

CURRENT AFFAIRS

11TH OCT. TO 20TH OCT. 2016

INDIA AND AFRICAN ASIAN RURAL DEVELOPMENT ORGANIZATION

IN NEWS: Memorandum of Understanding (MoU) signed between India and the African Asian Rural Development Organization (AARDO) for capacity building programmes in the field of rural development.

African Asian Rural Development Organization

- Its headquarters in New Delhi.
- It is an autonomous, inter-Governmental organization established in 1962 with the objective of promoting cooperation among the countries of the African - Asian Region in the direction of eradicating thirst, hunger, illiteracy, disease and poverty in the region.
- India is one of the Founder Members of the Organization and is the largest contributor in terms of membership contribution of US\$ 141,100 apart from contributing by way of providing 70 fully paid training scholarships for Human Resource Development Programme under the Indian Technical & Economic Cooperation Programme (ITEC) to the Organization.
- AARDO currently has 31 countries of the African - Asian Region under it.
- Since the year 2009, India is continuing to provide an Additional Contribution of US\$ 600,000 to AARDO for each triennium 2009-2011 to expand its scale and scope of the Capacity Building Programmes of AARDO for the benefit of Member Countries.

EL NINO AND LA NINA

IN NEWS: El Niño one of the longest and strongest in recent decades 2014 and 2015 had witnessed droughts. And the slightly less-than-expected, and forecast, cumulative rain this year — despite a ‘normal’ monsoon overall is being attributed to the fact that the anticipated La Niña didn’t develop over the Pacific Ocean.

For the third year in a row, the monsoon’s performance has been decided predominantly by ocean phenomena occurring far away in the Pacific, but which are now part of well-known monsoon terminology — El Niño and La Niña.

Background

- El Niño and La Niña are mutually opposite phenomena, during which an abnormal warming or cooling of sea surface temperatures is observed in the Pacific Ocean along the equator, off the coast of South America.
- Together they constitute what is known as the El Niño-Southern Oscillation system, or ENSO for short.
- The two phenomena impact weather and climate events across the world, including the Indian monsoon.
- The warming of the Pacific — El Niño — is known to suppress rainfall over India, especially in the northwestern parts.
- La Niña has been observed to help the monsoon

VENTURE CAPITAL FUND SCHEME

IN NEWS: The Ministry of Social Justice & Empowerment launched the Venture Capital Fund Scheme for Scheduled Caste (SC) Entrepreneurs in 2014-2015. 50 SC entrepreneurs have till now benefitted from the scheme. The Scheme has helped the entrepreneurs in achieving economic empowerment.

As per Census 2011, the SC population is 20.13 crore, which constitutes 16.62% of the total population in India.

Objectives of the Scheme

- It is a Social Sector initiative to be implemented nationally in order to promote entrepreneurship among the scheduled caste population in India.
- Promote entrepreneurship amongst the Scheduled Caste who are oriented towards innovation and growth technologies.
- To provide concessional finance to the scheduled caste entrepreneurs, who will create wealth and value for society and at the same time will promote profitable businesses. The assets so created will also create forward/ backward linkage. It will create chain effect in the locality.
- To increase financial inclusion for SC entrepreneurs and to motivate them for further growth of SC communities.
- To develop SC entrepreneurs economically.
- To enhance direct and indirect employment generation for SC population in India.

GLOBAL HUNGER INDEX (GHI) 2016

IN NEWS: India ranked 97th out of 118 countries on the International Food Policy Research Institute's (IFPRI) Global Hunger Index (GHI) in 2016. It was positioned at 80 out of 104 countries the previous year.

- India is rated with 'serious' hunger levels in the 2016 Index.
- At the end of 2016, around 15 per cent of the country's population was undernourished.
- The country had only the fifth highest rank in the whole of Asia, better than only North Korea (98), Pakistan (107), Timor-Leste (110) and Afghanistan (111).
- Nepal (72), Sri Lanka (84), and Bangladesh (90) had higher ranks among 96 countries than India's.
- Also, India had the lowest rank among BRICS nations, with Brazil in the top 16, Russia at 24, China at 29 and South Africa at 51.

Global Hunger Index is based on a country's performance on indicators such as

- The proportion of the undernourished in the population.
- Prevalence of wasting in children under five years.
- Prevalence of stunting in children under five years.
- Under-five mortality rate.

As per report in India

- Two out of five children below five years of age are stunted in India. Stunting measures chronic malnutrition and affected children's height would be considerably below the average for their age.

- Prevalence of wasting in children has declined from 20 per cent in 2010 to 15 per cent in 2015.
- Stunting in children below the age of five has also declined from 48 per cent to 38.7 per cent.
- Under-five mortality rate has declined from 6.6 to 4.8 over the same period.

Globally

- The Central African Republic, Chad, and Zambia were estimated to have the highest levels of hunger.
- For the developing world, the GHI score is estimated to be 21.3 which, according to the report, is at the lower end of the 'serious' category.
- It estimates that the level of hunger in developing countries has fallen by 29 per cent since 2000, with 20 countries reducing their GHI scores by around 50 per cent each since 2000.

INDIA- RUSSIA TO SET UP AGRO IRRADIATION CENTERS

IN NEWS: India and Russia signed a pact to set up 25 integrated infrastructure centers for irradiation treatment of perishable food items to improve shelf life and cut postharvest losses. The agreement will help in reducing agricultural losses.

At least 7 centers will be set up in Maharashtra, with the first centre near Shirdi to be ready next year. Perishable items ranging from flowers to fish will be treated there on a commercial scale.

