in excess of 150 km.
Its integration on the Rafale jets will mean IAF can hit targets inside both Pakistan and across the northern and eastern borders while staying within India's territorial boundary.
Pakistan at present has only a BVR with 80 km range.
During the Kargil war, India had used a BVR of 50 km range while Pakistan had none. However, Pakistan later acquired 80-km-range BVR, but now with 'Meteor', the balance of power in the air space has again tilted in India's favour. 'Scalp', a long-range air-to-ground cruise missile with a range in excess of 300 km, also gives IAF an edge over its adversaries. Both missiles have a 2 metres precision which means that a target can be hit with high precision. Defence Ministry sources said the Rafale, which has a range of 780 to 1055 km, depending on mission role, as compared to 400-450 of the Su30, will be better than what even the French uses as it will have numerous India specific additions.
The India specific modifications would also include Israeli helmet mounted displays, ability to start at cold bases like Leh, better radar, better detection and survival features among others.
Why has India opted for Rafale
•Rafale was not India's only choice. Several international aviation manufacturers expressed interest upon knowing the Indian government's mammoth plan to revamp its Indian Airforce fleet by introducing MMRCAs. Six renowned aircraft manufacturers competed to bag the contract of 126 fighter jets, which was touted to be the largest-ever defence procurement deal of India.
Initial bidders were:
•Lockheed Martin's F-16s, Boeing's F/A-18s, Eurofighter Typhoon, Russia's Mikoyan MiG-35, Sweden's Saab's Gripen and the

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Dassault's Rafale from France.

•All aircrafts were tested by the IAF and after careful analysis on the bids, two of them — Eurofighter and Rafale — were shortlisted. Dassault bagged the contract to provide 126 fighter jets, as it was the lowest bidder and the aircraft were said to be easy to maintain.

When did the actual procurement process

•Indian Air Force sought additional fighter jets in 2001. The current IAF fleet largely consists of heavy and light-weight combat aircraft. So the Defence Ministry considered bringing in intermediate medium-weight fighter jets. Though the idea has been around since 2001, the actual process began in 2007. The Defence Acquisition Council, headed by the then Defence Minister A.K. Antony, approved the Request For Proposal to buy 126 aircrafts in August 2007. This kick-started the bidding process.

How many Rafales are we buying and what's the cost involved

•The deal was initially estimated to be worth $10.2 billion (Rs.54,000 crore). The plan included acquiring 126 aircraft, 18 of them in fly-away condition and the rest to be made in India at the Hindustan Aeronautics facility under transfer of technology.

So Rafale won the contract. And India is buying 126 jets. That's it?

•No, it's trickier than that. After Rafale won the contract, the Indian side and Dassault started negotiations in 2012. While it is usual for such negotiations to stretch to several months, the Rafale negotiations has been on for almost four years now. The agreement was signed only in January this year.

Why this delay

•Both India and France witnessed national elections and a change in government while the negotiations were under way. Pricing was another factor. Even during the signing of the purchase agreement, both the sides couldn't reach a conclusion on the financial aspects. According to sources, the price of an aircraft it about Rs.740 crores and India wants them for at least 20 per cent lesser cost. Though the initial plan was to buy 126 jets, India scaled it down to 36, that too in ready condition.

How important is this deal to both India and France

•France: Rafale jets are currently being used only by France. Dassault is hoping that export of Rafale jets will help the company meet its revenue targets. India was the first country that agreed to buy Rafale, after it was used in Libyan airstrikes. If India inducts these jets in its military fold, other nations could express its willingness to buy Rafales.

•India: India chose Dassault over its traditional partner Russia's Mig. It also ignored U.S.' Lockheed, at a time when India and U.S. were aiming for closer ties. Procurement of combat aircraft is long overdue for the Indian Air Force. Further delay can only make things worse. This deal is India's biggest-ever procurement. In the effectiveness of the Rafale deal lies the future of other defence procurements.

PERSONALITIES

1. Devendra Jhajharia

Javelin thrower Devendra Jhajharia became the first Indian to clinch two gold medals at the Paralympics after he broke his own world record to clinch the top honours at the Rio Games at Rio De Janeiro. Devendra, who won his previous gold in the 2004 Athens Games, bettered his own world record to finish on top in the men's F46 event.

2. Ramesh Raskar

An Indian-origin scientist Ramesh Raskar is the 2016 recipient of the $500,000 Lemelson-MIT Prize. A pioneer in the field of vision technologies, Raskar has invented an ultra-fast imaging camera that operates at the speed of light to see around corners and do-it-yourself tools for medical imaging of the eye. He is an associate professor at MIT's Media Lab. The annual Lemelson-MIT prize, administered by the School of Engineering at the Massachusetts Institute of Technology, honors U.S. inventors who are mid-career and trying to improve the world through science and technology.

3. Junaid Ahmad

Junaid Ahmad was on 21 September 2016 appointed as the World Bank Country Director for India. He will succeed Onno Ruhl who completed his four-year term recently.

TIT BITS

1. INDRA-2016

India and Russia The eighth edition of joint military exercise 'Indra-2016' between has begun in Russian city of Vladivostok.

The main focus of this edition of bilateral military exercise is on Counter-Terrorism Operations in semi mountainous and jungle terrain under United Nations Mandate.

The 'Indra' series of annual bilateral exercises and is one of the major bilateral defence cooperation initiatives between India and Russia since 2003.

The seventh edition of this military exercise or 'Indra-2015' was held in Bikaner district of Rajasthan, India.

2. MICA missile

Indian Air Force (IAF) has successfully fired recently acquired long range air-to-air MICA missile from Mirage-2000 Upgrade combat aircraft on a manoeuvring target.

With this success IAF has become one of the few air forces in the world that have capability of launching such beyond visual range (BVR) air-to-air missile.

Mirage-2000 is a single-engine fourth-generation jet fighter manufactured by France's Dassault Aviation. The upgraded Mirage 2000 fighter jets are fitted with the Thales RDY 2 radar, new avionics, helmet-mounted display. They have ability to fire new weapons including BVR MICA, Meteor missiles.

3. Nobel Prize Facts

- 1896 → Dynamite inventor Alfred Nobel (Sweden) died,
- Left fund to give awards in 5 categories → Physics, Chemistry, Medicine, Literature, and Peace
- Later 6th Category added → Economics funded by Bank of Sweden exclusively
- Started in 1901, Maximum 3 persons can be awarded in each category
- A person must be alive to be nominated
- Nobel prize recipients are called laureates
- Actual medals are given on December 10, the anniversary of Alfred Nobel's death
- Get medal, diploma, and 8-million Swedish kroner ~ $1.1 million
- Peace Prize is awarded in Oslo, Norway
- Other prizes are awarded in Stockholm, Sweden

The nominations are made by Nobel laureates, members of the prize awarding institutions, active scholars in different fields, and officials and members of diverse universities and learned academies. The nominations are to be supported through a written proposal about the candidate's worthiness. There is no provision for Self-nomination.

Nobel Prize winners from India

Rabindranath Tagore	Was awarded Nobel Prize for Literature in 1913 for "Geetanjali" – a collection of his poems
C V Raman	Was awarded Nobel Prize for Physics in 1930 for his "Raman Effect"
Dr. Hargobind Khorana	Was awarded Nobel Prize for Medicine in 1968 for his study of the Human Genetic Code and its role in Protein Synthesis
Mother Teresa	A Yugoslavian nun who became an Indian citizen – was awarded Nobel Prize for Peace in 1979, for her service through her Charitable Mission "Nirmal Hriday" at Calcutta for people

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	suffering from Leprosy and to those people dying in destitute
Dr.Subramanian Chandrashekar	Was awarded Nobel Prize for Physics in 1983 for his theory on white dwarf stars' limitation known as 'Chandrasekhar Limit'
Dr. Amatya Sen	Was awarded Nobel Prize for Economics in 1998 for his work in Economic Theory related to Poverty, Democracy, Development and Social Welfare
Dr. Venkataraman Ramakrishnan	Shared Nobel Prize for Chemistry in 2009 with Thomas Steitz of America and Ada Yonath of Israel for mapping ribosomes, the protein producing factories within cells at the atomic level
Kailash Satyarthi	An Indian Children's rights activist had been awarded the "Nobel Prize For Peace" for the year 2014, jointly with Malala Yousafzai of Pakistan for their struggle against the suppression of children and young people and for the right of all children to education.

Noble Prize Winners – More than Once

International Committee of the Red Cross	▪ A humanitarian institution based in Geneva, Switzerland ▪ Three-time Nobel Peace Prize Laureate
United Nations High Commissioner for Refugees	▪ Two-time Nobel Peace Prize Laureate
Marie Curie	▪ First woman to win a Nobel Prize in Physics in the year 1903 and in Chemistry in 1911 ▪ First person and only woman to win twice ▪ The only person to win twice in multiple sciences
John Bardeen	▪ An American physicist; Two-time Nobel Prize Laureate
Linus Pauling	▪ An American Chemist; Two-time Nobel Prize Laureate
Frederick Sanger	▪ A British Biochemist; Two-time Nobel Prize Laureate

Nobel Prize Winners 2015

Medicine	William C. Campbell	Ireland	For their discoveries concerning a novel therapy against infections caused by roundworm parasites
	Satoshi Omura	Japan	
	Youyou Tu	China	For discovery concerning a novel therapy against Malaria
Chemistry	Tomas Lindhal	Sweden	For mechanistic studies of DNA repair
	Paul Modrich	USA	

	Aziz Sancar	Turkey	
Physics	Takaaki Kajita	Japan	For the discovery of neutrino oscillations, which shows that neutrinos have mass
	Arthur B. McDonald	Canada	
Literature	Svetlana Alexievich	Belarus	For her polyphonic writings, a monument to suffering and courage in our time
Peace	National Dialogue Quartet	Tunisia	For its decisive contribution to the building of a pluralistic democracy in Tunisia in the wake of Jasmine Revolution of 2011
Economics	Angus Deaton	UK	For his analysis of consumption, poverty, and welfare

4. 'Kairali'

It is a special Onam Programme organized recently in association with the Government of Kerala at the Rashtrapati Bhavan.

5. "TIHAYU"

It is the Water Jet Fast Attack Craft (WJFAC). It is built by Garden Reach Shipbuilders and Engineers Limited (GRSE), Kolkata. It was recently handed over to the Indian Navy. Named after an island in the Andaman, "Tihayu" is fitted with three water jet propulsion systems.

EDITORIALS AND COLUMNS - EDITED

1. India's Climate Future at Stake

The announcement by Prime Minister Narendra Modi in Kozhikode that India will now ratify the Paris Agreement on climate change as early as October 2 must surely occasion widespread surprise in India's polity.

Three weeks earlier, we had declared that while India planned to ratify the agreement at the earliest, it also needed time because "we were not ready yet in terms of domestic actions that are required for us to ratify or at least commit to ratify within 2016"

The U-turn: Is it haste?

- The government has not put forward the considerations it took to change the stance over ratification of Paris Agreement.
- It is also worth bearing in mind that developmental needs and people's aspirations are not the sole concern or prerogative of the Central government — a substantial part of it is also borne by State governments and local self-government authorities in urban and rural areas.
- Until the path towards achieving our stated goals is thoroughly checked viz. feasibility, finances, benefits etc. the ratification seems a haste decision.

Need for an INDC RELOOK

- There can be little doubt that India will have to eventually ratify the Paris Agreement. But it is not bound to convert all of the INDCs that it has submitted to the final Nationally Determined Contributions that would be written into the treaty.
- We are still development –deficit. And taking such heavy burdens it not needed as we have not caused the major damage to the environment.
- We need the flexibility in designing our INDCs keeping in mind our developmental agenda. Polluter pays principal must be the way forward.
- We should be ratifying the Paris Agreement only when we have studied the domestic implications; the finances for alternative energy generation- ought to be provided by the developed nations.

2. The SAARC gambit

Along with INDIA three more countries boycotted SAARC summit to be held at Pakistan.

Diplomatic pressure on Pakistan

- Due to increasing cross-border terrorist attacks in the region and growing interference in the internal affairs of Member States by one country have created an environment that is not conducive to the successful holding of the 19th SAARC summit in Islamabad in November 2016, an official statement from India.
- The decision is unprecedented as this is the first time that India has cancelled participation in the regional group's summit meeting because of actions that it blames on Pakistan-based elements.
- The tough step had been under consideration since the Uri attack, the second such cross border strike in nine months after the January 2 Pathankot airbase strike.

Impact

- Experts said India's cancellation might handicap economic integration in South Asia.
- It is not possible to run economic integration in South Asia without the two biggest economies working together.

Other members

- Apart from India, Bangladesh, Afghanistan and Bhutan have also pulled out of the SAARC Summit in Islamabad in November, saying the environment is not right for the successful holding of the meet.
- Bangladesh cited growing interference in the internal affairs by Pakistan.
- Afghanistan cited increased level of violence and fighting as a result of imposed terrorism.
- Bhutan shares the concerns of some of the member countries of SAARC on the deterioration of regional peace and security due to terrorism and joins them in boycotting the SAARC Summit.

SAARC

- The South Asian Association for Regional Cooperation (SAARC) is regional intergovernmental organization and geopolitical union in South Asia.
- SAARC was founded in Dhaka in 1985. Its secretariat is based in Kathmandu.
- Its member states include Afghanistan, Bangladesh, Bhutan, India, Nepal, Maldives, Pakistan and SriLanka.
- SAARC comprises 3% of the world's area, 21% of the world's population and 9.12% of the global economy, as of 2015.
- The organization promotes development of economical and regional.
- It launched the South Asian Free Trade Area in 2006.
- SAARC maintains permanent diplomatic relations at the United Nation as an observer and has developed links with multilateral entities, including the European.

INDIA-SAARC

- The election of Prime Minister Narendra Modi and his government's proactive focus on foreign policy has ushered in a new era for India-SAARC Relations.

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- In the past one year, we have had momentous events on ground – be it PM's decision to invite SAARC leaders to his oath taking ceremony or SAARC Summit, 2014 or Foreign Secretary S. Jaishankar's SAARC Yatra.
- These events have raised the aspirations and hopes of the entire world that SAARC will finally come good on its potential.

Road ahead

With one-fifth of the world's population, South Asia is home to two-fifths of the world's poor. It has abysmally low intra-regional trade. It was precisely to work around bilateral tensions in the subcontinent, especially between its two biggest members, and to make space for discussion on common issues such as trade, infrastructure, sustainable development and poverty alleviation, that SAARC was set up. The founding principle was that together South Asia had a better chance of fighting its shared ills, an idea that held the group together for decades in the face of intermittent regional tensions. Of course, this is not the first time that a SAARC summit has been postponed. But given the prevailing environment of deep mistrust and tension, it is unlikely that the summit will be rescheduled to take place in the near future. This is something that will cause serious damage to the multilateral process and raise even more questions about the future and relevance of SAARC.

As the current chair of SAARC, the government of Nepal strongly urges that a conducive environment be created soon to ensure the participation of all member states in the 19th SAARC summit in line with the spirit of the Saarc charter.

3. Doing what is necessary - Understanding the Kashmir problem

What needs to be done is a question that cannot be even raised meaningfully without paying close attention to what has happened. We need to ask first: in nearly 30 years since 1987, what has been lost? The loss of Kashmiri Hindus needs to be emphasized as it is often overlooked. An entire community has been thrown out of their original homeland and made refugees in their own country. This is not to overlook other losses. The actual deaths during the period are likely to be less than 1, 00,000, including those of security personnel, but the number is certainly very large and growing. Deaths, injuries, tortures, abuses, rapes, missing persons — these human miseries have caused havoc for individuals and families.

Common Kashmiri Muslims have suffered much. Women bear the brunt of such a massive upheaval. There have been major economic losses as well due to the insurgency. According to an estimate, just the ongoing unrest in Kashmir has already caused a loss of Rs 6,400 crore to the economy of the Valley owing to curfews and strikes. More depressing is the cost of missed opportunities. A peaceful state of Jammu and Kashmir could have opened up opportunities at all levels for benefiting from new technologies. A software and hardware hub, pharmaceutical industry, service industry with digital support, revitalized traditional economic activity such as tourism — all these come readily to mind.

Less tangible but more damaging is the change in mentality. If the social landscape of the Kashmir Valley has been changed, the mental landscape is being changed too. A key word that must be considered now is kashmiriyat, a word that has special reference to Kashmir. A brief reference to the past is relevant here. Kashmir is known to have been an abode of rishis, the inspired saints or ascetics of ancient times who sang hymns for the welfare of humanity. Nobody illustrates this tradition better than Lalla, born in the first half of the 14th century, seen as a Shaivite as well as a Sufi mystic. Lalla influenced the poets who followed her, notably Sheikh Nur-ud- din, revered by Hindus and Muslims alike, called Nunda Rishi by the Hindus. There are many legends about these mystic aspirants, notably how Lalla nursed the infant Nur- ud- din when he refused milk from his own mother.

These were the expressions of the coming together of Shaivism and Sufism in the local context of Kashmir. This coming together was moved by the spirit of ' peace with all' which had its influence on the social life of the common people. This tradition could be given the name kashmiriyat as has been done. But, unhappily, it is being turned into an exclusively Muslim tradition in Kashmir, denying Hindu connections, and is being increasingly used to refer to the devotion of Kashmiri Muslims to the shrines of Sufis, a devotion that is in turn under attack from the radical Islamic influence that has come from outside. If it is denied that Lalla was born in a Kashmiri Hindu family, then her connection with Sheikh Nur- ud- din becomes a Muslim story.

Kashmiriyat, moreover, is being seen as a political move going back to Sheikh Abdullah to define Kashmiri nationalism in the context of the unique history of the Kashmiri people. Thus, kashmiriyat gets connected with azadi, freedom, the buzzword of Kashmiri politics, a word which has been used in a very flexible manner to mean many different things. From being used as a bargaining counter by successive governments to extract more grants from the Central government, it has been used to mean autonomy, independence, independence from India, leaving the door open for joining Pakistan, or clearly joining Pakistan.

Thus, an attempt is made to politicize a plural cultural concept and align it with a unitary political concept. This goes against the grain of Kashmiri culture. Why did insurgency begin in Kashmir? What sustains it? An attempt to answer these questions would require the space that I do not have here. What can be briefly stated is that a combination of factors has played a role. The failure of the government of India in developing a clear policy and the failure of local governance that has often been seen as the failure of the Central government must be noted. Also, protests and measures to control them have often formed a vicious circle, leading to further escalation of conflict.

The role of Pakistan cannot be denied. Writing in this newspaper in 1999, I had written about the compulsion of the Pakistani oligarchy dominated by the top brass of the armed forces which rules in its own interest and which has learnt to use Islam as an instrument of central power. It is in the interest of this oligarchy to keep the conflict with India alive to protect the prominence and privileges of the armed forces. Subsequent research publications, especially by C. Christine Fair, Fighting to the End: The Pakistan Army's Way of War (2014), shed further light on the role of the Pakistani army. Fair has shown with much evidence how it has sustained a proxy war in Kashmir since 1989 using Islamist terrorists. The will of this oligarchy has prevailed so far. Pakistan has exported jihad to Kashmir and used Kashmiris as pawns.

It has sent ' guest' Mujahideen and also sent back local ones after training them. Moreover, sustained efforts have been made over the years to wean Kashmiri Muslim youths off their Kashmiri heritage and turn them into the soldiers of an imported version of Islam. Madrasas and mosques have been used systematically for the purpose. The struggle has been against the Kashmiri version of Islam. Even Sheikh Nurud- din, the patron saint of Kashmir, was not spared. His shrine at Charar- i- Sharief was turned by Mujahideen into a battleground in encounters with armed forces in 1995, causing extensive damage to the town and the shrine. So, what is to be done?

We must raise this question with knowledge of what has happened and in the spirit of sympathy and responsibility.

The right to self- determination in the case of Kashmir raises the question of the rights of minority groups as well. If a referendum is held and the most desired wish of the separatists is fulfilled which is in itself doubtful, it is difficult to see how with a referendum the partition of the state into at least four parts can be avoided: Kashmir partitioned into two to accommodate Kashmiri Muslims and Kashmiri Hindus and then the two regions of Jammu and Ladakh, each in turn with its own minorities. Is it sustainable or even desirable? Can we trust a leader like Syed Ali Shah Geelani of the Hurriyat who openly talks of his belief that Muslims constitute a separate nation and they must aspire wherever they live to create ' an Islamic dispensation' so that they may live fully in accordance with the rules of Islam? Is this a statement in the interests of the Kashmiri people or just a religious statement? Should Kashmir be partitioned on the ground of religion, what impact will it have on the secular fabric of the country which is already under threat? Can such a move be seen in isolation without considering likely repercussions? Any secular person must ask whether an adventure in a state with less than 13 million total populations, not even the size of greater Calcutta where I write this article, should be allowed to jeopardize the future of more than 172 million Indian Muslims and with them the future of the entire country. Indian Muslims have shown considerable inner strength in condemning terrorism. Which other country has shown the way forward as shown by nearly 70,000 Indian Muslim clerics who signed a fatwa against the Islamic State of Iraq and al- Sham and other terror groups calling them “not Islamic organisations"? Should the larger Muslim community in India not play an active role in finding a solution to the Kashmir problem? S ome further thoughts may be briefly shared. It is in the interest of the right- minded people in India to see Pakistan prosper.

In the well being of the common people of Pakistan lies our own well being. We need to do more to promote friendship at the people-topeople level. In saving the people of Pakistan from their oppressive oligarchy lies the possibility of saving Kashmir and indeed the subcontinent. We need to remember that Bangladesh could escape from it only by a painful separation. Also, political leaders in New Delhi, Jammu, and Srinagar need to behave with greater responsibility.

