

Abhimanu

Weekly current affairs Series

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Abhimanu's IAS Study Group
Chandigarh

NATIONAL ECONOMIC AFFAIRS

Paisa – Portal for Affordable Credit & Interest Subvention Access”

- PAiSA – A centralized electronic platform for processing interest subvention on bank loans to beneficiaries under Deendayal Antyodaya Yojana – National Urban Livelihoods Mission (DAY-NULM).
- It is designed and developed by Allahabad Bank (Nodal bank).
- PAiSA is an effort by the government to connect directly with the beneficiaries, ensuring that there is greater transparency and efficiency in delivery of services. DBT of subvention on monthly basis under DAY-NULM will give the necessary financial support to small entrepreneurs in a timely manner
- All 35 States/UTs & all scheduled commercial banks, RRBs and Cooperative Banks are expected to be on board the PAiSA portal the year end.

About Deendayal Antyodaya Yojana:

- The scheme has two component one for urban India and other for rural India.
- The Urban component named as Deen Dayal Antyodaya Yojana will be implemented by the Ministry of Housing and Urban Poverty Alleviation.
- The rural component named as Deen Dayal Upadhyaya Grameen Kaushalya Yojana will be implemented by the Ministry of Rural Development.

Main Highlights of The Scheme

- Employment through Skill Training and Placement - An expenditure of Rs.15, 000 per person is allowed on training of urban poor which is Rs.18, 000 in North-East and J&K. Moreover, Training urban poor to meet the enormous demand from urban citizens by imparting market-oriented skills through City Livelihood Centers.
- Social Mobilization and Institution Development - It will be done through formation of Self-Help Groups (SHG) for training members and hand holding, an initial support of 10, 000 is given for each group. Assistance of Rs.50, 000 is provided to Registered Area Level Federations.
- Subsidy to urban poor - An interest subsidy of 5% - 7% for setting up individual micro-enterprises with a loan of up to 2 lakh and for group enterprises with a loan limit of up to Rs.10 lakhs.
- Shelters for urban homeless - Cost of construction of shelters for urban homeless is fully funded under the Scheme.
- Other means - Development of vendor markets and also the promotion of skills for the vendors through setting up infrastructure and special projects for the rag picker and differently abled etc.

J&K bank turned into PSU

- State Administrative Council (SAC), under the chairmanship of Jammu and Kashmir Governor Satya Pal Malik took a decision to turn J&K Bank Limited into a public sector undertaking (PSU).
- It will hence be accountable to the state legislature, and the Finance Department will be required to place the bank's annual report before the Assembly. The SAC approved a proposal that provisions of the J&K Right to Information Act, 2009, shall be applicable to the bank just like other state-owned undertakings. It will have to follow guidelines of the Central Vigilance Commission. The department has been asked to issue directions to the bank to follow the decisions of the SAC. The bank is yet to receive these directions.

About J&K Bank:

- J&K Bank was established in 1938. It is owned by the J&K government and is a publicly listed entity functioning under the supervision of the Reserve Bank of India (RBI).
- It is the only bank in India in which a state government holds a majority stake. In all public-sector banks, the majority stake is held by the Centre.
- As per the Banking Companies (Acquisition & Transfer of Undertakings) Act, the central government holding in public-sector banks cannot drop below 51%. Though the state government holds 59.3% in J&K Bank, it is not considered a public-sector bank. This unique status needs to be seen in the context of Article 370 of the Constitution, which gives special autonomous status to the state of Jammu & Kashmir.
- J&K Bank is the largest employer among all state-promoted entities with a workforce of 9,190 in 2015-16.

Analysis:

- Governor' decision could be an attempt to disengage the bank from political influence and has come in the wake of backdoor entries and massive loans offered to defaulting big business houses.
- Recently, the Governor had accused the previous PDP-BJP government of changing the entire list of 582 selected candidates for jobs in J&K Bank to appoint favourites.
- This decision will also put the Jammu and Kashmir bank under the supervision of RTI and put at least under RTI supervision, the process of selection and hiring will be more transparent.
- Also, in J&K bank, the state government holds a majority stake of 59.3% in J&K Bank so it should have the character of a PSU, which is subject to general supervision and access for enhanced transparency in transaction of business to promote public trust.
- Extension of the RTI Act and CVC guidelines is only aimed at promoting good governance and transparency in the functioning of the bank.

