

# Abhimanu

**Weekly current affairs Series**

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**Week: III, May 2017**

**Abhimanu's IAS Study Group**

**Chandigarh**

## NATIONAL ECONOMIC AFFAIRS

### Industrial, corporate and Infrastructure sectors

- The Index of Industrial Production (IIP) which is a volume index with base year of 2004-05 has shown a modest growth of 0.4 percent. The index comprises of electricity generation, mining and manufacturing activities.
- In terms of use-based classification, basic goods, intermediate goods and consumer durable goods have attained moderate growth. In contrast, the production of capital goods declined steeply.
- The eight core infrastructure industries (coal, crude oil, natural gas, refinery products, fertilizers, steel, cement and electricity) that having a total weight of nearly 38 per cent in the IIP have registered a growth of 4.9 per cent.
- The Government has liberalized and simplified the foreign direct investment (FDI) policy in sectors like defence, railway infrastructure, construction and pharmaceuticals.
- Sectors like services sector, construction development, computer software hardware and telecommunications have attracted highest FDI equity inflows.
- New initiatives have been taken up by the Government to facilitate investment and ease of doing business in the country like Make-in-India, Invest India, Startup India and e-biz Mission Mode Project under the National e- Governance Plan, Online application for Industrial License and Industrial Entrepreneur Memorandum through the eBiz website 24x7 and others.

### About Gross fixed Capital formation (GFCF)

- **Gross fixed capital formation** (GFCF) refers to the net increase in physical assets (investment minus disposals) within the measurement period.
- It does not account for the consumption (depreciation) of fixed capital, and also does not include land purchases.
- The World Bank measures capital formation by assessing the change in net savings. If the household savings rate is increasing, savers may invest the additional rupees, and purchase stocks and bonds. If more households are saving, the country may report a cash surplus, which is a positive sign for capital formation.
- If a country's rate of capital formation increases, so does the country's GDP. Fixed investment (Gross Fixed Capital Formation (GFCF)) to GDP ratio is estimated to be lower in 2016-17 vis-a-vis 2015-16.

### Impact of Demonetisation

#### Short term impact

- Stock of black money fell, as some holders came into the tax net
- Private sector wealth declined, since some high denomination notes were not returned and real estate prices fell
- Digital transactions amongst new users increased sharply. Existing users' transactions increased in line.
- Real Estate prices declined, as wealth fell while cash shortages impeded transactions
- Job losses, decline in farm incomes, social disruption, especially in cash-intensive sectors
- Income taxes rose because of increased disclosure. Payments to local bodies and discoms increased because demonetised notes remained legal tender for tax payments/ clearances of arrears.

- Uncertainty increased, as Firms and households were unsure of the economic impact. Investment decisions postponed.

#### Long term impact

- Formalisation should reduce the unaccounted income
- Private sector wealth could fall further, if real estate prices continue to decline
- People will return to cash as supply normalises, but the now-launched digital revolution will propel Digitization
- Prices could fall further as investing undeclared income in real estate becomes more difficult but tax component could rise.
- Broad macroeconomic conditions should gradually stabilize as the economy is remonetised.
- Indirect and corporate taxes could decline, to the extent growth slows over long run; taxes should increase as formalisation expands and compliance improves gradually.
- Credibility will be strengthened if demonetisation is accompanied by complementary measures. Early and full remonetisation is essential. Tax arbitrariness and harassment could reduce credibility further.

### Objectives of Demonetization

- Demonetisation is a radical unprecedented step by the Government to seize the status of 500 and 1000 currency notes. The aim of this Action was to curb: i) Corruption ii) Counterfeiting iii) The use of high demonetisation notes for terrorist activities iv) Accumulation of Black Money generated by income that has not been declared by the tax authorities.
- It combined secrecy and suddenness amidst normal economic and political conditions. Internationally, all previous demonstrations were in the context of hyperinflation or wars or political upheavals or other extreme circumstances. However India is the fastest growing economy with a modest inflation rate. In such normal demonetisation has been a unique policy measure.
- c) This is not the first time that the country has demonetised its currency. It was first recommended in 1970 by **K.N. Wanchoo committee** which suggested demonetisation of 10,100 and higher denomination to combat the scourge of black money.
- There are 2 previous instances of Demonetization in 1946 and 1978 in India.
- India's currency to GDP ratio has been observed to follow its growths trend. As growth increased, the ratio witnesses an upward trend. This has made India relatively cash dependent. Across the world the use of higher quantities of cash has been linked with the increased rate of corruption. So a successful implementation of demonetisation can help curb corruption.
- The RBI data on Soil Rate shows that low denomination notes have a soil rate of 33 % while that 500 and 1000 notes have a soil rate of 22% and 11% respectively. Analysts suggest that the Soil rate for all the notes should be roughly the same. This indicates that they are not used for transaction and instead may be hoarded. Soil Rate is the rate at which notes are considered to be too damaged to use and have to be returned to the RBI for replacement.

