CURRENT AFFAIRS

1ST OCT. TO 10TH OCT. 2016

RATIFICATION OF PARIS CLIMATE TREATY

EU ratified Paris Climate Treaty

European Union ministers approved the ratification of the Paris Agreement. The 28 EU member nation together accounts for close to 12 per cent of global greenhouse gas emissions. Their addition took the cumulative emissions of ratifying parties well beyond the 55 per cent minimum required for the treaty to enter into force.

61 countries, accounting for almost 48 per cent of global emissions have ratified the deal. India, which accounts for 4.1 per cent of global emissions, has agreed to ratify the deal on October 2. Together with the EU, the total global emissions covered by ratifying parties will make the treaty ready to enter into force, 30 days after all the agreed parties submit their ratification instruments.

India ratified Paris Climate Treaty

India ratified the Paris Agreement on Climate Change with the United Nations, on the 147th birth anniversary of Mahatma Gandhi.

India is the 62nd country to ratify the agreement. The agreement will enter into force one month after 55 countries that account for 55 percent of global emissions ratify the agreement. 14 other countries, representing at least 12 per cent of global emissions, have committed to ratifying the pact before the end of the year.

BACKGROUND

The fight against climate change began in 1992 at the Earth Summit in Rio de Janeiro that gave birth to the UN Framework Convention on Climate Change and culminated with a global agreement in Paris in 2015.
The Paris Agreement seeks to spur global action to reduce greenhouse gases from the atmosphere, fast enough to prevent catastrophic effects of climate change. It also seeks to give an impetus to actions being taken to adapt to the impacts of climate change, and raise financial and technological resources to do so.

The Paris Agreement was initially supposed to come into operation in 2020 when the Kyoto Protocol, the existing international arrangement to deal with climate change, expires. But that deadline was later dropped it can now come into existence immediately after the 30-day period following the minimum ratifications is over. For a few years, **both Paris Agreement as well as the Kyoto Protocol would exist side by side.**

Major impacts of Paris climate deal for India

1. Solar & wind energy

Solar photovoltaic panels and, to a lesser extent, large wind mills will become one of the most familiar sights representing the fight against climate change. India plans to install as much as 100 GW of electricity generation capacity through solar energy by 2022, of which 40 GW would be through individual rooftop

systems. India had initially announced plans for setting up 60 GW of wind energy by 2022. A number of villages are already powered solely through solar or wind energy. But decentralised production and consumption of electricity, through solar, wind, biogas or small hydro initiatives, is likely to become more prevalent as efforts are made to take electricity to 200 million people.

2. Home appliances

Under the Paris Agreement, India has promised to reduce emissions intensity, or the amount of greenhouse gas emissions per unit of GDP, by 33 to 35 per cent by 2030 as compared to 2005 levels. A quarter of India's total electricity is consumed at homes. So far, more than 3 crore households have switched over to energy efficient LED bulbs, according to government figures. More than 16.5 crore LED bulbs are in use in these houses. Electrical appliances, including air conditioners, refrigerators and television have become far more efficient.

3. Private & public transport

Electric cars are slowly marking their presence and battery-operated e-rickshaws have become popular in many cities. Now, stricter fuel efficiency norms will be put in place, with India advancing the implementation of Bharat VI pollution norms to 2020 instead of 2022. Besides, Metro tracks coming up in various cities across the country that will resolve, to a large extent, not just the problem of mass urban transport but also pollution caused by older forms of transport.

4. More trees

India has promised to create an additional carbon sink — system capable of absorbing carbon dioxide (CO_2) from the atmosphere — of 2.5 to 3 billion tonnes of CO_2-equivalent through forest and tree cover by 2030. That is an ambitious target. Just over 24 per cent of India's geographical area is currently under forest and tree cover, and the stated objective is to take it to 33 per cent. However, it will be difficult to rapidly expand the forest cover, especially because more forest area will be cut for developmental or industrial requirements. As a result, planting of trees would be seen as an alternative. Besides, with close to half of India's forests of very low quality, transforming them would lead to an increase in carbon sink. In the previous Parliament session, the government managed to get the landmark **CAMPA (Compensatory Afforestation Fund Management and Planning Authority) bill** passed to make up for every piece of forest destroyed for any reason. Thousands of crores of rupees are available for afforestation drives through CAMPA, or Green India Mission. The government has also spoken about planting trees along the entire stretch of highways and railways.

5. Smarter buildings

70 per cent of the infrastructure that India will have in 2030 is still to be built, including new cities and buildings. "Smart" and "net zero" buildings, a vast majority of new constructions are still of poor quality. As an example, the new building of the Union Environment Ministry, which came up three years ago, was constructed to be net zero, ie., the total amount of energy used on an annual basis is roughly equal to the amount of renewable energy created on the site. The rating of buildings on green parameters, with incentives or penalties on electricity or water bills will become more common Already, the **Green Rating for Integrated Habitat Assessment (GRIHA),** endorsed by the Ministry of New & Renewable Energy, and Leadership in Energy and Environmental Design (LEED), a third-party certification programme, which is one of the most popular green building certification programs used worldwide are fairly well established.

6. Water

Climate change induces a lot of uncertainties in water availability. For a country that is already water-stressed, climate change is an additional urgent reason to reform the way in which water is managed and utilised. Some movements in this direction have already started happening. Free water is likely to be rationed in future. And water for all uses is likely to be priced. There will be no unrestricted rights over groundwater below the land one owns. And industries will be mandated to use only treated water.

OPEC AGREES TO MODEST OUTPUT CURBS

IN NEWS: OPEC agreed to a modest oil output cuts in the first such deal since 2008.

- OPEC would reduce output to a range of 32.5-33.0 million barrels per day from its current output at 33.24 million bpd.
- The move would effectively re-establish OPEC production ceilings abandoned a year ago.
- How much each country will produce will be decided in OPEC's next formal meeting in November, when an invitation to join cuts could also be extended to non-Opec countries such as Russia
- Goldman Sachs expects the OPEC deal to add $7-$10 to oil prices in the first half of 2017.
- Oil prices jumped more than 5 percent to trade above $48 per barrel as of 2015 GMT.

Oil price pressures

- The Saudi and Iranian economies depend heavily on oil but in a post-sanctions environment, Iran is suffering less pressure from the halving in crude prices since 2014 and its economy could expand by almost 4 percent this year.
- Riyadh, on the other hand, faces a second year of budget deficits after a record gap of $98 billion last year, a stagnating economy and is being forced to cut the salaries of government employees.
- Saudi Arabia is by far the largest OPEC producer with output of more than 10.7 million bpd, on par with Russia and the United States. Together, the three largest global producers extract a third of the world's oil.
- Iran's production has been stagnant at 3.6 million bpd in the past three months, close to pre-sanctions levels although Tehran says it wants to ramp up output to more than 4 million bpd when foreign investments in its fields kick in.
- Saudi oil revenue has halved over the past two years, forcing Riyadh to liquidate billions of dollars of overseas assets every month to pay bills and cut domestic fuel and utility subsidies last year.
- Iran have unemployment in double digits, so Tehran is also facing calls to maximize oil revenues and President Hassan Rouhani is under pressure from conservative opponents to deliver a faster economic recovery.
- Oil prices are well below the budget requirements of most OPEC nations. But attempts to reach an output deal have also been complicated by political rivalry between Iran and Saudi Arabia, which are fighting several proxy-wars in the Middle East, including in Syria and Yemen.

No benefits for the consumers

- Record production in the United States (US), weakened demand from the Eurozone and emerging economies like China and Brazil, and Iran's entry into the international market have effectively slashed the price of crude oil for India.

- As global crude prices reach an 11-year low, the Centre and state governments steadily increase excise duties and value-added tax, shoring up their revenues and keeping fuel prices high for retail consumers.
- Although India imports more than 80% of its fuel requirement, which means declining global prices should, theoretically, have seen sharp declines in retail petrol and diesel prices, Indian consumers of petrol and diesel now pay about double the global rate.

OPEC

- Organization of the Petroleum Exporting Countries (OPEC) is an intergovernmental organization of 14 nations, accounted for an estimated 43 percent of global oil production and 73 percent of the world's "proven" oil reserves, giving OPEC a major influence on global oil prices.
- As of 2016, OPEC's members are Algeria, Angola, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia (the de facto leader), United Arab Emirates, and Venezuela.
- Two-thirds of OPEC's oil production and reserves are in its six Middle Eastern countries that surround the oil-rich Persian Gulf.

INFRASTRUCTURE STATUS FOR SPORTS SECTOR

For addressing the issue of deficit of sports infrastructure in the country, the Ministry of Youth Affairs & Sports Affairs had moved a proposal for inclusion of Sports in the harmonized master list of infrastructure sub-sectors so that the sports sector becomes eligible for obtaining long term financial support from banks and other financial institutions on the same principle as is available to other infrastructure project.

Sports infrastructure will be included under the Harmonized Master List of Infrastructure Subsectors. It "includes the provision of Sports Stadia and Infrastructure for Academies for Training / Research in Sports and Sports-related activities. This inclusion would encourage private investment in a public good which has socio-economic externalities in a country with young population. It will also bolster investment in sports infrastructure sector which will contribute to the economy and help in promotion of health and fitness of the people of this country as also provide opportunities for employment in the new and exciting sectors.

