

CURRENT AFFAIRS

20TH OCT. TO 31ST OCT. 2016

EASTERN DEDICATED FREIGHT CORRIDOR PROJECT

IN NEWS: India and the World Bank today signed a \$650 million agreement towards the third loan for the Eastern Dedicated Freight Corridor (a freight-only rail line) that will help faster and more efficient movement of raw materials and finished goods between the north and eastern parts of India.

PROJECT

- The EDFC is part of India's first Dedicated Freight Corridor (DFC) initiative – being built on two main routes – the Western and the Eastern Corridors.
- These corridors will help India make a quantum leap in increasing the railways' transportation capacity by building high-capacity, higher-speed dedicated freight corridors along the Golden Quadrilateral. Currently, the rail routes that form a Golden Quadrilateral connecting Delhi, Mumbai, Chennai and Kolkata, account for 16 percent of the railway network's route length, but carry more than 60 percent of India's total rail freight.
- The Eastern Corridor is 1,840 km long and extends from Ludhiana to Kolkata.
- The World Bank is supporting the Eastern Dedicated Freight Corridor (EDFC) as a series of projects in which the three sections with a total route length of 1,193 km will be delivered.
- The 401 km Ludhiana–Khurja section goes through Punjab, Haryana and Uttar Pradesh. .

SIGNIFICANCE

- Moving freight from road to rail will reduce the carbon footprint of freight.
- The Eastern corridor is expected to generate about 10.48 million tons of GHG emissions up to 2041-42, as against 23.29 million of GHG emissions in the absence of EDFC – a 55 percent reduction in GHG emissions.
- The project will benefit industries of Northern and Eastern India, which rely on railway network for transportation of material inputs and exports that would accelerate creation of jobs in the northern and eastern regions of the country.
- The government is planning to set up integrated manufacturing clusters using EDFC as the backbone. These clusters will be set up with an investment of about \$1 billion on either side of EDFC.

The loan, from the International Bank for Reconstruction and Development (IBRD), has a 7-year grace period, and a maturity of 22 years.

UDAN SCHEME

IN NEWS: The Ministry of Civil Aviation launched the Regional Connectivity Scheme **UDAN** in New Delhi.

- UDAN is an innovative scheme to develop the regional aviation market.
- It is a market-based mechanism in which airlines bid for seat subsidies.
- This first-of-its-kind scheme globally will create affordable yet economically viable and profitable flights on regional routes so that flying becomes affordable to the common man even in small towns.
- The first flight under the scheme would be able to take off by January next year.
- The objective of the scheme was “**Ude Desh Ka Aam Naagrik**”.
- The state governments would reap the benefit of development of remote areas to enhance trade and commerce and more tourism expansion.
- The scheme UDAN envisages providing connectivity to un-served and under-served airports of the country through revival of existing air-strips and airports. The scheme would be in operation for a period of 10 years.
- UDAN has a unique market-based model to develop regional connectivity.
- The selected airline operator would have to provide a minimum of 9 and a maximum of 40 UDAN Seats (subsidized rates) on the UDAN Flights for operations through fixed wing aircraft and a minimum of 5 and a maximum of 13 Seats on the Flights for operations through helicopters.
- Central Government would provide concessions in the form of reduced excise duty, service tax, permission to trade ASKMs for Non-RCS (UDAN) Seats and flexibility of code sharing at the RCS (UDAN) airports.
- State governments will have to lower the VAT on ATF to 1% or less, besides providing security and fire services free of cost and electricity, water and other utilities at substantially concessional rates.

A **Regional Connectivity Fund** would be created to meet the viability gap funding requirements under the scheme. The RCF levy per departure will be applied to certain domestic flights. The partner State Governments (other than North Eastern States and Union Territories where contribution will be 10 %) would contribute a 20% share to this fund.

FEMALE LITERACY 2016

IN NEWS: Data from new research on female literacy show that India’s school education system is under-performing in terms of quality when compared to its neighbours, Pakistan, Bangladesh and Nepal. The research studies changes in female literacy over a number of schooling years.

The proportion of women who completed five years of primary schooling in India and were literate was 48 per cent, much less than 92 percent in Nepal, 74 per cent in Pakistan and 54 per cent in Bangladesh. It is a simple but powerful signal that India’s education system is under-performing.

- The data also revealed that, female literacy rates went up by one to 15 per cent after completing two years of schooling.
- Corresponding numbers for Pakistan and Nepal were three to 31 per cent and 11 to 47 per cent respectively.

- This implies that schooling is roughly twice as productive at generating literacy for women during the early grades in Pakistan when compared to India. Or, it could also mean that Indian schools are much more lenient about promoting students who cannot read,” Mr. Sandefur said.

Demographic and Health Survey data

- India ranks low in global indices of female literacy.
- If countries are ranked by the earliest grade at which at least half of the women are literate, a proxy for quality of learning India ranks 38th among the 51 developing.
- Indonesia, Rwanda, Ethiopia and Tanzania — all rank higher than India.
- Ghana is placed at the bottom. Just seven per cent of female students in Ghana can read after attaining their sixth grade.
- Millions of women have spent multiple years in school and emerged unable to read a simple sentence and it’s not getting much better over time.

GREENHOUSE GAS BULLETIN: WMO

IN NEWS: Globally averaged concentration of carbon dioxide in the atmosphere reached the symbolic and significant milestone of 400 parts per million for the first time in 2015 and surged again to new records in 2016 on the back of the very powerful El Niño event, according to the World Meteorological Organization's annual Greenhouse Gas Bulletin.

