

Abhimanu

Weekly current affairs Series

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Abhimanu's IAS Study Group
Chandigarh

NATIONAL ECONOMIC AFFAIRS

Support and Outreach Initiative for MSME Sector

- The Prime Minister has launched a historic support and outreach programme for the Micro, Small and Medium Enterprises (MSME) sector. As part of this programme, the Prime Minister unveiled 12 key initiatives which will help the growth, expansion and facilitation of MSMEs across the country.

Important Highlights:

- **First initiatives:** Loans amount up to Rs. 1 crore can be granted in-principle approval through this portal, in just 59 minutes. Link to this portal will be made available through the GST portal.
- **Second initiatives:** 2 percent interest subvention for all GST registered MSMEs, on fresh or incremental loans. For exporters who receive loans in the pre-shipment and post-shipment period, there is an increase in interest rebate from 3 percent to 5 percent.
- **Third initiatives:** All companies with a turnover more than Rs. 500 crore, must now compulsorily be brought on the Trade Receivables e-Discounting System (TReDS).
- **Fourth Initiative:** Public sector companies have now been asked to compulsorily procure 25 percent, instead of 20 percent of their total purchases, from MSMEs.
- **Fifth Initiative:** Out of the 25 percent procurement mandated from MSMEs, 3 percent must now be reserved for women entrepreneurs.
- **Sixth initiative:** All public sector undertakings of the Union Government must now compulsorily be a part of GeM. They should also get all their vendors registered on GeM.
- **Seventh initiative:** 20 hubs will be formed across the country, and 100 spokes in the form of tool rooms will be established.
- **Eighth initiative:** Clusters will be formed of pharma MSMEs. 70 percent cost of establishing these clusters will be borne by the Union Government.
- **Ninth initiative:** Simplification of government procedures.
- **Tenth initiative:** The establishments to be visited by an Inspector will be decided through a computerised random allotment.
- **Eleventh initiative:** An entrepreneur needs two clearances namely, environmental clearance and consent to establish his/her businesses
- **Twelfth initiative** Social security schemes should be launched for the MSME sector employees. This mission will be launched to ensure that they have Jan Dhan Accounts, provident fund and insurance.

Section 7 of the RBI Act of 1934

- The government has used Section 7 of the Reserve Bank of India Act, 1934, for the first time, in the 83rd year of Central Bank.
- IT is a provision under which the government can give directions to the RBI to take certain actions "in the public interest". This provision has been built into the law governing not just the RBI but also regulatory bodies in other sectors. Until now, however, the government has never exercised its powers under Section 7 of the RBI Act.

What is Section 7, Act 1934?

- The Section 7 Act 1934 provides the government with the power to issue directions to RBI in public interest from time-to-time after consulting the RBI governor.
- The RBI Act 1934, Section 7 of the constitution reads, "The central government may from time-to-time give such directions to the bank as it may, after consultation with the governor of the bank, consider necessary in the public interest".
- This is the first time in history that the central government has issued this amendment to direct the central bank on the necessary issues for the development of public.

History of RBI Act 1934 Section 7

- The RBI has made a combination of the provisions under the Bank of England Act 1946 and Commonwealth Bank of Australia 1945 on the authority of the central government for issuing directions to the central banks.
- The provision suggested that the Act makes it clear when the government doesn't work according to the advice of the RBI governor, the government will be solely responsible for the action.
- The government was not supportive of the provision at that time and the clauses were re-drafted accordingly.

Disinvestment of 100% Govt. of India's equity in the DCIL

- The Cabinet Committee on Economic Affairs has given 'in principle' approval for strategic disinvestment of 100% Government of India's shares in DCIL to consortium of four ports namely, Vishakhapatnam Port Trust, Paradeep Port Trust, Jawahar Lal Nehru Port Trust and Kandla Port Trust.
- Presently the Government of India holds 73.44% shares in Dredging Corporation of India Limited.
- The approval will further facilitate the linkage of dredging activities with the ports, keeping in view the role of the DCIL in expansion of dredging activity in the country as well as potential scope for diversification of ports into third party dredging.
- The co-sharing of facilities between the company as well as ports shall lead to savings for ports. This would further provide opportunities for larger investment in DCIL as integration with ports shall help ineffective vertical linkage in the value chain.
- The strategic disinvestment of DCIL shall be undertaken after conducting due diligence exercise by both the entities with the help of Advisors, appointed for the transaction.