INDIAN SANITATION CONFERENCE (INDOSAN)

IN NEWS: Prime Minister inaugurated the India Sanitation Conference (INDOSAN) in New Delhi.

India Sanitation Conference (INDOSAN)

- INDOSAN is envisaged as an annual national event, that brings together all stakeholders working in sanitation government, NGOs, academicians, researchers, partner agencies, corporates on one platform for a shared vision.
- The conference aims at bringing together all such stakeholders, will create an opportunity for collective vision, collective understanding of the key elements of the Swachh Bharat Mission programme.
- The conference will discuss on the steps to make India Open Defecation Free (ODF) by 2019 by construction of individual, cluster & community toilets and by keeping villages clean via solid and liquid waste management through Gram Panchayats.

- It is the platform where each state will share their approaches most suitable to them to reach ODF.

ENDEMIC SPECIES AND SPICES REPORT: BSI

IN NEWS: A recent publication by the Botanical Survey of India (BSI) has revealed that almost one of every four species of flowering plants found in India is endemic to the country.

Tamil Nadu accounts for the highest number of species with 410, followed by Kerala with 357 and Maharashtra with 278.

Of the 18,259 flowering plants reported in the country, 4,303 (over 23 per cent) are found only in India.

Ggeographical distribution of endemic plants, **the Western Ghats tops the list with about 2,116 species, followed by the Eastern Himalayas with 466 species** as these two regions are among the biodiversity hot spots of the country.

BSI has listed at least 37 species of **Black plum Syzyguim (Jamun),** 10 varieties of **Musa (banana),** along with 274 species of **orchids,** which are found only in the country. Four different varieties of **roses**, two **herbs** and two **climbers** and 12 species of j**asmines** are exclusively found in India.

Spices

45 species belonging to the **common black pepper family**, 19 species of **ginger** and 13 different kinds of **large cardamom** and also 40 species of **bamboos (Bambusoideae)** are endemic to India.

Some of these endemic species are restricted to only certain areas of the country, like Nepenthes khasiana, an insectivorous plant only found in the Khasi hills of Meghalaya. A total of 58 generea of flowering plants have been found to be endemic to India.

As far as endemism regarding vascular plants in India is concerned, the 19, 635 vascular plants found in the country, 4,381 are endemic. This includes 4,303 angiosperms or flowering plants, 12 gymnosperms - mostly Cycads, and 66 ferns and fern allies which come under the group Pteridophytes.

The Gymnosperms, non-flowering plants, at least six species of Cycas are found in the country. These plants are known to have existed from the Jurassic era and are commonly referred as living fossils as they grow very slowly.

Around 53 per cent of all endemic flowering plants are herbs, 20 per cent are shrubs and 15 per cent are trees.

Among the most widely exploited endemic plants in country is Pterocarpus santalinus, commonly known as red sandal wood, which is found only in the southern parts of the Eastern Ghats. This plant is classified as critically endangered under International Union for Conservation of Nature (IUCN) category because of its dwindling habitat due to economic over-exploitation. Some of the wild orchids, which are also endemic, are also exploited heavily.

NATIONAL MISSION ON BIOECONOMY

IN NEWS: In order to boost rural economy by utilizin bio-resources, a National Mission on Bioeconomy was launched in Shillong, Meghalaya by the Institute of Bio-resources and Sustainable Development (IBSD) under the Ministry of Science and Technology.

The mission is unique to south-east Asia and India has become one of the few countries to have tapped bio-resources, which when optimally utilized can create a large number of jobs at village level.

USA, Canada, European Union and Australia have started initiatives in this field of Bioeconomy.

The mission focuses on sustainable utilization of renewable biological resources for food, bio-based products and bio-energy through knowledge-based approaches.

It could have the potential to generate new solutions for the major challenges in the field of energy, health, food, water, climate change and deliver social, environmental and economic benefits.

The latest estimate pegs India's fast-growing bioeconomy at USD 35 billion in 2015, which can even rise to USD 100 billion.

'OCHOTONA SIKIMARIA' THE NEW PIKA SPECIES DISCOVERED

IN NEWS: A new species of a small mammal in the rabbit family has been discovered in the higher altitudes of the Himalayas in Sikkim, as it is an important part of the ecosystem.

Identified as 'Ochotona sikimaria' -- the new pika species was discovered by the study based on genetic data and skull measurements. The new species appears limited to Sikkim.

Pika

- These members of the rabbit family look like tailless rats and have been in the news in North America for their sensitivity to impacts of climate change, like increasing temperature, which has caused several of the populations in pika series go extinct.
- Pikas do not hibernate. They prepare for winter by collecting and storing hay piles for their winter food.
- Unlike rabbits and hares, pikas are active during the day, with the exception of the nocturnal steppe pikas .
- Being largely alpine or boreal species, most pikas are adapted to living in cold environments and cannot tolerate heat.
- When temperatures are high, they confine their activity to early morning and late afternoon.

WORLD HABITAT DAY

World Habitat Day is celebrated every year throughout the world on **first Monday of October month**.
World Habitat Day 2016 celebrated at Monday, on 3rd of October. "Theme: Housing at the center

- World Habitat Day was first declared by the United Nations General Assembly in the month of December in the year 1985. It was first started celebrating in the year 1986 at first Monday of the October.

- World Habitat Day is celebrated every year all across the world on 7th of October.
- The supporters of the affordable habitat worldwide works hard for the adequate shelter around the globe through their special activities highlighting the requirement of safe, civilized and inexpensive shelters for the common individual.
- The celebration of the day involves the plan to alter the systems which emphasize poverty housing as well as planning affordable housing for all.
- It is celebrated in many countries all across the world including Pakistan, Germany, Hungary, the USA, Brazil, Belgium, Japan, Italy, Russia, Indonesia, Mexico, China, Kenya, Jamaica, U.A.E., Angola, the Netherlands and Senegal.
- Various activities on World Habitat Day are structured in order to observe the troubles of the homeless, issues of fast urbanization and its impact on the surroundings and human poverty.
- It was planned to make available the sufficient shelter, water, sanitation, health, other basic services, good education within easy reach, job prospects and etc.

Statistics

There is a global housing crisis, approximately **1.6 billion** people worldwide are living in the substandard housing and almost **100 million** people are homeless. It indicates that it is very to take some serious actions otherwise the number of slum inhabitants will continuously increase all over the world. The World Habitat Day aims to draw the people attention towards the anxious need of poor people for an adequate housing.

Purpose

- To pay a big attention towards the need for better shelter all over the world
- To share the priority of affordable and adequate housing everywhere
- To bring the positive changes in the systems including policies and attitudes of person causing poverty housing
- To reflect on the states and towns and pay attention on the basic human rights for adequate shelter
- To increase the awareness worldwide of joint responsibility for the future generation's habitat

NOBEL PRIZE 2016

1. **Physics**

   Prize awarded to **David J. Thouless, F. Duncan M. Haldane and J. Michael Kosterlitz** for theoretical discoveries of **topological phase transitions and topological phases of matter".**

   Topology is the modern version of geometry, the study of all different sorts of spaces. One can observe different phases of materials; for example water, which exists as solid, liquid or gas. The material can undergo transitions from one phase to another, just as water evaporates into vapour. When we cool some substances to very low temperatures, one can encounter exotic phases. Such phases were studied by the scientists, who characterised the phases using a sophisticated geometrical concept — topology.

2. **Chemistry**

   The Prize was awarded jointly to **Jean-Pierre Sauvage, Sir J. Fraser Stoddart and Bernard L. Feringa** for the design and synthesis of **molecular machines.**

A **molecular machine** or **nanomachine** refers to any discrete number of molecular components that produce quasi-mechanical movements (output) in response to specific stimuli (input). The expression is often more generally applied to molecules that simply mimic functions that occur at the macroscopic level. Example molecular motors, molecular switches, etc,

3. **Physiology or Medicine**

Prize awarded to **Yoshinori Ohsumi:** for his discoveries of mechanisms for **autophagy.**

The word **autophagy** is derived from Greek words "auto" meaning self and "phagy" meaning eating. Autophagy is a normal physiological process in the body that deals with destruction of cells in the body.

It maintains homeostasis or normal functioning by protein degradation and turnover of the destroyed cell organelles for new cell formation. During cellular stress the process of Autophagy is upscaled and increased. Cellular stress is caused when there is deprivation of nutrients and/or growth factors. Thus Autophagy may provide an alternate source of intracellular building blocks and substrates that may generate energy to enable continuous cell survival.

Autophagy mainly maintains a balance between manufacture of cellular components and break down of damaged or unnecessary organelles and other cellular constituents.

4. **Literature**

Prize was awarded to **Bob Dylan** for having created new poetic expressions within the great American song tradition.

5. **Peace**

Prize was awarded to **Juan Manuel Santos** for his resolute efforts to bring the country's more than 50-year-long civil war to an end.

6. **Economics**

The Sveriges Riksbank Prize in Economic Sciences was awarded jointly to **Oliver Hart and Bengt Holmström** for their contributions to **contract theory**.