- The agreement was inked between Russia's United Innovation Corporation (UIC)-a subsidiary of Rosatom State Atomic Energy Corporation and Hindustan Agro Co-Op Ltd.
- The agreement was signed on the sidelines of the BRICS Business Forum in the national capital.
- UIC will be a technology partner and will help set up the irradiation centers in India.
- The 7 centers are likely to be established in Sindhurg, Satara, Solapur, JNPT, Jalana, Nagpur, and Pune in the first phase.
- The average cost of the irradiation center usually ranges between USD 4 million to USD 20 million. However, the exact cost will be determined after assessing the economic feasibility of the project.
- Radiation treatment is carried out in dosage recommended by the International Atomic Energy Agency (IAEA) and it neither reduces the nutritional value of food nor spoils their taste and appearance.
- Russian technologies are being used in 22 countries in 515 radiation plants.
- The agreement is to be implemented through a Joint Venture and aims to set up 25 integrated irradiation centres.

Benefits:

- The project will be an example of international cooperation in the sphere of nuclear technology development as well as the role of peaceful use of nuclear power in addressing global challenges including those related to Sustainable development.
- The irradiation centers once build will use the technology and technical solution based on gamma-facility and electron accelerator.
- In irradiation, food products are subjected to a low dosage of radiation to treat them for germs and insects, increasing their longevity and shelf life.

- In India, according to estimates, post-harvest losses in food and food grains are around 40-50 per cent, primarily due to insect infestation, microbiological contamination, physiological changes due to sprouting and ripening, and poor shelf life. The use of irradiation will make it possible to reduce the loss of onions in India, which currently go bad because of germination and inadequate storage, by 42,000 tonnes per year on average, as well as to reduce grain losses from [the current] 15 per cent to 3- 5 per cent per year.

INDIA-MYANMAR

India and Myanmar signed three MoUs for cooperation in insurance, power and banking sectors as part of efforts to improve ties between the two countries.

- MoU between Financial Regulatory Department of Myanmar and Insurance Institute of India for designing an academic and professional building programme for insurance industry of Myanmar.
- MoU on Cooperation in the field of Power Sector.
- MoU on Banking Supervision between RBI and Central Bank of Myanmar.

SELF-POWERED UV PHOTODETECTOR

IN NEWS: Indian Institute of Science (IISc), Bangalore, have developed a cost-effective, high-performance, self-powered UV photodetector that can use the harvested optical energy for direct self-charging of energy storage devices such as super capacitor.

- It can be used for operating electronic devices in the absence of external power source.
- The photodetector has superior performance in terms of faster detection of photo signals in the order of milliseconds even when UV light intensity is low.

The researchers developed the photodetector by integrating semiconducting vanadium doped zinc oxide (VZnO) nanoflakes with a conducting polymer Zinc oxide (ZnO), the base material for UV detection, can be doped with vanadium to produce photodetectors that are self-powered. When doped with vanadium, the microstructure of ZnO changes from nanorods to closely-packed nanoflakes, causing an increase in the surface area to the volume of the material.

- The nanoflakes are 80 per cent more porous than nanorods.
- The nanorods are one-dimensional and so the possibility of light reflection from the top surface is more. But nanoflakes are two-dimensional and the light penetration is more.
- The vanadium-doped zinc oxide nanoflake structure has 98 per cent light-harvesting efficiency, which is much higher than the 84 per cent seen in zinc oxide nanorods.
- Compared with ZnO, which generates only 40 nA photocurrent, the nanoflakes (VZnO) produced five times more photocurrent.

INDIA-RUSSIA

IN NEWS: India and Russia signed agreements across diverse sectors.

- Inter-governmental agreements (IGAs) for procurement of the S-400 air defence system and construction of 1135.6 series of frigates through partnership between Russian and Indian shipyards.
- To set up a joint venture to manufacture the Ka-226T helicopter in India.
- Memorandum of understanding (MoU) was signed for setting up an investment fund of \$1 billion by the National Investment and Infrastructure Fund (NIIF) and the Russian Direct Investment Fund.
- Developing smart cities in Andhra Pradesh and Haryana and for developing transport logistics systems for such cities.
- Agreement was signed between Gazprom and Engineers India Limited (EIL) for the joint study of a gas pipeline to India from Russia and other areas of cooperation.
- Russian consortium comprising energy giant Rosneft Oil Company, commodities trader Trafigura and private investment group United Capital Partners agreed to purchase 98 percent of Essar Oil for \$10.9 billion.
- Rosneft also signed an agreement with ONGC Videsh for education and training in the oil and gas sector.
- Both sides agreed to extend cooperation in railways development and to increase the speed of trains between Nagpur and Secunderabad.
- MoU between India's ISRO and Russia's Roscosmos on mutual allocation of ground measurement gathering stations for Russian space-based navigational system GLONASS and Indian regional navigational system NAVIC.
- An agreement was signed on cooperation on international information security.
- MoU for expansion of bilateral trade and economic cooperation between India and Russia.
- MoU between India's Department of Science and Technology and Russia's Federal Agency for Scientific Organisations.

MINING SURVEILLANCE SYSTEM (MSS)

IN NEWS: The Mines Ministry launched mining surveillance system (MSS), a pan-India surveillance network using latest satellite technology, to check illegal mining.

- In the MSS the maps of the mining leases have been geo-referenced. The geo-referenced mining leases are superimposed on the latest satellite remote sensing scenes obtained from CARTOSAT & USGS.
- MSS is a satellite-based monitoring system, which aims to check illegal mining activity through automatic remote-sensing detection technology.
- Technology will ensure sustainable utilisation of the country's mineral resources.
- MSS will trigger an alarm whenever there is an instance of illegal mining outside permitted areas.
- This technology will help design planned development of mining as also provide complete data of labourers working in the sector online, which will lead to better safety standards.
- The system checks 500 meters around the existing mining lease boundary to search for any unusual activity relating to illegal mining. Any discrepancy is flagged off as a trigger.
- These triggers will be studied at a remote-sensing control centre of IBM and then transmitted to district-level mining officials for field verification.