### Multilateral Convention to Implement Tax Treaty

- The Union Cabinet has given its approval for the Multilateral Convention to Implement Tax Treaty Related Measures to Prevent Base Erosion and Profit Shifting.

#### About convention:

- The Convention is an outcome of the OECD / G20 BEPS Project to tackle base erosion and profit shifting through tax planning strategies that exploit gaps and mismatches in tax rules to artificially shift profits to low or no-tax locations where there is little or no economic activity, resulting in little or no overall corporate tax being paid.
- India was part of the Ad Hoc Group of more than 100 countries and jurisdictions from G20, OECD, BEPS associates and other interested countries, which worked on an equal footing on the finalization of the text of the Multilateral Convention, starting May 2015.

- The text of the Convention and the accompanying Explanatory Statement was adopted by the Ad hoc Group on 24 November 2016.
- The Convention implements two minimum standards relating to prevention of treaty abuse and dispute resolution through Mutual Agreement Procedure.
- The Convention will not function in the same way as an Amending Protocol to a single existing treaty, which would directly amend the text of the Covered Tax Agreements. Instead, it will be applied alongside existing tax treaties, modifying their application in order to implement the BEPS measures.
- The Convention ensures consistency and certainty in the implementation of the BEPS Project in a multilateral context.
- The Convention also provides flexibility to exclude a specific tax treaty and to opt out of provisions or parts of provisions through making of reservations.
- The Convention has been opened for signature as on 31st December 2016 and a first joint signing ceremony is scheduled to be held in Paris on 7th June, 2017.
- Signature is the first step in the process of expressing consent to be bound by the Convention, which will become binding only upon ratification.
- A list of Covered Tax Agreements as well as a list of reservations and options chosen by a country are required to be made at the time of signature or when depositing the instrument of ratification.
- Signing of the Multilateral Convention will enable the application of BEPS outcomes through modification of existing tax treaties of India in a swift manner.
- It is also in India's interest to ensure that all its treaty partners adopt the BEPS anti-abuse outcomes.
- Signing of the Convention will enable curbing of revenue loss through treaty abuse and base erosion and profit shifting strategies by ensuring that profits are taxed where substantive economic activities generating the profits are carried out and where value is created.

## NATIONAL POLITY

### Pradhan mantra gram sadak yojana

- The Centre will soon begin work on a Rs. 11,000-crore project to provide road connectivity to 44 Naxal-affected districts, including Sukma in Chhattisgarh, which had recently witnessed one of the deadliest Maoist attacks.
- The project will be implemented under the Pradhan Mantri Gram Sadak Yojana in the districts that are critical from a security and communication point of view.
- Under the project, there will be construction or upgradation of 5,411 km of roads and 126 bridges.
- Odisha, Jharkhand, Bihar, Madhya Pradesh, Telangana and Maharashtra are the other States that will be covered under the scheme.

#### About Pradhan mantra gram sadak yojana

- In order to provide good unrestricted road connectivity to villages, the Government of India launched Pradhan Mantri Gram Sadak Yojana (PMGSY) on 25th Dec, 2000 as a Centrally Sponsored theme.
- The main objective of the PMGSY is to provide connectivity, by way of an all-weather road (with necessary culverts and cross-drainage structures, which is operable throughout the year), to the eligible unconnected habitations in the rural areas with a population of 500 persons and above in plain areas.

- In respect of hill states (North-East, Sikkim, Himachal Pradesh, Jammu & Kashmir and Uttarakhand), the desert areas (known within the Desert Development Programme), the social group (Schedule V) areas and chosen social group and Backward Districts (as known by the Ministry of Home Affairs and coming up with Commission, the target would be to attach eligible unconnected habitations with a population of 250 persons and higher.

### **Salient options of the PMGSY**

- **Planning:** The District Rural Roads are set up because the Core Network helps within the identification of the roads needed to attach the unconnected habitations to ensure basic access (single unrestricted road connectivity) to any or all the habitations. These plans are placed before the Panchayati dominion establishments for approval.
- **Project approach:** The road works are projected every year in time specific manner. Technical standards: The roads under the PMGSY are designed and executed as per the standards laid down by the Indian Roads Congress.
- **Tendering:** The roads are tendered in packages of Re 1 to 5 crore, to draw in competent contractors with requisite instrumentality.
- **Quality control:** A three-tier quality control system has been designed to implement the standard of the road works. All the states are requested to enlist the services of a state level federal agency to verify the standard of the roads. The National Rural Roads Development Agency engages senior technical personnel as National Quality Monitors to examine the road works.
- **Maintenance:** The roads created under the PMGSY are maintained by the Panchayati Raj establishments.
- **Analysis:**
  - After Independence, roads except National Highways became the responsibility of the state governments involved; it shaped a part of the state Plans.
  - Owing to funds constraints the allocations for road development remained meagre compared to demand and particularly in case of village roads. Road Development did not receive due importance and from the planners as compared to other specific development activities that got higher priority.
  - On the recommendations of National Rural Roads Development Committee, Pradhan Mantri Gram Sadak Yojana (PMGSY) was launched with a view to provide road connectivity in rural areas of the country.