- CO₂ levels had previously reached the 400 ppm barrier for certain months of the year and in certain locations but never before on a global average basis for the entire year.
- The longest-established greenhouse gas monitoring station at Mauna Loa, Hawaii, predicts that CO₂ concentrations will stay above 400 ppm for the whole of 2016 and not dip below that level for many generations.
- The growth spurt in CO₂ was fuelled by the El Niño event, which started in 2015 and had a strong impact well into 2016.
- This triggered droughts in tropical regions and reduced the capacity of “sinks” like forests, vegetation and the oceans to absorb CO₂.
- These sinks currently absorb about half of CO₂ emissions but there is a risk that they may become saturated, which would increase the fraction of emitted carbon dioxide which stays in the atmosphere.
- Between 1990 and 2015 there was a 37% increase in radiative forcing – the warming effect on our climate – because of long-lived greenhouse gases such as carbon dioxide, methane and nitrous oxide (N₂O) from industrial, agricultural and domestic activities.

The recent agreement in Kigali to amend the so-called Montreal Protocol and phase out hydrofluorocarbons, which act as strong greenhouse gases, is good news. The carbon dioxide has remained in the atmosphere for thousands of years and in the oceans for even longer.

WMO and partners are working towards an Integrated Global Greenhouse Gas Information System to provide information that can help nations to track the progress toward implementation of their national emission pledges, improve national emission reporting and inform additional mitigation actions.

WMO is also striving to improve weather and climate services for the renewable energy sector and to support the Green Economy and sustainable development. To optimize the use of solar, wind and hydropower production, new types of weather services are needed.

Highlights of Greenhouse Gas Bulletin

The WMO Greenhouse Gas Bulletin reports on atmospheric concentrations of greenhouse gases.

- **Emissions** represent what goes into the atmosphere.
- **Concentrations** represent what remains in the atmosphere after the complex system of interactions between the atmosphere, biosphere, cryosphere and the oceans.
- About a quarter of the total emissions is taken up by the oceans and another quarter by the biosphere, reducing in this way the amount of CO₂ in the atmosphere.

The Greenhouse Gas Bulletin provides a scientific base for decision-making. WMO released it ahead of the U.N. climate change negotiations in Marrakech, Morocco, to be held from 7 – 18 November 2016.

Carbon dioxide (CO₂)

- Accounted for about 65% of radiative forcing by long-lived greenhouse gases. The pre-industrial level of about 278 ppm represented a balance between the atmosphere, the oceans and the biosphere.
- Human activities such as the burning of fossil fuels has altered the natural balance and in 2015, globally averaged levels were 144% of pre-industrial levels.
- In 2015, global annual average concentration of CO₂ concentrations reached 400.0 ppm. The increase of CO₂ from 2014 to 2015 was larger than the previous year and the average over the previous 10 years.

In addition to reducing the capacity of vegetation to absorb CO₂ the powerful El Niño also led to an increase in CO₂ emissions from forest fires. CO₂ emissions in Equatorial Asia where there were serious forest fires in Indonesia in August-September 2015 were more than twice as high as the 1997-2015 average.

Methane (CH₄)

- It is the second most important long-lived greenhouse gas and contributes to about 17% of radiative forcing.
- Approximately 40% of methane is emitted into the atmosphere by natural sources (e.g., wetlands and termites), and about 60% comes from human activities like cattle breeding, rice agriculture, fossil fuel exploitation, landfills and biomass burning.
- Atmospheric methane reached a new high of about 1845 parts per billion (ppb) in 2015 and is now 256% of the pre-industrial level.

Nitrous oxide (N₂O)

- It is emitted into the atmosphere from both natural (about 60%) and anthropogenic sources (approximately 40%), including oceans, soil, biomass burning, fertilizer use, and various industrial processes.
- Its atmospheric concentration in 2015 was about 328 parts per billion. This is 121% of pre-industrial levels.

- It also plays an important role in the destruction of the stratospheric ozone layer which protects us from the harmful ultraviolet rays of the sun. It accounts for about 6% of radiative forcing by long-lived greenhouse gases.

Sulphur hexafluoride

- It is a potent long-lived greenhouse gas. It is produced by the chemical industry, mainly as an electrical insulator in power distribution equipment.
- Atmospheric levels are about twice the level observed in the mid-1990s.
- Ozone-depleting chlorofluorocarbons (CFCs), together with minor halogenated gases, contribute about 12% to radiative forcing by long-lived greenhouse gases. While CFCs and most halons are decreasing, some hydrochlorofluorocarbons (HCFCs) and hydrofluorocarbons (HFCs), which are also potent greenhouse gases, are increasing at relatively rapid rates, although they are still low in abundance.

CHANDRAYAAN-2 MISSION

IN NEWS: The Indian Space Research Organisation started a series of ground and aerial tests linked to the critical Moon landing of Chandrayaan-2 on at its new site at Challakere in Chitradurga district, 400 km from Bengaluru.

ISRO Satellite Centre or ISAC, the lead centre for the second Moon mission, has artificially created close to ten craters to simulate the lunar terrain and test the Lander's sensors.

A small ISRO aircraft has been carrying equipment with sensors over these craters to plan the tasks ahead.

Tests are conducted over the simulated craters at Chitradurga and using an aircraft to assess whether the sensors on the Lander will do their job [later] of identifying the landing spot on the Moon.

Chandrayaan-2 is tentatively set for late 2017 or early 2018 and includes soft-landing on Moon and moving a rover on its surface.

The mission includes an Orbiter, a Lander and a Rover. The Orbiter spacecraft when launched from will travel to the Moon and release the Lander, which will in turn deploy a tiny Rover to roam the lunar surface and all three sending data and pictures to Earth.