- Khasra maps of mining leases have been geo-referenced in MSS, which are superimposed on the latest satellite remote sensing scenes obtained from CARTOSAT and USGS.

NATIONAL HUB FOR SC/ST ENTREPRENEURS

IN NEWS: Government launched the SC/ST hub to provide support to entrepreneurs from the community.

- The SC/ST hub aims to facilitate technology knowhow to reserved categories and increasing procurement by public and government units from SC/ST industrial units from existing 0.4 per cent to 4 per cent.
- 1.25 lakh nationalised bank branches to give loans to SC/ST men and women entrepreneurs. If two loans each, one each men and women category, upto 1 crores are given, banks can give up to 3.75 lakh such loans.
- Zero Effect Zero Defect (ZED) certification scheme is also launched in which exhorting small businesses to make products with “zero defect” and “zero effect” on environment.

INDIA'S NUCLEAR TRIAD

IN NEWS: India has completed its nuclear triad by inducting the indigenously built strategic nuclear submarine INS Arihant into service.

- Arihant is capable of carrying nuclear tipped ballistic missiles, the class referred to as Ship Submersible Ballistic Nuclear (SSBN).
- SSBNs are designed to prowl the deep ocean waters carrying nuclear weapons and second strike capability — the capability to strike back after being hit by nuclear weapons first.
- The vessel weighing 6000 tonnes is powered by a 83 MW pressurised light water nuclear reactor. The project to build a strategic vessel began as the Advanced Technology Vessel (ATV) project in the 1980s.
- It will be armed with the K-15 Sagarika missiles with a range of 750 km and eventually with the much longer range K-4 missiles being developed by the Defence Research and Development Organisation.
- A nuclear triad i.e. capable of delivering nuclear weapons by aircraft, ballistic missiles and submarine launched missiles.

GST SLABS

IN NEWS: The Centre has proposed a four-slab rate structure for the Goods & Services Tax, ranging from zero to 26 per cent.

- The structure proposes the GST at 0 per cent on a host of goods and services, including food, health and education services, and at 26 per cent on luxury items, such as fast-moving consumer goods and consumer durables.
- On consumption of ultra-luxury items and demerit goods, such as big cars and tobacco products, it proposes imposition of cess over and above a 26 per cent GST rate.
- The GST is proposed to be levied at 6 per cent, 12 per cent or 18 per cent on the remaining goods and services.
- This proposal singles out gold, for which it proposes a GST rate of 4 per cent.

- The rate proposed on all items is by and large lower than the current rate. In the 26 per cent slab, for instance, currently most goods are being taxed at about 27 to 31 per cent.
- GST subsuming the Swachh Bharat Cess, the KrishiKalayanCess and the Education Cess.
- The proposal envisages 10 per cent of the current tax revenue collections base to fall in the 6 per cent GST slab and about 70 per cent in the 12 per cent and 18 per cent slabs.
- About 25 per cent of the current tax revenue base falls in the proposed 26 per cent slab, including items that will attract cess.
- The base year for calculating the revenue of a State would be 2015-16 and the likely revenue of each State in the first five years of implementation of GST will be calculated using secular growth rate of 14 per cent.
- The Centre would compensate States whose revenue collections fall lower than these levels.
- The Centre proposes to pay compensations out of a fund to be created from the Cess on top of the GST on ultra-luxury items and demerit goods.

SAGARMALA FUNDS FLAGSHIP PROJECT

IN NEWS:As part of promoting coastal shipping in the country under Sagarmalaprogramme, the Ministry of Shipping has sanctioned the Capital Dredging Project for Ro Pax Ferry Services between Gogha&Dahej, in Gulf of Cambay. The total project cost is estimated to be Rs 234 Crore and of which 50% will be funded by Centre Government under the Sagarmalaprogramme.

The project is first of its kinds in India as it will be executed in the area of world's 2nd highest tidal range. The project would open up new avenues in coastal shipping & tourism and help in socio-economic development of proximate areas. It would also help in utilisation of inland waterways through River Narmada for shipping goods from industries located upstream.

It is one of the flagship projects under Sagarmala which aims to increase share of waterways transportation in modal mix to 10 per cent from present level of 7 per cent by year 2025.

SAGARMALA PROJECT

- Sagarmala project is a **port-led development programme** of **Ministry of Shipping**.
- A Shipping ministry study has claimed that the project could lead to an annual saving of Rs 40,000 crore by optimizing logistics.
- Augmenting operational efficiency of ports (more terminals for loading and unloading cargo).
- Optimizing logistics (rails, roads and inland waterways).
- Identify capacity additions (more ports wherever viable).
- Modernize India's Ports so that port-led development can be augmented.

INDIA-CHINA: TACTICAL EXERCISE ON DISASTER RELIEF

IN NEWS: The Indian and Chinese armies held a second joint exercise under the Sino-India Cooperation 2016 as a sequel to the first joint exercise held in the area of Border Personnel Meeting Hut at Chushul Garrison of Eastern Ladakh, along with Chinese troops of Moldo Garrison.

- The joint exercise is part of the ongoing initiative to enhance interaction and cooperation between India and China under the provisions of Border Defence Cooperation Agreement (BDCA) 2013.
- During the exercise on Humanitarian Aid and Disaster Relief (HADR) the joint teams carried out rescue operations, evacuation and rendering of medical assistance.