## **Cabinet approves Pan-India implementation of Maternity Benefit Program**

- The Union Cabinet has given its approval to Pan-India implementation of Maternity Benefit Program which now has been extended to all districts of the country.

### **About Maternity benefit scheme**

- It is a Centrally Sponsored Scheme and the cost sharing between Centre and States is 60:40 for all the States and UTs (with legislature), 90:10 for NER and Himalayan States and 100% GoI share for UTs without legislatures.
- Ministry of Women and Child Development, in accordance with the provisions of Section 4(b) of National Food Security Act, formulated a scheme for pregnant and lactating mothers called Maternity Benefit Programme – a conditional cash transfer scheme.
- The Scheme provides cash incentives to pregnant and lactating women (i) for the wage loss so that the woman can take adequate rest before and after delivery; (ii) to improve her health and nutrition during the period of pregnancy and lactation; and (iii) to breastfeed the child during the first six months of the birth, which is very vital for the development of the child.
- Under the scheme, all Pregnant Women and Lactating Mothers (PW&LM), excluding the Pregnant Women and Lactating Mothers who are in regular employment with the Central Government or State Governments or Public Sector Undertakings or those who are in receipt of similar benefits under any law for the time being are eligible.

**The cash incentive of Rs.6,000/- is payable in three instalments for the first two live births at the following stages:**

- First instalment (in first trimester of pregnancy- 3,000/-) : Early Registration of Pregnancy, preferably within first three months and Received one antenatal check-up.
- Second instalment (500/-): At the time of institutional delivery.
- Third instalment (3 months after delivery, 1,500/-) Child birth is registered, Child has received BCG vaccination and Child has received OPV and DPT-1 & 2.

## Analysis:

- India's maternal and infant mortality indicators are very poor. Every third woman is undernourished and every second woman is anaemic, government statistics show.
- An undernourished woman would likely give birth to a low-weight baby. As per the UN Millennium Development Goals Report 2014, India recorded the highest number of maternal deaths in the preceding year, and accounted for 17% of global deaths due to pregnancy- and childbirth-related complications (some 50,000 of 2.89 lakh such deaths worldwide).
- Less than 40% of births in India are institutional deliveries. Data from the Registrar General of India, Sample Registration System (RGI-SRS) show a recent decline in Maternal Mortality Ratios (MMR) — from 212 per 100,000 live births in 2007-09 to 167 per 100,000 live births in 2011-13 — but there's a long way to go still. The Infant Mortality Rate is 40 per 1,000 live births, according to SRS 2011-13.
- This programme will ensure that every woman attains optimal nutritional status — especially from the most vulnerable communities as nutrition constitutes the foundation for human development.
- This is all the more important during the period of pregnancy and lactation coupled with wage loss.
- A woman's nutritional status has important implications for her health as well as the health and development of her children.
- An under-nourished mother almost inevitably gives birth to a low birth weight baby. When poor nutrition starts in-utero, it extends throughout the life cycle, particularly in women. Owing to economic and social distress many women continue to work to earn a living for their family right upto the last days of their pregnancy.
- Furthermore, they resume working soon after childbirth, even through their bodies might not permit it, thus preventing their bodies from fully recovering on one hand, and also impeding their ability to exclusively breastfeed their young infant in the first six months.
- Expansion of MBP will have huge impact on the PW&LM as it will not only provide them compensation for the wage loss but will also provide them adequate nutrition and rest before and after delivery. Mothers will have sufficient time to breastfeed the child during first six months of the birth. Resultantly, it is expected that it will reduce mother mortality rate, IMR, under-nutrition and its adverse effects.

## Public Premises (Eviction of Unauthorized Occupants) Amendment Bill, 2014

- The Bill seeks to amend the Public Premises (Eviction of Unauthorised Occupants) Act, 1971.
- The Act provides for the speedy eviction of unauthorised occupants from public premises, including those of government companies and corporations.

### Key features of the Bill:

- **Inclusion of certain properties under the definition of public premises:** The Act includes defines certain premises as public premises, to which its provisions extend. For example, it includes premises belonging to or leased by companies in which the central government owns at least 51% shares (including subsidiaries of these companies), premises belonging universities established under a central Act, etc. The Bill includes the following types of premises as public premises:
- Premises of companies in which at least 51% shares are owned by the central government and partly by one or more state government (including subsidiaries of these companies), and which carry on the business of public transport, including metro railways.