Sustainable Blue Economy Conference

- The first Sustainable Blue Economy Conference was held in Nairobi, capital of Kenya. It was organized by Kenya and co-hosted by Japan and Canada.
- India endorses the growth of the Blue Economy in a sustainable, inclusive and people centred manner through the framework of the Indian Ocean Rim Association (IORA).

About Conference:

- The Sustainable Blue Economy Conference is the first global conference on the sustainable blue economy.
- It builds on the momentum of the UN's 2030 Agenda for Sustainable Development, the 2015 Climate Change Conference in Paris and the UN Ocean Conference 2017 "Call to Action".
- The world has rallied around the enormous pressures facing our oceans and waters, from plastic pollution to the impacts of climate change. At the same time, there is international recognition that we need to develop our waters in an inclusive and sustainable manner for the benefit of all.

Analysis:

- "Blue economy" term was coined by Gunter Pauli in his book, "The Blue Economy: 10 Years, 100 Innovations, and 100 Million Jobs.
- Blue Economy is integration of Ocean Economy development with the principles of: a) Social Inclusion b) Environmental Sustainability and c) Innovative and dynamic business models.
- This is founded on the basis of Systems Approach where by organic and renewable inputs are fed into sustainably designed systems to fuel "blue growth"
- Indian Ocean Region is a promising region to propagate blue growth. It is pre-eminent seaway for trade and commerce and is endowed with natural resources which are largely untapped.
- It can play a promising role in blue growth in following manner: a) Providing a boost to coastal and national economies; b) Generating new employment, skill-sets and capacities; c) Promoting entrepreneurship in new areas of economic activity;d) Facilitating the interconnectedness of the regional economy; e) Utilising the vast, untapped potential of the Indian Ocean ; f) Contributing to sustainable development and climate change mitigation
- The Indian Ocean Region will be helpful developing members of IORA as blue economy.

- IORA member states will be benefited by Indian Ocean Region in their pursuit of Blue Economy in following ways: a) Fisheries and aquaculture; b) Renewable ocean energy; c) Seaports and shipping; d) Seabed explorations and minerals; e) Marine biotechnology and R&D; f) Tourism; g) Ocean Knowledge Clusters; h) SIDS(Small Island Development States) and LDCs.

NATIONAL POLITY

Tribes of Andaman

- An American national was killed allegedly by the Sentinelese tribe in the Andaman and Nicobar Islands after he illegally entered the protected zone.
- The tragic incident is not the first such attack by the tribe on people from the outside world.

Tribes of Andamans

- Andaman and Nicobar Islands are home to at least six tribes. Of these two are of Mongoloid origin – the Nicobarese and Shompen. The Nicobarese are the most mainstream of all tribes but the Shompen still tend to avoid outsiders.
- The other four tribes -- the Great Andamanese, the Onge, the Jarawas and the Sentinelese -- are of Negrito origin and are still hunter-gatherers. These tribes reached the islands tens of thousands of years ago and remained isolated till the British era.
- It was not until the first European colonialists arrived in the 18th century that the isolation of some of the tribes came to an end, with disastrous consequences in many cases.
- The Great Andamanese, for instance, numbered several thousand but the contact with the colonialists nearly finished them off. Fewer than 100 survive today.

About North Sentinel island:

- It spread across 28 square miles, North Sentinel Island has had little significant contact with the outside world for, perhaps, 60,000 years. Until a few months ago, all travel was banned to the island – for the sake of both the safety of the tourists and the long-term well-being of the island dwellers.
- There has been a debate in recent years on what's the best way forward to deal with a tribe like this – should they be kept under isolation – left alone, in other words -- or cautious attempts be made to reach out to them?
- Renowned anthropologist TN Pandit and his team played a pivotal role starting from the late 1960s in researching the various tribes and drawing a section of the Sentinelese people away from their bow and arrow ways. He did this by presenting them gifts of coconuts. The policy was partially successful – and controversial.
- But interactions between the tribe and outsiders have led to several unpleasant and violent incidents over the years.
- In 2006, tribesmen killed two fishermen who had illegally entered waters near the island. An attempt by the coast guard to retrieve their bodies by helicopter was also met by a shower of arrows.
- From whatever little is known about their way of life, the Sentinelese haven't progressed to agriculture yet. Their diet is believed to include coconuts, fish, turtles and even birds. Instead of wearing clothes, they use natural materials such as leaves and strings.