The joint exercise, compliments the 'Hand in Hand series' of the India-China joint exercises and the effort of both the nations to enhance cooperation and maintain peace and tranquillity along the border areas.

INDIA-ALGERIA

IN NEWS: India initiated a joint venture arrangement with Algeria for a multi-billion dollar fertilizer plant located in the North African country.

India which has up to 96 per cent phosphate dependency, with the volumes running to some six million tonnes a year, is seeking a 49 per cent share in an Algerian block that has a capacity of six billion tonnes with 26 per cent to 50 per cent phosphate content.

- India has ongoing arrangements and cooperative ventures in this field with neighbouring Morocco but on a much smaller scale than in Algeria.
- For India, such a project will have major favourable food security implications and could ease the fertilizer subsidy burden as well.
- India currently imports raw phosphate resources from a number of African countries including Tunisia, Jordan, Egypt and Syria, as also from Russia, Canada and Israel among others.
- India's bilateral trade with Algeria currently stands at \$1.5 billion a year with the trade balance in Algeria's favour given India's import of oil and gas.
- The major item of exports from India has been automobiles.

IIL launches vaccine to combat tapeworm in pigs

NDDB's arm Indian Immunologicals Ltd (IIL) today announced the launch of Cysvax vaccine to fight against tapeworms in pigs and this may also help reduce incidence of epilepsy in human beings.

Indian Immunologicals Ltd was set up by the National Dairy Development Board (NDDB) in 1982, as its unit, with the objective of making Foot and Mouth Disease (FMD) vaccine available to farmers at an affordable price.

WORLD'S FIRST VACCINE TO FIGHT AGAINST TAPEWORMS

IN NEWS: IIL has developed a recombinant porcine (pigs) cysticercosis vaccine - Cysvax for use in pigs which also has the potential to significantly reduce the incidence of epilepsy in humans.

WHO has designated cysticercosis as one of the 17 "neglected tropical diseases" worldwide. The life cycle of a tapeworm is dependent on the link between humans and pigs.

IIL collaborated with Dr Marshall Lightowlers, University of Melbourne, Australia and GALVmed (Global Alliance for Veterinary medicine) to develop this vaccine. Cysvax is the world's first vaccine to fight against Tapeworms in pigs.

It obtained license to manufacture and market this product after conducting extensive field trials in India and many other countries such as Spain, Peru etc.

Open defecation and unhygienic pig rearing are the primary breeding grounds for tapeworms. Cases of cysticercosis have been found to occur across India, particularly in north Uttar Pradesh and Northeast states.

Prevalence of porcine cysticercosis, as reported from slaughterhouse data, ranges from 7 per cent to 12 per cent in all pigs and one of the largest animal and human health players in India.

KIGALI DEAL: TO PHASE OUT HFCs

IN NEWS: World have reached an agreement for the phase-out of potent greenhouse gases used in refrigerators and air conditioners.

The elimination of HFCs could reduce global warming by 0.5 degrees by 2100.

Major Step

- Paris climate agreement aimed to keep global warming below 2 degrees Celcius, compared with pre-industrial levels, rich countries will have to take action earlier than poorer nations under the legally binding Kigali deal.
- Developed countries must reduce their use of HFCs by 10 percent by 2019 from 2011-2013 levels, and then by 85 percent by 2036.
- A second group of developing countries, including China and African nations, are committed to launching the transition in 2024.
- A reduction of 10 percent compared with 2020-2022 levels should be achieved by 2029, to be extended to 80 percent by 2045.
- A third group of developing countries, which include India, Pakistan, Iran, Iraq and Arab Gulf states, must begin the process in 2028 and reduce emissions by 10 percent by 2032 from 2024-2026 levels, and then by 85 percent by 2047.

BACKGROUND

HFCs were introduced in the 1990s to replace chemicals that had been found to erode the ozone layer, but turned out to be catastrophic for global warming.

Air conditioning is the cause of the largest growth in HFCs - and the world is likely to have another 700 million air conditioners by 2030.

HFCs - though they are greenhouse gases like carbon dioxide, methane and nitrous oxide - are not dealt with under the Paris Agreement but under the Montreal Protocol.

GREEN TRAIN CORRIDORS

IN NEWS: The 141-km-long Okha-Kanulus route and the 34-km-long Porbandar-Wansjaliya sections in Gujarat have now become the green train corridors as all trains passing on these lines are now equipped with bio-toilets.

- About 29 trains consisting of nearly 700 coaches have been provided with bio-toilets to prevent open discharge on the track.
- Railways have already provided around 48,000 bio-toilets in about 14,000 passenger coaches.
- During the current financial year 14,000 bio-toilets have already been fitted in coaches and it is planned to fit an additional of 16,000 bio-toilets in coaches in the remaining part of current financial year.
- In the bio-toilet fitted coaches, human waste is collected in tanks below the toilets and the same is decomposed by a consortium of bacteria.
- The technology has been developed jointly by Indian Railways and Defence Research and Development Organisation (DRDO) for railway passenger coaches.

Bio-toilets

- Composting toilets use nature's decomposition process to reduce waste by 90% and convert it into nutrient rich compost.
- They do not require water hook ups either which is great for our already stressed water supply. In short, composting toilets are a way to allow waste to decompose safely and without odors.
- Composting toilets use oxygen taking bacteria that is naturally present in human waste to do all the work.
- Bugs, worms, and other critters have absolutely *NO* role in BioLet's composting process.
- The other advantage is that single bacteria recharge works for nearly a year. The anaerobic bacteria used in the green toilets can withstand extreme climates and common disinfectants. They are resistant to normal cleaning solutions used by the railways.
- The **first** bio-toilet-fitted train, **Gwalior-Varanasi Bundelkhand Express**, has been running since January 2011.