NATIONAL TRIBAL CARNIVAL 2016

IN NEWS: Prime Minister inaugurated First National Tribal Carnival-2016 in New Delhi. The Government was committed to using modern technology such as underground mining and coal gasification, which would minimize disturbance to tribal settlements, for example the Rurban Mission would focus on development of rural growth centres.

Van Bandhu Kalyan Yojana is another important scheme which has proved beneficial for the tribals. Ministry of Tribal Affairs is equally concerned to provide suitable market for the forest products produced by tribals.

- To preserve and promote various facets of the tribal life relating to culture, tradition, customs and their skills of the Schedule Tribes.
- Activities like displaying documents on traditional socio-culture aspects, exhibition of art/artifacts, cultural performances, demonstration of skills like sports, paintings, traditional healing practices etc. was the part of the event.
- Workshop on issues like Panchayats (Extension to the Scheduled Areas) Act, 1996 (PESA) its implementation, benefit to tribal community and its drawbacks, Forest Rights Act (FRA) 2006 and its implications and reservation in politics and recruitment was also the part of the carnival.
- This event provided the stage for deliberations on important subjects affecting tribal development.
- It also gave an exposure of marketability of tribal products like textiles, paintings, artefacts so that it has a catalytic effect on income-generating activities and tribal livelihood.

FOREST RIGHT ACT (FRA) 2006

The **Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006** also been called as **Forest Rights Act**, the **Tribal Rights Act**, the **Tribal Bill**, and the **Tribal Land Act**.

The law concerns the rights of forest-dwelling communities to land and other resources.

- **Title rights** (ownership) - to land that is being farmed by tribals or forest dwellers are subject to a maximum of 4 hectares; ownership is only for land that is actually being cultivated by the concerned family as on that date, meaning that no new lands are granted.
- **Use rights** - to minor forest produce (also including ownership), to grazing areas, to pastoralist routes, etc.
- **Relief and development rights** - to rehabilitation in case of illegal eviction or forced displacement and to basic amenities, subject to restrictions for forest protection.
- **Forest management rights** - to protect forests and wildlife.

Eligibility to get rights under the Act is confined to those who "primarily reside in forests" and who depend on forests and forest land for a livelihood, either the claimant must be a member of the Scheduled Tribes scheduled in that area or must have been residing in the forest for 75 years.

CHINA'S SPACE LAB LAUNCHES MICRO-SATELLITE

IN NEWS: China's experimental space lab Tiangong-2 orbiting the Earth with two astronauts on board has successfully launched a micro-satellite, roughly the size of a desktop printer.

- Weighing 47 kilograms, the micro satellite has a series of visible light cameras, including a 25 megapixel camera and wide-angle imagers.
- Its mission is to take photographs of Tiangong II and the Shenzhou 11 spacecraft, which docked with the lab.
- The Tiangong II space laboratory released its companion satellite, Banxing-2.
- The satellite, which the media has nicknamed "Selfie Stick", also has an infrared camera that is temperature-sensitive.
- The companion satellite monitors Tiangong II and Shenzhou XI, conditions all the time, which is helpful in detecting failures.

- With three solar panels, the satellite can also generate enough power to adjust its orbit to shoot pictures of the lab and spacecraft.
- The new model is smaller and has a higher capacity.

INDO-SRI LANKA JOINT MILITARY EXERCISE MITRA SHAKTI 2016

IN NEWS: The fourth edition of the India-Sri Lanka Joint Military Exercise 'MITRA SHAKTI 2016' was conducted at Sinha Regimental Centre in Ambepussa, Sri Lanka.

The main focus

- To enhance inter-operability while carrying out Counter Insurgency (CI)/Counter Terrorism (CT) operations under the United Nations Mandate.
- A comprehensive training programme spanning fourteen days has been drawn up for the purpose.
- The Indian Contingent is represented by a platoon from the RAJPUTANA RIFLES Regiment and the Sri Lankan Army will be represented by a platoon from the Sinha Regiment.
- Mitra Shakti series of bilateral exercises is one of the major bilateral defence cooperation initiatives between India and Sri Lanka since 2013.

MAN BOOKER PRIZE

IN NEWS: Paul Beatty has become the first American writer to win the Man Booker prize, for a caustic satire on US racial politics.

PAUL BETTY

- The 54-year-old Los Angeles-born writer won for **The Sellout**, a laugh-out-loud novel whose main character wants to assert his African American identity by, outrageously and transgressively, bringing back slavery and segregation.
- In 1990, Beatty was crowned the first ever Grand Poetry Slam Champion of the Nuyorican Poets Cafe.
- His first novel, *The White Boy Shuffle* (1996).

MAN BOOKER PRIZE

The Man Booker Prize was established in 1969. The winner receives £50,000 as well as the £2,500 awarded to each of the shortlisted authors. Both the winner and the shortlisted authors are guaranteed a worldwide readership plus an increase in book sales.

The **Man Booker Prize for Fiction** (formerly known as the **Booker-McConnell Prize** and commonly known as the **Booker Prize**) is a literary prize awarded each year for the best original novel, written in the English language and published in the UK.

EASE OF DOING BUSINESS: WORLD BANK

IN NEWS: India has moved one rank up to the 130th position in the World Bank's 'ease of doing business' ranking for 2017. This marginal improvement came on the back of slight improvement in four indicators getting electricity, enforcing contracts, trading across borders and registering property.

India was last year ranked on 130th among 190 economies that were assessed over ten parameters.

- Starting a business.
- Dealing with construction permits.
- Getting electricity.
- Registering property.
- Getting credit.
- Protecting minority investors.
- Paying taxes.
- Trading across borders.
- Enforcing contracts.
- Resolving bankruptcy.