FIRST OPEN DEFECATION FREE STATES

IN NEWS: On the second anniversary of the Swachh Bharat Mission, the government named Gujarat and Andhra Pradesh as the first states to have become open defecation free (ODF) in urban areas. In rural areas, approximately 100,000 villages have also been declared ODF since the launch of the mission in 2014.

The Swachh Bharat Mission was launched on 2 October 2014 to make India clean and open defecation free by 2019, Mahatma Gandhi's 150th birth anniversary.

- In all, 180 and 110 cities and towns, respectively, in Gujarat and Andhra Pradesh were declared open defecation free by their chief ministers. A total of 405 out of the 4,041 cities and towns have so far claimed to have become open defecation free.
- The government has set a target of making 334 more cities open defecation free by March next year.
- According to official figures, in urban areas, with three years to go, the mission has managed to construct 36% of individual toilets, 30% community toilets and 9% public toilets.

- In rural India, while Sikkim, Himachal Pradesh and Kerala have achieved more than 90% of toilet construction in households, Bihar, Jammu and Kashmir and Odisha are still trailing with fewer than 30% of households with toilets.
- Gujarat, Kerala, Himachal Pradesh, Uttarakhand and Mizoram are likely to achieve open defecation-free status for all rural areas by 31 March 2017.
- Maharashtra, Kerala, Himachal Pradesh, Mizoram and other north-eastern states are to declare all urban areas as open defecation free soon.

DIRECT BENEFIT TRANSFER IN KEROSENE

IN NEWS: Jharkhand has become the first state in the country to implement Direct Benefit Transfer (DBT) in Kerosene in four identified districts namely, Chatra, Hazaribagh, Khunti and Jantara.

Under the **DBTK Scheme**, PDS kerosene is being sold at non-subsidised price, and subsidy, as admissible, is being transferred to consumers directly into their bank accounts. This initiative is aimed at rationalising subsidy, based on the approach to cut subsidy leakages but not subsidy per se.

INDIA-SINGAPORE

IN NEWS: India and Singapore signed three agreements including two in the area of skill development.

- One memorandum of understanding (MoU) was signed between Singapore's Institute of Technical Education (ITE) Education Services (ITEES) and India's National Skill Development Corporation on collaboration in technical and vocational education and training.
- Another MoU was signed between the Assam government and ITEES Singapore also on collaboration in technical and vocational education and training.
- A third MoU was signed in the field of industrial property cooperation.

INDIA AND EUROPEAN UNION ON WATER COOPERATION

IN NEWS: Government has given its approval for the signing of MoU between India and European Union in the field of water resources.

Highlights

- To identify key environmental issues and approaches to sustainable development.
- Strengthening the technological, scientific and management capabilities in the field of **water management** on the basis of equality, reciprocity and mutual benefit.
- It provides technical exchange on water issues, including on integrated water resource management plans within river basins and through study visits.
- It envisions a more sustainable management of water resources in India with an objective of tackling the challenges posed by water management in the context of growing population, competing water demands and a changing climate.
- A Joint Working Group will be formed to monitor the activities to be carried out in fulfillment of the MoU.

A NEW EDUCATION POLICY

IN NEWS: A new education policy is in the process of being finalized by the ministry of human resource development (MHRD).

Concern: Poor quality of education, not gross enrolment, is currently the key issue with the Indian education system.

The new policy is **aimed** at making education both emancipator and enabler while encouraging innovation over rote learning.

Gross enrolment was the focus area in earlier schemes, i.e. **Sarva Shiksha Abhiyan, Right to Education, National Literacy Mission** and so on. Poor quality of education is a major issue at present. To address this challenge there is a need to study various aspects of the Indian education system at the grass-roots level i.e.

- Quality of trainers.
- Curricula upgradation.
- Use of e-learning.
- Assessment pedagogies.
- Institutional accreditation.
- Focus on extracurricular activities.
- Common syllabi.
- Foreign universities Bill.
- Not-for profit model and so on.

Here are four important facets of our education system which should be incorporated in the new education policy to enhance overall credibility of the system.

Regulatory: The introduction of a single industry regulator along the lines of the Telecom Regulatory Authority of India and the Insurance Regulatory and Development Authority would be helpful in improving the overall productivity of the institutions. This would allow educational institutions to focus more on education delivery to students rather than spending more time in the paperwork of different regulatory bodies. In fact, too much control enables rent-seeking and corruption. Let market forces decide which player is better, as happens in other sectors.

Accountability: Parallel education or the emergence of coaching institutions in the Indian education system is due to the failure of the main education system comprising schools, colleges and universities. There is no accountability for the desired output from the core education system. In the US' new Every Student Succeeds Act, passed in December 2015, the federal role in establishing educational standards has been reduced while schools have been made more accountable and performance-oriented. Similarly in India, schools or colleges should not be allowed to consider themselves merely custodians of licences to grant degrees or certificates. They ought to be responsible for the final learning outcome. In this process, teachers should also be accountable. The government needs to address this issue, from reviewing the eligibility criteria for teachers to assessing their motivation.

Reservation: Reservation is one of the efficient ways to achieve social equilibrium. However, it need not necessarily be just caste-based reservation. The social benefits of reservation for a poor family or deprived student from the general category (as defined currently) is far greater than reservation for an affluent reserved category individual (based on the current caste system). But we are unlikely to see any update on

this in the new education policy. However, if education is listed among the "9 pillars" to transform India, then eventually, the issue will have to be addressed in order to foster excellence in education governance.

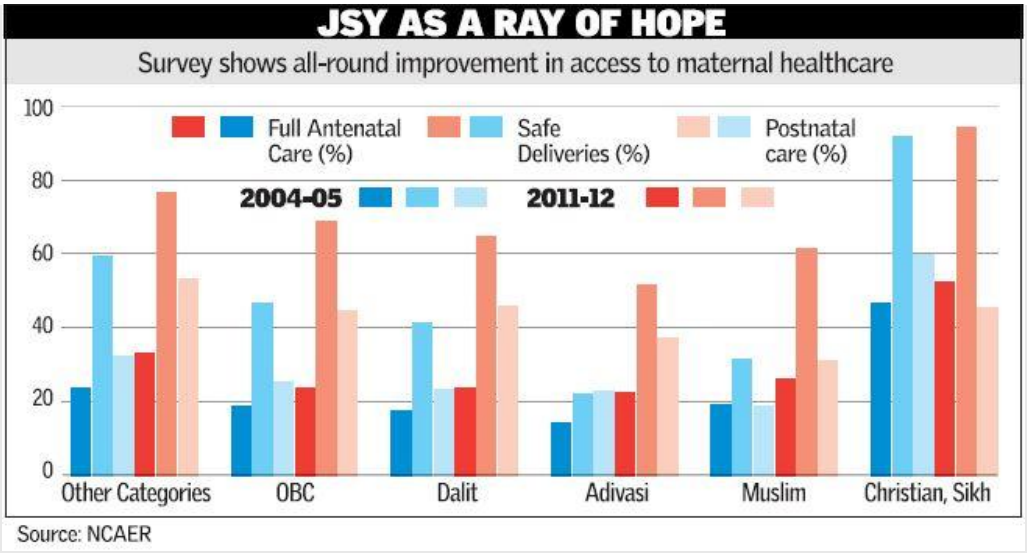
Financing: The Central government spends less than 4% of the gross domestic product (GDP) on education. The allotment in the last budget, with just 4.9% year-on-year increase, is actually lower as a percentage of GDP if inflation is factored in. If the government says that education is a national agenda, then it should get its proportionate allocation.

JANANI SURAKSHA YOJANA: STUDY REPORT

IN NEWS: A new study brings in first conclusive evidence of the role played by Janani Suraksha Yojana (JSY) in reducing 'socioeconomic disparities' existing in maternal care.

The JSY was launched in 2005 as part of the National Rural Health Mission (NRHM) to improve maternal and neonatal health by promotion of institutional deliveries (childbirth in hospitals).

JSY has led to an enhancement in the utilisation of health services among all groups especially among the poorer and underserved sections in the rural areas, thereby reducing the prevalent disparities in maternal care.



Three key services of maternal care were used for the analysis**: full antenatal care (full ANC), safe delivery, and postnatal care.**

There were three major findings:

- The increase in utilisation of all three maternal healthcare services was remarkably higher among illiterate or less educated and poor women. This documents the effect of the JSY scheme, where women with little or no education were motivated to utilise maternal health care services.

- The usage of all three maternal healthcare services by the OBC, Dalit, Adivasis and Muslim women has increased. After the implementation of the JSY, there was generally a narrowing of the gap between the less educated and more educated women and between the poorer and richer women.

- Women in their early twenties were more likely to avail of each of the three maternal health care services as compared to their older women. Also, the incidence of women availing maternal healthcare services decreases with the increase in the number of children they have delivered.

Background

Inequality in access to maternal care persists. However, the gap in access to healthcare between the marginalised group of women and those who are financially better-off has declined since the advent of the JSY program.

High incidence of maternal mortality continued to plague India. As per the latest Lancet series on maternal health, India accounted for 15 per cent of the total maternal deaths in the world in 2015 — second only to Nigeria — with 45,000 women dying during pregnancy or childbirth.