- Population estimates vary from 40 to 350, which means any contact with the Sentinelese that goes even slightly awry can have catastrophic consequences for the entire tribe. Miraculously, they survived the 2004 Indian Ocean tsunami. According to some accounts, they did this by moving to higher ground in time.

NGT to fine thermal plants over fly ash

- The National Green Tribunal (NGT) has imposed penalties of up to ₹5 crore on thermal power plants that have not fully disposed of the fly ash they generated.
- The “environmental damages” for not meeting the 100% fly ash disposal criterion will have to be deposited with the Central Pollution Control Board in a month, failing which these power plants will have to pay interest of 12% per annum.
- This makes it legally binding for all thermal power plants to ensure complete disposal of or utilization of fly ash immediately.
- The order is significant because of the high contribution of fly ash to air and water pollution and its impact on crops being grown in villages around these plants.
- According to government’s notification, thermal power plants commissioned before the date of the notification will have to ensure 100% fly ash utilisation in five years. Those commissioned after the notification have to ensure 100% compliance within four years of the date of commissioning.

Fly Ash:

- “Fly ash is a major source of PM 2.5 (fine, respirable pollution particles) in summer. It becomes air borne, and gets transported to a radius of 10 to 20 kms.
- It can settle on water and other surfaces. Fly ash contains heavy metals from coal, a large amount of PM 2.5 and black carbon (BC).
- Proper disposal of fly ash is still not happening in many places,” said an Indian Institute of Technology-Kanpur professor who did not wish to be named.
- Fly ash is a byproduct from burning pulverized coal in electric power generating plants. During combustion, mineral impurities in the coal (clay, feldspar, quartz, and shale) fuse in suspension and float out of the combustion chamber with the exhaust gases. As the fused material rises, it cools and solidifies into spherical glassy particles called fly ash. Fly ash is collected from the exhaust gases by electrostatic precipitators or bag filters. The fine powder does resemble portland cement but it is chemically different.
- Fly ash chemically reacts with the byproduct calcium hydroxide released by the chemical reaction between cement and water to form additional cementitious products that improve many desirable properties of concrete.
- All fly ashes exhibit cementitious properties to varying degrees depending on the chemical and physical properties of both the fly ash and cement.
- Compared to cement and water, the chemical reaction between fly ash and calcium hydroxide typically is slower resulting in delayed hardening of the concrete. Delayed concrete hardening coupled with the variability of fly ash properties can create significant challenges for the concrete producer and finisher when placing steel-trowelled floors.

Supreme Court refuses to entertain fresh plea against Article 370

- The Supreme Court has refused to entertain a fresh petition on Article 370, which gives special autonomous status to Jammu and Kashmir, and said that the issues raised in it were already part of the pending pleas.

About Petition:

- The petition sought a declaration that Article 370 of the Constitution had lapsed with the dissolution of constituent assembly of Jammu and Kashmir on January 26, 1957 and it cannot be treated as mandatory for exercise of powers of the President.
- The plea has also sought that the Constitution of Jammu and Kashmir be declared as “arbitrary, unconstitutional and void”, claiming that it was against the supremacy of the Indian Constitution and contrary to the dictum of “One Nation, One Constitution, One National Anthem and One National Flag”.