INDIA AND UNITED STATES TRADE POLICY FORUM

IN NEWS: 10th India-United States Trade Policy Forum (TPF) meetings scheduled in New Delhi.

TPF focused on

- Resolving trade concerns.
- India and US working groups on agriculture.
- Trade in services and goods.
- Promotion of investment in manufacturing.
- Intellectual property.

It will allow the United States and India to advance on-going bilateral efforts to expand trade and investment through forward-looking policy initiatives that can benefit our manufacturers, workers, innovators, service providers, farmers, and ranchers.

The bilateral commercial ties between the United States and India has increased bilateral trade in Goods and Services of \$109 billion and highest ever FDI inflows in 2015-16. The bilateral cooperation under TPF has resulted in resolving several market access issues and cooperation in services, manufacturing and IPR.

The previous 9th TPF was held in October, 2015 at Washington D.C, USA.

SMALL FINANCE BANKS

IN NEWS: Small finance banks are adopting an aggressive strategy to garner savings deposits by offering interest rates higher than that offered by full-service banks. While most full-service banks offer 4 per cent on savings bank deposits, small finance banks are offering or planning to offer between 5 and 7 per cent on such deposits.

Examples

Equitas Small Finance Bank, which started its operations in September, is offering a 6 per cent interest rate for deposits up to Rs.1 lakh and 6.5 per cent for deposits of above Rs.1 lakh and up to Rs.50 lakh.

Suryoday, another entity which plans to start a small finance bank by year end, could offer about 7 per cent on savings bank deposits.

The micro finance institution is among three entities to have received the final approval from RBI so far to start small bank operations.

Objective of the Small Banks

The main purpose of the small banks will be to provide a whole suite of basic banking products such as bank deposits and supply of credit, but in a limited area of operation. The objective for these Small Banks is to increase financial inclusion by provision of savings vehicles to under-served and unserved sections of the population, supply of credit to small farmers, micro and small industries, and other unorganized sector entities through high technology-low cost operations.

RBI's guidelines for Small Banks

- Eligibility – Professionals with 10 years of experience in banking / finance / Micro Finance Institutions.
- The minimum capital requirement is Rs 100 crore (minimum paid-up equity capital).
- Local focus and ability to serve smaller customers will be a key criterion in licensing such banks.
- The bank shall primarily undertake basic banking activities of accepting deposits and lending to small farmers, small businesses, micro and small industries, and unorganized sector entities. It cannot set up subsidiaries to undertake non-banking financial services activities. After the initial stabilization period of five years, and after a review, the RBI may liberalize the scope of activities for Small Banks.
- The area of operations would normally be restricted to few districts (near-by) of a state. However, if necessary, it would be allowed to expand its area of operations beyond contiguous districts in one or more states with reasonable geographical proximity.
- Small Banks have to meet RBI's norms and regulations regarding risk management. They have to meet CRR and SLR requirements, like any other commercial bank.
- Promoter must contribute minimum 40% equity capital and should be brought down to 30% in 10 years.
- The maximum loan size and investment limit exposure to single/group borrowers/issuers would be restricted to 15 per cent of capital funds.
- For the first three years, 25 per cent of branches should be in unbanked rural areas.
- Of the loans issued by Small Banks, 75% should be to the so-called priority sector which includes agriculture and small businesses. And half the loan portfolio of the banks should be loans and advances of up to Rs.25 lakh to micro finance businesses.
- A robust risk management framework should be followed and the banks would be subject to all prudential norms and regulations that are set by RBI.

NATIONAL SUMMIT ON FOOD FORTIFICATION

IN NEWS: The control of micronutrient deficiencies is an essential part of the overarching effort of the Government to fight hunger and malnutrition in the country. National Summit on Fortification of Food addresses interventions in combating micronutrient malnutrition in the country.

- Food fortification is a proven and effective strategy to meet the nutritional needs of a large number of people across various sections of the society, including the poor and underprivileged as well as the vulnerable, such as pregnant women and young children.
- Fortification requires neither changes in existing food patterns, habits nor individual compliance. It is socio-culturally acceptable and does not alter the characteristics of the food. It can be introduced quickly and can produce nutritional benefits for populations in a short period of time. It is safe and cost effective, especially if advantage is taken of the existing technology and delivery platforms.
- Food fortification reinforces and supports existing nutrition improvement programmes and is part of a broader, integrated approach to prevent micronutrient deficiencies, thereby complementing other approaches to improve health and nutrition.
- Nutrition is a major determinant of health and macro and micro nutrients deficiency will lead to risk factors that may cause various diseases like TB, anaemia, etc.

- ICMR has planned to conduct health and nutrition survey to get first hand insights about nutritional values of the food consumed by the people of the country to raise awareness and educate people about balanced diet.

Food Safety and Standards Authority of India (FSSAI)

- It has formulated a comprehensive regulation on fortification of foods namely 'Food Safety and Standards (Fortification of Foods) Regulations, 2016'.
- These regulations set the standards for food fortification and encourage the production, manufacture, distribution, sale and consumption of fortified foods.
- The regulations also provide for specific role of FSSAI in promotion for food fortification and to make fortification mandatory.

MANNED SPACE MISSION LAUNCHED BY CHINA

IN NEWS: China established its permanent space station by 2022 as it launched a spacecraft carrying two astronauts, in its longest-ever manned space mission, who would later join its second experimental space lab orbiting the Earth.