ORGANIC FARMING

IN NEWS: India holds a position among 172 countries practising organic agriculture: it has 6,50,000 organic producers, 699 processors, 669 exporters and 7,20,000 hectares under cultivation. But, merely 0.4 per cent of total agricultural land is under the organic cultivation.

Last year, the Indian organic export and domestic market grew by 30 and 40 per cent respectively, and will sustain primarily due to an increasing number of affluent and health conscious consumers. As the industry continues to grow, it faces unique challenges. Due to relatively small volumes, the costs of organic food products are relatively high. The cost of cultivation increases as it takes more time and energy to produce than its chemical-intensive counterpart.

Major challenges

- High demand and low supply has further created an inflationary pressure on organic food products.

This supply-demand mismatch can be eased fundamentally by making organic production mainstream with location-specific hybrid production strategies. Specialized farmer training costs, higher processing and inventory holding costs, and increased packaging, logistics and distribution costs add to the price of end products. Nevertheless, investments in achieving operations excellence by companies will facilitate lowering the cost of organic food products.

- The absence of organic food products across all segments in the market is a concern**.**

Consumers find little value buying limited organic products at a premium when rest of the foodstuff they consume is non-organic. Prospects are immense on the supply side as currently organically cultivated crop areas represent only a small fraction of the total acreage of these crops. The positive side is that the number of organic food categories has grown to more than 200, including tea, spices, flour, cereals, fruits, vegetables, milk, and honey.

- Many farmers are apprehensive about adopting organic farming due to the high production cost and the three-year transition period when farmers have to wait before getting their farms certified.
- There is low awareness at the producer level on the difference between conventional farming and organic farming.
- At the consumer level there is confusion between natural and organic products and limited understanding of the health benefits of organic food products.

- Consumers are faced with a plethora of decisions around brands — imported or domestic, product quality, authenticity of claims and certifications.
- It is critical for companies involved in the organic food business to increase awareness among consumers in non-metro cities.
- Many counterfeit organic products are available in the markets, which adversely impact the industry and consumer trust.
- Organic farmers are unable to save their crops using traditional methods of pest control.

Benefits of organic farming

- Though there is lower yield, these farms are more profitable and environmentally friendly.
- Provide several ecosystem services.
- Numerous social benefits and deliver nutritious foods.
- Less pesticide residues compared to conventional farming.
- Organically managed soils release less carbon dioxide per hectare per year than conventionally managed soils.
- New studies indicate that using the best management practices in organic systems over a long period of time can produce equal yields, or even outdo those of conventional systems.

Suggestions

- Progressively, people across all income groups should have access to organic food. This can be facilitated by different means such as establishing community-supported agricultural farms or with "grow your own food" programmes. Where penetration is low, smaller sized packs can help encourage trials.
- Impact assessment of organic farming compared to conventional farming considering the sustainability framework can help to increase consumer awareness on the true cost of a product.
- The Government must rope in agricultural scientists and international research institutions to develop organic herbicides.

Recent success

- The Government has come up with stringent punishment for selling counterfeit organic produce.
- Sikkim is an organic state with 75,000 ha of land under organic cultivation based on an initiative that started in 2003.
- Meghalaya aims to convert 200,000 ha under organic farming by 2020.
- Kerala has more than 100,000 farmers practising organic farming and 10 cooperatives promoting the sector.
- The Centre has announced for allocation of ₹1 billion for organic market development and ₹3 billion for the participatory guarantee scheme.
- Organic agriculture in India will continue to grow and play a larger part in safely feeding 1.5 billion Indians in 2030.

Initiatives by government to promote organic farming

Paramparagat Krishi Vikas Yojna (PKVY)

- It is the first extensive scheme which has been initiated in the form of Centre Sponsored Programme (CSP).
- The implementation of this scheme is carried out by the State Governments based on the cluster for every 20 hectare land.
- Under clusters the farmers are granted financial assistance for maximum one hectare land and Government of India has earmarked Rs. 50,000 for every hectare land during the period of transformation of three year ceiling.
- The objective in this regard has been chalked out for 10,000 of clusters while covering area of 2 lakh hectare land.

Organic Value Added Mode Development Mission

- A Central Regional Scheme for North-Eastern regions for implementation in Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim as well as Tripura during 2015-16 to 2017-18 while keeping in view the potentiality of farming in North-Eastern region.
- This scheme aims at to develop authentic organic products in value added mode so that the consumers might be linked with consumers and from input, seed certification to unification, processing, marketing as well as grant formation initiative.
- Assistance might be extended for the entire value added development. The scheme has been approved with Rs. 400 crore for a span of three years.

- The conservative cost of the estimate is pegged at Rs 14,700 crore by the Alzheimer's and Related Disorders Society of India (ARDSI). The numbers are expected to double by 2030 and the cost of care would estimatedly increase three times.

MATERNAL DEATHS IN INDIA AND WORLDWIDE

IN NEWS: Between 1990 and 2015, deaths of children under five have gone down by half worldwide but India has had the highest number of such deaths at 1.3 million in 2015. India has pulled down maternal deaths but Bangladesh has done better, according to the Global Burden of Disease 2015 study published in The Lancet, detailing key drivers of illness, disability and death in countries.

As per report

- The number of under-5 deaths has gone down from 12.1 million in 1990 to 5.8 million in 2015.
- India at 1.3 million was followed by Nigeria with 726,600 and Pakistan with 341,700.
- Over 30 per cent of these under-5 deaths took place in South Asia.
- Neonatal mortality (death in the first month of life) has fallen slower than child mortality, from 4.6 million in 1990 to 2.6 million in 2015 globally. The decrease is 42 per cent, compared with 52 per cent for under-5 deaths.
- Under-5 mortality fell at an annual average rate of 3 per cent between 1990 and 2015 – compared with 4.4 per cent rate required to achieve the Millennium Development Goal (MDG) target.

Causes of deaths

- Pre-term birth complications and birth asphyxia and trauma were the leading causes of deaths in children younger than 5 years worldwide.
- Lower respiratory infections are the third leading cause of child deaths overall. These infections account for around 16 per cent of mortality.
- Diarrhoeal diseases (the fourth leading cause of death in 2015) accounting for another 9 per cent.

In first-ever estimates of the number of stillbirths, the study counted 2.1 million such instances in 2015. The number of stillbirths in India was estimated at 0.61 million.

Of 195 countries, 122 countries have met the Sustainable Development Goal (SDG) target to reduce the number of women dying from pregnancy-related causes to less than 70 for every 100,000 live births by 2030.

Bangladesh has improved faster than expected while India has shown a slower pace in reduction of such deaths. Bangladesh had 7,663 maternal deaths in 2015, a two-thirds drop from its 21,789 in 1990, while India's maternal deaths dropped by half to 63,861 in 2015 from 1,32,239 in 1990. Globally, maternal deaths decreased by a third from 390,185 in 1990 to 275,288 in 2015.

As per GBD 2015 report there are 249 causes of death, 315 diseases and injuries and 79 risk factors in the 195 countries between 1990 and 2015.

A total 10,287,692 deaths were registered by the GBD 2015 in India

- Ischaemic heart disease accounted for 15.7 per cent of these deaths (1,610,122).
- Chronic obstructive pulmonary disease (COPD) for 10 per cent (1,041,713).
- Stroke for 7.8 per cent (802,000).

The average life expectancy for men has increased to 65.2 years in 2015 and that for women to 69.5 years. Globally, it is 69.0 years for men and 74.8 years for women.

Non-communicable diseases

- Globally, non-communicable diseases will pose a major challenge of longer survival accompanied by an expansion of morbidity.
- Worldwide, life expectancy has risen but 7out of 10 deaths are now due to non-communicable diseases.
- The number of annual deaths has increased from roughly 48 million in 1990 to almost 56 million in 2015 and 70 per cent of global deaths were due to NCDs including ischaemic heart disease and stroke. Headaches, tooth cavities, and hearing and vision loss each affect more than 1 in 10 people.

Natural Disasters

- Between 2004 and 2010, 74 700 people died in earthquakes in India and Pakistan.
- In 2015, natural disasters caused 11,800 deaths, mainly in the Nepal earthquake and floods in India.

HIV AND AIDS (PREVENTION AND CONTROL) BILL, 2014

IN NEWS: The HIV and AIDS Bill, 2014 has been drafted to safeguard the rights of people living with HIV and affected by HIV. The provisions of the Bill seek to address HIV-related discrimination, strengthen the existing programme by bringing in legal accountability and establish formal mechanisms for inquiring into complaints and redressing grievances.

FEATURES OF THE BILL

- The Bill seeks to prevent and control the spread of HIV and AIDS.
- Prohibits discrimination against persons with HIV and AIDS.
- Provides for informed consent and confidentiality with regard to their treatment.
- Places obligations on establishments to safeguard rights of persons living with HIV arid create mechanisms for redressing complaints.
- The Bill also aims to enhance access to health care services by ensuring informed consent and confidentiality for HIV-related testing, treatment and clinical research.
- Every HIV infected or affected person below the age of 18 years has the right to reside in a shared household and enjoy the facilities of the household.
- The Bill also prohibits any individual from publishing information or advocating feelings of hatred against HIV positive persons and those living with them.
- The Bill also provides for Guardianship for minors. A person between the age of 12 to 18 years who has sufficient maturity in understanding and managing the affairs of his HIV or AIDS affected family shall be competent to act as a guardian of another sibling below 18 years of age to be applicable in the matters relating to admission to educational establishments, operating bank accounts, managing property, care and treatment, amongst others.