About Article 370:

- According to the Constitution of India, Article 370 provides temporary provisions to the state of Jammu and Kashmir, granting it special autonomy.
- The article says that the provisions of Article 238, which was omitted from the Constitution in 1956 when Indian states were reorganised, shall not apply to the state of Jammu and Kashmir.
- Dr BR Ambedkar, the principal drafter of the Indian Constitution, had refused to draft Article 370.
- In 1949, the then Prime Minister Jawaharlal Nehru had directed Kashmiri leader Sheikh Abdullah to consult Ambedkar (then law minister) to prepare the draft of a suitable article to be included in the Constitution.
- Article 370 was eventually drafted by Gopaldaswami Ayyangar. Ayyangar was a minister without portfolio in the first Union Cabinet of India. He was also a former Diwan to Maharajah Hari Singh of Jammu and Kashmir
- Article 370 is drafted in Amendment of the Constitution section, in Part XXI, under Temporary and Transitional Provisions.
- It vests the executive powers of the state in the governor appointed by the president for the period of five years.
- Under the original constitution of the state, the Chief of the State was "Sadar-e-Riyasat" (President) and Chief of the government was "Wazir-e-Azam" (Chief Minister). In the year 1965, they were nominated as governors and Chief Minister respectively.
- Since 1964, the President rule has been introduced in the state. Earlier, in the situation of the failure of the state administration, only governor's rule used to impose here.
- "Urdu" will be the official language of the state whereas English can also be use for the official work.
- It lays down the procedure for its amendment; it can be amended by a bill passed in each house of the State Legislature by a majority of two thirds of the total membership of that house.

Security restrictions in border areas revised

- The Defence Ministry has now allowed developmental work of small nature by the central or state government's statutory bodies for faster development in border areas.

Highlights:

- The restrictions have been lifted for works like construction, repair and maintenance of village ponds, construction and maintenance of government buildings like schools and hospitals.
- Security considerations for construction activities in border areas issued earlier from time to time by the ministry shall not be applicable for the above mentioned development works in border areas.
- The fresh guidelines were issued by the ministry by superseding the Security Restrictions Guidelines enunciated by it in 1990.
- These restrictions were restrictive in nature towards developmental activities near border areas and were not fully facilitating in developmental works of small nature in the border areas.

Analysis:

- The need for new guidelines was felt, as the earlier restrictions were restrictive in nature towards developmental activities near border areas and were not fully facilitating in developmental works of small nature in the border areas.
- The construction works in the border areas were getting affected due to provisions listed in the Defence Ministry's existing guidelines. Hence, the state governments put forward requests to the centre to consider revision of the guidelines.

RCEP negotiation deadline missed again

- At the meeting leaders of RCEP countries passed a joint statement on RCEP negotiations.
- The joint statement announced the delay of the pact finalisation to 2019.
- The postponement came after the parties concerned had failed to attain a common voice as expected during the 7th RCEP Inter-Sessional Ministerial Meeting, held previously in Singapore with aims to finalise the RCEP talks in late 2018.

About Regional Comprehensive Economic Partnership:

- The Regional Comprehensive Economic Partnership is a mega regional free trade agreement being negotiated amongst 16 countries, comprising 10 ASEAN countries (Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam) and six ASEAN FTA partners, namely Australia, China, India, Japan, Korea and New Zealand. So far 6 Ministerial Meetings, 5 Inter-sessional Ministerial Meetings and 23 Rounds of the Trade Negotiating Committee at the technical level have been held.

Importance of RCEP

- The RCEP, when realized will become the largest trade bloc in terms of population with nearly 3.5 billion people. It will also have an estimated 40% of world's GDP and dominating 30% of global trade.
- A unique importance of the ambitious RCEP formation is that it contains the three biggest economies of Asia – China, India and Japan. The trade arrangement has big future potential as it holds the two of the fastest growing largest economies – China and India.

Origin and objectives

- The RCEP negotiations were launched at the Phnom Penh at a summit between the leaders of ASEAN and its six partners who occupies the remaining member of the RCEP on 20 November 2012.
- Objective of RCEP negotiations is to “achieve a modern, comprehensive, high-quality and mutually beneficial economic partnership agreement among the ASEAN Member States and ASEAN's FTA Partners. RCEP will cover trade in goods, trade in services, investment, economic and technical cooperation, intellectual property, competition, dispute settlement and other issues.” (from the Guiding Principles and Objectives for Negotiating the Regional Comprehensive Economic Partnership).