Concern with short- term selfish gains must be replaced by an awareness of the enormous price that is being paid because of this unresolved problem. Further, the state of Jammu and Kashmir must be brought on the course of development that benefits the common people, not exclusive elite. Moreover, the vicious circle of protests, attacks, and killings needs to be broken. Above all, there is a need for a healing touch for all. As far as Kashmiris themselves are concerned, has all been lost? They, Muslims and Hindus alike, will do well to listen to their poet Mahjoor, who sang: Come O Gardener get excited with the new spring / when flowers will blossom and bulbul will dance, create that consciousness. If not for they, then at least for the sake of the younger generation, especially the lost Kashmiri Muslim youths, a new future and a new consciousness need to be created.

Source - http://www.telegraphindia.com/1160926/jsp/opinion/story_110171.jsp#.V-vRU9ycHIU

4. 100GW solar by 2022: India's target or aspiration?

Unveiling its own bold initiative, India pledged that it would derive at least 40% of its energy needs from renewable sources by 2030. This includes plans for the development of 100 GW of solar energy by 2022, an extremely ambitious target considering the world’s installed solar power capacity in 2014 was 181 GW. Installed solar capacity in India has increased four-fold in the last three years. Yet overall solar capacity now is just eight per cent of the 100 GW targeted for 2022.

Achieving this goal would require commensurate and sustainable visibility of buyers for the electricity so generated, and smooth integration of solar power into the national and local grids.

Challenges ahead for Solar Energy Production

Road ahead

Mudra is one of the most recent initiatives of the Government of India to prepare the MSME Sector for the Technological up gradation and make it resilient for any downturn. Success for India lies in success of Small business units. Providing the flesh and blood to the economy, small businesses functioning either in form of partnership or proprietorship (Own Account Enterprises), adds nearly 50% of our GDP in the form of Manufacturing, Service and Trading. Alongside it is employment generation tool, with more than 12 Crores people associated. No wonder the support to this sector is support to government’s ambitious target of realizing the asset of India’s demography.

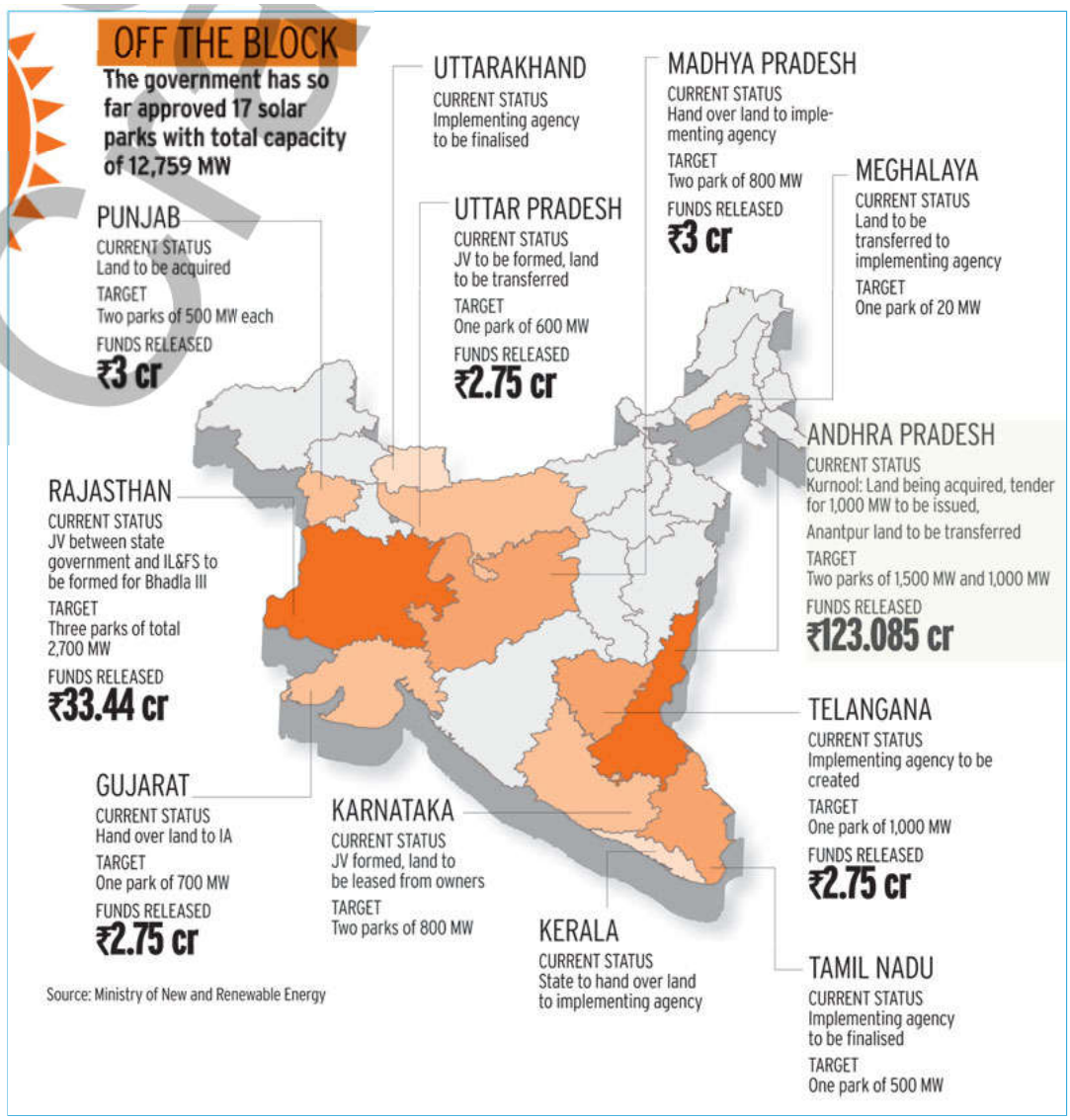
Therefore the government prioritized it through the current Pradhan Mantri Mudra Yojana (PMMY). The scheme focuses on alleviating the most pressing need of these small units, which is the credit provisioning. The scheme therefore runs on the motto “Funding the Unfunded”. Through PMMY the government seeks to create an enabling regime where formal channels of finance becomes easily accessible to these small units who will not be crippled on account of their scale and size.

Features

MUDRA model is rolled out through all the banks, MFI’s/NBFC’s etc. for its pan-India availability and making loan, for promoting small entrepreneurial ecosystem framework, readily available. The scheme is being pushed through creation of MUDRA Bank that will act as a vehicle for its implementation. MUDRA stands for the Micro Units Development Refinance Agency.

AS a precursor to the success of PMMY, the government through its 2015-16 budget established MUDRA bank as a subsidiary under SIDBI. With a refinance fund of 20000 crore and credit guarantee fund of 3000 crore, MUDRA Bank will support the PMMY initiative by refinancing and supporting Micro Finance Institution (MFI’s) that are the best available last mile fund source for the non-corporate small businesses.

In addition it shall create a regulatory and supervisory framework for MFI’s, directly translating into better service delivery and accessibility, promote best business practices, establish comprehensive last mile credit delivery mechanism and infusing technology solutions for achieving the same. It will draft guidelines for financial solutions to avoid situations of bad loan and finally, lay down client protection and better recovery processes.



irregular because generation is not possible 24 hours a dayCompared with conventional energy, solar power is

- Management of grids therefore becomes crucial, particularly when we scale up to 100 GW by 2022, supplying a third of the peak demand.

Irregular supply destabilises grids, impacts off-take and spawns curtailment risk or “back-down”, which is the unplugging of a power source from the grid.

- 10 per cent curtailment can lead to a five per cent decline in the internal rate of return (IRR) of wind power projects, enough to render many unviable.
- The problem is that backing down has now started in solar, too. So, the ministry of new and renewable energy has asked states to enforce “must run”, ordering that any backing down can be only of thermal projects, ensuring that some coal is saved.

Credit profile and wherewithal of Discoms

- In the wind sector, payments are delayed by six to 24 months, mainly due to revenue under-recovery by Discoms.
- Another reason for payment delays, now also visible in some solar projects is the significant gap between average revenue (without subsidy) and average cost of supply, which varies from Rs 1.49/kWh to Rs 2.31/kWh
- Further, large solar projects are being bid in the range of Rs 4.34 to Rs 5 per kWh, well above the national average procurement cost of Rs 3.40 per kWh (Central Electricity Regulatory Commission calculation), which increases the burden on Discoms

Renewable Purchase Obligation (RPO)

Renewable Purchase Obligation (RPO) is the obligation mandated by Central/State Regulatory Commission and is applicable to Distribution Licensee:
The Regulatory Commission in each State mandates a certain percentage of electricity generated through the above process to be from renewable sources.

        - Power distribution companies (DISCOMs);
        - Open Access Consumer: those Procuring power from power exchanges (IEX/PXIL), from traders, through bilateral agreements, etc;
        - Captive consumer: those generating and consuming power from captive coal/natural gas power plants (primarily industrial users in cement, steel, chemical etc. sectors.).
    - Financial implication on Discoms- shows an impact of 15-20 per cent on the annual revenue requirement, which, in turn, will have to be offset through a 65-87 paise tariff hike over three years. Thus making procurement costlier which would lead to expansion problems

- First, solar power needs greater grid acceptability and stability, and this can be ensured by strengthening the transmission infrastructure. Work is already underway on the Green Energy Corridor, which aims to promote inter-state trade of renewable power by synchronising renewable and conventional generation.
- Second, metering and forecasting needs to improve.
- Third, the Forum of Regulators has already come up with model regulations on forecasting, scheduling and deviation settlement for wind and solar power projects. States need to take the cue and roll out their own regulations.
- Fourth, there is a need to enhance grid stability structurally, or for the long term. This can be done by setting up ancillary industries that can sync with solar generation timings.
- Fifth, commercially, curtailment in solar can be curbed by shifting to a fixed take-or-pay, or deemed generation contract where Discoms will have to pay in spite of back-downs
- Finally, raising tariffs to reflect cost of supply is critical in improving the financial health of Discoms. With the Ujwal Discom Assurance Yojana (UDAY) taking off, this is the best time to raise tariffs and make utilities revenue-neutral, instead of artificially pruning costs during regulatory tariff assessment exercises

5. Pradhan Mantri Mudra Yojana - Insider-outsider Study

- PMMY initiative is for non-farm 'small and micro' scale income generating enterprises engaged in manufacturing, trading and services with credit need up to 10.00 lakhs. The segment includes small manufacturing units, shopkeepers, fruits/vegetable vendors, truck & taxi operators, food-service units, repair shops, machine operators, food processors, etc.
- The scheme has designed three products under the name of Shishu, Kishor and Tarun forloans upto 50000, 50000-5lakhs and 5-10 lakhs respectively. All three signify the funding requirements of micro units and their stages of growth.
- Exemption exists from furnishing any sort of collateral against a loan. Asset will be created out of Bank's finance. The usual terms and conditions of the lending agency may have to be followed for availing of loans under PMMY. The lending rates are as per the RBI guidelines issued in this regard from time to time.
- PMMY loans will be extended by all institutions such as PSB's, Regional Rural Banks (RRBs), Cooperative Banks, Private Sector Banks, Foreign Banks, Micro Finance Institutions and Non Banking Finance Companies. All loans sanctioned on or after April 08, 2015 upto 10 lakh for non farm income generating activities will be branded as PMMY loans.
- Monitoring of PMMY's progress at the State level will be done through SLBC forum and at National level by MUDRA/Department of Financial Services, Government of India. For this purpose, MUDRA has developed a portal, wherein the banks and other lending institutions directly feed their achievement details, which is consolidated by the system and reports are generated for review.
- The scheme also provides a MUDRA card that will allow credit in a hassle free and flexible manner. It will provide a facility of working capital arrangement in the form of CC/OD to the borrower. It will be RuPay debit card and can be used for drawing cash from ATM or Business Correspondent or make purchase using Point of Sale (POS) machine. Facility is also there to repay the amount, as and when, surplus cash is available, thereby reducing the interest cost.

MUDRA, Manufacturing Sector & Make in India

India is making a shift to establish a robust manufacturing base for a sustained economic growth, job creation and to boost export earnings. However, this shift cannot solely rely on the big, corporate based enterprise because of their limited extent despite high value generation. On the other hand the NCSBS have a larger multiplier effect. Their presence is of local and regional extent that helps them permeate the domestic market better. They create indigenized inputs base and have potential to supplement the total output for the national and international consumption. This is the precise attempt of Make in India program that seeks creating self-sufficiency in the field of mass production and to convert India into a manufacturing hub for the entire world. Hence impetus for labour intensive indigenized manufacturing base. Integrating NCSBS to achieve this feat is essential; it will widen the program outreach and help it grow in the desired trajectory. Small business units therefore need to be mainstreamed into production cycle via better institutional financial support creating necessary condition for their success and capacity realization. This relies on successful and dedicated implementation of MUDRA.

MUDRA and TUFS

Introduced in 1999, TUFS stands for Technology Upgradation Fund Scheme. The purpose was to mobilize investments in textiles, especially jute industry by way of interest subvention or reimbursement. It was approved initially for 5 years and since has been extended. It made a remarkable contribution in productivity and quality. Contributes around 4% of GDP and employs around 35 million people. Indian textile sector today is faced with urgent need to modernize its designing and manufacturing technique making it viable and more internationally competitive. It suffers from value loss in face of high volume low value exports and low volume high value imports. The situation has become stricter with rising competition, dwindling market demand and rise of new categories of textile type.

Improvement in process and manufacturing technique require installation of new machinery that warrants access to institutional credit, which is at present difficult to access for most firms in apparel sector given their confinement to the unorganized sector in the global commodity chain. In light of the above, continuation of TUFS in addition to MUDRA Yojana will complement the textile segment and help meet its immediate capital and credit requirement.

MUDRA and Indian Growth Story

Non Corporate Small Business Sector (NCSBS) dominates the economic landscape. They are the largest disaggregated businesses ecosystem and support directly and indirectly around 50 crore people. This business setup though made them more accessible as first line of providers or the initial units in a bigger business chain, but their structure and organizational pattern also severed their capacities. Fragmentation made it difficult to cover them under proper banking schemes of entrepreneurship promotion. Secondly, the nature of finance requirement peculiar to their business size, many a times did not find favour from formal finance channels. Thirdly, ill financial health and blunt bargaining power made them a riskier proposition. They couldn't generate more resources as the formal source were almost difficult to access. Hence, they remained largely funded through personal networks or informal sources like money lenders etc. making these units fall into the trap of indebtedness.

This segment of population has huge potential as they possess innovative ideas that work on such small scale thereby having direct bearing on better conditions of life. Increased and newer source of income promotes consumption and savings both. Higher income generation means access to more resources and services thereby boosting consumption that is a necessity to keep the economic cycle rolling. In addition, household savings that are generated always remain a big source to be tapped for supporting long gestation infrastructure projects. This cycle of **Income-Consumption-Saving** is the trinity of sustainable growth in a vibrant economy. The desired transformation in the society will reflect, if focus is on alleviating all the bottlenecks associated with NCSBS segment.

Difficulties in achieving the Targets

Scheme has a target of covering 1.75 crore people and to disburse 1.22 lakh crore loan by March 2016 but the scheme before it meets such ambitious targets will need to overcome few hurdles like Infrastructure gaps that are seen in form of lack of entry level technology and access to institution in each and every corner.

- Following this, true realisation of intent of pmmy rests upon Skill Development and Knowledge promotion.
- Next, the small units generally lack the growth orientation and spirit of enhancing their scope as a result the linking of NRLM component needs thorough planning.
- Further, lack of Market Development could jeopardize pmmy. To make small units viable good market expansion and growth is necessary. Not so developed make can make them a riskier proposition, discouraging institutions.
- In rural sector, the information and skill quotient is meek because of illiteracy. There has been, traditionally, dependence on moneylenders. Also low presence of financial institutions does no help situation any better.

MUDRA and the NPA of the PSB's

The RBI Data on credit disbursal by commercial banks highlights that Unlike 90's where 60% of total credit was available for unincorporated segment; the present share has seen a substantial decline to meager 33%. This has been despite the growth trajectory and the volume of business that the NCSBS have managed, yet they have failed to attract formal credit. A major cause is the way banks conduct themselves towards the formal corporate sector because of two things easy collection of interests on loans advanced and secondly, PSB's have to stand for the financing long gestation projects that private banking channels are not always upbeat about. Subsequently, large corporate private sector that contributes up to 15% of national income gets disproportionate 40% of credit pool. Nonetheless, over the past few years due to reckless lending by banks and poor financial decision making of corporate, has resulted into rising NPA's due to defaults. This increased PSB's exposure thereby stressing their assets. Consequently the pool and the will both to fund NCSBS shrank.

Where it needs improvement

The MUDRA bank that projects to reach the NCSBS segment through PSBs as well has not resolved two pending issues. The scheme seems to have not taken note of the existing NPA situation of the Banking sector. Secondly, the feature of almost zero percent lending, in case of default would accentuate the NPA mess further. Such loans will be difficult to re-collect, owing to their size and disbursal. As a result the Credit Guarantee Element of the Yojana of 1.2 lakh crore on security free loans has to be meticulously resolved and a blue print needs to be present for encouraging the PSB's to push the scheme targets. Hence, the focus on MFI's, RRB's and NBFC'S has to be intensified as they cater best to needs of these small business units.

Road ahead

Micro Finance is a potent tool for development of economy, enhancing opportunity for income generation in India. This also promotes a rewarding entrepreneurial ecosystem for those with ideas but restricted due to their credit standing and accessibility. Such Micro enterprises are indispensible for Indian economy, as they possess multiplier effect in terms of job, wealth and capital generation. This is correct step towards a sustainable economy.

To be an integrated financial and support service provider par excellence, benchmark with the global best practices and standards for the bottom of the pyramid for the comprehensive economic and social development. PMMY aims "to create an inclusive, sustainable and value based entrepreneurial culture, in collaboration with partner institution in achieving economic success and financial security."

6. Land Acquisition Issue

Since the commencement of the Constitution, the Land Rights have been the most controversial. It has frequently caused confrontations between the Supreme Court and the Parliament. Recently, the Supreme Court's verdict on the Singur land acquisition issue reiterated that the term 'public purpose' cannot be arbitrarily invoked to acquire land and hand it over to a private party. In light of the above critical judgment let's try to understand the fundamental of land rights and their significance to Indian development.

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Land acquisition is the process by which land owned by private persons is compulsorily acquired. It is different from the selling/buying of land, in which a mutual agreement is concluded between parties based on their willingness to buy/sell. Acquisition is where the land owner is forced to relinquish his property. Therefore, land acquisition procedures override the property rights of land owner. This might be justified only if a case can be made for greater public benefits.

Present status of individual private land/property rights in India

Presently, Article 300A provides that no person shall be deprived of his property except by authority of law. Thus, the right to property still remains a legal right or a constitutional right with the following implications:

(a) It can be regulated i.e., curtailed, abridged or modified without constitutional amendment by an ordinary law of the Parliament.
(b) It protects private property against executive action but not against legislative action.
(c) In case of violation, the aggrieved person can move to the High Court under Article 226.
(d) No guaranteed right to compensation in case of acquisition or requisition of the private property by the state.

However, fundamental rights still carries two provisions which provide for the guaranteed right to compensation in case of acquisition or requisition of the private property by the state.

(a) When the State acquires the property of a minority educational institution (Article 30); and
(b) When the State acquires the land held by a person under his personal cultivation and the land is within the statutory ceiling limits (Article 31 A).

Highlights of the 2015 Bill

1. This Bill amends the principal Act passed in 2013.
2. The Bill enables the government to exempt five categories of projects from the requirements of:
(i) Social impact assessment (ii) Restrictions on acquisition of multi-cropped land (iii)Consent for private projects and public private partnerships (PPPs) projects.
3. The five categories of projects are:
(i) Defense (ii) Rural infrastructure (iii) Affordable housing (iv) Industrial corridors (v) Infrastructure including PPPs where government owns the land.
4. The Act would apply retrospectively, if an award had been made five years earlier and compensation had not been paid or possession not taken. The Bill exempts any period when a court has given a stay on the acquisition while computing the five year period.
5. The Act deemed the head of a government department guilty for an offence by the department. The Bill removes this, and adds the requirement of prior sanction to prosecute a government employee.
6. The Bill mandates that employment be provided to at least one member of a family of farm laborers as a part of the Rehabilitation and Resettlement entitlements provided under the Act. It also requires that the government conduct a survey of wasteland, and maintain a record of this land.
7. The Act establishes a Land Acquisition, Rehabilitation and Resettlement (LARR) Authority to dispose disputes related to awards made under the Act. The Bill mandates that the hearing of the LARR Authority be held in the district where land is proposed to be acquired.

Key Issues of discontentment:

1. Lack of clarity in defining types of Exempted Projects

The categories mentioned are vaguely defined and left on the bureaucrat to decide the legitimacy of the project. The term-'Social Infrastructure' is highly ambiguous and even the projects not benefiting a public purpose could be fitted by this narrow window defeating the whole motive of rural developments. For example land acquisition for private hospitals and educational institutes is also included in exempted list.

2. Removal of consent clause and SIA

It is unclear why the level of consent required varies by ownership of project – i.e. government, private or public-private. From a land owner's point of view it is irrelevant who implements the project for which land is being acquired. He will get the same amount of compensation and other benefits, irrespective of who owns the project. There is no clarity on why the consent requirement should not be uniform across projects.

-->SIA was incorporated to examine the entire purpose of conducting acquisition and compensation in the form Rehabilitation and Resettlement. SIA, in addition, assisted in the prediction of likely expenditure and loss of a particular project so as to present a clear picture to decide the feasibility of the concerned project, be it social or economical.

But now the power to decide the social –cultural impact of projects mostly will rely on the government. This erodes the holistic idea of inclusive governance.