- Premises owned or leased by companies of the central government, one or more state governments, or jointly by the central government and one or more state governments, under the definition of public premises, in relation to the National Capital Territory of Delhi. Here, 'state government' refers to the Government of NCT of Delhi.
- The Act categorises premises belonging to the Municipal Corporation of Delhi or any Municipal Committee or notified area Committee, as public premises. The Bill seeks to include the Municipal Council in this definition.
- The Act includes premises owned or leased by the Board of Trustees constituted under the Major Ports Act, 1963. The Bill includes premises owned or leased by any Board of Trustees or any successor company constituted under or referred to in the Major Port Trusts Act, 1963.

**The Bill outlines time limits for certain actions to be followed while evicting unauthorised occupants:**

- If the Estate Officer is satisfied that premises are in unauthorised occupation, he may order the eviction of the premises. This should be done within 15 days from the order. The 15 day period may be extended if the Estate Officer feels there are compelling reasons which prevent a person from vacating the premises in 15 days.
- If an Estate Officer receives information that a person is in unauthorised occupation of the premises, he must make an order, within seven days of receiving this information, directing persons who have occupied the premises to show cause as to why they should not be evicted. However, any delay in issuing this order will not invalidate proceedings.
- When a person is in arrears of rent payable, the Estate Officer may order that he pay rent or damages, after issuing a notice asking the person to explain why such an order should not be made. The explanation must be provided within seven days of the notice.
- The Act states that every appeal to the Estate Officer's orders must be disposed off as quickly as possible. The Bill states that appeals must be disposed off within one month, as far as possible.

**Analysis:**

- The amendment will facilitate smooth and speedy eviction of unauthorised occupants from government residences.
- The Amendment will enable the Estate officer to apply summary proceedings for evicting unauthorised occupants from residential accommodations allotted for a fixed tenure or for a period he/she holds office on the basis of an order of allotment on licence basis, as non-vacation of such residences leads to unavailability of houses to new incumbents.
- As a consequence to these amendments, Government of India can now ensure that the unauthorised occupants are evicted from government residence in a speedy and smooth manner and the vacated accommodations are made available to eligible Govt. employees thus reducing the waiting period.
- The beneficiaries include the employees of the Central Government offices who are eligible for General Pool Residential Accommodation (GPRA) and waiting for the maturity of their turn.
- The Government of India has to evict unauthorised occupants from Government accommodations under the provisions of PPE Act, 1971. However, the eviction proceedings take unusually long time, thereby reducing the availability of govt. accommodations to new incumbents.

### China evokes Panchsheel principles to address India's concerns

- Chinese President Xi Jinping proposed five principles of peaceful co-existence or Panchsheel — the brainchild of China, India and Myanmar in the 1950s — as the mantra for advancing the Belt and Road Initiative (B&RI), and as a vehicle for achieving sustainable globalisation.
- India's had decided to boycott the BRF, as a mark of protest against the infringement of its sovereignty by the China- Pakistan Economic Corridor (CPEC) that passes through Pakistan-occupied Kashmir (PoK).

#### About Panchsheel:

- The principles of Panchsheel were first formally enunciated in the Preamble to the Agreement on Trade and Intercourse between the Tibet Region of China and India, which was signed on 29 April 1954.
- The Five Principles are: (a) mutual respect for each other's territorial integrity and sovereignty; (b) mutual non-aggression; (c) mutual non-interference in each other's internal affairs; (d) equality and mutual benefit; and (e) peaceful coexistence.
- Premier Zhou Enlai and Prime Minister Jawaharlal Nehru elaborated their vision of Panchsheel in June 1954 as a framework not only for relations between their countries, but also for their relations with other countries
- Panchsheel provided a suitable framework to China for breaking its isolation and playing a meaningful role in international affairs.
- Consequently, it also envisioned the shift of Chinese policy toward non-socialist states.
- Further, People's Republic of China was not a member of the UN in the first two decades of its existence. Thus, the principles of Panchsheel also worked as a means to enunciate its foreign policy across the world.
- From the Indian perspective, the Panchsheel was considered a moral obligation and a projection of the Indian idea of peaceful coexistence.
- However, Nehru's visualization of the Panchsheel as laying the foundation for peace along the border proved mistaken. Panchsheel became an inevitable casualty of the India- China conflict in 1962.
- It led to disenchantment with the significance of Panchsheel in India while in China, Panchsheel was forgotten during the Cultural Revolution (1966-1976).

### Indian mission adopt UJALA scheme in UK

- The Indian High Commission in London along with Vedanta Group will be among the first to adopt India's UJALA scheme of replacing all their old lamps with energy-saving LED bulbs in the UK.
- Under this a target is set for the EESL to replace 100 million incandescent bulbs with LEDs in the UK by March 2019.
- The EESL, under the Indian power ministry, is a joint venture of four state-run entities – Power Grid, NTPC, Rural Electrification Corporation Limited and the Power Finance Corporation Limited.