Astronauts blasted off into space by Shenzhou-11 (heavenly vessel) spacecraft from the Jiuquan Satellite Launch Centre near the Gobi Desert in northern China.

The Shenzhou-11 was put into orbit by a Long March-2F carrier rocket. It will dock with orbiting space lab Tiangong-2 in two days and the astronauts will stay in the lab for 30 days.

The space lab was launched as part of China's efforts to set up its own manned space station by 2022, which will make it the only the country to have such a facility in service as the current in-service International Space Station (ISS) retires by 2024.

Other objectives of the manned space mission include aerospace medical experiments, space science experiments and in-orbit maintenance with human participation, as well as other activities.

The space station has a designed life of 10 years in orbit 400 km above the earth surface. With this space station, China will become the second country after Russia to have developed a space station.

REVISION OF ETHANOL PRICES

IN NEWS: The Cabinet Committee on Economic Affairs has approved the mechanism for revision of ethanol price for supply to Public Sector Oil Marketing Companies (OMCs) to carry out the Ethanol Blended Petrol (EBP) Programme.

- For the next sugar season 2016-17 during ethanol supply period from 1st December, 2016 to 30th November, 2017, the administered price of ethanol for the EBP Programme will be Rs.39/- per litre.
- Additionally, charges will be paid to the ethanol suppliers as per actuals in case of Excise Duty and VAT/GST and transportation charges as decided by OMCs.
- If the need arises to increase/reduce the retail selling price of Petrol by Public Sector OMCs, then such increase/reduction would proportionately factor in the requirement of maintaining the fixed cost of purchase of ethanol during the ethanol supply year.

- The prices of ethanol will be reviewed and suitably revised by Government at any time during the ethanol supply period that is from 1st December, 2016 to 30th November, 2017 depending upon the prevailing economic situation and other relevant factors.

The revision in ethanol prices will facilitate the continued policy of the Government in providing price stability and remunerative prices for ethanol suppliers.

Ethanol Blended Petrol (EBP) Programme

It was launched by the Government in 2003 which has been extended to the Notified 21 States and 4 Union Territories to promote the use of alternative and environment friendly fuels. This intervention also sought to reduce import dependency for energy requirements.

However, since 2006, OMCs were not able to receive offers for the required quantity of ethanol against the tenders floated by them due to various constraints like State Specific issues, Supplier related issues including Pricing issues of ethanol.

In order to augment the supply of ethanol, a need was felt to put in place a new mechanism for pricing of ethanol. Accordingly, the Government on 10th December, 2014 decided that the delivered price of ethanol at OMC depots would be fixed in the range of Rs. 48.50 per litre to 49.50 per litre including Central/State Government taxes and transportation charges.

The decision has helped in significantly improving the supply of ethanol. Ethanol supplies increased to 67.4 crorelitres in 2014-15 and the projected supplies for ethanol supply year 2015-16 are around 120 crorelitres. The objective to fix the delivered price of ethanol has been achieved to a large extent. In view of firming of sugar prices, falling crude prices and consequent under-recoveries of OMCs on this account, a need to re-examine the pricing of ethanol under EBP Programme has been felt.

‘WOMEN OF INDIA FESTIVAL 2016’

IN NEWS: The Festival held from October 14-23 offered on sale the biggest selection of organic products ranging from food, fabrics and furniture to wellness, personal care and solar products. Organised and sponsored by the Union Ministry of Women & Child Development, the ‘Women of India Festival 2016’ celebrated and promoted women entrepreneurs from across India. Participants from the remotest areas of the country had travelled to Delhi for the entire duration of the festival and sell their unique products in the capital.

- This initiative is a move to benefit women entrepreneurs, and also actively promote organic food and products.
- The Women of India Festival is intended to highlight the health and environmental advantages of organic goods.
- Provide a platform for women engaged in this economy and encourage the development of sustainable and easily accessible sales outlets for organic producers from remote areas.
- Organic foods have been proven to contain more vitamins, minerals and nutrients than similar foods produced with chemical fertilizers, pesticides and preservatives.
- Organic farming relies on techniques such as crop rotation, green manure, compost, and natural methods of pest control.

- Organic plants and food crops have also been found to contain higher amounts of salicylic acid which fights bowel cancer; it helps to fight stress and disease.

Featured products were cereals, rice, pulses, spices, fabrics, dyes and dresses, cosmetics, household products, pickles, organic ice cream, preserves, oils, honey, tea, hair care, bath care, beauty care, aromatherapy products, kitchen composters, organic seeds and other bio products.

NATIONAL WATER FRAMEWORK BILL, 2016

IN NEWS: In order to resolve inter-State disputes over river water sharing, the Centre has brought final draft of the National Water Framework Bill, 2016, that stresses managing water at basin-level and “right measurement” of State’s contribution to river system to resolve conflicts.

The draft Bill pitches for establishing River Basin Authority for each inter-State basin to ensure “optimum and sustainable” development of rivers and valleys.

As per bill

- The Bill focuses on right measurement of the water at basin-level.
- States to recognise the principle that the rivers are not owned by the basin-States but are “public trustees.
- All basin States have “equitable” rights over a river water “provided such use does not violate the right to water for life” of any person in the river basin.
- Every person has a “right to sufficient quantity of safe water for life” within easy reach of the household regardless of caste, creed, religion, age, community, class, gender, disability, economic status, land ownership and place of residence.
- States should ensure water is conserved.
- The model law also stresses on Centre and States working in partnership for managing water.
- It proposes establishing institutional arrangements at all levels within a State and beyond up to an inter-State river basin level to “obviate” disputes through negotiations, conciliation or mediation before they become acute.
- All the basin States are equal in rights and status, and there is no hierarchy of rights among them, and further, in this context, equality of rights means not equal but equitable shares in the river waters.
- Water being a State subject, the Bill, however, will not be binding on States for adoption.