Challenges in front of RCEP

- Formation of the RCEP is not easy because of several economic and political hurdles. There are huge economic dissimilarities between the trading members. China is highly industrialized and is a trade powerhouse. India has more development objectives while connecting with trade. Japan and South Korea are innovation economies that excelled the world. Other ASEAN economies have long history of running FTAs though they are small in size.
- Similarly, there is differences about the extent of trade liberalization. China want more commodities and higher tariff cuts. India on the other hand, prefers some restrictions as the country's industrial sector is at the beginning state of development. Overall, most of the partners have a notion that China may dominate the RCEP because of its huge size economy and well competitive industrial sector advantages.
- Politically, there is less synergy between the RCEP members in the context of unresolved territorial dispute of China with other members – Japan, China and some other East Asian economies.

Russia-Ukraine sea clash

- Russia's capture of three Ukrainian naval ships and over 20 crew members in the disputed Azov Sea has refocused international attention on the conflict on Europe's eastern corridors and Azov sea.
- The incident has drawn strong criticism of Russia by the United States and its allies and has fueled fears of wider fighting in the region.

- It's part of the long-simmering conflict between the two countries, in which Russia annexed Ukraine's Crimean Peninsula in 2014 and supported separatists in Ukraine's east with clandestine dispatches of troops and weapons. That fighting has killed at least 10,000 people since 2014 but eased somewhat with a 2015 truce.

About Dispute:

- The Kerch Strait is the only connection between the Black Sea and the Sea of Azov, and the only way to reach two important Ukrainian ports, Mariupol and Berdiansk. Russia has controlled the strait since annexing Crimea in 2014, which has made traffic significantly more difficult for Ukrainian ships.
- A treaty was also signed between both countries in 2003 under which Russia has the right to inspect any vessel sailing to or from the Sea of Azov. Ukraine has accused Russia of abusing that right.
- Ukraine has also opposed a Russian-constructed bridge that crosses the Kerch strait and connects Russia and Crimea.
- Neither Ukraine nor the European Union nor the United States recognise Russia's 2014 annexation of Crimea. Kremlin-backed forces seized control of the Crimean peninsula and the territory voted to join Russia in a referendum that Ukraine and the international community deem illegal.

The law of the sea

- The UN Convention on the Law of the Sea (UNCLOS) sets out various scenarios that give a state freedom of passage, irrespective of a state's territorial waters.
- All ships, including foreign warships, enjoy the right of "innocent passage" within another state's territorial sea under international law.
- Russia has disputed whether the passage was innocent. The UN law states that a passage is innocent "so long as it is not prejudicial to the peace, good order or security of the coastal state". That includes threat or use of force, exercise or practice with weapons or any act of propaganda affecting the security of the state.
- Under international law, a country would have the right to seize another warship only if the warship was acting in a hostile manner.
- Also under UN conventions there is a requirement under which all ships needs to be given the freedom to travel through a strait from one part of the high seas to another - known as transit passage.

There are also rules within the UN convention that "ensure that ports which can only be reached by a single route through the strait, as is true of all ports in the Sea of Azov, always remain accessible

UN Central Emergency Response Fund

- The United Nations announced US\$9.2 million in health and nutritional aid for crisis-stricken Venezuela, where hunger and preventable disease are soaring amid the collapse of the country's socialist economic system.
- It is the first UN emergency funding for the government of President Nicolas Maduro, which blames the country's economic problems on US financial sanctions and an "economic war" led by political adversaries.

About the UN Central Emergency Response Fund:

- It is a humanitarian fund established by the United Nations General Assembly on December 15, 2005 and launched in March 2006.
- With CERF's objectives to 1) promote early action and response to reduce loss of life; 2) enhance response to time-critical requirements; and 3) strengthen core elements of humanitarian response in underfunded crises, CERF seeks to enable more timely and reliable humanitarian assistance to those affected by natural disasters and armed conflicts.
- The fund is replenished annually through contributions from governments, the private sector, foundations and individuals.

Analysis:

- The biggest problem facing Venezuelans in their day-to-day lives is hyperinflation. The annual inflation rate reached 83,000% till July this year.