3. Change in definition from private company to 'private entity'

A private entity is defined as an entity other than a government entity, and could include a proprietorship, partnership, company, corporation, non-profit organization, or another entity under any other law. This will give entities other than government to decide on the compensation and rehabilitation of the aggrieved person.

Social Impact Assessment

- The impacts of development projects occur in different forms. While significant benefits result for the society, the project area people may often bear the brunt of adverse impacts. This can happen, for example, when they are forced to relocate to make way for such interventions. There is now a growing concern over the fate of the displaced people. This has given rise to the need to understand beforehand the implications of adverse project impacts so that mitigation plans could be put in place in advance.
- The National Rehabilitation & Resettlement (R&R) Policy, issued in 2007, recognises the need to carry out Social Impact Assessment (SIA) as part of the resettlement planning and implementation processes. Section 4.1 in Chapter IV Social Impact Assessment (SIA) of the Policy reads as follows:
- Wherever it is desired to undertake a new project or expansion of an existing project, which involves involuntary displacement of 400 hundred or more families, en masse in plain areas, or two hundred or more families en masse in tribal or hilly areas, DDP blocks or areas mentioned in the Schedule V or Schedule VI to the Constitution, the appropriate Government shall ensure that a Social Impact Assessment (SIA) study is carried out in the proposed affected areas in such manner as may be prescribed. Social Impact Assessment

alerts the planners as to the likely benefits and costs of a proposed project, which may be social and/or economic. The knowledge of these likely impacts in advance can help decision-makes in deciding whether the project should proceed, or proceed with some changes, or dropped completely. The most useful outcome of a SIA is to develop mitigation plans to overcome the potential negative impacts on individuals and communities.

Advantages of Doing Social Impact Assessment

- **Identifying Affected Groups**: SIA helps in identifying people and groups who affect or are affected by the project.
- **Allying Fears and Winning Trust**: SIA can help allay fears of affected groups and build a basis of trust and cooperation which is so essential for successful project implementation
- **Avoiding Adverse Impacts**: SIA provides the basis for preparing mitigation measures to avoid, reduce or manage adverse impacts.
- **Enhancing Positive Impacts**: SIA preparation also helps identify measures to maximize/share project benefits.
- **Reducing Costs**: Addressing social impacts at an early stage helps to avoid costly errors in future.
- **Getting Approval Faster**: A well prepared SIA demonstrates that social impacts are taken seriously and helps in getting project clearance faster.

Road Ahead

In a country like India, wherein more than half of the population is dependent on land for their livelihood, a visionary land acquisition reform can be revolutionary. The stagnation in rural industrialization can be easily transformed via effective implementation of land laws. Thus, to achieve a neutral legislation on the concerned matter should be of foremost priority considering the benefit of greater number of citizens as a parameter.

The success of latest legislation is largely dependent on the executing authorities and hence imposing the doctrine of transparent and accountable bureaucracy is another parameter to be considered.

Establishment of a Land Acquisition, Rehabilitation and Resettlement (LARR) Authority to dispose disputes is a welcome change to deal with region –specific problems. The provision of the government to conduct a survey on wasteland is much needed resolution for keeping in account all the changes occurring due to acquisition of certain irrigated land and will also support government to formulate a better agricultural policy for the concerned area in the near future.

Moreover, it should be reiterated that all growth is interlinked and interdependent and shared prosperity demands shared responsibility. Hence only a better government to public participation model can help to achieve the far-reaching motive of land acquisition lead development.

7. Himalayan repair

Nepal's Prime Minister Prachanda has just completed a visit to India that was billed as an important move for the two countries to re-connect after a series of difficult bilateral developments. Recently there has been quite a bit of turbulence in relations between these closest of neighbours, and both sides showed wisdom in taking steps to restore what must remain a critically important tie for both of them. The previous leader in Kathmandu had experienced difficulties in his dealings with New Delhi which complicated his own task of providing effective governance at home. Earlier, India's Prime Minister Modi had made a special pitch for strengthening bilateral confidence and his initial visit to Nepal over a year ago was a big success, with the Nepalese public responding enthusiastically to his many spontaneous gestures affirming the exceptional bonding between the two countries. As everyone knows, there is no hindrance in coming and going from one to the other, or in their commercial exchanges, and open borders existed between the two well before the rest of the world began to move in that direction. Their close mutual understanding in all fields has underpinned the strategic harmonisation that they have maintained for so long.

Unexpectedly, however, the long running constitutional crisis in Nepal spilt over into bilateral India-Nepal ties, with divisive effect. The prevailing close friendship between the two countries notwithstanding, there have been occasional problems between them, though more of perception than of substance, and at the crunch they have invariably drawn together, but this time lines of division were more deeply engraved. Politically aggrieved groups in mid-Nepal acted to prevent normal movement of goods from India to the interior, which caused great hardship and consequent resentment, and India found it had to shoulder much of the blame. Nepal, always zealous in maintaining its sovereign rights against any perceived slight from its much larger neighbour, felt it was being coerced by the use of an economic weapon that was always potentially available but never employed, while India saw deliberate efforts being made to reduce its profile and seek alternatives to its historic close partnership with Nepal.

The most sensitive aspect of the bilateral India-Nepal relationship being its strategic component, at a time of uncertainty it is strategic matters that come in for a shakeup, which more often than not means bringing China into the equation. Nepal's own strategic significance has much to do with its geographical location between these two large Asian countries, and while its long established lines of communication and cooperation point towards India, this is no longer something to be taken for granted, and opening up to China in a number of development initiatives south of the Himalayan crest line has taken place over the last few years. This could have become a matter of concern to India at an earlier stage but is less of an obstacle to good relations today when India itself is busy opening up the Himalayan region with a number of major development projects. These economic plans will reinforce India's role as Nepal's leading development partner but yet some care and caution need to be exercised in the unfolding of intra-Himalayan relationships.

Against this background, Mr. Prachanda's visit was more than the customary courtesy call paid by a succession of Nepali leaders at the commencement of their respective terms of office. The recent jolts to this all-important relationship have been disturbing and have underlined the need for corrective action, which was Mr. Prachanda's mission for his visit, and he himself said before setting out that his task was to restore confidence and move on from the misunderstandings of the previous months. He seems to have substantially achieved this goal and would have returned to Kathmandu well satisfied with what he accomplished in New Delhi. Both he and his Indian host showed awareness of the need to undo the unhappy experience of the immediate past and made a special effort to set matters to rights: in New Delhi the Indian government took special care to provide a fulsome welcome, including accommodation at Rashtrapati Bhavan, and the joint statement at the conclusion kept studiously clear of any words that could imply anything but a trouble-free and highly cooperative relationship between the two countries. With this, it can be justly claimed that the repair work has been done and relations restored to their customary level of intimacy.

Yet though the required repairs were successfully concluded during the Prachanda visit, the matters that had become contentious are not without substance and resolving them may need substantive decisions as much as demonstrations of mutual goodwill. Vexed issues that were the source of much trouble just a short while go may not be much in the public eye at present but can flare up again if matters go awry. The final shaping of Nepal's newly adopted Constitution is yet to be achieved, and the many conflicting ideas about the shape of this basic document are yet to be resolved, for Constitution-making has been a prolonged and divisive matter and though a final text has been adopted it has not yet received the general backing it needs. The Madhesi population in the Terai portion adjacent to India has been especially aggrieved and has resorted to direct action that has had an unsettling effect. As links across the border in this section are exceptionally close there have been accusations that the agitators have received backing from the other side, which makes for unwarranted suspicion and unnecessary complication of the task of internal reconciliation. What is needed now is to find a way forward and this is the big challenge for Mr. Prachanda. Moreover, this is a matter to be settled by Nepal alone, for advice from any other source, however well-intentioned, can only be a complication. Mr. Prachanda's successful visit is a reminder that essential goodwill and mutual confidence more often than not are generated at the top; the current aura of goodwill owes much to what the two Prime Ministers were able to communicate to each other when they met.

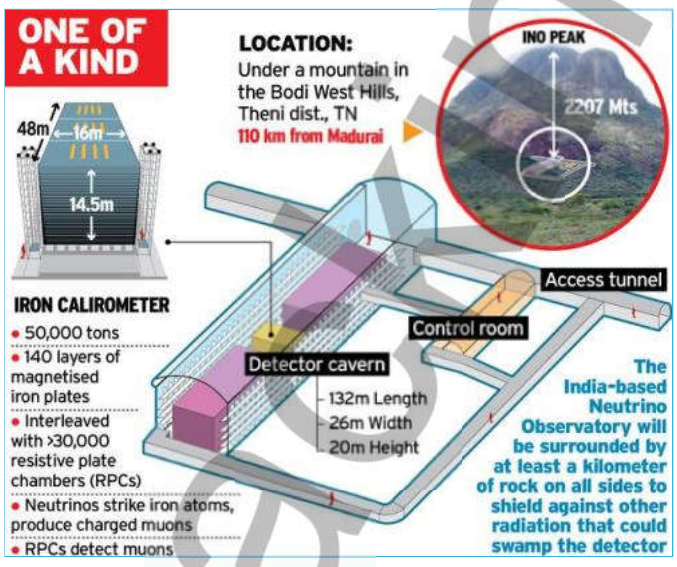
Mr Prachanda has been accused by his critics at home of having become very much of a mainstream politician -- no longer the ideological firebrand of the past but a typical South Asian politician capable of dealing with people of all political complexions, friend and foe alike. If that is so, it is something to applaud, for it should be easier to do business with the new-look Prachanda who has been tempered by experience. He merits the support proffered to him by New Delhi for having restored Nepal's image as a steadfast partner and friend to India.

Source - http://www.thestatesman.com/news/opinion/himalayan-repair/166880.html

8. A Scan of INO

The India-based Neutrino Observatory (INO) Project is a multi-institutional effort aimed at building a world-class underground laboratory with a rock cover of approx. 1200 m for non-accelerator based high energy and nuclear physics research in India

- Jointly effort by Department of Atomic Energy (DAE) & Department of Science & Technology (DST)
- Place → Bodi west hills, Theni district, South Tamilnadu



Key Features of INO

What are Neutrinos?

Facts about Neutrino

Location factors of INO

One might wonder at the need for such a massive detector and for drilling underground. The reason is that the neutrinos interact very weakly with the surroundings. We are all being washed by a stream of neutrinos every passing minute as they just pass through us without leaving a trace. Since they interact so weakly, detecting them over other interactions is impossible. We need to have a barrier of at least 1 km of earth to keep itself away from all the trillions of neutrinos produced in the atmosphere and which would otherwise choke an over-the-

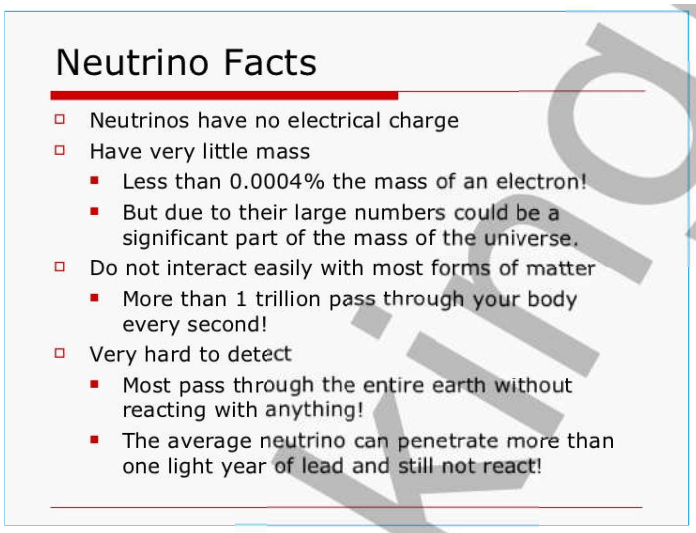
- Mega science project under 12th Five year plan, to setup an underground lab for pure science.
- Has 50,000 tones magnetic detector + an Iron Calorimeter detector to study neutrinos & particle physics
- Neutrinos are fundamental particles belonging to the lepton family.
- They come in three flavours, one associated with electrons and the others with their heavier cousins the muon and the Tau.
- According to standard model of particle physics, they are mass less.
- However recent experiments indicate that these charge-neutral fundamental particles have finite but small mass which is unknown.
- This was shown by observations of neutrino oscillation, which is a phenomenon by which one type of neutrino transforms into another.

ground neutrino detector. This is the reason scientists are now going underground.

The **Primary aims of the INO** are the following :

Neutrinos are very important for our scientific progress and technological growth as they are abundant & have very feeble mass and no charge, which means they can travel through planets, stars, rocks and human bodies without any interaction. In fact, a beam of trillions of neutrinos can travel thousands of kilometres through a rock before an interaction with a single atom of the rock. They hide within them a vast pool of knowledge and could open up new vistas in the fields of astronomy and astrophysics, communication and even in medical imaging, through the detector spin-offs.

'Deglobalisation' has become the favourite term for many commentators of late. The decision made by voters for Britain to exit the EU



—popularly termed "Brexit"—is seen as the harbinger of a new world where trade, financial and people 'flows' between countries that defined globalisation are in reverse gear. Recent data that show global GDP growth—one of the traditional metrics of globalisation—has halved from a 6%-high in the 1960s to 3% in 2015, falling share of FDI in total global investment and the stagnating trade intensity (the trade-GDP ratio), perhaps the most important metric of globalisation, were offered to prove the case of deglobalisation. These experts and commentators have offered the growing trade protectionism on one hand and the increasing cost of labour in emerging markets leading to the "re-shoring" of manufacturing on the other as key contributing factors.

That is certainly one view of the changing world.

- To detect Neutrinos and their reactions, the lab has to be at least 1000 m below surface, to reduce natural cosmic radiation
- Mountains of South India, are most ideal for this lab, because they've dense rock (mostly gneiss)
- Bodi west hills is made up of Charnockite (hardest rock known) hence Earthquake risk minimum
- Research **to study the properties of neutrinos** which are the second most abundant particles in the Universe. They are elementary particles, like electrons, but not part of atoms.
- Study of matter effects through electric charge identification, that may lead to the determination of the unknown sign of one of the mass differences.
- Study of charge-conjugation and charge parity (CP) violation in the leptonic sector as well as possible charge-conjugation, parity, time-reversal (CPT) violation studies.
- Study of Kolar events, possible identification of very-high energy neutrinos and multi-muon events.

9. Globalisation 4.0: Radical new phase driven by digital tech is beginning

There is another, a very different, view. At the BCG Henderson Institute, we think that rather than signalling the "death" of globalisation, the decline in the traditional metrics signals the "birth" of a radical new phase of globalisation—one that rebalances geo-politics with geo-economics. As such, we think that countries and companies need to think about globalisation in a different way, turn to different metrics, and devise a new strategic framework to develop their future strategies.

This is not the first time experts have predicted the end of globalisation in the modern era that began with Industrial Revolution in Europe in the 18th century. The first wave of growth was abruptly halted by World War I in 1914. The march of globalisation resumed only in the 1950s with the introduction of mass manufacturing and the building of export supply-chains by companies in the West. The Oil Crisis in the mid-1970s again halted this phase of globalisation. The third phase of globalisation emerged in the 1980s, with the growth of internet allowing the outsourcing of low-cost manufacturing and services and led to the development of globally-integrated supply-chains. This model of globalisation became our base-line until it was again halted by the financial crisis in 2008.

Each new phase of globalisation was preceded by a crisis. Each time, it emerged stronger, but different in its characteristics. More importantly, each new phase was triggered by the emergence of a new 'technology' that transformed the economics of doing business. First, it was the steam engine; the next phase was driven by the technology of mass manufacturing, and the last phase—which saw China emerging as the 'factory for the world' and India as the inventor of the 'offshore IT and BPO model'—by the growth of internet. A fourth, and equally powerful, technology is emerging rapidly, that of digital technologies; these are not just transforming economics and customer value propositions, it is in our view already launched the fourth and perhaps the most radical shift in the model of globalisation.

Digital technologies are shaping the world of business and global trade in three very distinct ways. First, they are altering productivity and competitiveness of companies and countries. By our estimation, the adoption of digital technology for manufacturing is expected to increase output per worker by 30% and decrease labour costs by as much as 30% in countries such as South Korea, Germany, the US, and China. This means that companies will need to reconsider their decisions on locating and designing their plants and supply-chains taken in the third phase of globalisation. Indian companies are beginning to adopt these new technologies to stay competitive. Second, while the trade in goods (which drove the earlier phases of globalisation) is stagnating, the trade in global services is growing, with the trade in digitally-enabled services being the fastest growing segment. In 2013, according to available figures, services constituted 23% of total exports from OECD countries—up from just 17% in 1980. This shift reflects the growing value of services in many industries, driven by the growth of digital technologies. Finally, the rapid growth of digital platforms has started to make country boundaries and traditional country-based business models redundant. Today, goods worth $700 billion are traded through Alibaba and Amazon, having grown at a compound annual growth rate of more than 33% since. In effect, these global market platforms and their associated supply and delivery systems are replacing the complex supply chains that were a common feature of the first three phases of globalisation, making it much easier for even small companies to compete in a global market.

This new 'technology' is fundamentally altering the model of globalisation, replacing the physical and financial connectivity with more and more digital linkages. Cloud becomes the digital container in tomorrow's globalisation. The globally optimised value-chain—a familiar feature of the third phase of globalisation—will give way to value-chains that blend digital technology with older low-cost

technologies, allow greater integration across products and services, and leverage the growth of independent global platforms for the exchange of goods and services. Leveraging these new technologies, Uber has become one of the fastest-globalising companies ever, despite all the regulatory issues it has faced and Pokemon Go perhaps became the fastest-globalising 'product' ever, blurring country boundaries or customer segmentation. Global manufacturing companies moving rapidly into digital services are creating more value than their traditional peers.

We can call this deglobalisation and bemoan the slowdown in the global GDP or stagnation in global trade and FDI, or see it as the start of a radical new phase of globalisation which brings global customers closer with a swipe on a smartphone screen, offering tremendous opportunities for growth and to build new capabilities to compete. Those companies who do the latter will win the new battles to be fought in Globalisation 4.0. Others will become memories for the new generations.

Source -http://www.financialexpress.com/fe-columnist/globalisation-4-0-radical-new-phase-driven-by-digital-tech-is-beginning/383799/

10. Consensus eludes GST Council on major issues

The goods and services tax (GST) council has been notified recently under the GST Bill. It will be another important step towards cooperative federalism. As GST is transforming the tax structure in the country, the GST council will have many issues to confront.

In what ways GST council is the important step towards cooperative federalism?

- Earlier, states had no role in deciding central taxes, but now, under GST, the council will decide on the central GST rate and the state GST rate.
- It will have the important responsibility of not only protecting the state taxes but also protecting the central taxes as states will get 42% from the divisible central taxes pool as per the recommendations of the 14th Finance Commission.
- The voting pattern of the council is also such that the states will play a major role with a two-third share, and though the central government with a one-third share has veto power; decisions will be taken by a three-fourth majority.

Challenges ahead for GST council:

Tax rates:

- Determining the tax rates will be one of the biggest issues facing the council as it will have to strike a balance between protecting its tax revenues while arriving at a rate that does not hurt the common man.

Dual administration:

- Besides the rates, dual administration or dual control will be one of the most contentious issues.
- No industry will prefer that two tax authorities have jurisdiction over them. For big companies and industries, it may not be a problem as they are already dealing with many tax authorities. But this may not be the case for small traders.

Bureaucracy:

- The Central Board of Excise and Customs does not want to give up control and that is not acceptable.

Exemptions:

- More than 300 items are exempt under excise laws, while around 99-100 items are exempt under value-added tax laws. There is a need to synchronize the lists.

Cesses and surcharges:

- The central government gets around Rs1.5 trillion from cesses and surcharges, but this revenue is not distributed to the states as it is not part of the divisible pool.
- States have always preferred doing away with all such cesses and surcharges.

Decisions not binding:

- The decisions of the GST council is not binding on any state and every state remains autonomous. However, states that disagree with the GST council and choose to follow their own path will be the ultimate loser. In such cases, the chairman and the vice-chairman will play an important role to convince a state and address their concerns.

Summing up

Sorting out all the issues will be important to finalize the legislation - the central GST law, the state GST law and the integrated GST law. The GST council has very little time to arrive at a consensus on all these issues.

11. Refugee crisis is test of our humanity

The Syrian Refugee crisis has taken the world to a storm. Never ever has the world witnessed a humanitarian crisis of this extent . It is now the greatest movement of the uprooted that the world has ever known. Some 65 million people have been displaced from their homes, 21.3 million of them refugees for whom flight is virtually compulsory – involuntary victims of politics, war or natural catastrophe.

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Refugees are not migrants: they are the people who would rather stay in their home country but were driven into neighbouring havens by violence or hunger. Their aspiration is to find a normal life , to earn a living and be part of a community.

Uncontrolled migration undermines public confidence in "the economic benefits of legal and controlled migration. The typical refugee is unable to return home for years, so the ability to earn a living quickly becomes a priority.

Why in news recently ?

Rival summits on refugees and migration were organised this week by the UN and the US state department. They were held in the same place, New York, on consecutive days.

This is a small symptom of a large problem: the **refugee system is broken.** The world has an agency, the UN High Commissioner for Refugees, that is devoid of strategy except for a Refugee Convention that is an anachronistic relic of the cold war.

The global refugee challenge, though serious, is entirely manageable as long as it is clearly separated from global migration. But neither the UNHCR nor the convention is right for dealing with these issues.

Debate on the path to be followed?

While this is a global challenge that every nation must collectively come about and solve the crisis. But, The UNHCR is the only UN agency to hold a monopoly mandate. Its competence is purely **humanitarian**, focused on camps that provide food and shelter. The existing UN Refugee Convention, which dates back to 1951, should remain **"the bedrock of our approach"** to the rising flows of migration around the world, but countries need to "also ensure we are implementing policies that are fit for the challenges we face today", according to the English Prime Minister. The core task is to bring jobs to refugees in haven countries. Economic agencies such as the International Finance Corporation and the World Bank have a central role to play, though until recently they have been missing from the action.