Presently, there are disputes because nobody [States] knows his/her contribution to a river’s catchment area. When a State will know its exact contribution to the catchment area, it will know quantum of its rightful share.

SIT INVESTING THROUGH P-NOTE TO CURB BLACK MONEY

IN NEWS: The special investigation team (SIT) on black money has asked the Securities and Exchange Board of India (SEBI) to furnish the details of all those investing through participatory notes (P-Notes). This is the first time the government-constituted body has sought such massive amount of data, which includes the list of beneficial owners and transfer trials of investors taking the P-Note route to invest in domestic equity and debt markets.

The P-Note route could still be used by Indian companies to bring back unaccounted money.

The tightening of P-Note norms was triggered by the concerns raised over the investment coming from **Cayman Islands**, the top destination for P-Note investors investing in the Indian securities market. It was noticed that investment from Cayman was more than its population itself. A major chunk of outstanding ODIs (offshore derivative instruments) invested in India – 31.31 per cent – are from Cayman Islands. This translates into roughly Rs 85,006 crore.

The government and the regulator are still concerned about round-tripping of money as there are some set of people who are adopting this route for illicit money transactions. But, this does not mean it is illegal or 100 per cent P-Notes are like this. This is an internationally accepted route to invest money in various markets.

Currently, the P-Note assets in the country are around Rs 2.1 lakh crore – 8.4 per cent of the total FPI assets. The share of P-Notes in the overall FPI assets has been coming down due to tightening of disclosure-related norms. In 2007, P-Notes accounted for nearly half of FPI assets.

- SEBI which has recently tightened the disclosure requirement for P-Notes has already furnished the information to the SIT.
- The SIT wants to ensure that the regulatory changes made by SEBI are sufficient to curb misuse of tools, particularly with respect to end beneficiaries.
- P-Notes allow foreign investors to take exposure to Indian stocks without registering with SEBI.
- These instruments are issued by foreign portfolio investors (FPIs) registered with SEBI.
- SEBI had increased the know-your-customer (KYC) requirement, issued curbs on transferability, and prescribed more stringent reporting for P-Notes issuers and holders.
- It also mandated issuers to follow Indian anti-money laundering laws instead of norms prevalent in the jurisdiction of the end beneficial owner.

CYBER SECURITY COMPANIES

IN NEWS: India is building its first platform for homegrown **cyber security companies** to promote indigenous expertise in the field and help local firms get a larger share of the country's digital security technology budget.

The government and industry have come together to prepare a road map to create a platform for digital and cyber security products and solution companies. This includes creating a special fund for cyber security start-ups to groom them to build local solutions to tackle internet security challenges.

- India's cyber security market size is about \$4 billion (about Rs 26, 729.5 crore), which is expected to grow nine-fold to \$35 billion by 2025, according to Data Security Council of India (DSCI).
- DSCI will collaborate with the Department of Electronics and Information Technology (DeITY) and the Technology Development Board of the Department of Science and Technology for the platform and funds.
- London and Hague as well as Israel are globally known cyber security clusters.
- DSCI had brought together 60-70 cyber security companies to give them a platform to grow.

- According to Nasscom data, there are about 150 such cyber security companies. However, the security landscape in India still remains considerably untouched by investors. The data show that only 40 per cent of the security companies here have received funding from global investors.

CYBER SECURITY LANDSCAPE IN INDIA

- Nasscom expects the digital and cyber security service, solutions and product market to grow to \$35 billion by 2025 from \$4 billion at present.
- There are about 150 security companies in the country.
- About 60 cyber security firms or 40 per cent of the security companies were created in or after 2010.
- About 40 per cent of the cyber security companies have been funded by global investors
- Some of the start-ups that are working with government bodies include Lucideus Tech. It has been hired, among others, to provide security for UPI and Innefu Labs, which provides facial and speech recognition solutions to organisations including DRDO, RBI and CRPF.

REGIONAL CONNECTIVITY SCHEME (RCS)

IN NEWS: The civil aviation ministry started the bidding process of routes under the regional connectivity scheme (RCS) from early next month and it has sought the coal ministry's suggestions on e-auctioning.

- The government will unveil the final RCS policy soon after which it will invite bids from the airlines wanting to fly on regional routes.
- The Airports Authority of India (AAI), the nodal body entrusted to implement the ambitious scheme, has written to the coal ministry to share its experience on the modus operandi of the coal block e-auction process.
- The civil aviation ministry will do the bidding of the routes through state-owned Metal and Scrap Trading Corporation (MSTC) — the body which conducts the coal mine and iron ore auction.
- The reverse bidding method is used by the government to bring down the requirement of viability gap funding (VGF), which the airlines will require to subsidise their operational cost.
- The Centre has proposed to cap fares at Rs 2,500 for a one-hour flight under the RCS.
- Airlines operating under the RCS will get viability gap funding and a host of other benefits such as lower taxes and airport charges to promote regional connectivity.
- The government has already notified setting up of a regional air connectivity fund for providing VGF to aircraft operators.
- The Centre will share 80 per cent of the cost of VGF, while the states will contribute the remaining.

HUMAN HAIR TO PRODUCE CATHODE FOR USE IN SOLAR CELLS

IN NEWS: Indian Institute of Science Education and Research (IISER) in Kolkata has used human hair to produce cost-effective, metal-free cathodes for use in solar cells. This is the first instance where a bio-waste-derived electrode has been used as cathode in a quantum dot sensitised solar cell device.