In the 2017 rankings the only major improvement for India was seen in the area of 'getting electricity'. India was ranked 51st for 'getting electricity' in 2016. In the area of 'enforcing contracts', the country's ranking improved from 178 in 2016 to 172 in 2017.

'ONE INDIA' CONCEPT

IN NEWS: The Centre, in collaboration with State governments, plans to introduce a 'One India' concept, the biggest and the most comprehensive 'ease of doing business' initiative.

'one-form-one-portal' model aimed at attracting huge investments, the processes will be simplified to an extent where investors will need to fill only a single e-form for investing and doing business anywhere in India.

The Centre is already developing an eBiz project that is basically a government-to-business portal. The services offered under the portal — which firms and investors can use 24X7 online — are on starting, running and closing down a business. The portal has an integrated payment gateway and currently offers 17 pan-India services (at the Central government-level).

The state-level services on offer include that of Delhi (two services), Andhra Pradesh (13) and Odisha (15). The upcoming services include seven Central government & other services, 13 from Andhra Pradesh, Maharashtra (10), Delhi (six) and Haryana & Tamil Nadu (eight each).

GLOBAL GENDER GAP REPORT 2016

IN NEWS: World Economic Forum (WEF) on released the Global Gender Gap Report 2016. The 2016 report provides Gender Gap scores for 144 countries compared to 145 countries included in 2015 report.

Out of the 144 countries surveyed, while Iceland topped the Gender Gap Index for the eighth consecutive year in a row, India stood at 87th position, from the 108th position in 2015.

As per the report, the global gender gap across health, education, economic opportunity and politics will take another 83 years across the 107 countries.

Highlights

- Top ten countries with high gender equality are Iceland (1), Finland (2), Norway (3), Sweden (4), Rwanda (5) Ireland (6), The Philippines (7), Slovenia (8), New Zealand (9) and Nicaragua (10).
- Five countries with least gender equality are Yemen (144), Pakistan (143), Syria (142), Saudi Arabia (141) and Chad (140).
- The non-European nations in the top ten include Rwanda (5), The Philippines (7), New Zealand (9) and Nicaragua (10).
- Out of the 142 countries covered by the Index both this year and last year, 68 countries have increased their overall gender gap score compared to 2015, while 74 have seen it decrease.
- No country in the world has fully closed its gender gap, but four out of the five Nordic countries and, for the first time this year, Rwanda, have closed more than 80% of theirs.
- Yemen, the lowest ranking country, has closed slightly less than 52% of its gender gap.

INDIA

- India which was ranked at 87th position had succeeded in closing the gender gap with regard to wage equality and across all indicators of the Educational Attainment sub-index, fully closing its primary and secondary education enrolment gender gaps.
- However, it also sees some regression on women's estimated earned income and continues to rank third-lowest in the world on Health and Survival, remaining the world's least-improved country on this sub-index over the past decade.
- Economic Participation and Opportunity: India was ranked at 136th position with 0.408 score. In this segment, India's performance was one of the lowest among the surveyed countries. In 2015, India was placed at 139th position.
- Educational attainment: India was ranked at 113rd position.
- Health and survival: India was ranked at 142nd position.
- Political empowerment: India was placed at 9th position

Global Gender Gap Index

- It was first published by World Economic Forum (WEF) in 2006 and the 2016 report was the 11th edition.
- Through the Global Gender Gap Report, the World Economic Forum quantifies the magnitude of gender disparities and tracks their progress over time, with a specific focus on the relative gaps between women and men across four key areas, namely health, education, economy and politics.
- There are three basic concepts underlying the Global Gender Gap Index, forming the basis of the choice of indicators, how the data is treated and the scale used.
 - a) First, it focuses on measuring gaps rather than levels.
 - b) Second, it captures gaps in outcome variables rather than gaps in input variables.
 - c) Third, it ranks countries according to gender equality rather than women's empowerment.

INDIA- NEW ZEALAND

IN NEWS: India and New Zealand signed three agreements

- There was an arrangement between the Food Safety and Standards Authority of India and the Ministry for Primary Industries of New Zealand regarding Food Safety Cooperation.
- MoU was signed between the Ministry of Youth Affairs and Sports of India and Sport New Zealand on cooperation in the field of youth affairs and sports.
- Protocol to the convention between India and New Zealand for the avoidance of double taxation and the prevention of fiscal evasion with respect to taxes on income.

Both nations also voiced their support for establishment of annual foreign ministry consultations at senior officials' level besides cooperation and dialogue on cyber issues.

BIOTECH-KISAN & CATTLE GENOMICS

IN NEWS: The Ministry of Science and Technology took two Farmer-Centric initiatives - **Biotech-KISAN and Cattle Genomics.**

Biotech- KISAN (Krishi Innovation Science Application Network)

- Biotech-KISAN is a new programme that empowers farmers, especially women farmers.
- Cash crops and horticulture can be a major source of income but the vagaries of climate, disease and market often prevent this.
- The Biotech-KISAN is a Farmer centric scheme launched by of the Department of Biotechnology.
- Soil, Water, Seed and Market are some key points that concern small and marginal farmers. Biotech-KISAN aims to link farmers, scientists and science institutions across the country in a network that identifies and helps solve their problems in a cooperative manner.
- The scheme includes the Mahila Biotech- KISAN fellowships, for training and education in farm practices, for women farmers. The Scheme also aims to support the women farmers/ entrepreneur in their small enterprises, making her a grass root innovator.

- The scheme is targeted towards the least educated marginalised farmer. Scientists will spend time on farms and link communication tools to soil, water seed and market.
- Biotech KISAN will connect farmers with science in the 15 agro-climatic zones of the country in a manner, which constantly links problems with available solutions.