#### About UJALA scheme:

- The main objective is to promote efficient lighting, enhance awareness on using efficient equipment which reduce electricity bills and help preserve environment.

#### Overall targets

- Overall target of number of incandescent bulbs to be replaced : 200 million
- Expected overall annual energy savings : 10.5 billion KWh
- Expected reduction of load : 5000 MW
- Expected annual cost reduction of consumer bills : Rs. 40,000 crore
- Annual estimated greenhouse gas emission reductions : 79 million tonnes of CO<sub>2</sub>



### **Implementation agencies**

- The Electricity Distribution Company and Energy Efficiency Services Limited (EESL) a public sector body of Government of India are implementing the programme.

### **Eligibility of acquiring LED bulbs**

- Every grid-connected consumer having a metered connection from their respective Electricity Distribution Company can get the LED bulbs at about 40% of the market price under the UJALA Scheme. Consumers also have the option of paying for the LEDs in equated monthly instalments.

### **Analysis:**

- An ordinary bulb is an extremely energy inefficient form of lighting with just 5% of the electricity input converted to light. Efficient light bulbs like Light-emitting Diode (LEDs) consumes only one-tenth of energy used by ordinary bulb to provide the same or better light output. However, high cost of LEDs has been a barrier in adoption of such efficient lighting systems.
- As of now, EESL has distributed over 10 crore LED bulbs under UJALA programme and this has led to significant savings to the country and consumers who are using these bulbs.
- Under India's commitment to achieving 30-35% reduced carbon emissions, the country has recognized energy efficiency as a key mitigation strategy. Therefore, the government is committed to executing schemes like UJALA.
- The UJALA scheme has played a significant role in creating awareness about energy efficient lighting. In 2014-15, the total number of LED bulbs that were distributed was mere 30 lakhs. The number of LED bulbs distributed in 2015-16 has crossed 15 crore, where 9 crore LED bulbs were distributed under UJALA and the remaining were contributed by the industry. For this year, the Government of India is confident of distributing an additional 20 crore LED bulbs. Sustained efforts under UJALA, coupled with industry support, will help the government achieve its objective of replacing 77 crore inefficient bulbs by March 2019.
- Efficient domestic lighting is one of the largest contributors to energy savings globally and the distribution of 10 crore LED bulbs in India has led to savings of over 1,298 crore kWh annually. This number has also helped the country avoid capacity of about 2,600 MW. Most importantly, the country has benefitted from reduction of CO2 emission by over 1 crore tonnes annually.
- LED bulbs consume half the energy as that of CFLs and one tenth as that of incandescent bulbs. UJALA is the largest non-subsidised LED programme in the world. The programme has led to significant savings to the consumers who are using these bulbs.

## **World Bank's electricity accessibility ranking**

- India has climbed up to the 26th position in World Bank's electricity accessibility ranking – up 73 spots from the 99th rank in 2014.
- India has taken many initiatives to increase the accessibility of electricity. Central Electricity Authority (CEA) regulations has been amended for installing transformers (up to 500KVA) on double-pole structures; waiving off electrical inspector approval for 11kV installations by Distribution Companies (DISCOMs) and allowing self-certification by DISCOM engineers; changing tariff regulations, rationalizing LT (low tension) tariff, and changing supply codes.
- Online portals also provided to enable customers to apply for connections without the need for physical documents,
- There is a reduction in procedures for the release of a new connection to only three: online application and site inspection, demand note generation (if required), and external connection and meter installation,
- The ranking was based on ten parameters, including the ease of getting electricity. Some other parameters were: number of procedures involved, time taken to obtain a new connection, cost for obtaining a commercial connection (up to 140KVA), and reliability of power supply.

### **Analysis:**

- Infrastructure services are a major concern for businesses around the world. Unreliable electricity supply and high tariffs, in particular, can be hurdles to entrepreneurial activity. According to 2016 World Bank Enterprise

Survey data for 139 economies, business owners find electricity services as the third biggest obstacles to their activities.

- A cumbersome connection process, consisting of numerous procedures, is more likely to occur in economies with an unreliable electricity supply, as they are plagued by inadequate electricity generation, coupled with high losses in the transmission and distribution systems.
- In most cases, a long-term approach is required to mitigate the adverse consequences of unreliable power infrastructure, through considerable capital investments in power system.
- There is a wide array of practical actions that governments can take to ensure more reliable electricity service, having a robust regulatory framework with the right oversight and incentives, establishing minimum quality standards on service continuity, ensuring timely investments in power system infrastructure are done, including investment in automated systems to identify network faults and restore service more efficiently, etc. The Governments role is instrumental for the majority of measures that can improve the reliability of electricity supply to customers.
- Electricity services are among the most regulated areas of economic activity, and research has shown that sector performance is linked to the quality of regulatory institutions.
- Transparency of electricity tariffs is important for customers to be able to plan their expenses, better understand the utility billing system, and contest the charges when needed. Businesses need to know in advance of any change in expenditure so that they can adjust their allocation of financial resources accordingly. In some economies, the regulation requires utilities to announce changes several billing cycles ahead. In others, the regulator helps ensure that tariffs are published through different media outlets and that adequate information and details are provided so that customers can calculate their electricity cost