Some campaigners for refugee rights argue that the convention should be updated, but for the opposite reasons: so that it includes more people.

At the summits

- Amnesty, Human Rights Watch and refugee charities are among those accusing both summits of being "toothless" and saying that the declaration expected to be ratified by the UN **imposes no obligations on the 193 general assembly nations to resettle refugees.**
- **some sharing of responsibility.** Funding is great and very much needed, but it's not going to tackle the central point of The , and **scale of imbalance there is growing** growing with disastrous consequences.
- The thousands of desperate people still drowning in the Mediterranean are testament to the failure of the international community, especially our own government and states across Europe, to safely and fairly deal with refugees fleeing Syria and Iraq, as well as those escaping the poverty of failed states in Africa.
- **very lack of cooperation** But it is the that makes the UN summit vital. We live in an age where even established principles of humanity and decency are under constant threat.In an age where politicians can be elected to power on platforms of lies, and established norms are under threat, there is something to be said for even anodyne statements reiterating our principles.
- **it doesn't distinguish between refugees and migrants** The summit will not do refugees a favour because . The big numbers allow governments to use fear and make bad policies.
- **concentrate on root causes of large population migrations,** We need now to celebrate those with the ability and courage to stay where they are, when they can, and help solve the myriad causes of unhappiness in the world.
- **UNHCR** The sheer number of people forced to flee today means we cannot have 'business as usual. sas the summit as an– a **extremely positive event garner the political will** historic opportunity to of world leaders to save lives, protect rights and share responsibility on a global scale.
- We need to convert this political will into action to address the drivers and causes of displacement, while helping refugees and communities hosting them.
- **key legal principles of refugee protection** The declaration reaffirms , including the which prohibits sending people back to institution of asylum and the principles of non-refoulement, countries where they face danger.
- Importantly, the summit builds upon these key legal instruments to meet the challenges of refugee crises in today's world, and **global cooperation and responsibility-sharing."** garnering more

Socio-Economic Implications

- The implications of the crisis are twofold. One is on the refugees itself, and other on the country where they have sought refuge.
- Syrian refugees challenge the stereotype of migrants as lacking education and skills to match labor market needs—many are highly educated, and an overwhelming majority are under the age of 35, with years of productive potential ahead of them.
- **Refugees are often omitted from national poverty surveys** and other crucial studies, and so are left out of efforts to track the progress of people moving out of poverty. The longer-term livelihood needs of refugees and displaced people are not systematically addressed.
- Many such refugees Find it difficult to adjust to local customs and traditions.Rigidity in stand leads to tension **suffer cultural shock.** and conflicts thereby hurting the fabric of society.
- Given the burgeoning scale and protracted nature of the crisis, there is a pressing need for data on refugees and migrants to be a poverty and development issue , not just a humanitarian or migration concern.The inclusion of refugees and displaced people in

national poverty surveys would, for example, ensure that their needs are reflected in national planning.

- harbingers of socioeconomic instabilityRefugees are often seen as in host countries. A World Bank report, ' suggests that such a **Forcibly Displaced: Toward a New Development Approach Supporting Refugees, the Internally Displaced, and their Hosts',** view could be rooted more in prejudice than facts.
- **eight out of 991 country-year episodes.**Over the last 25 years, hosting refugees may have contributed to causing conflict in only and in each case, the country was already on the brink of conflict.
- **less than 1% of the population**Even the economic story is not very different. Refugees typically represent of host countries and their impact on economic performance is more muted than factors such as changes in oil prices.
- Actually, blaming refugees for the poor economic performance of host countries could be a case of putting the cart before the horse. **Countries that have the biggest number of refugees in the world are already backward in terms of their business environment and incomes.**
- **Evidence of Liberian refugees in Ghana** suggests that better-off refugees, with better access to resources, skills and networks are keener to return as they have a better chance of starting their lives afresh.
- **attitude of host countries** The to refugees could be of crucial importance in determining these endowments. Countries which allow refugees to participate in economic activities have a better chance of them returning. The policy makes economic sense too. Billions of dollars have to be spent on sustaining refugees because they are not allowed to become independent.
- As one of its recommendations towards longer-term solutions to the refugee crisis, this is what the World Bank says: " **Development actors should support efforts to transform camps into settlements.**
- They should also work with other partners to enhance the way assistance is provided so as to gradually reduce dependency—for example by strengthening targeting, supporting people in rejoining the labour force, and building capacity to allow for a gradual shift to country systems.
- It is generally believed that giving The global response to the refugee crisis might just be another case of misguided policy where **greater freedom to refugees could increase rather than decrease their number in individual countries.**crucial actors err because the whole is not the sum of the parts.

Road ahead

Amnesty International says that **asylum is a human right.** The world has a very short memory. In the aftermath of World War II, most countries agreed to protect refugees through the 1951 Refugee Convention, and through UN agencies like the UNHCR.By ignoring the warning signs, world leaders have allowed a huge, global humanitarian crisis to unfold. Ultimately, it will be resolved by ending the conflicts and persecution that forced people to flee in the first place.

But no one knows when that will be. Meanwhile, **we need radical solutions, visionary leadership and global co-operation** on a scale not seen for 70 years. That involves setting up **strong refugee systems:** allowing people to apply for asylum, treating their refugee claims fairly, resettling the most vulnerable of all, and providing basics like education and healthcare.

12. India in Global Politics of Oil

Oil is one of the most important commodities in recent times. Much of the economy depends on oil and this is why prices of oil matter to almost every economy including India. India is one of the largest importers of oil in the world. It imports nearly 70 percent of its total oil needs which accounts for one third of its total imports. For this reason, the price of oil affects India a lot. Global crude oil prices fell 17 percent to 46.59 US dollars per barrel in 2015 after sliding 47 percent in 2014. Experts are predicting a fall towards 30 US dollars per barrel in 2016.

Reasons for fall in oil prices

• **The escalating tensions between** the Sunni dominated **Saudi Arabia and** Shia dominated**Iran –** the two top oil producing nations in the World - is said to be the primary reason behind falling crude prices.

• **Slowing demand,** especially in Asia where the biggest economy and energy consumer, China, is seeing the slowest economic growth in a generation.

• **Large overhang** that has left storage tanks around the world struggling to cope with **the excess oil.** Domestic crude production in the USA reached 9.6 million barrels in July 2015. Canada experienced a similar sharp surge in production, as heavy investment in tar sands began to pay off.

• **Shale gas revolution in the USA**, in recent years led to lesser dependence on crude oil imports. This revolution is of importance for the global oil market as the USA consumes around 20 percent of the oil production in the world.

Impact on Global politics

• **Political realignment:** Given the centrality of oil in the global power equation, this is bound to translate into a profound shakeup in the political order, with petroleum-producing states from Saudi Arabia to Russia losing both prominence and geopolitical clout.

• **Relevance of OPEC:** Oil is not a scarce resource any more. The geopolitical battle is not over access to resources but about global market share. Saudi Arabia seems to flood global markets to push out higher-cost producers, especially in the US. Further Iran has little interest in cooperating with the Saudis on oil. That means that OPEC looks unlikely to be revived.

• Role of Saudi Arabia: It is no longer the swing producer in the global oil market. It is producing at full tilt even though the oil price has collapsed. In the past, Saudi Arabia's balancing role meant that both low-cost and high-cost producers would supply the market at an elevated price that guaranteed an income stream for all producers.

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• **Role of the USA:** If the country's domestic shale industry manages to maintain production at lower prices, America will be heading towards self-sufficiency in oil and gas. Its interest in guaranteeing stability in the Middle East might wane accordingly thus increasing geopolitical tensions.

Benefits to India

As a major oil importing nation in the world, India will have the following benefits due to reduced oil prices in the global market.

• **Current account balance:** India, one of the largest importers of crude oil, is saving billions of dollars due to falling prices of crude oil. Fall in prices would drive down the value of its imports. This helps in narrowing India's current account deficit.

• **Inflation:** Oil price affects the entire economy, especially because of its use in transportation of goods and services. A fall in oil price also leads to fall in prices of all petroleum by products like tyre, paints, etc. It also benefits many industries because of decreased input costs.

• **Oil subsidy and fiscal deficit:** The government fixes the price of fuel at a subsidised rate which is relative to the market price. Hence, fall in oil prices leads to reduced government fund transfers to oil marketing companies on account of subsidies and thereby, low fiscal deficit.

• **As per the 2015-16 Economic Survey**, decline in global crude oil prices majorly helped in restricting the petroleum **subsidy bill to 30000 crore rupees in 2015-16** against **57769 crore rupees spent in 2014-15.**

• **Rupee exchange rate:** Low oil price means favourable exchange rate for Indian rupee in the Indian rupee because of reduced dependence on reserved currencies like the dollar for oil payments.

• However, the downside is that the dollar strengthens every time the value of oil falls. This negates any benefits accruing to India due to lower oil prices as it is a major service exporter in the world.

• **As per the Economic Survey 2015-16**, **India exported 155.6 billion US dollars worth services in 2014** making the country the eighth largest services exporter in the world.

Downsides for India

The fall in global oil prices may be beneficial to India, but it still has its downsides which are as follows -

• **Petroleum producers:** It affects the exporters of petroleum producers in the country. India is the sixth largest exporter of petroleum products in the world. Any fall in oil prices negatively impacts exports.

• Moreover, a lot of India's trade partners and buyers of its exports are net oil exporters. A fall in oil price may impact their economy, and hamper demand for Indian products.

• **Remittances:** As per **the World Bank's Migration and Development Brief 2015**, India is the World's largest remittance recipient with 72 billion US dollars. Majority of this money comes from Indians staying in Gulf countries.

• Hence, any fall in oil prices adversely impacts the economic prospects of GCC and thereby, remittances to India which plays an important role to fund the Current Account Deficit (CAD).

Fallout for rest of the world

• **Drop in revenue:** Major decline in oil export revenues forced countries like Russia, Saudi Arabia and Venezuela to cut public spending which will have long term impact on human development.

• **Fall in investments:** When crude oil price was over 100 dollars a barrel it made sense to spend on exploration in out-of-the-way provinces, such as the Arctic, West Africa and deep below the saline rock off the coast of Brazil.

• This trend has been reversed in recent times as prices have tumbled, so has the investment. Projects worth 380 billion US dollars of investment in oil exploration activities have been put on hold.

• **Political order:** The fall in global crude prices has shifted the global political order that once rested on oil's soaring price. With concern over climate change growing globally couple with the predominance of renewable energy sources the demand for oil is sure to decline in future.

Summing up

According to the International Energy Agency (IEA), prices **might not again reach the 50 to 60 dollars per barrel range until the 2020s.** While this trend may mean hardship for some, especially the citizens of export-dependent States like Russia and Venezuela, it could help others like China and India because of reduced import bill.

India should seize the opportunities provided by the low oil price regime and use its good offices to negotiate long term strategic deals with major oil exporting nations before the market enters into the phase of correction.

13. Implementing GST Act

With the majority of state governments having blessed the Constitution (122nd Amendment) Bill 2014 and President giving his assent to the Goods and Services Tax Bill (GST), the stage has been set for both the Central and all the state governments to commence the work of drafting the Central GST, State GST and Integrated GST laws. This is probably the most important stage in the GST journey as the governments need to consider the impact of a major deviation from the present systems of taxation. One of the major puzzles that is yet to be resolved in what we have of the GST laws today is the rate of taxation. Guesstimates have suggested rates ranging from 2% to 40%.

The Arvind Subramaniam Committee recommended four rates - a lower rate of 12% for goods that are consumed by the poor, a Revenue Neutral Rate of 15%, a rate of 17-18% to be applied to most Goods and Services and a rate of 40% to be applied on luxury cars, aerated beverages, paan masala and tobacco. The rate of 18% appears to be the number that is on everyone's mind and could

well turn out to be the popular rate. It is being suggested that the rates of GST would be fixed by the GST Council - a move that is being questioned as this would bring in a lot of uncertainty in the fixing of the rates.

GST Council: When created, there can be no doubt that the GST Council will be one the most powerful bodies that has ever been created in India. The GST council will be chaired by the Union finance minister with a state finance minister as deputy chairman. All the state finance ministers will be part of this council. The Council will have the last say in finalising the shape of the GST. It will finalise the tax rate under the GST as well as the revenue threshold for traders to be exempt from this tax. It will make recommendations on the taxes, cesses and surcharges that will be subsumed by the GST.

The Council will also decide if and when petroleum and petroleum products will come under the GST's ambit. It will also decide which goods and services will be exempt from tax to protect the common man as well as the fine print of sharing of administrative duties between the Central Board of Excise and Customs and the state tax officers. Interestingly, every decision of the GST Council needs to be taken with a three-fourth majority. While the Central government's vote will have a one-third weightage, the votes of all the states put together will have a two-third weightage, thus making a near-consensus between the Centre and the states imperative for any major decision.

The Council will also have the final say on the mechanism to resolve disputes that may arise between the Centre and the states or between states. Would the members of such a powerful body be able to see eye to eye on the rates of taxation in each state for every type of commodity/goods/services? Invariably, the answer would be a no. In the same breath, it should be said that under the GST regime, it would not be preferable to have either the Central or the states having independent powers to fix the rates of tax. Inclusion of the GST rate in the Constitution is a no-brainer because amending it requires at least half a decade. One other option is to include it in the GST Act which would mean that any amendment requires simple majority of both Houses of Parliament - this could also lead to delays.

Caps and floors

All indirect tax laws in India have different rates of taxes for different goods and services. For instance, the VAT laws in every state have schedules that list out items that are exempt from tax, subject to tax at different rates ranging from 1% to 20%. Integrating these across all states would be a thankless task that the GST Council should not even attempt to undertake. For instance, in Karnataka, some food items are exempt from tax under the First Schedule to the Karnataka VAT Act whereas similar items may not be exempt under the VAT laws of other states. The Council should only oversee the rates that the states propose when they pass the SGST laws.

Like the present Central excise tariff, the Council should prepare an all India GST Tariff Schedule and fix caps and floors for individual items in the schedule. The caps and floors would be fixed considering the present limits in different states. Fixing a cap would ensure that the rates of tariff are not left to individual discretions while fixing a floor would take care of sensitive items such as agricultural commodities.

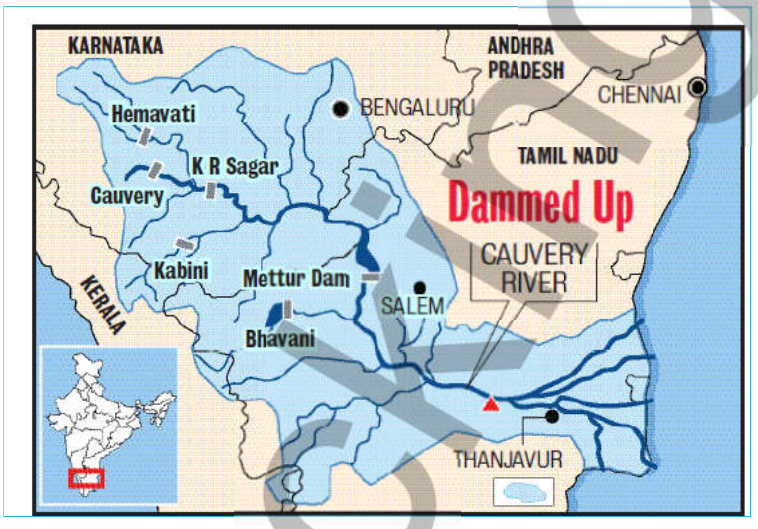
For instance, edible oilseeds are taxed at 4.5% in Karnataka at present. If - as is being suggested - the minimum rate of tax under GST is 12%, dealers in oilseeds have an immediate problem on their hands - an increase in prices to the end customer. The Karnataka government and the GST Council should fix a cap of 6% and a floor of 4.5% for edible oilseeds which would ensure that both consumers and dealers get the comfort that there will not be a spiralling of prices due to taxes.

Since the powers with the GST Council are supreme, the only succour for any aggrieved state or others are the courts of law but there could be interminable delays in the courts. A GST Ombudsman should act one who resolves disputes before troubling the courts. While there is no magic formula to get an all-India GST rate for all goods and services, the GST Tariff Schedule should be comprehensive enough to ensure that there are no transition traumas.

14. A Scan of Cauvery issue

Facts about Cauvery River

Cauvery River rises from Coorg Plateau in Karnataka and the source is Thala Cauvery.



Charmaraj Sagar Reservoir is over Arkavati River, which is the tributary of Cauvery

Cauvery Delta:

·It is the **only example of Quadrilateral Delta in the world**

· This delta is the home of many religious places like: **Thanjavur, Tiruchchirappalli, Tiruvarur**

· Most famous is Thanjavur for **Great Raj Raja Temple (Chola Temple**)

· Two very famous reservoirs on this delta are: **Willingdon Reservoir and Kolli dam**

·**Manimukta, Vellar, Gomukta and Kullar rivers drain themselves in delta part of Cauvery River**

Some very Famous Reservoirs in cauvery river basin are: **Krishnaraj Sagar(Karnataka), Bhavani Sagar(Tamil Nadu), Stanley Reservoir.**

Left Hand Tributaries

- **Hemvati and Yagachi:**
  They meet Cauvery at Krishnaraj Sagar Reservoir, which is very famous for hydro project and a tourism destination called **Vrindavan**

Garden.

- **Shimsha river, Arkavati River**

Right Hand Tributaries

Meets at Krishnaraj Sagar**Lakshman Tirtha:**

Kabbani, Svarnavati, Amravati and Noyil

Panchaimalai Hills are between Cauvery and Kollar River

What is the dispute?

The Cauvery basin covers a large expanse of land including major chunks in Karnataka and Tamil Nadu and also smaller areas in Kerala and Puducherry. Initially, the dispute was between Karnataka and TN but later Kerala and Puducherry also entered the fray. The issue dates back to 1892 when an agreement was filed between Madras Presidency and Mysore for arbitration but led to a fresh set of disputes. Later, attempts were renewed to arbitrate between the two states under the supervision of Government of India and the second agreement was signed in 1924.

Post-Independence efforts

As Kerala and Puducherry also laid claim on the share of Cauvery water after India attained Independence, a Fact Finding Committee was set-up in 1970 to figure out the situation on ground. The committee submitted its report in 1972 and further studies were done by expert committee and the states reached an agreement in 1976. However, after a new government came to power in Tamil Nadu, it refused to give a consent to terms of the agreement paving way for further dispute.

Later in 1986, Tamil Nadu government appealed the Central government to constitute a tribunal for solving the issue under Inter-State Water Disputes Act, 1956. However, the tribunal was not set-up until Supreme Court took cognizance of the matter and ordered the Central government to do so in 1990. The Cauvery Waters Tribunal was constituted on June, 2, 1990.

After 16 years of hearing and an interim order, the Tribunal announced its final order in 2007 allocating 419 tmc ft water to Tamil Nadu and 270 tmc ft to Karnataka. Kerala was given 30 tmc ft and Puducherry got 7 tmc ft. The Tribunal had come to a conclusion that total availability of water in Cauvery basin stood at 740 tmc ft. However, both Tamil Nadu and Karnataka filed a review petition before the Tribunal.

In 2012, Prime Minister Manmohan Singh, as chairman of Cauvery River Authority, directed the Karnataka government to release 9,000 cusecs of water daily. The Supreme Court slammed state government as it failed to comply with the order. The government offered an unconditional apology and started the release of water leading to widespread violent protests.

However, the issue kept troubling the region as Karnataka stopped the release of water again and Tamil Nadu government led by Chief Minister J Jayalalithaa decided to sue the Karnataka government for contempt of court. With the Karnataka government continuously failing to release the water to Tamil Nadu, Chief Minister Jayalithaa filed an interlocutory petition in the Supreme Court in August, 2016 seeking the release of water as per guidelines of Cauvery Tribunal. Announcing its verdict in the case, the SC has now directed Karnataka government to release 12,000 cusecs of water to its neighboring state for 10 days. But pro-Kannada activists protested the decision saying the state has just enough water in its Cauvery reservoirs for its own drinking and irrigation needs.

Present Problem

States of Karnataka (K), Kerala (M), Tamil Nadu (T) and Puduchery (P) are riparian states of the river Kaveri,claims for water of Kaveri

Karnataka (K): 425 billion ft^3

Tamil Nadu(T): 566 billion ft^3

Kerala (M) : 100 billion ft^3

Puduchery (P): 10 billion ft^3

Total requirement of the water by all these states comes around 1100 billion ft^3 but average estimated water available in the river is around 730 billion ft^3.

- Kaveri water is very crucial for the states Karnataka & Tamil Nadu as most of the farmers in the Kaveri delta dependent on the water. Considering the fact that significant area of these regions of both the states comes under drought prone area, water of Kaveri is very essential.
- Approximately, 30% of the **water river sources** are in Tamil Nadu and 53% are in Karnataka. Approximately 54% of the **river basin area** is in Tamil Nadu and 42% is in Karnataka. Since maximum water resources of Kaveri comes under Karnataka, state wants to use the maximum extent of water. Since Tamil Nadu has maximum river basin area and using the maximum water from ancient time, claims for more water from Karnataka.