About Dredging Corporation of India Limited (DCIL):

- The Dredging Corporation of India Limited (D C I) was established in the year 1976 to provide dredging services to the Major Ports of the country in India.
- D C I is a pioneer organization in the field of dredging and maritime development. D C I is fully equipped to offer the complete range of dredging and allied services to the users in India and Abroad and to provide the vital inputs for the national development.
- It's Head Office is strategically situated on the east coast of India at Visakhapatnam, DCI helps to ensure continuous availability of the desired depths in the shipping channels of the major and minor Ports, Indian Navy, Fishing Harbors and other maritime organizations.
- It further serves the Nation in a variety of ways, be it capital dredging for creation of new harbors, deepening of existing harbors or maintenance dredging for the upkeep of the required depths at various Ports along the 7,500 Kms coastline of India.

Companies Amendment (Ordinance), 2018

- Companies Amendment (Ordinance) has been assented by the President of India. The twin objectives of the Ordinance are promotion of Ease of Doing Business along with better corporate compliance.

Important amendments:

- Shifting of jurisdiction of 16 types of corporate offences from the special courts to in-house adjudication, which is expected to reduce the case load of Special Courts by over 60%, thereby enabling them to concentrate on serious corporate offences. With this amendment the scope of in-house adjudication has gone up from 18 Sections at present to 34 Sections of the Act.

- The penalty for small companies and one person companies has been reduced to half of that applicable to normal companies.
- Instituting a transparent and technology driven in-house adjudication mechanism on an online platform and publication of the orders on the website.
- Strengthening in-house adjudication mechanism by necessitating a concomitant order for making good the default at the time of levying penalty, to achieve the ultimate aim of achieving better compliance
- Declogging the National Company law tribunal by: a) enlarging the pecuniary jurisdiction of Regional Director by enhancing the limit up to Rs. 25 Lakh as against earlier limit of Rs. 5Lakh under Section 441 of the Act; b) vesting in the Central Government the power to approve the alteration in the financial year of a company under section 2(41); and c) vesting the Central Government the power to approve cases of conversion of public companies into private companies.
- Recommendations related to corporate compliance and corporate governance include re-introduction of declaration of commencement of business provision to better tackle the menace of 'shell companies'; greater disclosures with respect to public deposits; greater accountability with respect to filing documents related to creation, modification and satisfaction of charges; non-maintenance of registered office to trigger de-registration process; and holding of directorships beyond permissible limits to trigger disqualification of such directors.

Society for worldwide interbank financial telecommunication

- The Head of the US Treasury Steven Mnuchin has announced that Washington wants the world-wide payment network to cut off its services to the entities that were affected by Iran sanctions and warned that otherwise SWIFT might be sanctioned as well.
- The US will reintroduce sanctions against Tehran that were earlier lifted under the Iran nuclear deal, on November 5. These sanctions will affect the country's energy, banking, and shipping sectors.

What is SWIFT?

- The SWIFT is a global member-owned cooperative that is headquartered in Brussels, Belgium. It was founded in 1973 by a group of 239 banks from 15 countries which formed a co-operative utility to develop a secure electronic messaging service and common standards to facilitate cross-border payments. It carries an average of approximately 26 million financial messages each day. In order to use its messaging services, customers need to connect to the SWIFT environment.
- SWIFT does not facilitate funds transfer: rather, it sends payment orders, which must be settled by correspondent accounts that the institutions have with each other.
- The SWIFT is a secure financial message carrier — in other words, it transports messages from one bank to its intended bank recipient.
- Its core role is to provide a secure transmission channel so that Bank A knows that its message to Bank B goes to Bank B and no one else. Bank B, in turn, knows that Bank A, and no one other than Bank A, sent, read or altered the message en route. Banks, of course, need to have checks in place before actually sending messages.