- Prices have been doubling every 26 days on average. This has resulted in many Venezuelans struggling to afford basic items such as food and toiletries.
- With small items like a cup of coffee costing a whopping 2.5m bolivars until recently, it also became increasingly difficult to pay for goods in cash.
- To avoid going shopping with rucksacks full of cash, Venezuelans increasingly started using electronic transfers for even the smallest transactions.
- Venezuela is rich in oil and has the largest proven reserves in the world. But arguably it's this exact wealth that underpins many of its economic problems. Because it has so much oil, Venezuela has never bothered to produce much else. It sells oil to other countries, and with the dollars it earns, imports the goods Venezuelans want and need from abroad. Its oil revenues account for about 95% of its export earnings. But when the oil price plummeted in 2014, Venezuela was faced with a shortfall of foreign currency.
- This in turn made it difficult to import goods at the same level as before, and imported items became scarcer.
- Government has printed extra money and regularly hike the minimum wage in an effort to regain popularity with Venezuela's poor, and you get money which loses its worth rapidly.
- Many of those fleeing the country say they are doing so because they cannot get the operations and medical care they need.

Lancet Countdown Report 2018

- According to Lancet Countdown 2018 report, Indian policy makers must take a series of initiatives to mitigate the increased risks to health, and the loss of labour hours due to a surge in exposure to heatwave events in the country over the 2012-2016 period.
- Heatwaves are associated with increased rates of heat stress and heat stroke, worsening heart failure and acute kidney injury from dehydration. Children, the elderly and those with pre-existing morbidities are particularly vulnerable.

Important Highlights of the report:

- From 2014-2017, the average length of heatwaves in India ranged from 3-4 days compared to the global average of 0.8-1.8 days, and Indians were exposed to almost 60 million heatwave exposure events in 2016, a jump of about 40 million from 2012, the report released Thursday showed.
- Almost 153 billion hours of labour were lost globally in 2017 due to heat, an increase of 62 billion hours from the year 2000.
- To solve this problem India must identify "heat hot-spots" through appropriate tracking of meteorological data and promoting "timely development and implementation of local Heat Action Plans with strategic inter-agency co-ordination, and a response which targets the most vulnerable groups.
- This report urge India to review the existing occupational health standards, labour laws and sectoral regulations for worker safety in relation to climatic conditions.
- The India Meteorological Department had reported that from 1901 to 2007, there was an increase of more than 0.5°C in mean temperature, with considerable geographic variation, and climate forecasts by research groups project a 2.2-5.5°C rise in temperatures in northern, central and western India by the end of the 21st century.
- The number of hours of labour lost also jumped between 2000-2017 across India.
- For the agriculture sector alone, this rose to about 60,000 million hours in 2017, from about 40,000 million hours in 2000. Overall, across sectors India lost almost 75,000 million hours of labour in 2017, from about 43,000 million hours in 2000.
- The agriculture sector was more vulnerable compared to the industrial and service sectors because workers there were more likely to be exposed to heat.

Impact Based Forecasting Approach

- India Meteorological Department (IMD) has developed new technology called 'Impact Based Forecasting Approach' to assess rise of water level in rivers and reservoirs by rain.

Benefits:

- It shows pre-event scenario will help state governments authorities to minutely monitor impact of rainfall and take real-time decisions.
- It will help to avoid disastrous situation similar to Kerala floods. It can generate scenario to help take decisions to release water or not from reservoirs after heavy downpour. It will be helpful for every state authority to take decision. This system can be run in pre-event scenario.

About India Meteorological Department (IMD):

- India Meteorological Department was established in 1875. It is the National Meteorological Service of the country and the principal government agency in all matters relating to meteorology, seismology and allied subjects.

Mandate:

- To take meteorological observations and to provide current and forecast meteorological information for optimum operation of weather-sensitive activities like agriculture, irrigation, shipping, aviation, offshore oil explorations, etc.
- To warn against severe weather phenomena like tropical cyclones, norwesters, duststorms, heavy rains and snow, cold and heat waves, etc., which cause destruction of life and property.
- To provide meteorological statistics required for agriculture, water resource management, industries, oil exploration and other nation-building activities.
- To conduct and promote research in meteorology and allied disciplines.
- To detect and locate earthquakes and to evaluate seismicity in different parts of the country for development projects.