Karnataka's Stand

- Tamil Nadu got higher share of water in the 2007 tribunal award, which is based on agreement between madras state and Mysore state at 1892 and 1924, it is skewed to support Tamil Nadu.
- Tamil Nadu has bigger farmland than karnataka, wherein Tamil nadu farmers grow three crops a year (samba, Kuruvai, Thaladi)
- Karnataka needs drinking water for its people in Mysore, Bangalore, Mandya..etc
- Tamil nadu has unsustainable agriculture practice
- Tamil nadu wastes lots of water in the sea
- Mandya , Hassan, Mysore, Chamrajnagar, Ramnagara, Chikmagalur..etc farmers need cauvery water.
- Karnataka can't release water to Tamil Nadu till its water needs are met
- From 1950–72 Tamil Nadu increased its farm area by more than 6lakh acre
- Center should not setup cauvery management board that creates an independent authority to manage the cauvery river water as

mentioned in tribunal award 2007

- Present cauvery tribunal award is not reflecting the actual ground requirements of the state, since it has not considered the industrialization and ground water levels.
- During a good monsoon season, Karnataka will release the tribunal award of 190 TMC to Tamil nadu. Karnataka has full authority to use the remaining water (on and above the 270 TMC allotted to it).
- During deficit monsoon year, Karnataka will give a priority to its drinking water requirements and basic farm needs of its farmers. Tamil nadu should not expect much water from karnataka (since we are in distress). There is no distress formula given in cauvery tribunal award.
- Most of the regions in Karnataka (except south east and some portion of North east karnataka) only receive south west monsoon, which ends in September, but Tamil nadu will receives its rain in the North east monsoon which starts in September end. So there is a possibility of Tamil nadu getting more water.

Tamil Nadu's Stand

- Historically Tamil nadu is using cauvery water for its agriculture and drinking water needs, so newfound use of cauvery in karnataka shouldn't reduce the water for Tamil nadu
- Cauvery only forms delta in Tamil nadu (east of trichy), so it has really rich soil. Historically before British period it always had three crops.
- For last twenty years, Tamil nadu farmers are struggling to even have two crops. Historically mettur dam used to open on June 12, but since the last sixteen years it has been postponed to July, due to blockage of cauvery by Karnataka
- Karnataka constructed many check dams in cauvery without getting consent from tamil nadu, which reduces the river flow significantly. There's no transparency in the water level in these check dams
- Cauvery is the only major river in Tamil nadu, Karnataka has krishna and untapped west flowing rivers which can be tapped for drinking water
- Karnataka has to see Tamil Nadu as equal partner and not just as a place to dump flood water
- Drinking and Agricultural heart of Tamil Nadu is dependent on the cauvery river; it can't give away historical rights of water utilization (since in the international water sharing ruling, historical rights are considered higher priority). One of the oldest working structure in the world "kallanai Dam" was built by Chola's (2 century AD) on cauvery. Our cauvery farming is 2000+ year old. Tamil nadu has civilization rights in cauvery.
- Karnataka is diverting water to many industries illegally in the name of drinking water and irrigation
- Karnataka is not releasing to Tamil nadu, its share of water on time as per the tribunal award
- Karnataka is taking decisions of building structures in cauvery arrogantly without the consent of lower riparian state
- Implement cauvery management board as suggested in cauvery tribunal award 2007.
- Cauvery tribunal award reduced Tamil nadu share from 487 TMC (in 1991) to 419 TMC, which was not inline with the state requirement.
- More than 14 districts in Tamil nadu depends on cauvery; we have more people and basin area than Karnataka
- During distress (deficit monsoon) year, Karnataka has to share water with Tamil nadu. Karnataka should not wait until fulfillment of their requirement. Proportional sharing in tribunal has to followed during distress monsoon.
- Our crops have to planted before July end to face the north east monsoon, otherwise we will lose our harvest.
- Extra water in cauvery to be shared based on Tribunal proportion
- Thirty years before, Early June Tamil Nadu used to open the dam for farming, due to increased requirement of karnataka, it went to july, last few years it postponed to August now even in September our dams are not having enough capacity above drinking water need.

Major Hurdles

The major reasons in the failure of reaching a solution are "Politics and Inefficient Governments", "Failure of Negotiations" and "Delays of the Tribunal and its faulty solutions" which made this dispute as old as 150 years and still no proper solution.

Politics and Inefficient Governments

ØThe Union Governments were inefficient in providing a proper deal and solution.

ØInstead they used it as a point in their agenda in the center and the states as well where the farmers' votes were used to win the elections.

Failure of Negotiations

ØThe Cauvery issue became intensely politicized in the 1970s and 1980s where both states were run by different political parties which made a final solution almost impossible.

ØThe irrigation ministers were not the same all over the period and it was a hindrance for the uphill task and moreover the engineers too got involved in the politics.

ØThere didn't exist a common interest between Karnataka and Tamil Nadu on the question of pursuing negotiations as Karnataka tried to prolong the negotiations in order to gain time to complete its new projects.

Delays of Tribunal and its Faulty Solutions

ØThe constitution, the submission and the enforcement of the tribunals have caused a lot of delay in sorting the issue.

ØSometimes, the orders either were not followed or were delayed which led to further increase in the gravity of the situation.

ØThe solutions provided by the Tribunal were dependent on the values of resources; instead they should have provided a solution based on percentages which would have been same in distribution of the resources in any season. This is solely due to the fact that Cauvery is not a Himalayan river and it is highly dependent on monsoon, thus the water level varies again leading to the conflict in the former case.

Solutions to reduce dependence on Cauvery River Water

Present Status

- Nearly 29 lakh acres of paddy crop in TN and an estimated 14 lakh acres of paddy and semi-dry crops in Karnataka are currently dependent on Cauvery water. TN farmers grow 3 paddy crops a year while Karnataka counterparts grow 1 and, or sometimes a second less water-intensive crop.
- This huge dependence on Cauvery water by Tamilnadu has been a source of resentment between the two states.
- One of the effective ways to resolve the dispute between the two states have is to reduce the dependence of Tamilnadu farmers on Cauvery water. It can be done by following ways

Promoting a shift in cropping pattern in the Cauvery Delta Districts

Traditionally, farmers in the Cauvery Delta Districts of Tamilnadu had managed two crops

- The short-term 'Kuruvai', a summer crop, followed by
- The long-term 'Samba' crop.

This is possible only in a normal monsoon season with water released from upstream Karnataka. This will mean that water storage level in the Mettur Dam in May will be at least 90 feet, and water is released on June 12 for cultivation. This year, when the neighbouring State government has declined to release water, farmers in Tamil Nadu have again given up the 'Kuruvai' and the Samba crop is delayed by more than two months. When the water is released late, farmers begin transplantation or direct sowing of paddy in late September. With the north-east monsoon commencing on October, this crop will be just a few weeks old and will not withstand the flooding that accompanies the torrential rains. Also presently there are no popular varieties that can tolerate submergence.

Therefore Paddy should be cultivated in January/February after the rains, followed by pulses crop in the traditional Kuruvai season followed again by a regular early Samba. So farmers get two crops of paddy and one of pulse crop

Micro-level planning

- Micro-level planning to help farmers tackle water shortage in case the south-west monsoons fail.
- Tamil Nadu needs a crisis management plan that should kick in when there is a water shortage. Also, with just about 1 tmcft of water a day being released from Mettur Dam, it will not be enough to reach tail-end areas, which will be dry. Direct sowing, without going through transplantation, will be help tackle this.
- A crop insurance tailored to the risks in tail end areas and coastal districts are needed to protect the farmers.

Directing MNREGA projects towards water conservation

- Recently Jharkhand had constructed around one lakh small water bodies to conserve water which are expected to irrigate about 50,000 acres of arable land.
- Similar projects will help to conserve excess water of North Eastern monsoon which might be used to support supper crops.

Promoting alternate employment by shifting of focus to non agricultural sector.

- Tamilnadu has an inherent advantage with the decentralised industrialisation prevelant in the state. e.g : Sivakasi for safety matches, firecrackers and printing, Karur, Erode and Salem for powerlooms and home textiles; Tirupur for knitted garments.
- Gujarat, Maharashtra and TN are three states where manufacturing's share in the GDP is higher than every other sector, including agriculture and only 34.7% of rural households in TN to be engaged in agriculture
- But in recent times the problems like power shortage had led to the movement of small scale industries to neighbouring states, putting a further pressure on agriculture. Hence it should be addressed to reduce the sependence on agriculture.

SOURCE- http://www1.american.edu/ted/ice/CAUVERY.HTM

Other Disputes

Mahadayi Water Dispute

Mahadayi River or Mondovi, as it is called in Goa, actually originates from a cluster of 30 springs near Bhimgad in Karnataka and forms into a river at Degaon village in Khanapur Taluk of Belagavi district.

The Mahadayi is essentially a rain-fed river that flows at its peak during monsoon months. The river flows 35 km through Karnataka and then 52 km through Goa, before flowing into the Arabian Sea.

The Mahadayi catchment area covers around 2,032 km and includes some parts of Maharashtra near the Maharashtra-Karnataka border region.

Genesis of the dispute between Karnataka and Goa

The regions of northern Karnataka, along with bordering areas of Maharashtra and Goa, have traditionally been dependent on monsoon rain with little investment made towards building rain-fed catchment dams to meet drinking and irrigation needs of people of

the area.
The region depends on Mahadayi river basin that holds around 220 tmcft water, of which around 200 tmcft flows into the Arabian Sea after passing through Goa.
Given erratic monsoon patterns over the years, people of the region have been demanding drinking water and water to meet irrigation needs for agriculture.
In April 2002, after getting an approval from the Water Resources Ministry in New Delhi and the National Environment Engineering Institute, the state government of Karnataka announced plans to build two barrages on Kalasa and Banduri, the two tributaries of Mahadayi river, to supply water to people living the Hubballi-Dharwad, Badami, Nargund, Ron, Navalgund and Gadag region.
Since the Mahadayi river is largely rain-fed between months of June through October, any diversion of waters by Karnataka would adversely affect the water needs of people of Goa.
Therefore, the state government of Goa approached the Supreme Court in September 2002 objecting to the plan, claiming any water diversion would deny people of Goa critical water it needs, besides having a negative impact on the highly sensitive ecology of Western Ghats.
In 2006, Goa had moved the apex court for establishing a tribunal. Justice JM Panchal headed the MWDT set up in 2010.
With the recent announcement, both Karnataka and Goa will have to wait for the final judgement from the tribunal.

Similar river water sharing disputes between states

River Krishna
- Andhra Pradesh, Karnataka and Maharashtra

River Godavari
- Andhra Pradesh, Karnataka, Maharashtra, Madhya Pradesh and Odisha

River Narmada
- Maharashtra, Madhya Pradesh, Rajasthan and Gujarat

River Cauvery
- Tamil Nadu, Karnataka, Kerala and Puducherry

River Krishna
- Andhra Pradesh, Karnataka and Maharashtra

River Vansadhara
- Andhra Pradesh and Odisha

River Ravi & Beas – Sutlej-Yamuna Link Canal
- Punjab and Haryana

15. Change cropping pattern

Every third or the fourth year, river Cauvery, the lifeline of both Karnataka and Tamil Nadu, embitters the harmonious relationship existing between the two southern states. The Cauvery river dispute is more than a century old but a lasting solution is eluding. Out of the riparian states of Karnataka, Tamil Nadu, Kerala and the Union Territory of Puducherry, the first two are major players. When the river supplies are copious, there is obviously no dispute. It is only when the river supplies are low that the two states literally go to war. One can examine some basic facts about the river, its water potential, the Cauvery Water Disputes Tribunal's (CWDT) award and measures that could be taken to minimise or mitigate the distress in the bad years.

General: About 42% of the Cauvery basin area lies in Karnataka, 54% in TN and the rest 4% in Kerala and Puducherry. In a normal year, the contribution of Karnataka and TN to the river system is 53% and 30%, respectively. In an average year, the total flow in the river is 730 TMC ft (Thousand Million Cubic Feet). The CWDT allocated in 2007 a quantity of 270 TMCft (37%) to Karnataka, 419 TMcft (54%) to TN and the remaining 66 TMCft (9%) to Kerala and Puducherry.

Karnataka felt aggrieved that though its contribution to the river flows was much higher than that of TN; its allocation was less than what it should get. The Tribunal also stipulated that Karnataka should release annually 192 TMCft to TN as per the monthly schedule drawn by it. It did not spell out clearly what should be the quantum of releases in bad years. There exist four major dams in Karnataka -Krishna Raja Sagar, Kabini, Harangi and Hemavathi - with an aggregate gross storage capacity of 114.37 TMCft. Tamil Nadu has three big dams - Mettur, Bhavanisagar and Periyar - with an aggregate storage capacity of 136.54 TMCft.

Demand: The reservoirs on the Cauvery river and its tributaries are designed to meet the irrigation needs of all the four states, generate some hydro power and meet the drinking water requirements of Bengaluru, Mysuru and many other smaller towns and villages. The farmers in TN and Karnataka grow principally rice and sugar cane. These are water-intensive crops. The area between Mandya and Srirangapatna is a sugar belt. Lush green paddy fields on either side of the National Highway between Bengaluru and Mysuru greet the visitor. Tamil Nadu raises three rice crops in a year. Some measures which, if implemented, would ensure lowering of water demand and also making the riparian states less dependent on the river supplies.

(1) Crop Pattern: Both Karnataka and TN at present grow water-guzzling crops like sugar cane and rice. Sugar cane is a perennial crop, which requires 3,000 mm of water all through the year. Rice requires 1,200-1,500 mm of water. In drier years, it becomes extremely difficult to meet the huge demand of both the states. The solution that suggests itself is to curtail the demand by way of replacing high water-intensive crops by light crops. Millets, oilseeds, pulses, ragi etc should replace sugar cane and rice cultivation. Unfortunately, India has still not developed a reliable weather forecasting system.

If there were such a reliable system, the farmers would have a choice at the beginning of the sowing season itself to sow the particular type of crop depending upon the supply position. Till such time a reliable forecasting system is developed, it would be a gamble to grow water-intensive crops. The farmers should be educated about the wisdom in going in for light crops. The field workers of the agricultural department should do this. The TN government should dissuade its farmers from raising more than one rice crop.

(2) Water-saving measures: Many farmers are under the mistaken impression that "more is better". Application of more water affects the yield, spoils health of the soil and also results in wastage of precious water. Water should be applied by drip/sprinkler irrigation. Irrigation water should be charged on volumetric basis. The water conveyance system, right up to the field level, should be lined to minimise transmission losses.

(3) Conjunctive use: The subsoil water levels in irrigated areas are always high. Bore/dug wells should be provided in the irrigated areas so that underground water supplements the canal supplies. This would lessen dependence on irrigation water; help prevent water logging and the consequent deterioration in the health of the soil.

(4) Drinking Water issues: Bengaluru, Mysuru and other small towns, having a total population of 13 million, depend on Cauvery water. The requirement in a full year is as much as 23 TMCft. There is what is called 'water illiteracy' among the users. A campaign should be launched to educate the users to conserve water. A good amount of water is lost due to the leakages in the distribution system. The Bengaluru Water Supply and Sewerage Board as also other municipalities should plug the leakages and replace the old and rusted pipelines.

Unauthorised pipe connections should be detected and penal action taken against the offenders. Rain water harvesting (RWH) should be made mandatory so that precious rainwater is not allowed to flow to the gutters. Determined efforts should be made to raise the depleting water table levels by recharging with RWH. Installation of sewage water treatment plants should be made mandatory. A number of lakes have vanished in the city, thanks to the real estate lobby. These lakes should be revived which will help ease the water problem to some extent. A national policy to deal with inter-state river disputes should be drawn. The Centre should lay down broad principles for sharing water amongst the riparian states in years of distress.

Source - http://www.deccanherald.com/content/570211/change-cropping-pattern.html

16. War in Syria

Civil war in Syria is an ongoing multi-sided armed conflict in Syria in which international interventions have taken place. The war grew out of the unrest of the 2011 Arab Spring and escalated to armed conflict after President Bashar al-Assad's government violently repressed protests calling for his removal. - See more at: http://www.drishtiias.com/editorial-analysis-The-ceasefire-in-Syria#sthash.TpNPFWHv.dpuf

Causes

Political repression - President Bashar al-Assad assumed power in 2000 after the death of his father Hafez who had ruled Syria since 1970. Assad quickly dashed hopes of reform, as power remained concentrated in the ruling family, and the one-party system left few channels for political dissent. With no peaceful transfer of power since the 1950s, popular uprising was inevitable.

Discredited ideology - Syrian Baath party is regarded as the founder of "Arab socialism", an ideological current that merged state-led economy with Pan-Arab nationalism. However, by 2000 the Baathist ideology was reduced to an empty shell, discredited by lost wars with Israel and a crippled economy. Upon taking power, Assad tried to modernize the regime invoking the Chinese model of economic reform, but failed to bring result.

Uneven economy - Cautious reform of the remnants of socialism opened the door to private investment, triggering an explosion of consumerism among the urban upper-middle classes. However, privatization has favoured families with personal links to Assad, but seeded anger among common man as living costs soared and jobs remained scarce.

Drought - To make matters worse, a persistent drought has devastated farming communities in north-eastern Syria, affecting more than a million people since 2008. Tens of thousands of impoverished farmer families flocked into rapidly expanding urban slums, their anger at the lack of government help fueled by the new ostentatious wealth of the nouveau riche.

New media - Although the state media is tightly controlled, the proliferation of satellite TV, mobile phones and the internet after 2000 meant that any government attempt to insulate the youth from the outside world was doomed to fail. The use of the new media is critical to the activist networks that underpin the uprising in Syria.

Corruption - The system is corrupt. Even for daily activities huge amount of bribes are transited.

State violence - Syria's vast intelligence services, the infamous mukhabarat, penetrate all spheres of society. The fear of the state is one of the reasons why so many Syrians simply take the regime as a fact of life. But the outrage over the brutal response of the security forces to the outbreak of peaceful protest in Spring 2011, documented on social media, helped generate the snowball effect as thousands across Syria joined the uprising. More funerals, more protest.

Minority rule - Syria is a majority Sunni Muslim country but the top positions in the security apparatus are in the hands of the Alawis, a Shiite religious minority to which the Assad family belongs. Most Syrians pride themselves on their tradition of religious tolerance, but many Sunnis still resent the fact that so much power is monopolized by a handful of Alawi families. While not a driving force of the Syrian uprising, the combination of a majority Sunni protest movement and an Alawi-dominated military has added to the tension in religiously mixed areas, such as the city of Homs.

Actors in the Conflict

- **The Regime -** The Assad regime's forces are estimated to number between 100.000 and 200.000. They dispose of heavy military weapons including tanks, fight helicopters, armoured personnel carriers and artillery. Due to this professional military technology, the regime forces have an advantage in the direct military confrontations with the demonstrators. A vast majority of the Alawite community is loyal to the regime for several reasons. High-ranking military posts are held by Alawites, therefore they strongly identify themselves with the regime and they also fear revenge by the Sunni majority in a case of regime's fall. Also Demographically, wealthier urban areas tend to support Assad more than the countryside.
- **The opposition -** The Syrian opposition is considered to be divided. Some parts of the opposition groups are considered to be connected to small communities. Currently, there are two main opposition coalitions in Syria.

a) The Syrian National Council (SNC)

The SNC was formally created in Turkey in October 2011 by a range of mostly exile activists. It includes many members of the Muslim Brotherhood movement and it is dominated by the Sunni community. The SNC serves as a contact point for the international community, but it struggles with the internal disunity and a lack of efficiency. It advocates for an international military intervention, which leads some Syrians in the country to suspect the SNC as a tool of the foreign regional powers. On the other hand, some protest

groups have put aside their differences and respect the SNC.

b) National Coordination Body for Democratic Change (NCB)
The NCB is sometimes referred to as The National Coordination Committee for Democratic Change (NCC). It is based on an opposition bloc inside Syria and includes many long-term dissidents, who are allegedly afraid of Islamists within the SNC. Unlike SNC, the NCB is willing to negotiate with Assad's regime, opposes foreign military intervention and communicates with Russia.

Opposition forces are formidable but lack unity of purpose, unity of command, and unified international support. Various opposition groups have, depending on the circumstances, cooperated and competed for influence and control. At present, significant elements of the opposition are engaged in outright conflict against one another. Some observers suggest that more than 75% of the armed opposition may seek to replace the Assad government with a state ruled according to some form of Sunni Islamic law. Kurdish opposition groups control large areas of northeastern Syria and may seek autonomy or independence in the future.

- **Free Syrian Army (FSA)**

Thousands of Sunni soldiers have deserted the army since the uprising began (up to 60.000 by March 2012, according to the Turkish government data). These soldiers are mostly light-armed and trained on elementary level, as the core of the regime's high-ranking and well-trained military officials are from the Alawite religious group. Some of those deserters create the core of the FSA, which resorted to arms in its fight against the current regime. Although its leader Riyad al-Asaad (not related to the president) claims he's got around 40.000 men directly under his command, it is likely that the number is not even a half of this figure (valid estimates are not available). The FSA and the SNC cooperate together on some issues. In addition, there are also thousands of armed opposition fighters not directly associated with the FSA. Efficiency of the armed opposition increases in time partly thanks to the foreign support. Some of the armed protesters allegedly receive salaries, part of which comes likely from abroad (especially from Qatar and Saudi Arabi).This was strongly criticised by the regime as a foreign interference.

Implications of continuing civil war

The implications have been immense. Apart from the mounting death toll, and refugee problem, there is a multifold increase in religious radicalism in the country.

The effect outside Syria's borders, of refugees and the creep of global terror, continues to raise the stakes.
One concern for everyone involved has been the gradual blending of extremist groups among the mainstream anti-Assad rebels. Syria's war has become especially complex and destructive and could stay that way for many years yet.

Syrian Peace Process-

The aim of the process is to bring a **sustainable peace to war** that has raged insatiably for five years and shows little sign of slowing.

Kofi Annan's 6 Point Peace Plan:

- Both parties shall work with international envoys.
- Both parties to end violence as soon as possible.
- To allow humanitarian aid.
- To release detainees
- To ensure freedom of movement of journalists.
- Respect peaceful demonstrations.