RBI allows banks to provide partial credit enhancement of NBFC bonds

- The Reserve Bank of India (RBI) allowed banks to provide partial credit enhancement (PCE) to bonds issued by systemically important non-deposit taking non-banking financial companies (NBFCs) registered with the RBI and housing finance companies (HFCs) registered with the National Housing Bank.
- The move is aimed at enhancing the credit rating of the bonds and enabling these NBFCs to access funds from the bond market on better terms.
- PCE, which was introduced in 2015, is expected to help NBFCs and HFCs raise money from insurance and provident or pension funds who invest only in highly-rated instruments.

- The tenure of these bonds shall not be less than three years and that proceeds from them shall only be utilized to refinance existing debt. Banks shall introduce appropriate mechanisms to monitor and ensure that the end-use condition is met.

Meaning of Credit enhancement:

- Credit enhancement means improving the credit rating of a corporate bond. For example, if a bond is rated BBB, credit enhancement, which is basically an assurance of repayment by another entity, can improve the rating to AA. This is done to provide an additional source of assurance or guarantee to service the bond.
- RBI has now allowed banks to provide credit enhancement up to 20% of the total bond issue. This means banks (one or many together) can assure repayment of dues related to a bond issue up to 20% of the value. Other than banks, organisations such as India Infrastructure Finance Co. Ltd also provide this facility.

Important points of notification on PCE:

- Banks can provide partial credit enhancement to bonds issued by systemically important non-deposit taking NBFCs and HFCs.
- Tenor of bonds eligible for partial credit enhancement shall not be less than 3 years.
- Bonds backed by partial credit enhancement of banks shall only be used for refinancing.
- Banks should introduce appropriate mechanisms to monitor and ensure that the end-use condition is met.
- Exposure to bonds issued by these NBFCs by partial credit enhancement should be restricted to 1 percent of the bank's capital funds.

Analysis:

- The Indian corporate bond market is at a nascent stage of development, resulting in excessive pressure on the banking system to fund credit for project development. Due to greater asset-liability mismatch in infrastructure and project financing, banks are exposed to liquidity risk. The insurance and provident/pension funds, whose liabilities are long term, may be better suited to finance such projects.
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RBI starts process to set up digital Public Credit Registry

- The Reserve Bank has initiated steps to set up a wide-based digital Public Credit Registry (PCR) to capture details of all borrowers, including wilful defaulters and also the pending legal suits in order to check financial delinquencies.
- The PCR will also include data from entities like market regulator SEBI, the Corporate Affairs Ministry and the Insolvency and Bankruptcy Board of India to enable banks and financial institutions to get a 360-degree profile of existing and prospective borrowers on a real-time basis.

What is PCR?

- A public credit registry is an information repository that collates all loan information of individuals and corporate borrowers. A credit repository helps banks distinguish between a bad and a good borrower and accordingly offer attractive interest rates to good borrowers and higher interest rates to bad borrowers.
- The move is based on the recommendations of a committee, headed by Y.M. Deosthalee. PCR will address issues such as information asymmetry, improve access to credit and strengthen the credit culture among consumers. It can also address the bad loan problem staring at banks, as corporate debtors will not be able to borrow across banks without disclosing existing debt. A PCR may also help raise India's rank in the global ease of doing business index.
- Setting up the PCR will help improve India's rankings in the World Bank's ease of doing business index.