NASA's In Sight spacecraft lands on red planet after six-month journey

- InSight, a NASA spacecraft designed to burrow beneath the surface of Mars has landed on the red after a six-month, 482 million-km journey.
- It was NASA's ninth attempt to land at Mars since the 1976 Viking probes. All but one of the previous U.S. touchdowns was successful. NASA last landed on Mars in 2012 with the Curiosity rover.

About InSight Mission:

- InSight stands for Interior Exploration using Seismic Investigations, Geodesy and Heat Transport
- The aim of NASA's InSight Mission is to gather information about Mars kind of like a thorough medical checkup. This will be the first time in the Red Planet's formation where Mars' interior will be studied to this level of detail.
- The planet's core, mantle and crust will be explored allowing scientists to find out more about the formation of the rocky planets in our Solar System and measure its' tectonic activity.
- The InSight Lander is 5 ft 1 inch (1.56 m) wide and 19 feet 8 inches (6 m) long and weighs 794 pounds (360 kg) which is roughly the weight of about 5 people.

Instruments:

- **SEIS:** A seismometer that can provide information on internal vibrations or Marsquakes occurring within the Red Planet. Depending on the material the vibrations propagate through will change the way the seismic waves travel which when detected can tell scientists what the materials are.
- **HP3:** A heat probe that will burrow almost 16 feet (5 m) into Mars' surface – the deepest to date. The probe will help scientists measure Mars' temperature and work out whether Mars was formed from the same materials as Earth or not.
- **RISE:** A radio wave instrument that can help scientists work out the size of Mars' core as well as its composition by sending out a signal and seeing how it changes in frequency via the Doppler shift.
- **Instrument Deployment and Instrument Context Camera:** The former being a camera that offers a 360-degree panoramic view of the Martian land in color. The latter being a camera that will take 'fisheye' field of view of the Lander's workspace.

Biggest coral reseeded project launches on Great Barrier Reef

- Scientists have launched the largest-ever attempt to regenerate coral on the endangered Great Barrier Reef by harvesting millions of the creatures' eggs and sperm during their annual spawning.
- It is to grow coral larvae from the harvested eggs and return these to areas of the reef which have been badly damaged by climate-related coral bleaching.
- This is the first time that the entire process of large scale larval rearing and settlement will be undertaken directly on reefs on the Great Barrier Reef.

What is coral bleaching

- Many types of coral have a special symbiotic relationship with a tiny marine algae (zooxanthellae) that live inside corals' tissue and are very efficient food producers that provide up to 90 per cent of the energy corals require to grow and reproduce.
- Coral bleaching occurs when the relationship between the coral host and zooxanthellae, which give coral much of their colour, breaks down. Without the zooxanthellae, the tissue of the coral animal appears transparent and the coral's bright white skeleton is revealed.
- Corals begin to starve once they bleach. While some corals are able to feed themselves, most corals struggle to survive without their zooxanthellae.
- If conditions return to normal, corals can regain their zooxanthellae, return to their normal colour and survive. However, this stress is likely to cause decreased coral growth and reproduction, and increased susceptibility to disease.
- Bleached corals often die if the stress persists. Coral reefs that have high rates of coral death following bleaching can take many years or decades to recover.

Coral bleaching and the Great Barrier Reef

- The Great Barrier Reef has experienced mass coral bleaching events in the past.
- In 1998, there was a global mass bleaching event where 50 per cent of the reefs on the Great Barrier Reef suffered bleaching. During this time, sea temperatures on the Great Barrier Reef were the highest ever recorded.
- Mass bleaching also occurred in 2002, with 60 per cent of reefs were affected. This was the largest coral bleaching event on record. Two periods of hot weather resulted in sea surface temperatures a few degrees centigrade higher than long-term summer maxima. In both events, about five per cent of the Great Barrier Reef's coral reefs were severely damaged