The Bill lists various grounds on which discrimination against HIV positive persons and those living with them is prohibited. These include the denial, termination, discontinuation or unfair treatment with regard to:

- Employment.
- Educational establishments.
- Health care services.
- Residing or renting property.
- Standing for public or private office.
- Provision of insurance (unless based on actuarial studies).
- The requirement for HIV testing as a pre-requisite for obtaining employment or accessing health care or education is also prohibited.

The Bill requires that "No person shall be compelled to disclose his HIV status except with his informed consent, and if required by a court order". Establishments keeping records of information of HIV positive persons shall adopt data protection measures. According to the Bill, the Central and State governments shall take measures to:

- Prevent the spread of HIV or AIDS.
- Provide anti-retroviral therapy and infection management for persons with HIV or AIDS.
- Facilitate their access to welfare schemes especially for women and children.
- Formulate HIV or AIDS education communication programmes that are age appropriate, gender sensitive, and non-stigmatizing.

- Lay guidelines for the care and treatment of children with HIV or AIDS. Every person in the care and custody of the state shall have right to HIV prevention, testing, treatment and counseling services.
- The Bill suggest that cases relating to HIV positive persons shall be disposed' off by the court on a priority basis and duly ensuring the confidentiality.

OVERVIEW

There are no financial implications of the Bill. Most of the activities are being already undertaken or can be integrated within the existing systems of various Ministries under training, communication and data management, etc. The Bill makes provision for appointment of an ombudsman by State Governments to inquire into complaints related to the violation of the Act and penal actions in case of non-compliance. The Ombudsman need not be a separate entity, but any existing State Government functionary can be deputed or given additional charge.

There are approximately 21 lakh persons estimated to be living with HIV in India. Even though the prevalence of HIV is decreasing over the last decade, the Bill would provide essential support to National AIDS Control Programme in arresting new infections and thereby achieving the target of "Ending the epidemic by 2030" according to Sustainable Development Goals.

GSAT-18 COMMUNICATION SATELLITE LAUNCHED SUCCESSFULLY

India's communication satellite GSAT-18 was launched successfully by the European Ariane 5 VA-231 launch. The European launcher Ariane-5 VA-231 injected GSAT-18 into a Geosynchronous Transfer Orbit (GTO) shortly after orbiting co-passenger Sky Muster II satellite for Australian operator, National Broadband Network.

- GSAT-18 is designed to provide continuity of services on operational satellites in C-band, Extended C-band and Ku-bands.
- Weighing 3404 kilograms at lift-off and having a mission life of about 15 years, GSAT-18 will strengthen ISRO's current fleet of 14 operational telecommunication satellites.
- It carries 48 communication transponders to provide services in Normal C-band, Upper Extended C-band and Ku-bands of the frequency spectrum.
- GSAT-18 carries Ku-band beacon as well to help in accurately pointing ground antennas towards the satellite.
- It will enable the continuity of the vital communication services in the country by replacing the currently ageing satellites.

GSAT-18 is the 20th satellite from ISRO to be launched by the European space agency and the mission is the 280th for Arianespace launcher family.

ISRO, which has been dependent on Ariane-5 rocket for carrying its heavier satellites, is developing GSLV Mk III for this purpose.

GSAT-18's co-passenger Sky Muster II, built by Space Systems Loral in California, is aimed at bridging the digital divide, especially in the rural and isolated regions of Australia.

PAYMENT BANKS LICENSE: RBI

IN NEWS: The Reserve Bank of India (RBI) said the entities that had been granted a payments bank (PB) licence would need to take specific approval for the products they would be offering to customers.

- At the time of submitting application for license, the PBs should submit to RBI a list of financial products they intend to offer with a clear description.
- Banks do not need to take prior RBI approval to launch products but prepaid payment instruments issuers need to take such approval to offer payments products.
- All new products proposed to be introduced thereafter should be intimated to RBI for information. If required, the RBI may place suitable restrictions on the design, functioning, or other features of the product including discontinuing the product.
- The annual plans for opening of physical access points by the PBs for the initial five years would need prior approval of the RBI. The first such plan shall be submitted to RBI before commencement of business.
- Payments banks are not allowed to lend.
- Their main mandate is to offer remittance services.
- They can also offer simple financial products like insurance and mutual funds.
- The regulator also mandated that an employee of the PB should be available for sufficient duration, at a fixed location known to the customers at the district level, to attend to customer grievances and support agent supervision.
- The fixed location will be considered while assessing the requirement of opening at least 25 per cent physical access points in rural centers.
- Entities are required to have 25 per cent of their branches in un-banked rural centers within one year from the date of commencement of operations.
- Both payments banks and small finance banks have been allowed electronic authentication and confirmation for opening accounts and wet signatures have not been made mandatory.

RBI had granted in-principle licences to 11 payments banks and 10 small finance banks last year. While three out of 11 PBs have dropped out, others will have to start operations within 18 months of receiving in-principle approval. One small finance bank has already started operation, while two others have received the final licence.

LIGO INDIA PROJECT

IN NEWS: Recently, Maharashtra Government has allocated 40.68 hectare land to Department of Atomic Energy (DAE) to build LIGO (Laser Interferometer Gravitational Wave Observatory) India Project at Dudhala village in Hingoli district.

LIGO-India project aims to move one Advanced LIGO detector from Hanford to India. The project would have see collaboration between the Laser Interferometer Gravitational-wave Observatory (LIGO) Laboratory (operated by Caltech and MIT) and three Institutes in India – the Raja Ramanna Center for Advanced Technology (Indore), the Institute for Plasma Research (Ahmedabad), and the Inter-University Centre for Astronomy and Astrophysics (Pune).

Significance of LIGO India Project:

- Information extracted by these transmitted waves will help to address unsolved questions and mysteries of physics and astronomy.

- It will help Indian scientific community to be a major player in the emerging research frontier of GW astronomy.
- The high-end engineering requirements of the project (such as the world's largest ultra-high vacuum facility) will provide unprecedented opportunities for Indian industries in collaboration with academic research institutions.
- Multidisciplinary nature of project would provide opportunity to bring together scientists and engineers from different fields like optics, lasers, gravitational physics, astronomy and astrophysics, cosmology, computational science, mathematics and various branches of engineering.
- The cutting edge project in India can serve as a local focus to interest and inspire students and young scientists.

Gravitational Waves

- Gravitational waves are ripples in the curvature of spacetime which propagate as waves, travelling outward from the source at the speed of light.
- They transport energy as gravitational radiation and pass through matter without interacting with it.
- Gravitational waves were first predicted in 1916 by Albert Einstein on the basis of his Theory of General Relativity.
- Strongest sources of gravitational waves are among enigmatic objects in our universe like black holes, supernova, neutron stars and Big Bang.

NEW TERMITE SPECIE DISCOVERED

A new termite species, Glyptotermes Chiraharitae, has been discovered at Kakkayam in the Malabar Wildlife Sanctuary.

The species are named 'Chiraharitae', after the tropical evergreen forests of the Western Ghats.

- The flying adults of this species are approximately 10 mm long, while the soldiers are around 9.5 mm long.
- Winged adults, soldiers, and immature nymphs termed 'pseudergates'.
- Termites were of three types — dry wood, damp wood, and subterranean.
- The new species are of the damp wood category, and they infest parts of woods with high moisture content, the decaying or rotting areas in particular.
- They are exclusively wood dwelling and do not require any contact with soil.
- Its relatives are known to attack mango, sal, banyan trees, Rhododendron, Artocarpus, silver oak, and jamun trees.
- Its related species are serious pests of tea bushes in Sri Lanka and Southeast Asia.
- There are only 285 species in India, with just 61 reported from Kerala.

MEDIPARK IN INDIA

IN NEWS: The Union Cabinet approved the sub-leasing of 330.10 acres of land in Tamil Nadu by HLL Lifecare Ltd, a Mini-Ratna, for setting up a medical devices manufacturing park (Medipark).

The Medipark is expected to be completed over seven years. Physical infrastructure will be created in the first phase with plots expected to be leased out from the third year. HLL's shareholding in the project would be more than 50 per cent, while the government of Tamil Nadu would have an equity participation of up to 10 per cent. "The land has been leased to HLL for 99 years at Re. 1 per annum; the assessed market value of the land will be paid back to the Government out of surplus generated from the 7th year onwards.

FACTS

- The Medipark project will boost the local manufacturing of hi-end products at a significantly lower cost, resulting in affordable healthcare delivery to a large section of people.
- It will contribute to the development of medical devices and technology sector and allied disciplines in the country.
- HLL will sublease the land to investors, through a transparent bidding process to investors desirous to set up manufacturing units for Medical equipment and devices.
- It will be developed in phases, spread over seven years for completion.
- In the first phase, physical infrastructure will be developed and plots will be leased from third year onwards. In the initial phase, the land cost to the qualifying entrepreneurs from Medical Device and Equipment, Manufacturing Industry will be at a subsidized rate.
- Knowledge management center will be developed in the second phase, with grants and assistance from departments, which funds similar initiatives.
- It will reduce the dependence on imports and create a strong base for the growth of indigenous and domestic industry by providing access to state of art infrastructure and technology.