## New member of ISA(International Solar Alliance)

- The island of Nauru which is the world's smallest republic has become the sixth country to ratify the International Solar Alliance (ISA) Framework pact.
- Five more nations namely the Comoros, Cote d'Ivoire, Somalia, Ghana and Djibouti have committed to ink the International Solar Alliance Framework Pact in the ongoing annual meeting of the African Development bank in Gandhinagar.
- This is the first time that India is hosting the annual meetings of the AfDB and its sister institutions. India had joined the African Development Bank (AfDB) in 1983.

### About Solar Alliance

- India's prime minister has launched an international solar alliance of over 120 countries with the French president, François Hollande, at the Paris COP 21 climate summit.
- The Alliance is likely to boost the absorption and deployment of solar power, which has already seen exponential expansion in the last five years — between 2010 and 2014, the installed capacity of solar energy across the world has grown from 23 GW to about 180 GW.
- It is an invitation to 121 countries lying between the Tropic of Cancer and the Tropic of Capricorn, which get the most solar insolation, to make collaborative efforts to harness solar energy to generate electricity. Most of these countries are in Asia, Africa and South America, and many of them are power deficient.
- By coming together to install solar power plants, these countries can drive up the demand for solar technologies manifold, in the process forcing down prices even more. Currently, the growth of solar installed capacity has been coming from very few countries.
- This alliance can bring standardization to manufacturing processes and solar technologies. If every country starts using similar products and processes, costs of manufacturing elements of solar technologies can fall substantially.
- A keenly awaited technology breakthrough is in the area of storage systems. There is currently no way to store the electricity being produced by solar systems, because of which the sun is not the most reliable energy source on many days.

- India will provide money and infrastructure to this alliance. India has committed itself to providing Rs 400 crore over the next five years to building infrastructure and meeting recurring costs. A secretariat is being set up in New Delhi. Till a building is constructed, the secretariat will function from the Delhi-based National Institute of Solar Energy. India is leading world from the front by launching various initiatives regarding solar energy. India has a capacity of 4 GW and has set a target of adding 100 GW of solar power by 2022.

#### **Analysis:**

- More than 180 nations have submitted national action plans in Paris climate summit, but they are not enough to achieve a goal of limiting global warming to 2 degrees Celsius above pre-industrial times. Solar energy will help to reduce the emission of green house gases. The alliance from both developed and developing countries aims to mobilise USD 1 trillion by 2030 to be invested in the generation of clean solar energy.
- The Solar Alliance model, if it succeeds, can potentially be extended to other forms of renewable energy like wind or biogas. It can, in turn, foster south-south cooperation and bring transformational changes in providing affordable access to energy in poorer countries, and lift living standards.
- It is a truly brightening move. This will undoubtedly encourage global corporates to initiate more bold steps in utilising solar power. This initiative is bound to have a knock-on effect on other forms of renewable energy as well.

## **Annual Meeting of African Development Bank**

- The 52nd Annual Meetings of the African Development bank are being held in Gandhinagar.
- This is the first time that the Annual Meetings of AfDB are being held in India.
- This annual Meetings provide a unique forum for representatives of government, business, civil society, think-tanks, academia and the media – from Africa and beyond – to debate key issues on Africa’s development, and to discuss the Bank’s performance in delivering on its mandate.

#### **About African development bank:**

- The Agreement establishing the African Development Bank was adopted and opened for signature at the Khartoum, Sudan, conference on August 4, 1963.
- This agreement entered into force on September 10, 1964. The Bank began effective operations on July 1, 1966. Its major role is to contribute to the economic and social progress of its regional member countries - individually and collectively.
- African Development Bank's authorized capital is subscribed to by 78 member countries made up of 53 independent African countries (regional members) and 25 non-African countries (non-regional members).
- The voting power on the Board is split according to the size of each member’s share, currently 60%-40% between African (or “regional”) countries and “non-regional” member countries (“donors”). The largest African Development Bank shareholder is Nigeria with nearly 9% of the vote.

#### **Analysis:**

- India joined the African Development Bank (AfDB) in 1983.
- This meeting is important for India for more than one reason. After India’s boycott of China’s Belt and Road forum, there will be a keenness to understand the Indian government’s approach to its own connectivity, infrastructure and developmental projects, particularly in geographies where it competes with Beijing.
- Indian private sector presence in Africa is significant. Investments amount to US\$ 35 billion and range from automobile manufacture to drugs and pharmaceuticals, textiles to IT services, water treatment to petroleum refining.
- Africa remains a manufacturing frontier. Unlike China, Indian state agencies are more open to building local capacities in Africa. As an example, India’s Exim Bank has helped incubate similar institutions in five countries.
- Africa is crucial to the India-fostered International Solar Alliance (ISA). Over a dozen of the ISA’s 24 members are from Africa, the continental powerhouse of solar energy.