Analysis:

- Credit information is now available across multiple systems in bits and pieces and not in one window.
- Data on borrowings from banks, non-banking financial companies, corporate bonds or debentures from the market, external commercial borrowings (ECBs), foreign currency convertible bonds (FCCBs), masala bonds, and inter-corporate borrowings are not available in one data repository.
- PCR will help capture all relevant information about a borrower, across different borrowing products in one place.
- It can flag early warnings on asset quality by tracking performance on other credits.
- Access to credit information, including debt details and repayment history would drive innovation in lending. For example, currently most banks focus on large companies for loans and consequently the micro, small and medium enterprises are left with limited options for borrowing. With satisfactory payment history and validated debt details made available, it will increase the credit availability to micro, small and medium enterprises along with deepening of the financial markets. This will support the policy of financial inclusion.

Operation Greens

- The government has approved the operationalization strategy for Operation Greens to ensure availability of Tomato, Onion and Potato throughout the country round the year without price volatility.
- Operation Greens was announced in the Budget speech of 2018-19 with an outlay of 500 crore rupees to stabilize the supply of Tomato, Onion and Potato crops.

The Strategy will comprise of a series of measures as decided by the Ministry:

- Short term Price Stabilisation Measures:
- National Agricultural Cooperative Marketing Federation of India (NAFED) will be the Nodal Agency to implement price stabilisation measures.
- Ministry of Food Processing Industries (MoFPI) will provide 50 percent of the subsidy on transportation of Tomato Onion Potato (TOP) Crops from production to storage; and hiring of appropriate storage facilities for TOP Crops.

About Operation Greens:

- Operation Greens aims to promote farmer producers organisations, agri-logistics, processing facilities and professional management. The operation aims to aid farmers and help control and limit the erratic fluctuations in the prices of onions, potatoes and tomatoes.
- The idea behind Operation Greens is to double the income of farmers by the end of 2022. Operation is essentially a price fixation scheme that aims to ensure farmers are given the right price for their produce.
- The MSP regulation has a key role to play here. The announcement to set minimum support price of all kharif crops at 1.5 times the cost of production will increase the farmers' income and for consumers, tax incentives will be given under Operation Greens.
- The government aims to focus on basic ingredients and not on additional commodities in agriculture. Operation Greens will work to increase demand in the economy as well with its demand forecasting model. To help in the structural and infrastructure part of the scheme, Jaitley announced that as many as 470 agriculture market committee (APMCs) promoted markets will now be connected to the e-nam platform while the government will help in development of 22,000 agricultural markets.

Third Round of Regional connectivity scheme (RCS)

- Opening the third round of the Regional connectivity scheme (RCS), the Ministry of Civil Aviation has invited proposals for air routes that include tourist destinations. The deadline for submitting applications is November 20.
- Under this scheme, the government has allowed seaplanes to operate commercial passenger flights. Included among the 10 destinations that the government proposes to connect through seaplanes are the recently unveiled Statue of Unity at Sardar Sarovar Dam, Sabarmati Riverfront in Ahmedabad, Tehri Dam in Uttarakhand and Nagarjuna Sagar in Telangana.

About UDAN (Ude Desh ka Aam Nagrik) scheme:

- UDAN(Ude Desh Ka Aam Nagrik) is the Government's initiative to make air travel to India's tier II and tier III cities affordable to the aam aadmi.
- The idea is to put smaller cities and remote regions on the aviation map, by getting domestic airlines to ply more regional routes.
- Under the scheme, the Government offers incentives to airlines to flag off new flights to neglected smaller cities and towns by providing Viability Gap Funding to make these operations profitable. Airlines are required to bid for exclusive rights to fly on the regional routes opened up under the scheme.
- They must sell a specific number of seats on each flight at a fixed fare of ₹2,500 for one hour of flying. In the case of helicopter operations, allowed for the first time now, fares are capped at ₹2,500 for a 30-minute flight.

India's nuclear triad

- India has declared that its nuclear triad, stated in its nuclear doctrine, is operational after indigenous ballistic missile nuclear submarine INS Arihant recently achieved a milestone by conducting its first deterrence patrol.