CONTINGENT RESERVE ARRANGEMENT DECLARED OPERATIONAL

IN NEWS: A crucial economic mechanism to help BRICS member nations - Brazil, Russia, India, China and South Africa - deal with economic crisis, like balance of payments pressures, has become operational announced at the annual meeting of the International Monetary Fund and the World Bank.. The Contingent Reserve Arrangement or CRA was declared operational, after being signed more than a year ago, in 2015.

- It marks an important step in economic cooperation between member countries, and implies a commitment from each member that it will support the other during crisis.
- A decision to set up a network of central bank research units to implement the CRA.
- India has promised more than a million pounds to the Commonwealth Fund for Technical Cooperation.

The **BRICS Contingent Reserve Arrangement** (**CRA**) is a framework for the provision of support through liquidity and precautionary instruments in response to actual or potential short-term balance of payments pressures.

It was established in 2015 by the BRICS countries Brazil, Russia, India, China and South Africa.

The legal basis is formed by the Treaty for the Establishment of a BRICS Contingent Reserve Arrangement, signed at Fortaleza, Brazil in 2014. It entered into force upon ratification by all BRICS states, announced at the 7th BRICS summit in July 2015.

The objective of this reserve is to provide protection against global liquidity pressures. This includes currency issues where members' national currencies are being adversely affected by global financial pressures.

The CRA is generally seen as a competitor to the International Monetary Fund (IMF) and along with the New Development Bank is viewed as an example of increasing South-South cooperation.

The capital of $100 billion is distributed as follows. The maximum access states can request from the Arrangement is half (China) to twice the amount of capital contributed.

SOLAR CELLS

IN NEWS: A researcher from Pune's Indian Institute of Science Education and Research (IISER) has successfully produced a stable, high-efficiency, all-inorganic perovskite nanocrystal solar cells.

- The new material has 10.77% efficiency to convert sunlight to electricity.
- Traditional research has been around a hybrid organic-inorganic halide perovskite material.
- The hybrid material has high efficiency of over 22%, the organic component in it is volatile and becomes completely unstable under ambient conditions within a short span of time. This renders the material unsuitable for commercial photovoltaic applications.
- Reducing the size of the material to nanometer range, the surface to volume ratio increases tremendously. As a result, high surface energy comes into play and makes the high-temperature cubic phase crystal structure stable even at room temperature.
- The researchers assembled the nanocrystals as a thin film. The thin film was used for making both solar cells and red LEDs.
- Solar cells made using the nanocrystal thin film has 10.77 per cent efficiency to convert sunlight to electricity and produce a high voltage of 1.23 volts.
- More electrical energy is required to get low energy emission in LEDs. But less electrical energy [voltage] was sufficient to produce red light in LEDs made using this method.
- In bulk form [bigger size crystal], the cesium lead iodide perovskite absorbs sunlight light only up to about 400 nm. So it does not have much application as a photovoltaic material.

ANTI-DUMPING DUTY ON CHINESE PRODUCTS

IN NEWS: Union Government Extends Anti-Dumping Duty on Certain Chinese Products [Current Affairs] Get Updates on Email (October 10, 2016) Revenue department has extended the anti-dumping duty on import of certain Chinese products, used in manufacturing shoes, toys, garment, and footwear and other industrial segments for another five years until 2021. This decision was taken by Central Board of Excise and Customs (CBEC).

- Extension will safeguard domestic industry from the harm caused by dumping (import) of the cheap Chinese products.
- Anti-dumping duty on 'narrow woven fabrics hook and loop Velcro tapes' will be charged at the rate of USD 1.87 per kg.

- DGAD made the case for extension of the anti-dumping duty on Chinese products After levy's second review it will be in force on the imports.
- Previously in 2010, the Revenue Department of the Union Finance Ministry had extended the anti-dumping duty till October 2015.

Anti-Dumping Duty

Anti-Dumping Duty is a protectionist tariff- imposed by domestic government on foreign imports to protect the local industries. Anti dumping duty is imposed by government on imported products that have prices less than their fair normal values in the domestic market.

Dumping is a process where a company exports a product at a lower price than it normally charges on its own home market. Many countries impose stiff duties on products they believe where dumped to protect local businesses and markets. Anti-Dumping Duty is imposed under the multilateral World Trade Organisation (WTO) agreements.

PUBLIC DEBT MANAGEMENT CELL (PDMC)

IN NEWS: Union Finance Ministry constituted a Public Debt Management Cell (PDMC). The cell was created to streamline government borrowings and better cash management with the overall objective of deepening bond markets.

As an interim arrangement, the PDMC will be housed at the RBI's Delhi office. In about two years, the PDMC will be upgraded to a statutory Public Debt Management Agency (PDMA).

Highlights

- The interim arrangement will allow separation of debt management functions from RBI to PDMA in a gradual and seamless manner, without causing market disruptions.
- It will have only advisory functions to avoid any conflict with the statutory functions of RBI.
- It has been tasked to plan government borrowings, including market borrowings and other borrowings, like Sovereign Gold Bond issuance.
- It will also advise government on matters related to investment, capital market operations, administration of interest rates on small savings among others.
- The middle office of the Budget Division will be subsumed into PDMC with immediate effect.

The transition process from PDMC to PDMA would be implemented by a Joint Implementation Committee (JIC), which will be chaired by Joint Secretary (Budget). Other members of the JIC will be from Government and RBI.

As per the circular issued by the ministry, the JIC would operate under the supervision of the Monitoring Group on Cash and Debt Management (MGCDM) with Secretary, Economic Affairs and DG, RBI as co-chairpersons. The PDMC would be staffed by 15 debt managers from Budget Division, RBI, current Middle Office and other government units.

CHILD LABOUR

IN NEWS: By allowing children to work in family enterprises, amendments to the Child Labour Act have made them more vulnerable to exploitation. Tracking the issue will be more difficult.

CONCERN

- Home based work can be anything -- on the fields, in the forest, work contracted to the household or caste-based occupation. And the definition of family has been extended to mother, father, brother, sister and father's brother and sister as well as mother's brothers and sister – in short the whole village could loosely be called 'uncle' and 'aunty'.

- A new section has been added in the legislation that prohibits employment of adolescents (defined as children between the ages 14 to 18) to work in hazardous industry. But, what is hazardous has been slashed from 83 kinds of jobs to just three -- mining, explosives, and occupations mentioned in the Factory Act. This means it leaves children open to employment in all other kind of hazardous industries including construction, asbestos, brick kilns, glass factories and garbage picking.

ISSUES WITH THE ACT

- That the amendments have not been thought through for their long term impact. While they are bound to increase child workers in the country, the enforcement machinery under the Act remains primarily with the labour inspector.
- There is no cross-reference to other laws, like The Protection of Children from Sexual Offences (POCSO)Act 2012, RTE and Juvenile Justice Act, which are important for enforcement.
- CLPRA stands in isolation.
- Child labour decreased over a decade by a rate of 2.2 per cent per year which was felt to be slow and highly insufficient. But with the new norms in place there is a feeling that even this pace will not be maintained.
- Keeping track of child labour is becoming difficult as over the years sectoral data has been decreasing.
- The 2001 Census released sectoral data from 18 hazardous occupations including gem cutting, construction, detergent making and brick kilns. Whereas in 2011, the sectoral data was limited to three main sectors – agriculture, cultivator and household workers.With data vanishing, keeping watch on child labour statistics may be a tough proposition.
- Apart from the debilitating psychological impact, many of these jobs can cause injuries, and ailments including tuberculosis, tetanus and parasitic diseases.
- Further, even the ones listed as hazardous in the new legislation can be removed, according to Section 4, at the discretion of government authorities without the consent of the Parliament.

According to the 2001 census, there were 12.6 million child workers between the ages of five and 14 in India. In 2011, this number fell to 4.35 million. The National Sample Survey Office's survey of 2009-10 put the number at 4.98 million. Despite the fall**, India has the highest incidence of adolescents in hazardous work in the world.**

FACTS AS PER REPORT

- Girls who support their families in *bidi* rolling. They work at least six to seven hours to roll a thousand *bidis* to earn a meagre income.
- In jasmine plucking which is done in the early hours of the day, children start work around 4 am and are completely exhausted by school time.
- In families in Marathwada that migrate for the sugarcane harvest, children miss months of studies.
- On every traffic junction the children who sell a whole host of Chinese products are doing so at the behest of their 'uncles' or 'aunts' who bring them from the village. “In most cases around ₹1,000 is sent back to their parents in the village.
- In 2015, children working in Delhi’s garment industry, which is dominated by small, home-based enterprises. These formed the unorganised sector of the industry. Here children employed were poor, exposed to risks and hazards like loud noise, poor lighting and ventilation and sharp tools.
- Children mostly work in households (87 per cent), they are poorly paid and receive no benefits and with 36 per cent of those working at home not paid at all.
- 12-year-olds who spend three hours or more on household chores in a day are 70 per cent less likely to complete secondary education and 65.5 per cent of them dropped out from the schools.