Cattle Genomics

Livestock contributes significantly to the livelihood of rural poor in our country and has enormous potential to reduce poverty. There is a predicted increase in demand for animal food products in India by 2020. In the wake of climate change challenges, quality breeding of indigenous livestock is essential. When breeding is selective, the native livestock can transform the lives of small farmers. Genomic selection will ensure high-yielding, disease-resistant, resilient livestock.

- Better livestock can be genetically, selected which ultimately leads to enhancement of productivity in a sustainable, resilient manner.
- Genetic improvement of livestock through traditional selection for increasing livestock productivity has major limitations. To overcome these, genomic selection has played a crucial role in livestock industry globally.
- Genomic selection will transform local livestock breeding. This uses information on variation in DNA sequences between animals to predict the breeding value of animals more accurately.
- This will reduce the cost and time interval of breeding program in future and productivity of indigenous cattle will be enhanced.

WORLD MAY LOSE TWO-THIRDS OF WILD ANIMALS BY 2020

IN NEWS: World is on a track to lose two third of a wild animals by 67% on 1970 levels unless urgent action is taken to reduce humanity's impact. The number of wild animals living on Earth is set to fall by two-thirds by 2020, according to a new report, part of a mass extinction that is destroying the natural world upon which humans depends.

As per report

- Animal populations plummeted by 58% between 1970 and 2012, with losses on track to reach 67% by 2020.
- Researchers from WWF and the Zoological Society of London compiled the report from scientific data and found that the **destruction of wild habitats, hunting and pollution** are the main cause.
- The creatures being lost range from mountains to forests to rivers and the seas and include well-known endangered species such as elephants and gorillas and lesser known creatures such as vultures and salamanders.
- The biggest cause of tumbling animal numbers is the destruction of wild areas for farming and logging.
- The majority of the Earth's land area has now been impacted by humans, with just 15% protected for nature.
- Poaching and exploitation for food is another major factor, due to unsustainable fishing and hunting.
- more than 300 mammal species are being eaten into extinction.
- killer whales and dolphins in European seas being seriously harmed by long-lived industrial pollutants. Vultures in south-east Asia have been decimated over the last 20 years, dying after eating

the carcasses of cattle dosed with an anti-inflammatory drug. Amphibians have suffered one of the greatest declines of all animals due to a fungal disease thought to be spread around the world by the trade in frogs and newts.

- Rivers and lakes are the hardest hit habitats, with animals populations down by 81% since 1970, due to excessive water extraction, pollution and dams. All the pressures are magnified by global warming, which shifts the ranges in which animals are able to live.
- Increased human pressure threatens the natural resources that humanity depends upon, increasing the risk of water and food insecurity and competition over natural resources.

IMPROVEMENTS

- Tiger numbers are thought to be increasing and the giant panda has recently been removed from the list of endangered species.
- In Europe, protection of the habitat of the Eurasian lynx and controls on hunting has seen its population rise fivefold since the 1960s.
- A recent global wildlife summit also introduced new protection for pangolins, the world's most trafficked mammals, and rosewoods, the most trafficked wild product of all.

BRAHMOS SUPERSONIC CRUISE MISSILE

IN NEWS: India and Russia have agreed to double the range of the BrahMos supersonic cruise missile that the two produce together. This follows India's recent accession to the Missile Technology Control Regime (MTCR). Earlier, India was denied access to the missile technology with range over 300 km as it was not a member state.

The decision was taken earlier this month during the BRICS summit that the range will be extended to over 600 km. Both the countries have also agreed to improve the BrahMos missile, which can be launched on land, air and sea.

BrahMos has already been deployed by the Army and the Navy in anti-ship and precision strike roles respectively. The air version is at present undergoing testing.

Missile Technology Control Regime (MTCR)

- It is a multilateral export control regime.
- Established in April 1987, the voluntary Missile Technology Control Regime (MTCR) aims to limit the spread of ballistic missiles and other unmanned delivery systems that could be used for chemical, biological, and nuclear attacks.
- The regime urges its 35 members, 1 which include most of the world's key missile manufacturers, to restrict their exports of missiles and related technologies capable of carrying a 500-kilogram payload at least 300 kilometers or delivering any type of weapon of mass destruction.
- **India** formally applied for membership to the group in June 2015, with active support from France and the United States, and officially became a member on 27 June 2016 with the consensus of the 34 member nations.

Brahmos

- It is a short-range ramjet supersonic cruise missile that can be launched from submarines, ships, aircraft or land.
- It is a joint venture between the Russian Federation's NPO Mashinostroeyenia and India's Defence Research and Development Organisation (DRDO).
- The name BrahMos is a portmanteau formed from the names of two rivers, the Brahmaputra of India and the Moskva of Russia.
- It is the world's fastest anti-ship cruise missile in operation.
- The missile travels at speeds of Mach 2.8 to 3.0.
- The land-launched and ship-launched versions are already in service, with the air and submarine-launched versions currently in the testing phase.
- An air-launched variant of BrahMos is planned which came out in 2012. A hypersonic version of the missile, BrahMos-II, is also presently under development with speed of Mach 7-8 to boost aerial fast strike capability. It is expected to be ready for testing by 2017.

WORLD'S LARGEST OUTDOOR AIR PURIFIER IN BEIJING

IN NEWS: China will deploy the seven-meter-tall tower, world's largest outdoor air purifier designed by a Dutch engineer Daan Roosegaarde, in its smog-hit capital Beijing, as the thick heavily-polluted haze returned to city. The city's environmental authorities issued a "yellow alert" for air pollution.

"Yellow alert" is the third-most serious level in a four tier color-code warning system. Red is the most serious and orange the second-most serious while blue is the least serious pollution level.