Geneva Conference

It was held in 2012 to implement the 6 point peace plan by multilateral cooperation. But US wanted Assad to step down first before transitional government, while Russia wanted him to lead the transitional government. Therefore, to implement the peace plan, **UN observer Mission** was announced, which had to be withdrawn as no consensus could be reached.

Geneva II Middle East Conference

It was till then the most serious effort to tackle the situation. But here, another point of difference was the role of Iran, which was backed by Russia,but US did not want any involvement of Iran. Every country had its own strategy for international intervention. Russia wanted intervention only under the aegis of UN. Saudi Arabia came up with **uniting for peace resolution** wherein, it was important that great powers do not confront each other , as it happened on Korea War.

India wanted the crisis to get resolved under the Syria people itself. So, it was a **passive spectator.**

Moroever, Right to protect could not have been used in this situation as Russia and Iran would have reacted. Lakhdar Brahimi, UN special envoy to Syria, tried to pursue the conference in close cooperation with the U.S. and Russia. It started on 22 January 2014 and ended on 31 January; no agreement was reached.

Vienna Peace Conference (Since October 2015)

On 23 October 2015, the Foreign Ministers of the United States, Russia, Saudi Arabia and Turkey met and talked in Vienna, Austria, to find a way to end the Syrian conflict.

On 30 October 2015, the first round of the Syria peace talks were held in Vienna with foreign ministers of 20 countries participating: U.S., Russia, Iran, Saudi Arabia, Turkey, China, United Kingdom, France, Italy, Germany and other countries. The ministers agreed on the**need of the Syrian government and opposition to start political talks.**

The second round of the **Vienna** talks held in mid-November produced an agreement on the need to convene Syrian government and opposition representatives in formal negotiations under UN auspices with a target date of 1 January 2016.

On 18 December 2015, the UN Security Council, having overcome the gridlock on Syria that had persisted since October 2011,unanimously passed Resolution 2254 (2015), endorsing the ISSG's transitional plan that set out a **timetable for formal talks and a unity government within six months;** the resolution put UN special envoy Staffan de Mistura in charge of organising Syria talks. However, the major powers remained divided on **who should represent the Syrian opposition**; no mention was made of the future role of Syrian President Bashar Assad.

Several rounds of peace talks have failed to stop the fighting. Although a **ceasefire announced in February 2016** has limited fighting in some parts of Syria, recent government air strikes in Aleppo have prompted uncertainty about the ceasefire's future.

But with much of the country in ruins , millions of Syrians having fled abroad, and a population deeply traumatised by war, one thing is certain: Rebuilding Syria after the war ends will be a lengthy, extremely difficult process.

2016 cease fire deal

In September 2016, Russia and U.S. reached a deal on establishing a cease fire between **Baa'thist Syria and Syrian Opposition,** whilejointly agreeing to continue attacks on Islamic State of Iraq and the Levant group and on Jihadist Jabhat Fateh al-Sham (former al-Nusra Front).

Under it, Russia will prevent the regime of President Bashar al-Assad from bombing rebel-held areas, while the U.S. will join hands with Russia in the fight against jihadist groups, including the Islamic State. The broad framework of the deal is the **Putin Plan,** made public a year ago while announcing Russia's intervention in Syria. Vladimir Putin wanted Syrian statehood to be restored and the major powers to come together in the fight against the jihadists.

The U.S.'s initial response to the Russian intervention was sceptical, with reservations about Russia attacking non-IS rebel groups. The intervention has bolstered the Syrian regime, changing the balance of the conflict. Mr. Assad's regime was on the verge of collapse a year ago; it is now stable at least in its strongholds. The rebels' influence has shrunk, though they appear to be unbeatable in many of the small towns they control. **This stalemate and the fear of more bloodshed may have prompted both the U.S. and Russia to play down their differences.**

The **Syrian government has given its backing,** but a number of rebel groups have expressed strong reservations and have yet to say whether they will abide by it.

The Western-backed **Free Syrian Army** said rebel groups fighting under its banner would "co-operate positively" with the truce, but were concerned that it would benefit the government.

The hardline Islamist group **Ahrar al-Sham** condemned the agreement as an effort to drive rebel factions apart, but stopped short of explicitly rejecting it outright.

Jabhat Fateh al-Sham stressed that the group's fighters shared the same goals as the rebels, and were "deeply embedded in society and cannot be singled out in any way.

What will be its implications ?

If successful, it will see President Bashar al-Assad's forces ending air strikes on territory controlled by mainstream rebels, and both sides allowing humanitarian access to besieged areas. A priority will be the second city of Aleppo and its surroundings, where as many as two million people live. Government and rebel forces will pull back from the Castello Road, a major artery running around the north of the city into the rebel-held east. They will also provide safe access through the south-western Ramouseh Gap area

Providing there are seven consecutive days of significantly reduced violence and humanitarian access, the US and Russia will work together to "develop military strikes" against Jabhat Fateh al-Sham and IS. A Joint Implementation Centre will be established to share information necessary for the delineation of territories controlled by jihadist and rebel groups in areas of active hostilities.

Can we go the distance now?

Two big challenges remain. First, **can Russia halt Mr. Assad's fighter jets?** Though Russia wields strong influence over Damascus, it has in the past expressed uneasiness over the stubbornness of the regime.

Second, the **rebels fighting the regime are not a unified force.** Russia wants Fateh al-Sham, a former affiliate of al-Qaeda, to be singled out and attacked. The U.S. has agreed to this suggestion in principle, but its practicality is uncertain.

The ceasefire announced in Munich failed because it was **based on calculations far removed from the ground realities:** around 2,600km removed, to be precise, the distance, as a jetliner flies, from the Bavarian capital to Damascus. Geneva is 300km farther away. On the ground in Syria, where the cost of the failure of the previous Kerry-Lavrov ceasefire pact is measured in blood and bodies, there is widespread scepticism, a sentiment that has succeeded where all other mediation has failed, in uniting the many anti-regime rebel groups.

They are right to be pessimistic, because the **deal is short on specifics**, and **long on loopholes.** Since Assad routinely brands all his opponents terrorists, this gives him licence to continue pounding helpless civilians. If he doesn't stop dropping bombs, there's no reason for the rebels to silence their guns.

Another reason to be sceptical is that the deal was announced by the wrong people. Kerry and Lavrov may represent powerful nations, but **in the Syrian context, they are not the primary actors.** Far more important players were not seen in Geneva: Iran, Saudi Arabia, and only slightly less important, Turkey.

Moreover, Parties are paying **lip-service to a 'political solution'** even as a dysfunctional truce collapses around them. Arab governments are bitterly divided over Syria but many see a lesson that was learned the hard way by the Palestinians: the Oslo agreement of 1993 appeared to herald an end to the conflict with Israel, but the long "peace process" that followed saw Israel swallow up more Palestinian land to the point that no solution was left.

Critics also say that, the idea that a cessation of hostilities in Syria can be enforced is pure fantasy. There is no political will for an

international peacekeeping force. There is not even consensus on something as basic who is a terrorist and who is not.

No political path is yet apparent, and this is another criticism of the deal. However, the ceasefire is being pitched as a trust-building measure, a necessary step before ways to put an end to the crisis can be meaningfully discussed. Previous summits in Geneva, have ended in spectacular failure. If the protagonists start to believe that outright victory is impossible, then there may be breathing space for negotiations. If the ceasefire holds, it could force that realisation. Therein lies its purpose.

However, the odds should not overshadow the significance of the agreement. If the ceasefire is clearly established, that itself would be quite an achievement given the horrors of the war.

Conclusion

Trust has been impossible to build. Every previous multilateral attempt at a ceasefire has failed. Neither side has been willing to share power. The Syrian regime has preferred starvation sieges and widespread bombing of civilian areas to negotiations. The opposition has been unable to put forward a credible political alternative to rule Syria and failed to press home its early battlefield gains.

Meanwhile, the goals of the foreign stakeholders in the conflict, Turkey, Russia, Iran, Saudi Arabia and the US, are mostly in competition with each other. While everyone agrees it would be a good idea for the war to stop, no one has been able to draft the terms on how that could happen.

For peace to exist, it is essential that the next ceasefire deal feature a larger cast of actors—and at a location exactly 0 km from Damascus.While chances that the ceasefire will hold are slim, it may lead to **humanitarian access throughout the country.**

Making peace between multiple factions is like three-dimensional chess – a fact that will not be lost on those trying to bring peace to Syria. **Reducing the complexity is essential.**

17. InvITs

More than two years after markets watchdog SEBI had issued guidelines for infrastructure investment trusts (InvITs), the regulator has finally granted three companies — IRB Infrastructure, GMR and MEP Infrastructure — to launch the trusts.

- Accordingly, these companies will float IRB Invit Fund, GMR Infrastructure Trust and MEP Infrastructure Trust shortly as per SEBI.
- With a view to help infra developers mop up funds for long-term projects in a more transparent manner, SEBI had in August 2014 introduced InvITs — an investment vehicle that would enable promoters to monetise completed assets.
- But the move failed to get enough attention of businesses owing to taxation issues.

InvITs

An Infrastructure Investment Trust (InvITs) is like a mutual fund, which enables direct investment of small amounts of money from possible individual/institutional investors in infrastructure to earn a small portion of the income as return.

- SEBI notified the SEBI (Infrastructure Investment Trusts) Regulations, 2014 on September 26, 2014, providing for registration and regulation of InvITs in India.
- The objective of InvITs is to facilitate investment in the infrastructure sector.
- InvITS are like mutual funds in structure. InvITs can be established as a trust and registered with SEBI. An InvIT consists of four elements:

- Trustee,
- Sponsor(s),
- Investment Manager and
- Project Manager.

- InvITs work like mutual funds or real estate investment trusts (REITs) in features.
- InvITs can be treated as the modified version of REITs designed to suit the specific circumstances of the infrastructure sector.

18. A job of uniting nations

The United Nations has 193 members, more than 30 agencies, funds and programmes, and a 40,000- strong staff. At its head, is the organization's chief administrative officer, popularly known as the world's top diplomat? In the past 70 years, there have been eight UN secretaries- general, three from west Europe, two from Asia, and one each from the Arab world, Latin America and Africa. There has never been a Muslim, a Hindu or a woman.

The United Nations Charter provides an uncomplicated selection process: Article 97 cryptically provides that the Secretary-General shall be appointed by the General Assembly upon the recommendation of the Security Council". This directive has been supplemented by procedures and practices such as a single nominee being recommended by the Security Council to the general assembly, where a simple majority is necessary for appointment, unless the assembly itself decides that it requires a two- thirds majority. The nominee must receive at least nine votes in the council, including no veto from any permanent member, consisting of the United States of America, Russia, China, France and the United Kingdom.

The term of office is considered five years, renewable. No one has served more than two terms, and in principle, a candidate is never from one of the big powers. The assembly, where all countries are represented, has invariably ratified the sole candidate presented to it by the council. Both the Security Council and the general assembly take their decisions in closed sessions. This year, the submission of a name to the assembly is expected by the end of October and the nominee takes over from Ban Ki- moon in January. The search for the successor to Ban is in full swing. Calls for transparency do not sit well on the five permanent members of

the council, who have the biggest stake in working with the chief executive of the UN secretariat. The rotational principle, which should apply to this appointment, implies that the next incumbent should be from Eastern Europe, which has never had a secretary- general although it is a recognized UN regional grouping. There is opposition to any change in the rotation principle from Russia which resents the domination over the council exercised, since the end of the Cold War, by the US and its compliant allies, France and Britain. But rotation is a principle to be ignored if it suits the permanent five, and it is argued by the Western camp that the world has changed from the time when the principle was introduced, and only the qualifications of the candidate should count.

The next secretary- general will be the result of a compromise between the US and Russia — a person who has not alienated either of them, or China, through past actions. For this reason, the big powers will not welcome any candidate with a high profile or a forceful personality. The current election reflects the tensions between Russia and the Western camp; Russia backs an East European woman, the director- general of the United Nations Educational, Scientific and Cultural Organization, Irina Bokova of Bulgaria, while the Americans favour the Argentine foreign minister, Susana Malcorra.

The Security Council holds a series of ' straw polls' to weigh each candidate's level of support, and to narrow the field by discouraging weaker candidates from standing. The council has held four straw polls so far in which its 15 members either "encouraged"," discouraged," or offered " no opinion". The ballots are cast anonymously and the election is conducted in secret, but the voting details are rapidly leaked. In all the four polls, António Guterres, a former Portuguese prime minister and UN High Commissioner for Refugees, with a Goan wife, has taken the lead but faces portents of danger.

In the latest poll at the start of September, of the 10 remaining candidates, Guterres gained 12 votes encouraging and two discouraging. If either of those two includes a state with a veto, it would prove fatal to Guterres's candidacy. The Slovak foreign minister, Miroslav Lajcak, was second with 10 encouragements but four discouragements, and the Serbian former foreign minister, Vuk Jeremic, third with nine in favour and four discouragements. Bokova fell back to fifth, and Malcorra was seventh. That the first three places were occupied by men was discouraging for some countries and advocacy groups that have pressed for a first woman at the top of the UN secretariat. With women as elected chief executives of La Francophonie, the Commonwealth and Fifa, the international football federation, and a woman candidate for the US presidency, they hoped a trend had been established.

Ban himself has suggested that it would be appropriate for a woman to replace him, but hastily clarified that this was up to the member states to determine. There were still five women in the field in the fourth straw poll but some of them must surely withdraw before the next poll. The inconclusive outcome sets the stage for other one or two straw polls in September to eliminate lower- placed candidates and smoke out if any permanent member is casting a veto. A continued impasse could open the door for a dark horse, with some considering the case of Bulgaria's Kristalina Georgieva, currently the European commissioner for the budget and human resources. Once the straw poll process is over and the candidates are whittled down to a smaller number, the final stage will be marked, when only the five permanent members are given a coloured ballot paper, effectively signifying a blackball and veto power.

Previous secretaries- general have tried to leave their mark on the UN. In the 1960s, Dag Hammarskjöld of Sweden was known for standing up for the independence of his office against hectoring by the Soviet Union and for initiating peace- keeping operations. After the Cold War, Boutros Boutros- Ghali of Egypt tried to promote vision statements called " An Agenda for Peace" and " An Agenda for Development", but fell afoul of the US which refused to endorse him for a second term — although it has to be said that developing countries also had reservations about his proposals.

Kofi Annan of Ghana rose through the ranks of the UN bureaucracy to become secretarygeneral, and supported the concept of humanitarian interventions that played into the hands of Western unilateralists. He denounced as illegal the Iraq invasion of 2003 by the US- led coalition, but by then he was already into his second term. South Korea's Ban Ki- moon's current tenure has been noted for its blandness, which suits the permanent members perfectly.

India will be watching the proceedings leading up to the election of the secretary- general with keen interest, although it can do little or nothing to shape the outcome. It would prefer someone who is not too proactive and would keep away from potentially embarrassing issues for India like Kashmir. It would like to have the world's top diplomat functioning from the 38th floor of the UN secretariat building in a manner supportive of UN reform, the leading aspect of which, in India's opinion, is to have an expansion of the permanent membership of the Security Council in order to include itself. And more generally, to have a secretary- general with whom it can communicate easily and who would be inclined to endorse discreetly India's aspiration to be a central player in international relations in future.

Source - http://www.telegraphindia.com/1160912/jsp/opinion/story_107611.jsp#.V9pky9ycHIU

19. Women's Reservation Bill - Pros & Cons

The 73rd and 74th Amendments passed in 1993, which introduced panchayats and municipalities in the Constitution, reserve one-third of seats for women in these bodies. The Constitution also provides for reservation of seats in Lok Sabha and state legislative assemblies for scheduled castes and scheduled tribes in proportion to their number in the population. The Constitution makes no provision for reserving seats for women in Parliament and the state legislatures. Currently, women constitute 9% of the Lok Sabha, 10% of the Rajya Sabha and 7% of the state legislative assemblies.

Key Features:

• The Bill seeks to reserve, as nearly as possible, one-third of all seats for women in the Lok Sabha and the state legislative assemblies (including Delhi). The allocation of reserved seats shall be determined by such authority as prescribed by Parliament.

• As nearly as possible, one third of the total number of seats reserved for Scheduled Caste/Scheduled Tribes (SC/ST) in the Lok Sabha and the legislative assemblies shall be reserved for SC/ST women.

• Reservation of seats for women shall cease to exist 15 years after the commencement of the Act.

Lok Sabha

• Reserved seats may be allotted by rotation to different constituencies in the state or union territory. If a state or union territory has only one seat in the Lok Sabha, that seat shall be reserved for women in the first general election of every cycle of three elections. If there are two seats, each shall be reserved once in a cycle of three elections. Similar rules apply for seats reserved for SC/STs. Of the two seats in the Lok Sabha reserved for Anglo Indians, one will be reserved for women in each of the two elections in a cycle of three

elections.

Legislative Assemblies

• The Bill reserves one-third of all seats in the legislative assemblies that are to be filled by direct election for women. Such seats may be allotted by rotation to different constituencies in the state. For SC/ST seats, similar rules as those for the Lok Sabha apply.

Analysis

From the analysis of the provisions of the WRB, one of the 'faulty lines' evident is the suggestion for one-third reservation for women, inclusive of the proposed one-third of reserved seats for SC/ST women under the available SC/ST quota in Parliament. In essence, out of the reserved quota for SC/STs in direct election to the House of the People, one-third of the seats shall be reserved for SC/ST women and those seats would be added to calculate one-third women's reservation quota.

The argument is that the reservation of SC/ST women under the SC/ST reservation quota shall be independent of reservation to SC/ST women under the women's reservation quota. This is because SC/ST women fight gender discrimination within the caste and at the same time fight caste discrimination within the gender.

Therefore, double reservation quota independently under SC/ST reservation and women's reservation can be justified for SC/ST women against single discrimination and double discrimination that they face on gender and caste lines, resp-ectively. The Parliamentary Standing Committee Report on WRB also suggested that to have a fair competition with forward caste women, women belonging to SC/STs should have quota for their political, economic and social advancement.

Quota in upper houses

Secondly, it is also relevant to note the silence of WRB on application of women's reservation in Upper House of Parliam-ent and legislative councils of states. This would precipitate gender inequality at the Upper Houses of power. The Standing Committee Report favours extension of reservation to the RS and the councils in the states on the principle of equality.

Thirdly, the Bill also has a provision of termination of women's reservation system after 15 years. The repeal of the Bill without a review of the system and an impact study would be unreasonable co-nsidering the deep-rooted gender inequ-ality in the society. It is important again to note that the Standing Committee Report recommends the review process.

It is important to understand that direct discrimination at multiple levels and complex pattern of hidden barriers prevent women from getting their equal share in politics and decision-making. This is despite the fact that feminists' argument, that a mere removal of formal barriers doesn't produce real equal opportunity, holds relevance. As long as barriers exist, compensatory measures must be introduced as a means to reach equality. The Lok Sabha 2014 election manifesto of the BJP, the Congress and the CPM, unanimously promised passage of the WRB. A reconsideration and relook at 'faulty lines' of WRB would provide an equity-based reservation system for women in decision making and equal citizenry for them.

In Favour of WRB

1) Empowerment of women.

2) More political opportunities for women.

3) There are ample chances of improvement in women's social, economic status.

4) Women's issues will be given enough importance in the parliament and state assemblies.

5) Having a women representative for every constituency for at least one term in the 15 years (if rotation of seats is there in the women reservation bill) is a big step towards reducing the gender gap.

6) Though there are chances of misusing reservation, a large number of women, who have genuine interest to develop their constituency, will be benefited.

7) Some politicians have fear that this bill may discriminate men. But men have a wide range of opportunities already. They are socially and economically forward with high literacy rates, when compared with women.

Against WRB

1) Opponents argue that it would perpetuate the unequal status of women since they would not be perceived to be competing on merit. They also contend that this policy diverts attention from the larger issues of electoral reform such as criminalisation of politics and inner party democracy.

2) Reservation of seats in Parliament restricts choice of voters to women candidates. Therefore, some experts have suggested alternate methods such as reservation in political parties and dual member constituencies.

3) Rotation of reserved constituencies in every election may reduce the incentive for an MP to work for his constituency as he may be ineligible to seek re-election from that constituency.

Summing up

Women's reservation is the need of the hour. This will empower women and can act as a level playing field. The theory of representation proposes that all citizens should have the same opportunity to participate in political affairs regardless of gender, race and other identities. Therefore the entry of women into political institutions is an issue of equality. For a healthy political system and welfare of the people it is important that women must come forward and perform a vital role in political activities because more opportunities to participate in the political process will enhance their economic and organizational capacities so that they can gain more self-confidence and make attempts for a better share in the political system. Thus their participation in the political process is crucial for strengthening the democratic traditions.

20. Commercial Surrogacy: Boon or Bane

India created itself as a universal center of commercial surrogacy. Its general business sector business in India evaluated at $450 million by Indian Council of Medical Research (ICMR), however the most broadly utilized "legendary quality" for this unregulated business sector is $2.3 billion. Therefore, it was alluded to as the "pot of gold" by the Law Commission of India (2009). Possibly low expenses and advantageous directions, (for example, having the name of appointing guardians on the birth declaration and holding surrogates under steady supervision for nine months in a lodging) pulled in planning guardians from around the world.

India has the world-class well being and the medical facilities, with quality services at much lower costs than most first world nations. It

came about into a goal for Medical tourism and now all around acknowledged as a noteworthy type of tourism in India. Numerous renowned and lavish healing facilities in the nation notwithstanding giving excursions to touring and different intends to see the India and around the nation as a part of the "Bharat Darshan."

Be that as it may, the multiplication of the business has uncovered a couple of darker spots also. One such issue is the flourishing foundation of ripeness tourism in India, famously called "commercial surrogacy." Surrogacy is a term which means a woman carries a child to term for its intended parents via different fertility techniques, including IVF implantation. She is compensated for carrying the child, hence the term commercial surrogacy.