About Nuclear tirade:

- A nuclear triad is defined as the capability to deliver a strategic or tactical nuclear warhead through air, land and sea. It means that a nation possesses strategic bomber jets, intercontinental ballistic missiles (ICBM) and ballistic submarines. Having these three on hand ensures that a nation can launch a nuke into enemy territory by dropping it from the sky, launching it as a payload from its own land or dispatching it from a ballistic submarine in the sea

India's capabilities:

- Air: India has a solid inventory of aerial vehicles -- the French Dassault Mirage 2000H, Russian-Indian Sukhoi Su-30 MKI, Russian MiG 29, and Anglo-French SEPECAT Jaguars are all capable of delivering a nuclear warhead into enemy's the territory.
- Land: India has surface-to-surface Agni-II and Agni-III missiles having a range of nearly 5000 km, and a three-times successfully tested Agni-V missile ranging nearly 8000 km. This gives India a clear advantage and the liberty to target from a very distant base.
- Marine:: INS Arihant gives India the power to hold the threat of a 'second strike' in a nuclear counter attack, even if the country is completely destroyed. This finds relevance in India's 'No First Strike' policy in contrast to Pakistan's "First strike" policy. The 'First Strike' policy allows Pakistan to use nuclear weapons against India even if India does not. INS Arihant, a 6,000-tonne submarine, is country's first indigenous nuclear submarine and can launch nuclear weapons from underwater. The vessel was declared as ready for operation in February 2016. It was built under the Advanced Technology Vessel Project at the Ship Building Centre. In August 2016, INS Arihant had been commissioned by PM Modi into the Indian Navy.

Analysis:

- Adopting a no-first use policy enables New Delhi to keep the nuclear threshold high, especially as Pakistan tries to lower the threshold by developing tactical nuclear weapons, the Hatf-9 with 60km range.
- It must also be noted that New Delhi is not bordered by just one nuclear weapon state. China adopts a no-first use policy and, in spite of calls for Beijing to revise its no-first use doctrine, it is unlikely to do so. Hence, if New Delhi gave up its no-first use doctrine, it could give Beijing a chance to adopt a first strike policy and shift blame on India.
- In fact, India's adoption of a first strike policy would be an easy excuse for Beijing to give up its no-first use doctrine against the United States and Russia as well.
- Moreover, India has always promoted herself as a responsible nuclear weapon state. Hence, a first strike policy would severely damage India's reputation as a responsible nuclear weapon state. This means that while India would not be resilient to any nuclear attack by its adversaries, at the same time, it will not act as a villain who tries to bully its adversaries by threatening to strike first.
- Also, it is India's no first use doctrine that has enabled both Pakistan and India to keep their nuclear arsenal in a de-mated posture rather than a ready deterrent posture. This means nuclear warheads are not mated with the delivery systems. This reduces the chances of nuclear terrorism in Pakistan and also reduces the likelihood of an accidental launch of a nuclear weapon. A first strike policy by India may not have allowed Pakistan to keep their nuclear arsenal in a de-mated posture.
- There is also the issue of ballistic missile defense being developed by India which is highly destabilizing in nature and hence, New Delhi would continue to resort to using its no-first use doctrine in order to prevent instability in the South Asian region. A first-strike policy, coupled with a ballistic missile defense system, could provoke Pakistan to launch a nuclear pre-emptive strike against India.
- By adopting a no-first use doctrine, New Delhi has also made it evident that nuclear weapons are indeed the weapons of last resort. Abandoning this doctrine would make it evident that India considers the option of using nuclear weapons in the initial phases of the conflict. In fact, India's nuclear strategy is dependent on punitive retaliation. This strategy itself acts as deterrence against Pakistan.

Govt releases Rs 113 crore to six border states

- The home ministry recently released Rs 113.36 crore to Assam, Nagaland, Sikkim, Gujarat, Rajasthan and Uttarakhand under the Border Area Development Programme (BADP).
- With this, the home ministry has released a total of Rs 637.98 crore so far during 2018-19 to states having International Border.
- **About Border Area Development Programme (BADP):**
- The major issues with which India's borders are plagued with include – poor accessibility, economic backwardness, sense of insecurity among people living in border areas etc.
- Thus, development of the border areas was envisaged as an important element of the border management policy of the government.
- In this direction, the Border Area Development Programme (BADP) was started as early as 1987 along with India-Pakistan border.