### Antikythera Mechanism's discovery

- On 17th may, 1902, Greek archaeologist Valerios Stais found a corroded chunk of metal which turned out to be part of the world's first computer and became known as the Antikythera Mechanism.

#### What is the Antikythera Mechanism?

- The Antikythera mechanism is the world's first analogical computer, used by ancient Greeks to chart the movement of the sun, moon and planets, predict lunar and solar eclipses and even signal the next Olympic Games.
- The 2,000-year-old astronomical calculator could also add, multiply, divide and subtract. It was also able to align the number of lunar months with years and display where the sun and the moon were in the zodiac.
- The device is an intricate system of more than 30 sophisticated bronze gears housed in a wooden and bronze case the size of a shoebox built around the end of the 2nd Century BC.
- Its mechanical function has seen it hailed as possible the world's oldest-known computer. While the system of gears bears little resemblance to the digital-based computers of the 20th and 21st century, its mechanical design allowed people to make calculations that would have been near impossible on their own.
- This device was probably made on the island of Rhodes. While there was only one device ever found, they do not think it was unique.
- There are minute inscriptions on the remaining fragments of its outer surfaces which point to at least two people being involved in that, and there could have been more people making its gears, according to Mike Edmunds, an astrophysics professor from the University of Cardiff in Wales who has been studying it for over a decade.
- More than a dozen pieces of classical literature, stretched over a period from about 300 BC to 500 AD, make references to devices such as that found at Antikythera.
- The instrument has been variously dated to about 85 BC, but recent studies suggest it may be even older (circa 150 BC).
- The cargo ship inside which it was found is believed to have sunk around 60 BC.

### Cobra Lily

- Two species of genus *Arisaema*, or cobra lily, have been spotted in the wild after 84 years.
- One species was found in Thia Shola, the other was spotted in the Pennant Valley forest area.
- A few hundred plants of the genus can be found within a small area in the Nilgiris.

#### About Cobra Lilly:

- The cobra lily (*Darlingtonia californica*) is a predatory plant native to Northern California and Southern Oregon.
- Also called the California pitcher plant, it has evolved an astonishing set of adaptations that allow it to trap, kill and digest its animal prey using highly modified pitcher-shaped leaves.
- The plants entice insects into their pitcher-shaped traps with an offering of sugary nectar on their long leafy fangs. Insects that land on the plants gorge on the nectar, which leads them to the cobra lillies' downward facing openings.
- Carnivorous plants like the cobra lily still collect energy from the sun. But plants also require nutrients, and not all habitats have ideal nutrients in the soil.
- Carnivorous plants have evolved an alternative method of absorbing the essential nutrients. Instead of depending entirely on their roots to draw nitrogen and phosphorus up from the soil, carnivorous plants can supplement their input by absorbing the nutrients from the carcasses of their insect prey.

## **National surveillance programme for aquatic animal diseases**

- The national surveillance programme for aquatic animal diseases in India, one of the largest fish disease surveillance programme implemented in the country, is all set to begin a new phase.
- A road map proposed for taking the surveillance programme to the next level includes developing disease-free zones and targeted active surveillance for fish pathogens in India. The programme is led by the ICAR-National Bureau of Fish Genetic Resources (ICAR-NBFGR).

### **About National surveillance programme for aquatic animal diseases**

- Surveillance programme for monitoring and controlling spread of diseases of national and international concern has become a primary requirement for effective health management and ultimately for sustainable aquaculture.
- Keeping this in view, the present programme on aquatic animal disease surveillance has been proposed which would be implemented in two phases; first phase (for initial five years) would cover aquaculture farms of 14 important states of the country. The implementation would be done in two key steps. In Step 1, emphasis will be given for improvement in data collection, diagnostic infrastructure and protocols on aquatic animal health, while step 2 would result in establishment of a Fish Disease Data Management and Reporting System in the country. This surveillance program would involve State Fisheries Department, College of Fisheries and ICAR Fishery Institutes
- This programme will include monitoring of the disease status of susceptible populations and would provide a general picture of prevalence of diseases in the country.
- It will also provide a means for rapid detection of new and exotic infectious diseases through advanced diagnostic techniques; help in certifying freedom from diseases of concern within a defined geographical area or a specific population and give boost to our aquatic animal exports.
- The proposed programme would also result in assessing the efficiency of disease control programmes.
- The proposed programme will also help in developing appropriately trained and dedicated personnel who can understand normal health patterns and describe the abnormalities.
- Finally, this programme will help in providing scientifically accurate and cost-effective information for assessing and managing risks of pathogen transfer associated with trade in aquatic animals and improve production efficiency. .