- The tower can capture about 75 percent of PM 2.5 and PM 10 tiny particles in its vicinity and then release purified air to create a "bubble" of fresh air around it.
- The tower can clean 30,000 cubic meters of air per hour through its patented ozone-free ion technology.

WESTERN ZONAL COUNCIL MEETING

IN NEWS: The 22nd meeting of the Western Zonal Council consisting of the States of Maharashtra, Gujarat, Goa and Union Territories of Daman & Diu and Dadra & Nagar Haveli was held at Mumbai.

The Council took up issue related to

- Coastal security.
- Internal security.
- Issuance of bio-metric identity cards to fishermen & issue of card readers.
- Formulation of plans for countering terrorism.
- Modernization of police force.
- Pradhan Mantri Awas Yojna (Urban) Mission.

- Surplus lands of Central Government for 'Housing for All : 2022' and providing shelters to the urban homeless. Pollution in Daman Ganga and Kolak river due to discharge of untreated effluents from Vapi industrial area.
- Setting up of Regional Development Authority for development of infrastructure in the region.
- Setting up of international museum of Indus – Valley civilization in Kutch District.
- Bringing back Indian fishermen (many of them belonging to Gujarat) languishing in Pakistan Jails.
- Education and Aadhaar.
- Pollution control and environmental related issues.

Five Zonal Councils (Northern, Western, Eastern, Central and Southern) were set up under the States Reorganization Act, 1956 to foster Inter-State co-operation and co-ordination among the States. **The Zonal Councils are mandated** to discuss and make recommendations on any matter of common interest in the field of economic and **social planning, border disputes, linguistic minorities or inter-State transport etc.** They are regional fora of cooperative endeavor for States linked with each other economically, politically and culturally. Being compact high level bodies, specially meant for looking after the interests of respective Zones, they are capable of focusing attention on specific issues taking into account regional factors, while keeping the national perspective in view.

COMPENSATORY AFFORESTATION FUND BILL 2016

IN NEWS: The Environment Ministry will frame rules within a month, to help States use of Rs 40,000 crore corpus earmarked to restore forests.

HIGHLIGHTS

- These rules are a follow-up to the Compensatory Afforestation Fund Bill passed by Parliament recently.
- The Bill establishes the National Compensatory Afforestation Fund under the Public Account of India, and a State Compensatory Afforestation Fund under the Public Account of each state.
- Most of the money will be used to restock and improve degraded forest.
- The CAF Bill proposes to dispense the corpus that has, over the years, collected money from projects that have diverted forest land for infrastructure development.
- These Funds will receive payments for compensatory afforestation, net present value of forest (NPV) and other project specific payments.
- Transfer of 90 % of the accumulated amounts, which presently is of the order of Rs. 40,000 crores to the States for creation and maintenance of compensatory afforestation and execution of other activities for conservation, protection, improvement and expansion of forest and wildlife resources of the country.
- The remaining 10 % Amounts to be retained at the National level will be used for monitoring and evaluation of activities to be undertaken by the States/UTs and Central Government from these funds and to provide, research and technical support to the States.
- It will help in make up more than 40 per cent of the total forest cover of the country.
- It will create more than 15 crore man days of direct employment.

- Many of these jobs will be in tribal and backward areas.
- Utilisation of these amounts will result in increased availability of timber and non-timber forest products.
- It will help in improvement of the overall living standards of the forest dependent communities.
- The Bill also establishes the National and State Compensatory Afforestation Fund Management and Planning Authorities to manage the National and State Funds.

NCB FREEZE 500 BITCOINS

IN NEWS: Recently, the Narcotics Control Bureau (NCB) cracked down on drug trafficking that was conducted through the darknet, NCB set to freeze about 500 Bitcoins in the accounts of traffickers. This is first ever seizure of the virtual, unregulated currency.

OVERVIEW

- Narcotics Control Bureau (NCB) is the nodal department to combat drug trafficking works with multiple narcotics control and enforcement agencies.
- It has begun investigation against three syndicates in the country till now and in one case detected in western India, it is moving to seize Bitcoins.
- NCB is working on the legal aspects of the case to seize about 400-500 Bitcoins as part of its criminal investigation under the Narcotic Drugs and Psychotropic Substances Act (NDPS).
- A variety of assets like cash and immovable assets were seized in their respective investigations but Bitcoins have never been frozen as part of the tainted assets seizure.
- The case involves the trafficking of drugs and narcotic supplements over the cryptic form of internet called Darknet using the illegal payment method of Bitcoins to avoid detection by investigative agencies.

Darknet

Darknet refers to the secret internet network which can only be accessed with specific software, configurations and authorisation and it is difficult to track using usual communications protocols and ports.

Bitcoin

- Bitcoin is a virtual currency that allows consumers to make electronic transactions by skipping the legal banking channels.
- Transactions are made with no middle men—banks. There are no transaction fees and no need to give your real name.
- Bitcoins can be used to buy merchandise anonymously.
- In addition, international payments are easy and cheap because bitcoins are not tied to any country or subject to regulation.
- Australian entrepreneur Craig Wright has publicly identified himself as Bitcoin creator Satoshi Nakamoto.

Online-pharmacies

- The online pharmacies transmit orders from customers to agents in India who then procure the medicines from either legitimate or illegitimate sources before dispatching them to customers by post or courier.
- Internet pharmacies are usually highly vulnerable and keep the identity of organisers tightly implicit.
- The emergence of Darknet and Bitcoins were seen as an extension by anti-narcotics agents of the illegal internet pharmacies peddling drugs.
- Despite strict controls and monitoring put in place for certain pharmaceutical products, there is evidence indicating their diversion for abuse.
- Thus, government has to regulate the flow of Bitcoin in order to curtail the drug trafficking especially among E-pharmacies.