Commercial surrogacy was permitted in India without precedent for 2002 and has since developed into a monstrous industry inside the medicinal calling. While no reasonable monetary numbers are accessible, a World Bank study conducted in 2012 evaluated the surrogacy business to be worth just about $400 million a year, with 3,000 fertility clinic crosswise over India.

In spite of the fact that the surrogacy in India is a multi billion industry, however surrogate moms are paid not exactly a tenth of what they get in the US. The mushrooming of IVF centers, nonattendance of an administrative structure, and the accessibility of poor ladies willing to lease their wombs has made India an alluring choice for non natives looking for a surrogate kid. Several questions have been raised over the alleged exploitation of surrogate mothers, and over the need to safeguard their, the child's, as well as the commissioning parents' rights.

Types of Surrogacy

There are two types of surrogacy, 'straight' and 'host'.

Straight (or traditional) surrogacy

Straight surrogacy is the simplest and least expensive form of surrogacy and is also known as artificial insemination. The surrogate mother uses an insemination kit to become pregnant using the intended father's semen. The baby will therefore be conceived using the surrogate's egg.

Some people prefer to use a clinic for insemination's, but it can also happen at home and can therefore seem a more natural and less 'medical' way of becoming pregnant than host surrogacy. It can, however, can be harder emotionally for both the surrogate and the intended parents.

Host (or gestational) surrogacy

Host surrogacy is when IVF is used, either with the eggs of the intended mother, or with donor eggs. The surrogate mother therefore does not use her own eggs, and is genetically unrelated to the baby. It is physically more complicated and considerably more expensive than straight surrogacy, and always takes place in a fertility clinic.

Some Surrogates prefer this method as they may not be comfortable with using their own eggs in surrogacy.

In essence, there are three stages to 'host' surrogacy:

- **Egg donation:** the female IP, or the egg donor, undergo special procedures to extract a number of eggs
- **Fertilisation:** the egg is fertilised with semen in the laborator
- **Transfer:** the fertilised egg is transferred into the womb of the surrogate mother

The fertilised egg can be transferred to the surrogate either 'fresh' or after having been de-frosted from egg storage. For a fresh egg transfer the monthly cycles of the surrogate and the egg donor must be synchronised, and this is done using hormone medications. In cases where embryos have been frozen already and the de-frosted embryos are being transferred some IVF clinics will insist on the surrogate mother taking hormone medications to 'ready' her womb lining.

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SC on Surrogacy:

Supreme Court in 2008 Baby Manji Yamada versus Union Of India case held that commercial surrogacy is passable in India. Baby Manji was charged by Japanese guardians (through an obscure egg giver and the spouse's sperm) and was destined to a surrogate mother in Gujarat. The guardians separated before the child was conceived. The genetic father needed the child's guardianship, however Indian law banished single men from it, and Japanese law didn't perceive surrogacy. The child was at last allowed a visa, however the case underscored the requirement for an administrative structure for surrogacy in India. This was the beginning of the ATR Bill (Assisted Reproductive Techniques) (Regulation) Bill, 2014. Here emerges the main legitimate confusions as to commercial surrogacy.

Though the child was at long last given over to her grandma, it opened inquiries regarding a practice that had proceeded with unabated for various years. The finish of these inquiries brought about India's draft Surrogacy (Regulation) Bill that was endorsed by the Cabinet in August 2016.

What the new drafted Bill says?

The newly drafted bill provides for surrogacy as an option to parents:

1. who have been married for five years can't naturally have children,
2. lack access to other reproductive technologies,
3. Want biological children and can find a willing participant among their relatives.

This would come as a major blow to fertility centers in India, as the greater part of them have flourishing commercial surrogacy practices, which would be prohibited under the present type of the bill. Commercial surrogacy will bring about 10 years' detainment.

The bill likewise tries to illuminate the lawful position of such a chils and guarantees, to the point that a child conceived of surrogacy will have every legitimate rights as citizen. It would likewise confine abroad Indians, non natives, unmarried couples, gay people, and live-in couples from going into a surrogacy plan. The surrogate mother must be a hitched lady who has herself borne a youngster and is neither a non-Resident Indian (NRI) nor an outsider. Couples who as of now have organic or received kids can't commission a surrogate child.

Manji case :

The Supreme Court in the 2008 Manji case held that commercial surrogacy was permissible in India. Baby Manji was commissioned by Japanese parents (through an unknown egg donor and the husband's sperm) and was born to a surrogate mother in Gujarat. **The parents divorced before the baby was born**. The genetic father wanted the child's custody, but Indian law barred single men from it, and Japanese law didn't recognise surrogacy. The baby was ultimately granted a visa, but the case underscored the need for a regulatory framework for surrogacy in India. This was the genesis of the **Assisted Reproductive Techniques (Regulation) Bill, 2014.**

Declared a criminal offense by civilized countries the world over, commercial surrogacy in India has had ill manifestations, ethical and

legal.

Legal issues involved :

At a glance, surrogacy seems like an attractive alternative as a poor surrogate mother gets very much needed money, an infertile couple gets their long-desired biologically related baby and the country earns foreign currency, but the real picture reveals the bitter truth.

- **lack of proper legislation,** Due to both surrogate mothers and intended parents are somehow . **exploited and the profit is earned by middlemen and commercial agencies**
- **no transparency** There is in the whole system, and the chance of getting involved in legal problems is there due to **unpredictable regulations governing surrogacy in India.**
- Although in 2005, ICMR issued guidelines for **accreditation, supervision, and regulation of ART clinics in India, these guidelines are repeatedly violated.**
- Frustration of cross border childless couples is easily understandable who not only have to cope up with language barrier, but sometimes have to fight a long legal battle to get their child. Even if everything goes well, they have to stay in India for 2-3 months for completion of formalities after the birth of baby.
- **children are denied nationality of the country of intended parents** There are occasions where and this results in either a like in **long legal battle Jan Balaz case** case of the German couple ( ) with twin surrogate children or the Israeli gay couple who had to undergo DNA testing to establish parentage or have a future in orphanage for the child.

Ethical and moral support issues involved :

- **potential harm** that may be inflicted upon the surrogate mother and the child.
- Poor, illiterate women of rural background are often persuaded in such deals by their spouse or middlemen for earning easy money. **no right on decision regarding their own body and life.** These women have
- **Identity of the Child** – There are also ethical considerations that are brought to mind in terms of informing the child of his or her **effect on the child's self-identity.** surrogate mother, as doing so may have an
- After recruitment by commercial agencies, The real motive is to **these women are shifted into hostels for the whole duration of pregnancy on the pretext of taking antenatal care. guard them and to avoid any social stigma of being outcast by their community.**
- **unfavorable outcome of pregnancy, they are unlikely to be paid** The worst part is that in case of , and there is no provision of insurance or post-pregnancy medical and psychiatric support for them.
- In certain instances, the surrogate mothers have developed a strong attachment to the baby, and thus refused to give away the child on birth.

Criticism

- Gynaecologists and infertility specialists also took offence to surrogacy being equated with indulgence as they said it is most often the last resort for people wanting a child.
- The draft Bill bans renting a womb for money and allows it only if the woman is doing so for altruistic reasons, which surrogacy experts dubbed illogical and unreasonable.
- Daft bill even banned egg donation that would only ensure that a sizeable number of people seeking IVF treatment would not be able to take it up now.
- The bill could have aimed at improving an exploitative ecosystem by ensuring effective legal recourse, stronger measures against cheating a woman who has chosen to undertake this option of livelihood, better remuneration, and a greater say in her healthcare regimen.
- It violates of the reproductive right of the surrogate mother.

21. What Brexit Means?

BREXIT refers to Britain holding a referendum to decide whether it wants to continue membership under EU or not. The referendum was held on 23rd June 2016 and 52% voted for BREXIT whereas 48% voted for remaining within the EU. Although the referendum is not binding on the Britain's parliament, the PM has announced that he has to respect the will of the people.
The idea for the European Union first got conceptualized by the Maastricht Treaty on November 1st 1993, with the aim of ending the frequent and bloody wars between neighbors, which culminated in the Second World War. Though, European Union is not the result of one day but of a gradual integration since World War - II. Originally found by the six member countries in 1951, confined to Western Europe, the EU undertook a robust expansion into central and Eastern Europe in the early 21st century.
The treaty of Maastricht was designed to enhance European political and economic integration by creating a single currency (the Euro), a unified foreign and security policy and common citizenship rights and by advancing cooperation in the areas of immigration, asylum and judicial affairs. The EU was awarded the Nobel Prize for Peace in 2012, in recognition of the organization's efforts to promote peace and democracy in Europe.
On January 1st, 1973, Denmark, Ireland and United Kingdom joined the European Union raising the number of member states to nine. Today it has the membership of 28 nations. Britain joined the EU as a way to avoid its economic decline. The UK's per capita GDP relative to the EU founding members' declined steadily from 1945 to 1972. However, it was relatively stable between 1973 and 2010. This suggests substantial benefits from EU membership especially considering that, by sponsoring an overpowered integration model, Britain joined too late, at a bad moment in time, and at an avoidably larger cost.

Yojna IAS.com

The movement for Brexit was founded in 1991 (under a different name) to oppose Britain's EU membership and saw its popularity surge in 2013. The two campaigns, "Britain Stronger in Europe" and "Vote Leave", that are likely to form the official lobby group for each side in the referendum.

Article 50 (of the Treaty on European Union) -

This Article allows European Union member states to notify the EU of its withdrawal and obliges the EU to try to negotiate a 'withdrawal agreement' with the state. The form of any withdrawal agreement would depend on the negotiations and there is therefore no guarantee the UK would find the terms acceptable. The EU Treaties would cease to apply to the UK on the entry into force of a withdrawal agreement or, if no new agreement is concluded, after two years, unless there is unanimous agreement to extend the negotiating period.

Why the 'EXIT' campaign?

- The Exit Campaign argued that Britain is losing out a big deal by staying in the EU.
- It had to pay millions of pounds each week as a contribution to the European budget.
- The extremely bureaucratic nature of the European parliament is hurting British exporters
- Migration from the European Union into Britain (mainly PIGS economies) is creating an imbalance in the welfare schemes of the UK government.
- But, those who oppose the campaign say that Brtiain is a net gainer, if She stay in EU.

Referendum

- Referendum are votes in which everyone (or nearly everyone) of voting age can take part, normally giving a 'Yes' or 'No' answer to a question. The side which gets more than half of all votes cast is declared a winner.
- Prime Minister David Cameron (Conservative Party) had promised to hold a referendum for Brexit if he won the 2015 general election. But, he led the campaign for 'stay' vote.
- There were growing calls from many MPs of Conservative Party and the UK Independence Party (UKIP), for a new referendum. (In 1975, Britain had voted to stay in the EU in a referendum).
- A referendum was held on June 23, 2016 to decide whether Britain should exit or remain in the European Union.
- Eligible voters: All British, Irish and Commonwealth citizens over 18 who are resident in the UK, along with UK nationals living abroad who have been on the electoral register in the UK in the past 15 years.
- 51.9% of voters favored exit of Britain from EU. It is the first time since the EU was founded in 1957 that a member country be leaving.

Implications for India



NEGATIVE

BREXIT will hurt growth in the UK, as well as in the European Union. The UK is a big market for goods and services from the EU area.

Automobiles
Travel & tourism
Garment exports
Pharmaceutical
Precious stones
Other Implications
POSITIVE
Implications for Britain
Implications for the World
India's Preparedness

The Telecom Regulatory Authority of India (TRAI) on 10 June 2016 released **the Consultation Paper on Cloud Computing** inviting suggestions

- Lower growth and a weaker currency are likely to impact businesses in India. Short-term impact adverse on several Indian businesses across sectors
- For companies with manufacturing in the UK, access to a single market is important, as their products can get uncompetitive if they had to pay import duties
- If the UK becomes a member of the European Economic Area (EEA), like Norway, it could be advantageous for India in terms of trade
- The British government can also cut tariffs and boost trade. If the UK and India finalize a free trade agreement, it will boost trade
- But India would not be able to use the UK as a gateway to the European Union as easily as before, and trade between India and the EU through the UK could be hampered
- The UK and the EU account for 4% and 16% of India's automobiles exports.
- For companies manufacturing in the UK, access to the single market is important; products will get uncompetitive if they have to pay

duties.

- In the near term, products become cheaper but profits will fetch lower amounts
- The travel and tourism sector will be affected by the BREXIT developments, as it is directly affected by currency fluctuations.
- Travel to the UK could get a boost, as the British economy gains competitiveness via a weaker currency.
- But, it also means fewer British tourists in India and lower spending.
- Garment exports accounted for a fifth of India's exports to the UK.
- Indian garment exporters have already witnessed a 5% drop in demand last year, and could see lower sales due to a slowdown in growth.
- India's pharmaceutical sector has significant exposure to the UK and the EU, with exports of $0.46 billion to the UK and $1.51 billion to the EU.
- A drop in demand in the UK and the EU will impact profits and sales.
- Trade in precious metals and stones between the UK and India amounted to about $2 billion in FY16.
- A weaker pound will make imports cheaper.
- Foreign funds are likely to move out if the world outside thinks that investment in India is risky.
- India's Forex (currently a record 363 billion dollars) may diminish, particular if currency is stored in Euros or Pound (this comes around 20% of total forex).
- Brexit will have a negative impact on the $108 billion Indian IT sector in the short term.
- Many Indian companies are listed on the London Stock Exchange and many have European headquarters in London. Brexit will take away this advantage.
- Due to fall in value of Pound sterling, Indian exports to UK will suffer. Cheaper rupee will make Indian exports, including IT and ITeS, competitive. Indian import companies operating in UK may also report loss. Also note that, India is exporting more than what it is importing from Britain.
- India being more of an importing country than an exporting nation, the overall effect may turn out positive for India (if dollar doesn't appreciate much against rupee).
- With lower pound value, Indian companies may be able to acquire many hi-tech assets.
- As investors look around the world for safe havens in these turbulent times, India stands out both in terms of stability and of growth.
- Brexit might give a boost to trade ties between India and the UK.
- Britain will now be free to discuss a bilateral trade pact with India.
- Due to fall in value of Pound sterling, those who import from UK will gain. Indian export companies operating in UK may also gain.
- More Indian tourists can afford to visit Britain in coming days as the currency value has fallen.
- More Indian students can afford to study in Britain (for higher education) as the fees may seem cheaper.
- Britain will need a steady inflow of talented labour, and India fits the bill perfectly due to its English-speaking population.
- The fall in the prices of commodities like crude, which will help India save a lot on its import bill(every $1 drop in crude prices leads to roughly $1 billion savings in India's oil import bill), reducing its trade and current account deficits (CAD).
- Brexit would weaken global growth and lead to a meaningful decline in commodity prices. This is only going to enhance both the relative and absolute appeal of India.
- Lower commodity prices will help the macro fundamentals: be it fiscal deficit, current account deficit or inflation, which will give the government more levers to pump up the investment cycle.
- As per International Monetary Fund (IMF), a vote to exit the European Union in the referendum could leave Britain's economy more than 5 percent smaller by 2019 than if it stays in the 28-nation club.
- Brexit could cause the country's economy to be between 3.8 and 7.5 per cent smaller by 2030.
- The pound expected to fall by around 20 percent. This would mean that exports to UK will suffer and imports from UK will gain. Export companies operating in UK will gain, while import companies will lose.
- More foreign tourists will visit Britain in coming days as the currency value has fallen.
- More foreign students may prefer Britain for higher education as the fees may seem cheaper.
- EU citizens in Britain and Brits living in other EU nations would have to update their immigration statuses.
- Companies operating in both the UK and the EU would have to verify that they're compliant with two sets of laws.
- US President Obama has warned that it could take 10 years for Britain to negotiate a new trade deal with the US.
- The referendum results (52:48) are very close. This means a major division of opinion in Britain which has social implications too. While the less educated and the old seems to favor the 'leave EU' campaign, the young and the employed are more in favor of Britain staying in EU.

- Brexit could encourage England, Wales, Scotland, or Northern Ireland to appeal for quitting United Kingdom.
- Remittance from UK to countries outside in terms of Pound will fetch lesser returns compared to past.
- Export dominated countries may be affected, whether exporting to UK or not. If UK is the major trading partner, the effect will be more.
- The United States will bear the major brunt of a Brexit being UK's biggest trading partner.
- A direct impact on Asian economies from Brexit is unlikely in the longer term, because as a percentage of GDP, exports to the UK is less than 2% for most economies.
- But businesses in some major Asian economies – like India and Japan- will be hit.
- Companies which have set up operations in the UK to gain access to EU markets will be affected.
- BREXIT would likely allow any US Dollar strength to play out. This may cause other currencies to decline in value.
- The finance ministry said that the country has sufficient foreign exchange reserves to handle any impact.
- RBI Governor Raghuram Rajan said the central bank will infuse whatever liquidity is needed into the Indian market to keep it "well behaved".
- SEBI and stock exchanges have beefed up their surveillance mechanism to deal with any excessive volatility.
- If exports to UK are costly and imports are cheaper, India can think of utilizing the import-advantage by reversing the present trade scenario.
- Once the dust settles, India may be seen to be a net gainer and inflows would continue to gravitate towards the Indian shores.

22. Cloud Computing

and comments from the experts, academia and the public at large.

The consultation paper enumerates current trends in the cloud computing sector across the world. Besides, it also dealt with a gamut of opportunities in this sector and major challenges for its successful adoption in India.

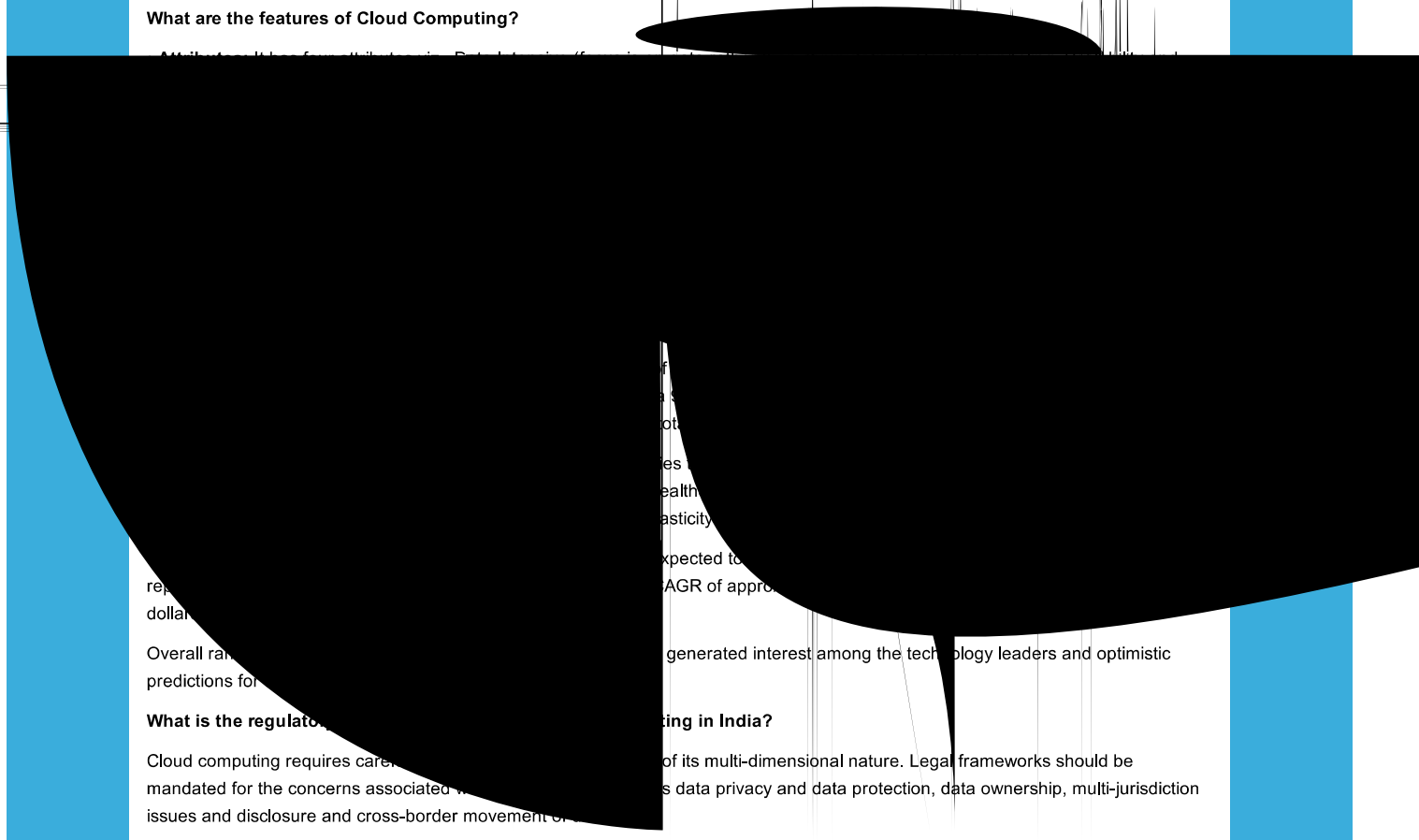
What is Cloud Computing?

As per the National Institute of Standards and Technology (NIST) of the US Department of Commerce, Cloud computing is defined as a model for enabling ubiquitous convenient, on-demand network access to a shared pool of configurable computing resources.

The pool of shared resources include networks, servers, storage, applications, and services that can be rapidly provisioned and released with minimal management effort or service provider interaction.

The Internet is at the core of evolution of this technology. Cloud computing applications have become ubiquitous in India in recent years as they encompassed mundane activities of individuals like social networking, mail, online purchases as well as large scale operations of multinational companies including big data, Internet of Things (IoT), etc.