OUTCOMES

- Children who take up economic roles work for long hours, have lower attendance in the school, are absent for long periods especially in case of season migrants leading to disinterest in education and drop out.
- Most of these children are not able to cope with studies, leave touch with the school and prefer to move ahead working full time.
- No identity documents needed to establish relationship, child trafficking that is rampant today will only increase.
- In 2007, India included domestic labour as a hazardous employment and this did lead to a curb in trafficking of girls for domestic labour. Now that the law allows domestic work below 14 years, this would bring a larger number of girls in the fold of employment.

SUGGESTION

It is important for the Ministry to note that Factories Act, and other labour legislations are regulatory acts while the Child Labour Act is protection oriented with larger social implications. The process of determining hazardous for children needs to be scientific and evidence-based.

AIRBORNE EARLY WARNING AND CONTROL SYSTEM: DRDO

IN NEWS: The DRDO has fitted its own airborne early warning and control system (AEW & CS) on a modified Embraer ERJ 145 aircraft imported from Brazil. The first of the two small surveillance aircraft carrying the first Indian airborne early warning system is slated to be inducted into the Air Force in about two months.

The DRDO’s Bengaluru-based Centre for Airborne Systems (CABS) is the nodal agency for the design, integration and testing of the Indian early warning systems on the Embraer.

Airborne Early Warning and Control System

- It is basically a sharp-seeing and listening' radar that can look out deep across enemy territory for any incoming threat without itself crossing over.
- The Radar will have an extended range mode against fighter aircraft, and will consist of two back to back AESA (active electronically scanned array) arrays, with an additional dedicated IFF (identification friend or foe) array.
- The ESM (Electronic Support Measures) system will have complete 360 degree coverage in azimuth and have a database of up to 3000 emitters against which threats will be scanned.
- Communication Support Measure system will analyse and record intercepted communications both inflight and post flight.
- Self Protection Suite will have a passive Missile Approach Warning System, a Radar Warning Receiver and countermeasures dispensers. The SPS will be integrated with the ESM and CSM suite.
- The aircraft will support Inflight refuelling.
- The aircraft will have SATCOM, and datalinks to pass on ESM, CSM and radar data to ground stations and datalinks to pass on target information to fighters. More than 40 other aircraft will be datalinked together by the AEW&C aircraft.

TWO-THIRDS OF ELDERLY FINANCIALLY DEPENDENT: STUDY

IN NEWS: According to a survey, 65 per cent of the elderly in India are dependent on others for their financial requirements and undergo financial crisis. The nation-wide survey conducted by Agewell Foundation involved a random sample of 15,000 people across India aged 60 or above.

- Pension was the main source of income for 38 per cent of the respondents.
- 46.4 per cent of the elderly claimed that their net-worth value had increased remarkably in their old age, primarily due to a sharp increase in real estate prices over the last two decades.
- More than four-fifths of the respondent's major problems were related to healthcare issues, where financial status plays a key role.
- Senior citizens aged over 70 are marginalised and isolated to a large extent.
- The financially well-off older people do not wish to be dependent on government facilities for healthcare needs, as they prefer private institutions for better services.
- Out of every 10 elderly couples in India, more than 6 are forced by their children to leave their homes.
- Dependency ratio of the elderly is very high and among the elderly females the dependency is higher. 70.6% and 75.7% of the urban women are totally dependent.
- It is calculated that average expenditure for middle class elderly will be around Rs.5000 a month excluding the rent and clothing. Of this amount major expenses are for food and medicine. The dependent category of the elderly are denied the appropriate food and medicine.

INDIA TO PUSH FOR FUNDS AT CLIMATE TALKS

IN NEWS: Forthcoming climate talks in Morocco in November, India would stress most on trying to operationalise the $100 billion corpus called the **Green Climate Fund** that has been committed by developed countries to aid policy, projects and technology transfer to buffer against the impact of climate change. Only a fraction of it has been pledged so far.

Current status

- So far developing nations got only $ 2 million of the $10 million committed this year.
- The funds will help nations work on fulfilling their Intended Nationally Determined Contributions (INDC) which aim to reduce carbon emissions through a host of solutions.
- India has already completed 12 per cent of all pre-2020 Intended National Determined Contributions (INDC) to reduce carbon emissions.
- As part of its INDC plans, India had promised to bring down its emissions intensity, or emissions per unit of the GDP by at least 33 per cent by the year 2030 as compared to 2005 levels.

GREEN CLIMATE FUND

- Green Climate Fund (GCF) established at COP16 as an operating entity of the Financial Mechanism of the Convention.
- The GCF will support projects, programmes, policies and other activities in developing country Parties.
- The Fund is governed by the GCF Board.
- The Green Climate Fund is a Long Term Financing under the UNFCCC, which has set itself a goal of raising $100 billion per year by 2020.
- It is based in the new Songdo district of Incheon,South Korea.
- In India it is managed by NABARD.

AIR QUALITY REPORT: WHO

IN NEWS: Delhi's air is the worst among world megacities, the World Health Organization (WHO) confirmed recently.

As per WHO report

- Fine-particulate-matter (PM2.5) levels were almost four times above daily safe levels.
- Over the monsoons, Delhi's air was relatively cleaner because the rain and wind diminished the impact of pollutants.
- In December 2015, week-long analysis of data showed Delhi's air pollution was one-and-a-half times worse than in Beijing.
- In 2012, with one million deaths, China reported the highest toll from PM2.5 and PM10 pollution. At the time, India followed, reporting 621,138 deaths, nearly 10 per cent of the global toll (6.5 million deaths) associated with outdoor and indoor air pollution.
- Between 2011 and 2015, in a comparison of megacities with population above 14 million, Delhi's ambient air-pollution levels were worse than Beijing and Shanghai according to IndiaSpend analysis of the WHO's 2016 data of global ambient air pollution.

- Delhi recorded a PM10 level of 229 µg/m³ followed by Cairo with 179 µg/m³ and Dhaka with 158 µg/m³ the top three megacities with the most polluted air globally. Beijing and Shanghai were sixth and seventh on that list.
- India's capital was the only megacity to record a PM10 level above 200 µg/m³, exceeding the WHO air quality standard of 20 µg/m³ by more than 900 per cent.
- Beijing and Shanghai reported ambient air pollution levels of 108 and 84 µg/m³ respectively.
- Even Kolkata and Mumbai - recording PM10 levels of 135 µg/m³ and 117 µg/m³ respectively - had air worse than the biggest Chinese cities.
- Within India, the smaller cities of Gwalior and Allahabad measured the worst levels of ambient air pollution at PM2.5 levels of 176 µg/m³ and 170 µg/m³ respectively.
- A significant portion of northern India falls in a zone with "critical" air pollution-reporting PM2.5 levels of over 70 µg/m³.
- Some three million deaths every year are linked to exposure to outdoor air pollution, according to the WHO. Nearly 90 per cent of air-pollution-related deaths occur in low- and middle-income countries, with nearly two out of three occurring in south-east Asia region (of which India is a part) and the western pacific region.
- 92 per cent of the world's population lives in places where air quality levels exceed WHO limits.
- Up to 97.5 per cent of Delhi's 16.8 million people live in urban areas, and the city has a density of 11,297 persons per sq km-making it one of the densest regions in the country- according to Census 2011 data.

The WHO guideline for annual mean levels for PM10 is 20 µg/m³ and for PM2.5 is 10 µg/m³

- For 24 hours, the levels should not exceed 50 µg/m³(for PM10) and 25 µg/m³ (for PM2.5).
- The WHO sourced its data on India's air pollution from the Central Pollution Control Board, Environmental Data Bank.
- PM10, or coarse particulate matter with diameter between 2.5 and 10 micrometers, are primarily made up of dirt and dust from farming, factories and roads, and caused due to the crushing of rocks and soil.
- Most air-pollution deaths are caused by fine, invisible particles, called PM2.5, about 30 times finer than a human hair. These pollutants, if inhaled deep into the lungs, can cause heart attacks, strokes, lung cancer and respiratory diseases, and are known to pose the greatest risk to human beings. Their measurement is considered to be the best indicator of the level of health risks from air pollution, according to the WHO.

The WHO's new air-quality model is based on information from satellite measurements, air-transport models and ground-station monitors for more than 3,000 urban and rural areas across the world. It analyses this with population data in a grid pattern area of 10 sq km. It was developed by the WHO in collaboration with the University of Bath, United Kingdom.

Air pollution continues take a toll on the health of the most vulnerable populations women, children and the older adults.

MAJOR SOURCES OF POLLUTION

- Mobile sources – In efficient cars, buses, planes, trucks, and trains.
- Stationary sources – Power plants, oil refineries, industrial facilities and factories, construction sites.

- Area sources – Agricultural areas, cities, and wood burning fireplaces.
- Natural sources – such as wind-blown dust, wildfires, and volcanoes.

INTEGRATION OF AGRICULTURAL MARKETS: E-NAM

IN NEWS: The Centre has integrated 250 regulated agricultural markets across 10 States to the online trading platform for agriculture produce, e-NAM, surpassing the target of 200 set for the period.

Commodities worth 421 crore have already been traded on the platform and more than 1,60,000 farmers and 46,888 traders have got themselves registered.

The Agriculture Ministry had set a target of connecting all 585 mandis to the e-platform by March 2018.