'MOBILE AIR DISPENSARY'

IN NEWS: Union Minister of State (Independent Charge) for Development of North Eastern Region (DoNER) has proposed "Mobile Air Dispensary" service for remote and far-flung areas of Northeast, which would envisage a mobile dispensary in a Helicopter with a doctor, necessary equipment and medicines that can fly to remote and far-flung on regular basis and also, as and when required. Particularly in areas from where patients find it difficult to reach a dispensary, a doctor with dispensary can reach them. The same can also be replicated in other hill States and remote areas having poor connectivity like Jammu and Kashmir, Himachal Pradesh etc.

This was a motivation from "Royal Flying Service of Australia", popularly known as "Flying Doctors", which is meant to provide aid and primary health care service in rural and remote areas.

NATIONAL ACADEMIC DEPOSITORY

IN NEWS: Government has accorded its approval for establishment and operationalisation of a National Academic Depository (NAD). The decision aims at bringing another dimension and enhancement of the vision of Digital India.

The NAD would be established and operationalised within the next three months and would be rolled out throughout the country in 2017-18.

The NAD would be operationalised by NSDL Database Management Limited (NDML) and CDSL Ventures, Limited (CVL) - two of the wholly owned subsidiaries of the Depositories registered under Securities Exchange Board of India (SEBI) Act, 1992.

- Academic institutions would be responsible for the authenticity of data digitally uploaded by them into the system.
- The depositories will ensure the integrity of the data in the NAD.
- The NAD will register educational institutions/boards/eligibility assessment bodies, students and other users/verifying entities like banks, employer companies, government agencies and academic institutions.
- It will provide digital or a printed copy of the academic award with security features to the students or other authorized users.

- NAD will verify academic awards online on the same day of request initiated by any authorized user.
- Requests for access to academic awards, for example, from potential employers, and academic institutions would be only on the basis of consent of the student.
- NAD shall maintain the authenticity, integrity and confidentiality of its database.
- It will also train and facilitate academic institutions/boards/ eligibility assessment bodies to efficiently lodge academic awards in the database.

RUSSIA TO DESTROY ITS CHEMICAL WEAPONS

IN NEWS: Russian will destroy all of its chemical weapons by the end of next year. 93 p.c. weapons already destroyed and the remaining weapons will have been disposed of by December 2017.

As a signatory of the international Chemical Weapons Convention, Russia already has destroyed about 93 per cent of its chemical weapons. Russia had to build several plants in the past two decades to dispose of the world's largest chemical weapons arsenal.

International Chemical Weapons Convention

- CWC negotiations started in 1980 in the UN Conference on Disarmament. The convention opened for signature on January 13, 1993, and entered into force on April 29, 1997.
- The convention augments the Geneva Protocol of 1925 for chemical weapons and includes extensive verification measures such as on-site inspections. It does not, however, cover biological weapons.
- The convention is administered by the Organization for the Prohibition of Chemical Weapons (OPCW), which acts as the legal platform for specification of the CWC provisions.
- CWC headquartered in The Hague.
- The Convention aims to eliminate an entire category of weapons of mass destruction by prohibiting the development, production, acquisition, stockpiling, retention, transfer or use of chemical weapons by States Parties.
- The 2013 Nobel Peace Prize was awarded to the organization because it had, with the Chemical Weapons Convention, "defined the use of chemical weapons as a taboo under international law"

Highlights of the convention

- Prohibition of production and use of chemical weapons.
- Destruction (or monitored conversion to other functions) of chemical weapons production facilities.
- Destruction of all chemical weapons (including chemical weapons abandoned outside the state parties territory).
- Assistance between State Parties and the OPCW in the case of use of chemical weapons.
- An OPCW inspection regime for the production of chemicals which might be converted to chemical weapons.
- International cooperation in the peaceful use of chemistry in relevant areas.

SEAWEED FARMING INDUSTRY

IN NEWS: The emerging seaweed farming industry in the country will get a major boost with the Central Marine Fisheries Research Institute (CMFRI) by transferring seaweed cultivation technology to the Andaman administration.

The CMFRI has provided scientific inputs on methods of seaweed farming suitable for the islands. Seaweed cultivation is perceived as one of the most environmentally benign types of mariculture.

CMFRI provided practical training on farming methods and will provide technical inputs on monoline culture method of the seaweed to the Department of Fisheries in Andamans.

Seaweed farming

- It is the practice of cultivating and harvesting seaweed. It consists of fully controlling the life cycle of the algae.
- The main food species grown by aquaculture in Japan, China and Korea include Gelidium, Pterocladia, Porphyra and Laminaria.
- Seaweed farming has frequently been developed as an alternative to improve economic conditions and to reduce fishing pressure and over exploited fisheries.
- Seaweeds have been harvested throughout the world as a food source as well as an export commodity for production of agar and carrageenan products.

Seaweed farming began in Japan as early as 1670 in Tokyo Bay. In autumn of each year, farmers would throw bamboo branches into shallow, muddy water, where the spores of the seaweed would collect. A few weeks later these branches would be moved to a river estuary. The nutrients from the river would help the seaweed to grow.

GLOBAL TB REPORT 2016: WHO

IN NEWS: World Health Organisation's (WHO) flagship Global TB Report 2016 considers India as the most vulnerable country to this infectious disease.