What are the features of Cloud Computing?



Overall ra generated interest among the tech ology leaders and optimistic predictions fo

What is the regulato ting in India?

Cloud computing requires care of its multi-dimensional nature. Legal frameworks should be mandated for the concerns associated s data privacy and data protection, data ownership, multi-jurisdiction issues and disclosure and cross-border movement o

While the Indian Telegraph Act, 1885, the Civil Procedure Code 1908, the Telecom Regulatory Authority of India Act, 1997 deal with this sector in an implicit way, **the Information Technology Act of 2000** is of more relevance for regulating this sector.

Various sections of the IT Act, 2000 deals with penalties for the breach of data and privacy, at least in the domain of computers and cyber-crime. The Act is focused on e-commerce and cybercrime in general and data protection and data privacy are covered under it.

While the existing laws do cover some legal issues thrown up by cloud computing, they don't contemplate the scope of cloud computing services and the resultant magnification of the issues.

What are the government initiatives in cloud computing sector?

• **Infrastructure sector: Smart Cities Mission** of the Union Government enables local development by harnessing technology for creating smart outcomes. Besides, the Government has also recognized the importance of cloud-based service-delivery platforms for establishing the foundation of **Digital India**, as it integrates smart devices and infrastructure and processes data from the large amount of scattered sources in real time.

• **e-Governance:** The government has been exploring a cloud based application and data access model to revolutionize its e-governance initiative. All e-governance platforms including State Wide Area Networks (SWANs, Data Centres, etc) across the country could be migrated into cloud architecture in near future with an option of a public cloud and a private cloud.

• **Banking sector:** Reserve Bank of India (RBI) is working on achieving 100 percent financial inclusion with the help of technology. The RBI has been incorporating Cloud based solutions particularly for Cooperative banks to extend the banking services across the country through core banking solutions.

Use of cloud computing in this sector will lead to reduced timelines, moving the cost from CapEx to OpEx and focus on core banking business. **Indian Banking Community Cloud (IBCC)**is the first Community Cloud initiative for banking industry in the country.

• **Manufacturing sector:** With **Make In India** initiative in full swing, adoption of this technology became even more relevant for the Indian manufacturing sector. Some of the most notable application areas in manufacturing suited for cloud are CRM and supply chain applications which provide better connectivity to external stakeholders and customers.

The other areas where cloud enhances manufacturing effectiveness are in data warehousing, information security, green IT, Human machine interface (HMI) applications and many others.

• **Telecom sector:** Deploying Operation Support System (OSS) and Business Support System (BSS) solutions over cloud platforms is a highly effective method of addressing several business and technical challenges faced by this sector.

Cloud-based infrastructure offers an efficient way to enable resource sharing, automation and monitoring, management of software upgrades (with near zero downtimes) and the on-demand scaling up of operations using virtual machines on the same hardware.

• **Start-up and SMEs:** One of the key benefits of cloud computing is the low capital investment and quick time to market the new ideas. This particularly encourages entrepreneurship in the country, enabling start-ups and small medium businesses to **start small and expand their business based on demand.**

Indian SMEs are expected to increase cloud adoption at a CAGR of 20 percent between 2012 and 2016.

• **Indian Railways:** Railways are utilizing the mobile technology in a big way for freight management and passenger reservation system. Strategies have been rolled out to use cloud for GIS management in railways, for e-ticket bookings and for automated surveillances of railway premises and storage of video logs in cloud data centres.

• **Education Sector: Megh-Sikshak** is a cloud-based learning management system, which is evolved from the objective of converting the traditional model of e-Learning system (eSikshak) to a SaaS model. The cloud-based eSikshak delivers e-Learning as a service rather than as a product, which helps the institutions/organizations/individuals in alleviating the burden of installation, maintenance, and management of the e-Learning application on-premise.

Apart from this, IIT Delhi, IGNOU and other universities have deployed their own cloud environments.

• **Health Sector:** Cloud Computing Innovation council of India has proposed a layout for systematic adoption of cloud services in Indian health sector, known as e-Health vision. e-Health vision aims to incorporate Health Information Exchange (HIE) mechanisms to successful deployment of cloud. An electronic health information exchange (HIE) allows stakeholders associated with health data to appropriately access and securely share a patient's vital medical information electronically.

• **Right to Information:** Government initiative to digitize its database and make more and more information available to the public domain calls for an indispensable need of adoption of cloud services in the domain of RTI for efficient performances.

• **Meghraj:** Department of Electronics and IT (DeitY) of the Union Government has initiated an extensive project termed as '**GI Cloud**'. The 'GI Cloud' Meghraj is the Government of India's cloud computing environment that will be used by government departments and agencies at the centre and states following a set of common protocols, guidelines and standards.

• **National eGov App Store:** The eGov App Store will include the setting up of a common platform to host and run applications (developed by government agencies or private players) at National Cloud, which are easily customisable and configurable for reuse by various government agencies or departments at the central and state levels without investing effort in the development of such applications.

Apart from the above government-led initiatives, **Microsoft** announced the opening of three data centres in India which would primarily drive adoption of public cloud services by government departments, state-owned agencies, banks and financial institutions. Microsoft now accounts for 30 percent share in public cloud market in India.

What are the barriers for adoption of cloud computing in India?

One of the biggest challenges that cloud computing in India is facing is the lack of dependable infrastructure for data centres. For Cloud computing to be successful in India, the basic data centre grade **physical infrastructure i.e. Connectivity, Power and Cooling should be consistent.**

Some of the other prime concerns associated with adoption of cloud services in India are –

• **Energy resource management:** It has been estimated that the cost of powering and cooling accounts for 53 percent of the total operational expenditure of data centres. The goal is not only to cut down energy cost in data centres, but also to meet government regulations and environmental standards.

• **Server consolidation:** Achieving effective server consolidation (using the remote servers to maximum level to minimize energy usage) without hurting application performance is a major challenge.

• **Platform management:** This includes challenges in delivering middleware capabilities for building, deploying, integrating and managing applications in a multi-tenant, elastic and scalable environments.

23. The Hague verdict in the South China Sea

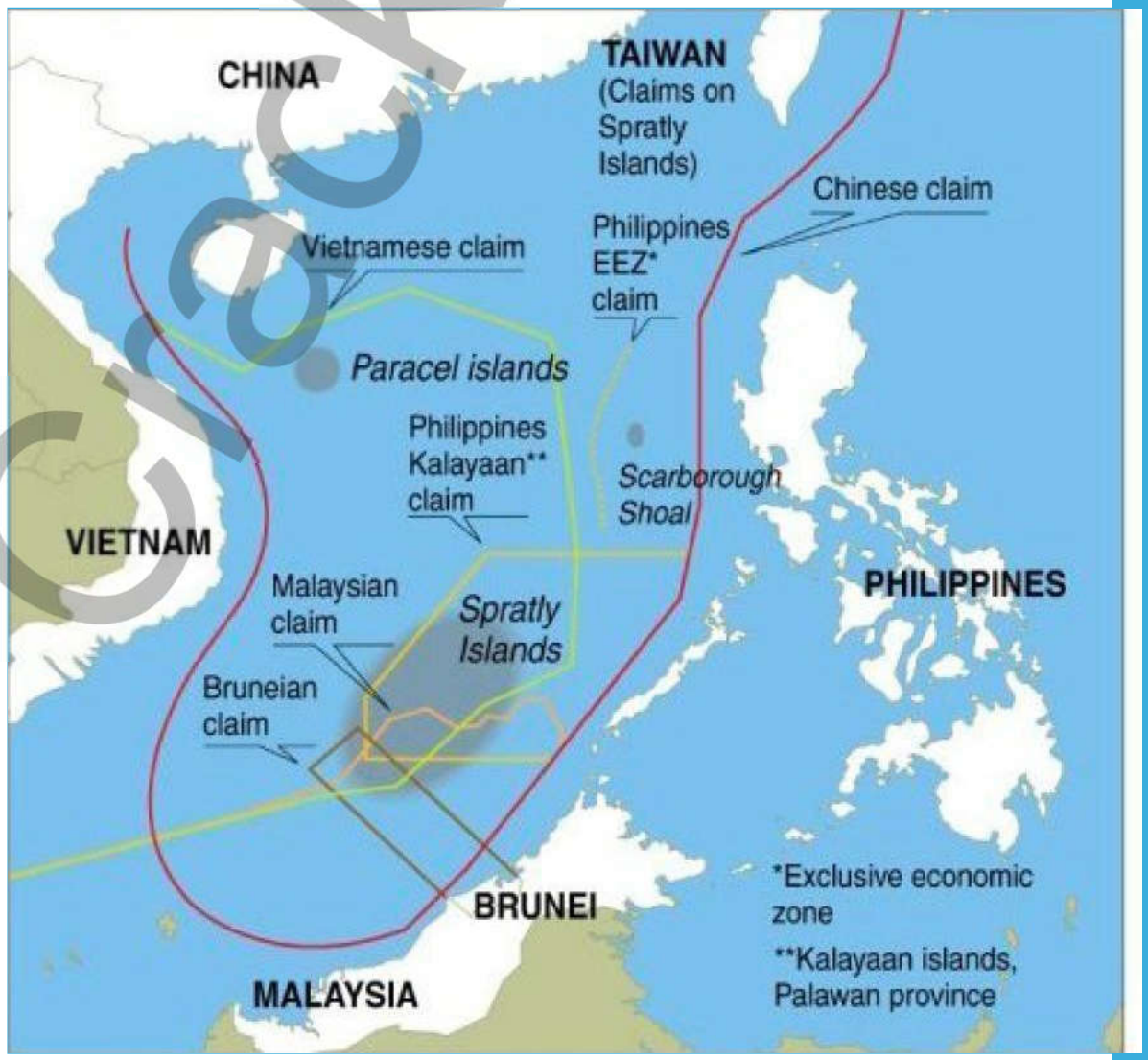
Judges at an arbitration tribunal in The Hague rejected China's claims to economic rights across large swathes of the South China Sea in a ruling that will be claimed as a victory by the Philippines.

Highlights

- The tribunal said China has no "historical rights" over South China Sea.
- Tribunal said "none of the Spratly islands grant China an exclusive economic zone".
- China has said it will not be bound by any ruling.

South China Sea Dispute

The South China Seas is the scene of escalating territorial disputes between China and its neighbors, including Japan, Vietnam, and the Philippines. All parties are signatories to UNCLOS agreement. The tensions, shaped by China's growing assertiveness, have fueled concerns over armed conflict and raised questions about Washington's security commitments in its strategic re-balance toward the Asia-Pacific region.



South China Sea

- China has backed its expansive claims with island-building and naval patrols.
- The US says it does not take sides in territorial disputes, but has sent military ships and planes near disputed islands, calling them "freedom of navigation" operations to ensure access to key shipping and air routes.

- Both US and China have accused each other of “militarising” the South China Sea.
- The US is concerned that China, if left unchallenged, may seize control of these vital international shipping lanes and resources.
- The Philippines, Vietnam, Malaysia and Taiwan have all built airstrips on the disputed islands under their control.
- There are fears that the area is becoming a flashpoint, with potentially serious global consequences.

SCS - Significance

- The 3.5 million sq km South China Sea is critical to the world’s economy and to regional security.
- Some US$5 trillion in ship-borne goods pass through the SCS each year, connecting Asia’s fast-growing economies with the US, Europe, the Middle East and Africa.
- The SCS is also believed to hold oil and gas reserves.

China claiming nearly all of the South China Sea

- China’s increasing assertiveness in the South China Sea is a natural consequence of its growing economic power and its need to secure its front yard.
- China believes that the increased US presence in the Asia-Pacific region now institutionalised under the ‘Pivot to Asia’ policy, launched in 2012 - is meant to contain China’s rise.
- **freedom of navigation’**The United States’ active diplomacy encourages Japan, India and Australia to participate in ‘operations in the South China Sea.

Case in ICJ

- The South China Sea Arbitrationwas an arbitration case brought by the Republic of the Philippines against the Peoples Republic of China concerning certain issues in the South China Sea in 2013.
- **nine-dotted line”** The Philippines contends that the “claim by China is invalid because it violates the agreements about exclusive **UN Convention on Laws of the Sea (UNCLOS)**economic zones and territorial seas.
- On 12 July 2016, the Hague tribunal ruled in favour of the Philippines and against China over territorial disputes in the South China Sea.

SCS Tribunal findings

- **“no historical rights”“nine-dash line”**The Hague tribunal ruled China has based on the so-called
- The tribunal furthermore found China had violated the Philippines’ sovereign rights in those waters by interfering with its fishing and petroleum exploration and by constructing artificial islands.
- **Scarborough Shoal,**At where it said fishermen from the Philippines and China had traditional fishing rights, it said China had restricted these rights.
- It added that China had created a serious risk of collision when its patrol boats had physically obstructed Philippine fishing vessels.
- The tribunal also condemned China’s land reclamation projects and its construction of artificial islands at seven features in the Spratly Islands, concluding that it had caused “severe harm to the coral reef environment and violated its obligation to preserve and protect fragile ecosystems and the habitat of depleted, threatened, or endangered species”.

China's Reaction

- China boycotted the proceedings, questioning the Court’s jurisdiction and publicly claiming historic rights to the SCS and its resources.
- China reacted with indignation to the verdict by describing the ruling as “ill-founded” and commented that it was “naturally null and void”.
- China’s proclaimed right to declare an air defense identification zone (ADIZ) over the South China Sea.

International reactions

- The Philippines called for “restraint and sobriety” in the SCS.
- The Philippines faces pressure both at home and abroad not to cede an inch to China.
- Washington called upon countries bordering the South China Sea to avoid “provocative statements or actions.”

Implications

- It is highly unlikely that China will relent on its position and cede control of the islands Beijing now occupies within its nine dash line, despite the ruling.
- But China does not want to be seen as a bully in the region, and will likely accommodate other’s positions in bilateral negotiations.
- China’s ambitions need a friendly neighborhood.
- China must assure the ASEAN member-states that its intentions are benign.
- It will also increase pressure on China toseek a negotiated resolution to the overlapping claims. Any other course will be damaging to China’s international standing.

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- ASEAN countries face a serious dilemma in balancing their relations with both China and the United States.
- Perceived pressure from China will likely push smaller countries towards the United States.
- As China is the major regional power, and has global ambitions, the onus is on it to take the lead in reducing tensions. This will mean working quietly behind the scenes to accommodate the interests of ASEAN member-states.
- After all, small economic concessions from China the world's largest economy in terms of real GDP could mean big gains for the ASEAN countries. Together, Asia can rise peacefully.

24. Render sedition unconstitutional

Sedition, defined as "incitement to violence" or "disorder", is a legislation meant to suppress the voice of Indian people and has no place in a 21st century democracy. The Supreme Court, being the protector of the fundamental rights of the citizens needs to declare the law unconstitutionalSince the governments and its agencies have strictly gone by the text of Section 124A though the Supreme Court itself did not apply these principles to the speech of Kedarnath, the law declared in Kedarnath has lost its potencyIndependent India's governments seem to have found great relief in having a provision on sedition. Amendments made to Article 19 of the Constitution imposing curbs and validating them on the ground of "reasonable restrictions", indicate just that

Some trigger-happy State governments in India start shooting from the hip the moment they see an article or a cartoon or hear a speech very critical of the government or Ministers or politicians in power.'Sedition' is an offence incorporated into the Indian Penal Code (IPC) which they have found handy to silence or discipline critics. This nineteenth century law, enacted to silence the Indian people by the colonial rulers, has been retained by the democratic government in free India. Not only that, it has perhaps been used more often by free India's governments than the colonial government did during the 77 years of its presence in the Penal Code. Sedition was not a part of the original Indian Penal Code(IPC) enacted in 1860 and was introduced in 1870.

Independent India's governments seem to have found great relief in having a provision on sedition in the penal statute. A spate of litigations in the fifties and sixties, and the amendments made to Article 19 of the Constitution — widening the scope of penal legislation and validating them on the ground of reasonable restrictions — indicate just that. During the past four years, we have again witnessed frequent invocation of sedition to deal with free speech and expression.

State intolerance to freedoms

Recently, the Gujarat government booked a Patel leader under sedition for sending messages containing "offensive language against the Prime Minister, the State Chief Minister and Amit Shah, the President of BJP". These cases are indicative of a high level of intolerance being displayed by governments towards the basic freedom enjoyed by citizens. Democracy has no meaning without these freedoms and sedition as interpreted and applied by the police is a negation of it.

Section 124A of the IPC defines sedition and says: (i) whoever by words either spoken or written or by signs or by visible representation or otherwise brings or attempts to bring into hatred or contempt, the government established by law; or (ii) whoever by the above means excites or attempts to excite disaffection towards the government established by law, has committed the offence of sedition. The punishment prescribed varies from imprisonment up to three years to life imprisonment, with fine or without it. The first explanation says that disaffection includes disloyalty and all feelings of enmity. Explanations 2 and 3 in effect say that disapprobation of the measures or administrative action etc. of the government to obtain their alteration by lawful means is not an offence.

The caveat however, is that there should be no attempt to excite hatred or contempt or disaffection. In other words, even if the impugned speech or article or cartoon seeks to obtain the alteration of the wrong governmental decisions, if they excite hatred, contempt or disaffection towards the government, the author of the speech and others are liable to be charged with sedition and punished.

History of sedition

The history of the offence of sedition in the IPC is one of conflicts in judicial interpretations. In the pre-Independence era, a number of landmark cases on sedition were decided by the Federal Court as well as the Privy Council. These two high judicial bodies had taken diametrically opposite positions on the meaning and scope of sedition as a penal offence. The Federal Court in Niharendu Dutt Majumdar Vs. King Emperor (1942) FCR 48, held that "public disorder or the reasonable anticipation or likelihood of public disorder is the gist of the offence". These judges were of the view that sedition implies resistance or lawlessness in some form. In all these cases the point that has been emphasised is that if there is no incitement to violence, there is no sedition.

On the other hand, the Privy Council was of the view that acts like incitement to violence and insurrection are immaterial while deciding the culpability of a person charged with sedition. It said that since the IPC defines the offence of sedition, unlike the English Law, which doesn't define it, one needs to go by that definition only. Queen Empress Vs. Bal Gangadhar Tilak (1897) was the first case wherein the law on sedition under Section 124A in the IPC was explained. Strachey J. stated the law in the following terms;

"The offence consists in exciting or attempting to excite in others certain bad feelings towards the government. It is not the exciting or attempting to excite mutiny or rebellion or any sort of actual disturbance, great or small. Whether any disturbance or outbreak was caused by these articles is absolutely immaterial."

In King Emperor V. Sadashiv Narayan Bhalerao (1947) , the Privy Council not only reiterated the law on sedition enunciated in the Tilak case, but also held that the Federal Court's statement of law in theNiharendu Majumdar case was wrong. The Privy Council overruled the decision of the Federal Court and held that excitement of feelings of enmity to the government is sufficient to make one guilty under Section 124A of the Code.

Now, let us look at the decisions of the Supreme Court of independent India on sedition. The Constitution bench of the Supreme Court explained the amplitude of sedition for the first time in 1962 in the case of Kedarnath Vs. State of Bihar (1962). Quite interestingly the court adopted the view of the Federal Court of India that the gist of the offence of sedition is "incitement to violence" or the "tendency or the intention to create public disorder". So, as per the Constitution Bench of the Supreme Court, a person can be charged with sedition only if there is incitement to violence in his speech or writing or an intention to create disorder.

Kedarnath decision

The occasion for this decision was an appeal by a person named Kedarnath Singh of Bihar who was punished by the trial court for making a speech, a punishment upheld by the High Court. A few lines of his speech are worth quoting:

"To-day the dogs of CID are loitering around Barauni. Many official dogs are sitting even in this meeting. The people of India drove out the Britishers from this country and elected these Congressgoondas to the gaddi…. When we drove out the Britishers, we shall strike and turn out these Congressgoondas as well… They have today established a rule of lathis and bullets in the country…. We believe in [a] revolution, which will come and in the flames of which, the capitalists, zamindars and the Congress leaders of India… will be reduced to ashes and on their ashes will be established a Government of the poor and downtrodden people of India."

It can be seen from this speech that there is no "incitement to violence" or "disorder" which alone, according to the Supreme Court, formed the basis of a charge of sedition. Therein lies the contradiction in this landmark judgment. In fact, the issue before the court was whether Section 124A was violative of Article 19(1)(a) relating to freedom of speech and expression. If the view of the Privy Council on sedition was to be adopted, then Section 124A would have had to be struck down as violative of Article 19(1)(a). The Supreme Court did not want to do that, so, it adopted the strict principles of English Law on sedition which were laid down in the Niharendu case in 1942. But the court upheld the punishment of Kedarnath who did not incite anyone to resort to violence and overthrow the government.

Sedition defined under Section 124A of the IPC is a colonial law meant to suppress the voice of Indian people. That is why the Indian law on sedition was different from the English law. Despite the strict construction adopted by the Supreme Court, the law enforcement agencies have always used it against artists, public men, intellectuals, et al for criticising the governments. In fact the Supreme Court itself did not apply these strict principles to the speech of Kedarnath and his conviction. The government and its agencies have, in reality, followed the law enunciated by the Privy Council and not by the Supreme Court in Kedarnath. The governments in free India continue to use it for the very purpose for which the colonial government used it.

Therefore, since the governments and its agencies have strictly gone by the text of Section 124A though the Supreme Court itself did not apply these principles to the speech of Kedarnath, the law declared inKedarnath has lost its potency. The Supreme Court, being the protector of the fundamental rights of the citizens may step in now and declare Section 124A unconstitutional. India of the 21st century does not require a law used by the colonial government to suppress India's voice.

Source - http://www.thehindu.com/opinion/lead/sedition-legislation-meant-to-suppress-the-voice-of-indian-people/article7758013.ece

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