Objectives

Border Area Development Programme was launched to meet the special development needs of the people living in remote and inaccessible areas near the international border. Its primary objectives were to:

- Create infrastructure in border areas
- Provide economic opportunities to people living in the vicinity of the border
- instil a sense of security among the people living in border areas.

Implementation

- The BADP programme was introduced as a “Centrally Sponsored Scheme” and is implemented by state governments under the monitoring of Department of Border Management under the Ministry of Home Affairs.
- Its implementation includes development of community-based infrastructure like forestry, pasture land, fishery ponds, floriculture parks, community centres, mobile dispensaries, mini marketing yards, etc. in border areas.
- Currently, this programme is being implemented in all the 17 states which share international borders of India. These include: Arunachal Pradesh, Assam, Bihar, Gujarat, Himachal Pradesh, Jammu & Kashmir, Manipur, Meghalaya, Mizoram, Nagaland, Punjab, Rajasthan, Sikkim, Tripura, Uttar Pradesh, Uttarakhand and West Bengal.

Cabinet approves filling of Padur Strategic Petroleum Reserves

- The Union Cabinet has approved the filling of Padur Strategic Petroleum Reserves (SPR) in Karnataka by overseas National Oil Companies (NOCs).
- The filling of the SPR will be under PPP model and is being undertaken to reduce budgetary support of Union Government.
- The SPR facility at Padur is underground rock cavern with total capacity of 2.5 million metric tonnes (MMT) having four compartments of 0.625 MMT each.

About Strategic Petroleum Oil Reserve:

- Strategic oil reserve is storage facilities for oil in addition to the existing ones of crude oil and petroleum products with the oil companies. The crude oil storages are constructed in underground rock caverns. Rock caverns are large man-made spaces in the rock and are considered the safest means of storing hydrocarbons. Oil reserves are being built to provide the cushion during any external supply disruptions and to ensure India’s energy security. These oil reserves are being managed by Indian Strategic Petroleum Reserves Ltd.

Analysis:

- India is the world’s third largest energy consumer after the US and China. India produce very little oil of its own and is dependent on imports for more than 80 per cent of its needs. The chunk of this is from West Asia which is often in the midst some geo-political face-off or the other. There’s no saying when some major supplier would toy with the idea of arm-twisting India.
- There is always the risk of supply disruption from natural disasters, war or other calamities. In short, our energy demand-supply dynamic is delicately poised. Strategic petroleum reserves add much-needed heft to the country’s energy security, giving us crucial time and breathing space if push comes to shove.
- The global practice is to maintain strategic reserves of at least 90 days of oil imports. Petroleum reserves are also a good idea because crude oil prices are extremely fickle, and defy punditry. Few anticipated its crash from triple digits in 2014 to less than \$30 a barrel in 2016. Fewer anticipated the near-doubling of prices since then to about \$80 a barrel now.

INTERNATIONAL AFFAIRS

World’s first Hyperloop passenger capsule unveiled

- Hyperloop Transportation Technologies Inc. has unveiled its first full-scale passenger capsule in Spain.

- The capsule is 105 feet (32 meters) long and weighs 5 tons. Named as the Quintero One, the product is made almost entirely out of composite material.

What is hyperloop transportation system?

- The Hyperloop is a concept proposed by billionaire inventor Elon Musk, CEO the aerospace firm SpaceX.
- Musk's Hyperloop consists of two massive tubes. Pods carrying passengers would travel through the tubes at speeds topping out over 700 mph. For propulsion, magnetic accelerators will be planted along the length of the tube, propelling the pods forward. The tubes would house a low pressure environment, surrounding the pod with a cushion of air that permits the pod to move safely at such high speeds, like a puck gliding over an air hockey table.
- Musk's design recommends an air compressor on the front of the pod that will move air from the front to the tail, keeping it aloft and preventing pressure building up due to air displacement.