E-NAM

E-NAM or the National Agriculture Market is a pan-India electronic portal for the sale and purchase of agricultural produce launched in April this year.

- The idea behind the online market is to reduce the transaction cost, provide a single licence valid across all markets, help farmers identify the best buyers, enable single point levy of market fees and maintain quality standards with provision for quality testing.
- About 69 agricultural and horticultural commodities, including fruits and vegetables are notified for trading on the e-NAM platform.

INDIAN BRIDGE MANAGEMENT SYSTEM (IBMS)

IN NEWS: To ensure proper and timely upkeep of bridges, the government has started creating a database of these structures. Poor condition of bridges hampers efficient transport and has also led to accidents and loss of lives on several occasions. Indian Bridge Management System (IBMS) aims to fill this gap by preparing a data base of all bridges in the country and detailing their structural condition so that timely action can be taken to repair the structures or build new ones in their place.

- Indian Bridge Management System (IBMS) is developed to create an inventory of all bridge assets on National Highways (NH) in India and apply a technical logic to manage the bridge asset during its life cycle.
- It generates detailed inventory data and condition ratings of bridges to ensure that the dynamics of deterioration process are captured and this dynamism in the deterioration process guides the inspection and rehabilitation of bridges.
- The system allows the user to assign priority to maintenance activity based on the present condition of the bridge.
- The progressive improvement of all bridge assets is ensured over a period of time as worst bridges are first rehabilitated and then the less damaged bridges are rehabilitated.

HERITAGE INFRASTRUCTURE DEVELOPMENT AND AUGMENTATION YOJANA (HRIDAY)

IN NEWS: Ministry of Urban Development has approved projects worth Rs.114 cr under Heritage Infrastructure Development and Augmentation Yojana (HRIDAY) for improving infrastructure facilities around core heritage sites in five cities of Varnasi, Amritsar, Dwaraka, Puri and Warangal.

- HRIDAY is a Central Scheme for which Central Assistance of Rs.500 cr has been provisioned till March,2017. Twelve cities have been included in this mission.
- Other cities are Amaravati (Andhra Pradesh), Badami (Karnataka), Kanchipuram and Vellankini (Tamil Naidu), Ajmer (Rajasthan), Mathura (UP) and Gaya (Bihar).
- City Hriday Plans of all the 12 Mission cities have been approved and Detailed Project Reports based on these plans costing over Rs.350 cr have so far been sanctioned for implementation.

The Ministry of Urban Development launched the National Heritage City Development and Augmentation Yojana (HRIDAY) scheme on 21st January, 2015, with a focus on holistic development of heritage cities. The scheme aims to preserve and revitalise soul of the heritage city to reflect the city's unique character by encouraging aesthetically appealing, accessible, informative & secured environment.

Objectives of HRIDAY

- Planning, development and implementation of heritage sensitive infrastructure.
- Service delivery and infrastructure provisioning in historic city core areas.
- Preserve and revitalize heritage wherein tourists can connect directly with city's unique character.
- Develop and document a heritage asset inventory of cities – natural, cultural, living and built heritage as a basis for urban planning, growth and service provision & delivery.
- Implementation and enhancement of basic services delivery with focus on sanitation services like public conveniences, toilets, water taps, street lights with use of latest technologies in improving tourist facilities/amenities.
- Local capacity enhancement for inclusive heritage-based industry.
- Create effective linkages between tourism and cultural facilities and also the conservation of natural and built heritage.
- Urban heritage adaptive rehabilitation and maintenance, including appropriate technologies for historic buildings retrofitting.
- Establish and manage effective public private partnership for adaptive urban rehabilitation.
- Development and promotion of core tangible economic activities to enhance avenues of livelihoods amongst stakeholders. This would also include necessary skill development amongst them including making public spaces accessible and developing cultural spaces.
- Making cities informative with use of modern ICT tools and making cities secure with modern surveillance and security apparatus like CCTV etc.
- Increase accessibility i.e. physical access (roads as well as universal design) and intellectual access (i.e. digital heritage and GIS mapping of historical locations/ tourist maps and routes)

INDIA TO HOST FIRST AMCDRR

IN NEWS: The Government of India is hosting the Asian Ministerial Conference for Disaster Risk Reduction (AMCDRR) next month in collaboration with the United Nations Office for Disaster Risk Reduction (UNISDR).

AMCDRR 2016 will focus on collaboration, consultation and partnership with governments and stakeholders to mainstream DRR in the region's development narrative.

This is the first AMCDRR after the advent of the Sendai Framework for Disaster Risk Reduction (SFDRRR), adopted at the third UN World Conference in Sendai, Japan in March, 2015. It will set the direction of Sendai Framework implementation in the region.

The Conference will aim at transforming the commitments of governments and stakeholders during the Sendai Conference into national and local action.

Established in 2005, AMCDRR is a biennial conference jointly organized by different Asian countries and the UNISDR. So far, six AMCDRR conferences have been organised. India had also hosted the second AMCDRR in New Delhi in 2007.

India's commitment to Disaster Risk Reduction (DRR) is evident from the fact that it became one of the first countries to align its National Disaster Management Plan (NDMP) with SFDRRR.

The Conference will adopt the 'Asian Regional Plan for Implementation of the Sendai Framework' endorsed by the Asian countries. It will also consolidate the political commitment of governments towards preventing and reducing risk as well as strengthening resilience in the form of a political declaration. Voluntary statements of action of stakeholder groups towards a 'shared responsibility' approach in implementation of the SFDRR would also be adopted.

The Conference will discuss issues related to DRR

- Risk Resilient Infrastructure for Sustainable Development.
- Application of Science and Technology for prevention of new risks.
- Strengthening Community Resilience.
- Gender sensitive DRR.
- Child-centred DRR.
- Risk financing - Disaster Risk: Identification and Financing Solution.
- Tsunami and the importance of Early Warning Systems in mitigating its impact.

Sendai Framework for Disaster Risk Reduction (SFDRRR)

The Sendai Framework for Disaster Risk Reduction 2015-2030 (Sendai Framework) is the first major agreement of the post-2015 development agenda, with seven targets and four priorities for action.

It was endorsed by the UN General Assembly following the 2015 Third UN World Conference on Disaster Risk Reduction (WCDRR).

The seven global targets are

- Substantially reduce global disaster mortality by 2030 aiming to lower average per 100,000, global mortality between 2020-2030 compared to 2005-2015.
- Substantially reduce the number of affected people globally by 2030, aiming to lower the average global figure per 100,000 between 2020-2030 compared to 2005-2015.
- Reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030.
- Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030.
- Substantially increase the number of countries with national and local disaster risk reduction strategies by 2020.
- Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of this framework by 2030.
- Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to the people by 2030.

HIMANSH, INDIA'S REMOTE, HIGH-ALTITUDE STATION

IN NEWS: As part of the Indian government's initiatives to better study and quantify the Himalayan glacier responses towards the climate change, National Centre for Antarctic and Ocean Research (NCAOR), Goa, under the Ministry of Earth Sciences has established a high altitude research station in Himalaya called HIMANSH (literally meaning, a slice of ice), situated above 13,500 ft (> 4000 m) at a remote region in Spiti, Himachal Pradesh.

- The station houses many instruments to quantify the glacier melting and its relation to changing climate. Some of the instruments that are available at this research facility include, Automatic Weather Stations for weather monitoring, water level recorder for quantifying the glacier melt, ground penetrating radar to know the thickness of glaciers, geodetic GPS systems to study the glacier movements, snow fork for studying snow thickness, steam drill, snow corer, temperature profilers, as well as various glaciological tools.
- The researchers would be using this as a base for undertaking surveys using Terrestrial Laser Scanners (TLS) and Unmanned Aerial Vehicles (UAV) that would digitize the glacier motion and snow cover variations with exceptional precision.
- The ongoing initiatives by NCAOR would contribute to the integrated study the glaciers in the upper Indus basin (Chandra basin) in Himachal Pradesh and their contribution to discharge.
- According to the UN data, the contribution of snow/glacier melt in annual stream runoff is substantially higher (>40%) in Indus basin as compared to Ganga and Brahmaputra basins (<10%). Therefore, understanding the glacier mass balance and their contribution to the Indus River is more critical than other

basins towards the understanding on the impact of glacier retreat on the water cycle in the northern India and Pakistan.

- Some of the bench mark glaciers that are already being studied under this project include Bada Shigri, Samudra Tapu, Sutri Dhaka, Batal, Gepang Gath and Kunzam.
- An integrated study using glaciological, geodetic, glacio-hydrological methods will shed light on the glacier response to the changing climate in this region and will also quantify the contribution from glacial melt water to the river discharge in Indus basin.
- "Himansh" will provide the much needed fillip to the scientific research on Himalayan glaciers and its hydrological contribution.

Himalayan region has the largest concentration of glaciers outside the polar caps, as this region is aptly called the "Water Tower of Asia" is the source of the 10 major river systems that provide irrigation, power and drinking water for over 700 million people live in India, Pakistan and Bangladesh– nearly 10% of the world's population. Understanding the behaviour of these glaciers and their contribution to the sustainable supply of water for mankind and agriculture is one of the grand challenges of Indian scientific community.