Report

- A revised estimate of the new TB cases in India to 2.8 million in 2015 as compared to 2.2 million in 2014.
- The severity of the challenge can also be found with a whopping 480,000 people losing their lives to this disease in the country, which is about a quarter to the total of 1.8 million deaths globally.
- India is also among other five countries (Indonesia, China, Nigeria, Pakistan and South Africa) accounted for 60% of total new TB cases.
- A threat to tackle the low rate of decline in TB incidence, which has remained static at 1.5 per cent from 2014 to 2015. This low decline rate needs to be scaled up to the level of 4% to 5% annually by 2020 to reach the first milestone to end the TB strategy.

- 480,000 people diagnosed with MDR TB in 2015 with India, China and Russia, accounted for more than 50% of such cases globally. Unfortunately, one out of five people have only got the access to second line treatment and overall global cure rates of MDR-TB continue to remain low at about 52%.
- Ten countries account for 77% of the total estimated gaps between incidence and notifications, with India, Indonesia and Nigeria alone accounting for over 60% of the gaps between enrolment on MDR TB treatment in 2015 and the estimated number of incident MDR/RR TB cases in 2015.
- Most of these cases in 2015 were notified by India (2130), Ukraine (1206), Russian Federation (1205) and South Africa (719).

POVERTY & HUNGER: STUDY

One in every five Indians is poor. Goal 1 and 2 of the United Nation's Sustainable Development Goals (SDGs) envision eradicating poverty and ending hunger by 2030. An astounding 767 million people in the world are poor while those who do not have enough to eat are estimated to be close to 800 million.

The Global Hunger Index (GHI) of the International Food Policy Research Institute and the Pathways to Reducing Poverty and Sharing Prosperity in India (PRPSPI) of the World Bank studied the hunger and poverty respectively.

GLOBAL HUNGER INDEX

- The GHI tries to capture the hunger level across countries.
- The index is constructed using four component indicators: percentage of undernourished in the population, percentage of wasting in children under five years old, percentage of stunting in children under five years, and under-five mortality rates.
- The index has been calculated since 2006 and the oldest back calculations on the index go back to 1992.
- The overall scale of the index is from zero to 100 where 100 represents 'absolute hunger' and zero represents 'zero hunger'. Countries and regions are also classified in terms of the level of hunger.
- Those falling in the ≤ 9.9 category are classified as having a 'low' level of hunger, those in the 10.0-19.9 category are 'moderate', those in the 20-34.9 bracket are 'serious', those between 35 and 49.9 are classified as 'alarming', and those < 50 are 'extremely alarming'.

Global Hunger Report 2016

- Developing countries have a major stake in reducing hunger levels. Overall hunger has come down by 29 per cent since 2000 in these countries.
- There are distinct regions, the ones with the highest GHI scores, which can help in fulfilling the SDGs. On the 2016 index, Africa south of the Sahara and South Asia have the highest GHI scores (30.1 and 29.0, respectively). Thus they are placed in the 'alarming' category on the GHI.

- India is placed at a dismal 97th rank among the 118 countries considered for the index. The country has improved its score from 46.4 in 1992 to 28.5 at present, which is considerable, but its overall level continues to be 'serious' on the index.

Poverty

- Poverty in India has declined considerably from 1994 to 2013. Those below India's official poverty line have reduced from 45 per cent to 22 per cent. This means that 133 million people have been lifted out of poverty.
- Some population groups in India are substantially worse off than other groups. These include the Scheduled Tribes (STs), 43 per cent of whom were below the poverty line in 2012, and the Scheduled Castes, 29 per cent below the poverty line. Poverty also seems entrenched among the STs, with the pace of poverty reduction slower than that witnessed in other groups between 2005 and 2012.
- Poverty seems to be present in certain geographical locations. The top States for poverty in absolute terms in India are Uttar Pradesh (60 million poor), Bihar (36 million) and Madhya Pradesh (24 million). The top seven States account for roughly 62 per cent of India's poor.
- Also important is the rural-urban divide in poverty. Almost one in five Indians is poor and out of every five poor people, four live in rural areas. Also, the poverty rate is just 7 per cent in big cities with a population of more than 1 million.

NEW SPECIE OF MLLIPEDE DISCOVERED

IN NEWS: A group of researchers discovered a tiny threadlike millipede in the unexplored dark marble caves in Sequoia National Park in California.

The newly found millipede is recognised as the evolutionary cousin of the leggiest animal on the planet, *Illacme plenipes*.

MILLIPEDE

- The millipede is named ***Illacme tobini*** after cave biologist Ben Tobin of the National Park Service.
- It was discovered along with many spiders, pseudoscorpions and flies in Sequoia National Park.
- The new species may possess 414 legs, compared to its relative's 750 legs.
- It has peculiar anatomical features, including a body armed with 200 poison glands, silk-secreting hairs, and four penises.
- The millipede's closest relative lives under giant sandstone boulders outside of San Juan Bautista, California.

INDIA -ITALY

IN NEWS: The Indo-Italian Joint Committee established under the Scientific and Technological Cooperation Agreement re-launched the cooperation in the sectors of science, technology and innovation. The original agreement was signed between Italy and India in 2003.

Highlights

- The Joint Committee approved several initiatives in bilateral scientific R&D projects of significance with the aim of facilitating the mobility of researchers who will be jointly selected within the framework of the 2017-2019 Indo-Italy Executive Programme of Scientific and Technological Cooperation.
- IT, energy, environment and sustainable agriculture, health care, biotechnology, nanotechnology, physics and cultural and natural heritage are the areas for joint projects.
- A new scientific and technological cooperation programme on applied science was launched aiming at developing technologies and processes to be applied in industry.
- Joint workshops will be alternatively held in Italy and India, starting from 2017.
- An Indo-Italian Innovation Forum will be established to promote and connect the world of research with the world of business and investment.