Analysis:

- Conventional means of transportation (road, water, air, and rail) tend to be some mix of expensive, slow, and environmentally harmful. Road travel is particularly problematic, given carbon emissions and the fluctuating price of oil. As the environmental dangers of energy consumption continue to worsen, mass transit will be crucial in the years to come.
- Rail travel is relatively energy efficient and offers the most environmentally friendly option, but is too slow and expensive to be massively adopted. At distances less than 900 miles, supersonic travel is unfeasible, as most of the journey would be spent ascending and descending (the slowest parts of a flight.) Given these issues, the Hyperloop aims to make a cost-effective, high speed transportation system for use at moderate distances.
- The Hyperloop tubes would have solar panels installed on the roof, allowing for a clean and self-powering system.
- There are of course some drawbacks in this system. Most notably, moving through a tube at such high speeds precludes large turns or changes in elevation. As a result, the system is optimal for straightforward trips across relatively level terrain.
- Realistically, the most important problem in getting any project off the ground is money. Even if one can produce an impressive blueprint, there are still issues of public approval, legislation, regulations, and contractors to worry about.

SCIENCE AFFAIRS

Ozone Hole Recovery Due to Chemicals Ban

- The hole in Ozone layer has shrunk thanks to the ban of CFCs, after NASA's finding that chlorine levels are rapidly declining in Earth's stratosphere.
- Last year satellite images showed that the hole had begun to close and could be completely healed by 2060.
- But it was not clear whether the closure was a direct result of the Montreal Protocol, which was signed by all countries of the world in 1985 phasing out chlorofluorocarbons (CFCs).

- Now long-term satellite observations by Nasa has shown a 20 per cent decrease in levels of chlorine in Earth's atmosphere since 2005, proving for the first time that the worldwide action is having a dramatic impact on the planet.
- **Analysis:**
- A layer of ozone envelops the Earth and keeps damaging ultraviolet, or UV, radiation from reaching living things on the planet's surface. The ozone layer exists mainly in the stratosphere, a layer of the atmosphere that reaches from 10 to 50 kilometers (about 6 to 30 miles) above the Earth's surface.
- CFCs, which were used in aerosols, fridges, air conditioning and packing materials, are so harmful because they rise into the stratosphere, where they are broken apart by the Sun's ultraviolet radiation, releasing chlorine atoms that destroy ozone molecules.
- Nasa has been permanently monitoring the hole in the ozone layer with its Aura satellite since 2005.
- The ozone layer is expected to recover gradually as CFCs leave the atmosphere, but it will take decades before the hole closes entirely.
- CFCs have lifetimes from 50 to 100 years, so they linger in the atmosphere for a very long time.

Shakti- India's first indigenous microprocessor

- Indian Institute of Technology Madras (IIT Madras) researchers have designed India's first indigenous microprocessor called 'Shakti'.

About Shakti:

- It will reduce dependency on imported microchips and the risk of cyber attacks making it ideal for communication and defence sectors.
- The design originated from an open source instruction set architecture, a set of basic instructions a processor understands, called RISC V, which makes it customisable to any device.
- Bluespec, an open-source high level synthesis language, went into making the chips.
- The brain of all computing and electronic devices, many such microprocessors that are connected are used to operate larger high-speed systems and super computers.
- The microprocessor fabricated in India was in a 180nm facility, while the one in the US was in a 20nm.
- However, 180nm is outdated, but still it is relevant as many applications across the world look for limited frequency. You do not need a washing machine or a surveillance camera running at one gigahertz. This chip can be used for any application where conventional power is available. While the other that we fabricated in the US earlier consumes less power and hence can be used in mobiles.
- The microprocessor has already attracted the attention of Indian industry, and IIT-M is in touch with more than 13 companies involved in strategic and commercial applications.