### **Objectives**

- To provide means for rapid detection of new and exotic infectious disease.
- To provide evidence of freedom from diseases of concern within a defined geographical area or a specific population.
- To collect the information on distribution and occurrence of diseases of concern.
- To assess the efficiency of disease control programmes with a defined geographical area.
- To improve reporting requirements to World organization for Animal Health(OIE) and regional Quarterly Aquatic Animal Disease Reporting System and enhance compliance to OIE standards.

## **WannaCry' ransomware**

- The WannaCry ransomware attack has hit about 150 countries globally, including Russia and the US. In India, five or six isolated instances have been reported in states like Gujrat, Kerala and West Bengal

### **What is ransomware?**

- Ransomware is a kind of cyber-attack that involves hackers taking control of a computer system and blocking access to it until a ransom is paid.
- For cyber criminals to gain access to the system they need to download a type of malicious software onto a device within the network. This is often done by getting a victim to click on a link or download it by mistake.
- Once the software is on a victim's computer the hackers can launch an attack that locks all files it can find within a network. This tends to be a gradual process with files being encrypted one after another.

- Large companies with sophisticated security systems are able to spot this occurring and can isolate documents to minimise damage.

## What is Wanna Decryptor?

- Wanna Decryptor, also known as WannaCry or wcry, is a specific ransomware program that locks all the data on a computer system and leaves the user with only two files: instructions on what to do next and the Wanna Decryptor program itself.
- When the software is opened it tells computer users that their files have been encrypted, and gives them a few days to pay up, warning that their files will otherwise be deleted. It demands payment in Bitcoin, gives instructions on how to buy it, and provides a Bitcoin address to send it to.
- Most computer security companies have ransomware decryption tools that can bypass the software.

## How to protect yourself against ransomware attacks

- The best protection against ransomware attacks is to have all files backed up in a completely separate system. This means that if you suffer an attack you won't lose any information to the hackers.
- It is difficult to prevent determined hackers from launching a ransomware attack, but exercising caution can help. Cyber attackers need to download the malicious software onto a computer, phone or other connected device.
- The best way to protect yourself is to be suspicious of unsolicited emails and always type out web addresses yourself rather than clicking on links. Another key defence is antivirus programs that can scan files before they are downloaded, block secret installations and look for malware that may already be on a computer.
- Victims are advised to never pay the ransom as it encourages the attackers. Even if victims do pay there is also no guarantee that all files will be returned to them intact.

## Indigenous Pressurized Heavy Water Reactors (PHWR)

- In a significant decision to fast-track India's domestic nuclear power programme, and give a push to country's nuclear industry, the Union Cabinet has given its approval for construction of 10 units of India's indigenous Pressurized Heavy Water Reactors (PHWR).
- The 10 PHWR project will result in a significant augmentation of nuclear power generation capacity. With this, the total installed capacity of the Plants will be 7000 MW.
- The ten reactors will be part of India's latest design of 700 MW PHWR fleet with state-of-art technology meeting the highest standards of safety.

## About pressurized heavy water reactor (PHWR)

- A pressurized heavy water reactor (PHWR) is a nuclear power reactor, commonly using unenriched natural uranium as its fuel, that uses heavy water (deuterium oxide D<sub>2</sub>O) as its coolant and moderator.
- The heavy water coolant is kept under pressure, allowing it to be heated to higher temperatures without boiling, much as in a typical pressurized water reactor.
- While heavy water is significantly more expensive than ordinary light water, it yields greatly enhanced neutron economy, allowing the reactor to operate without fuel enrichment facilities (mitigating the additional capital cost of the heavy water) and generally enhancing the ability of the reactor to efficiently make use of alternate fuel cycles.

## Analysis:

- India has current installed nuclear power capacity of 6780 MW from 22 operational plants. Another 6700 MWs of nuclear power is expected to come onstream by 2021-22 through projects presently under construction.
- This Project will bring about substantial economies of scale and maximise cost and time efficiencies by adopting fleet mode for execution.
- It is expected to generate more than 33,400 jobs in direct and indirect employment.

- With manufacturing orders to domestic industry, it will be a major step towards strengthening India's credentials as a major nuclear manufacturing powerhouse.
- It also supports India's commitment to sustainable development, energy self-sufficiency and bolsters global efforts to combat climate change.

## **QUICK FACTS**

- International Museum Day is observed on - **18 May**
- Arctic Energy Summit, 2017 will be hosted by - **Finland**
- International Day for Biological Diversity was observed on - **22 May**
- World Metrology Day is observed on - **20 May**
- First Videsh Sampark is hosted by - **Telangana**
- National Dengue Day is observed on - **16 May**
- 15th National Meeting of State Commissioners for Persons with Disabilities is held in - **New Delhi**
- National Anti-terrorism day is observed on - **21 May**
- New Prime minister of France: **Edouard Philippe**
- Mark Twain Prize has won by - **David Letterman**