- The graphitic porous carbon cathode converted visible sunlight to electricity [power conversion] much higher than commercially available activated carbon cathodes and are comparable with commonly used cathodes made of platinum metal and metal sulfides.

- Green cathodes have the potential to bring down the cost of solar cells.
- The cathode was found to generate high open-circuit voltage, which is at par with conventional platinum and activated carbon cathodes. Thereby, the power conversion efficiencies can also be enhanced.
- Producing graphitic porous carbon cathode using human hair is also simple, quick and inexpensive.
- The cleaned and dry human hair was first treated with sulphuric acid at 165 degrees C for 25 minutes to achieve precarbonisation. It was then heated to different temperatures in the presence of an inert gas for six hours to carbonise and bring better electrical conductivity for efficient charge transfer.
- 850 degrees C was the optimum temperature to achieve highly catalytic graphitic porous carbon for fabricating efficient green cathodes.

PENSION PRODUCT REGULATION

IN NEWS: The Finance Ministry has set up a high-level committee to consolidate the regulation of pension products that is currently being done by three different watchdogs including the insurance and stock market regulators.

- Pension Fund Regulatory and Development Authority (PFRDA) was set up with the intent of regulating all pension products, insurers and mutual funds continue to sell pension products outside its watch.
- Pension products floated by insurance companies come under the purview of the Insurance Regulatory and Development Authority (IRDA) while those sold by mutual funds are overseen by the SEBI.
- The Centre has formed a committee to look into the issue of bringing these companies which are offering pension plans under the purview of PFRDA.
- The committee to be formed by the Department of Financial Services, would have representatives from all financial sector regulators — SEBI, IRDA, RBI and PFRDA.

The regulator has to see that nobody is fiddling with the money, that they are following the guidelines, are not expensive, and that the money is managed well.

AMUR FALCON

IN NEWS: Thousands of Amur falcons, small birds of prey that undertake one of the longest migrations, started arriving in Wokha district in Nagaland and Tamenglong district of Manipur.

Wokha district is a declared second home of the Amur Falcon.

- Amur falcon, *Falco amurensis* is a small bird weighs only 150 grams.
- The male mostly grey in colour, and the females having dark-streaked cream or orange underparts.
- The species flies non-stop from Mongolia to northeast India covering 5,600 km in five days and nights, a small part of its 22,000 km circular migratory journey. The birds halt briefly in Myanmar.
- After a month or so, they reach central and western India en route to South Africa.
- The species is vulnerable to degradation of grassland habitats by agriculture and afforestation in its African range.
- The species is evaluated as Least Concern.

TRANSMISSION PLANNING TO FACILITATE TRANSFER OF POWER

IN NEWS: A committee appointed by the Central Electricity Regulatory Commission has suggested an overhaul in transmission planning to facilitate transfer of power on economic principles. The committee, headed by power system expert Mata Prasad, has suggested that transmission planning be aligned to meet customer aspirations as opposed to the existing system where transmission is associated with long-term power purchase agreements (PPAs).

According to the committee, transmission planning can be done on the basis of projected load of the states and anticipated generation scenario based on economic principles of merit order operation.

- In case of renewable energy sources the transmission system may be planned by the central transmission utility (CTU) based on estimated capacity additions in perspective plan and renewable purchase obligations of each state.
- Centre has already launched renewable energy capacity addition of 175 Gw by 2032.
- To promote the power market, the committee has suggested that the transmission corridor allocation be suitably made.
- Five per cent of each flow gate may be reserved for day-ahead collective transactions, which may be released for the contingency market in case of non-utilisation of the corridor by power exchanges.
- The percentage of reservation may be reviewed after one year of operation.
- The system studies be carried out for various generation and load scenarios during peak and off-peak hours, considering renewable capacity addition and scheduling of various generating stations that don't have any PPAs.
- The committee has emphasised the need for the creation of a central repository of generators in the Central Electricity Authority of India (CEA), where any generation project developer proposing to setup a new generation plant must register itself. This will not only provide vital data for the transmission planning process but will alleviate problems due to uncoordinated generation additions.
- States procure software for short-term, medium-term and long-term demand forecasting.
- The volume of short-term transactions has increased from 65.9 billion units (BUs) in 2009-10 to 115.23 BUs in 2015-16. Also, the average prices of electricity transacted through traders in the short term has come down from Rs 7.29 a unit in 2008-09 to Rs 4.11 in 2015-16.
- The price of electricity transacted through power exchanges for 2015-16 was Rs 2.72 a unit. The trend is likely to cause more participants shifting towards short-term transactions.

ELECTRIC BANDAGE: NASA

IN NEWS: NASA has developed a new high-tech material that uses electricity to significantly promote healing of injured wounds. In conditions of non-Earth gravity, human blood displays behaviour quite different from that on Earth. Wounds are likely to heal much more slowly and considering the survival risks and the cost of space missions, healing wounds as fast as possible is crucial.

- The new material generates a small amount of electricity when interacting with another surface, including human skin.
- The material, called polyvinylidene fluoride (PVDF) has numerous possible applications, including wound healing.
- It is proven that wounds tend to heal much more quickly if small amounts of electricity are applied to the surrounding tissue. However, the gauze pattern is also essential to the healing process.
- If the PVDF fibres are aligned correctly, cells on a wound use it as a scaffold, helping the wound to heal faster.
- The easiest way to align the fibres is to make gauze which also creates an additional layer of protection against infection.
- The invention is a simple and inexpensive means of producing fibres and mats of controlled fibre diameter, porosity, and thickness.
- The device can also be used by military personnel wounded in the field, patients who have undergone surgery and even those who have suffered a serious wound.