

**GOVERNANCE**

**Irregularities in School Toilet Construction: CAG**

The Comptroller and Auditor General of India (CAG) has flagged irregularities in the construction of toilets in schools by Central Public Sector Enterprises (CPSEs) in an audit report tabled before Parliament.

**Key Points**

**Physical survey:**

- There are 10.8 lakh government schools in the country. Overall, more than 1.4 lakh toilets have been built by 53 CPSEs, with significant support coming from power, coal and oil companies as part of the Swachh Vidyalaya Abhiyan.
- The CAG audit conducted a physical survey of a sample of 2,695 toilets built by these companies in 15 States.

**Issues Found:**

- **No functional toilets:** Out of the 1,967 coeducational schools surveyed, 99 schools had no functional toilets while 436 had only one functional toilet, meaning that the objective of providing separate toilets for boys and girls was not fulfilled in 27% of the schools.

**Maintenance and Sanitation:**

- 75% of toilets did not follow the norm for daily cleaning at least once a day.
- 72% of constructed toilets had no running water facilities inside, and 55% had no hand washing facilities at all, an even greater necessity in Covid-19 affected times.
- Construction Issues: Out of the sample of 2,695 toilets, CPSEs identified but did not construct 83. Another 200 toilets were reported to be constructed, but were non-existent, while 86 toilets were only partially constructed.
- Thus, almost 40% of toilets were non-existent, partially completed or unused.
- The audit also noticed cases of defective construction of toilets, non-provision of foundation, ramp/staircase and damaged or overflowed leach pit, which led to ineffective use of toilets.
- Prefabricated structures were used for constructing many toilets leading to extra expenditure, dilution in durability and non-compliance with direction.

**Swachh Vidyalaya Abhiyan:**

- It was launched by the Ministry of Human Resource Development (now Ministry of Education) in September 2014.
- The aim is to meet the Right to Education Act's mandate that all schools must have separate toilets for boys and girls.
- In order to effectively change the behaviour of students, the programme norms required the CPSEs to build toilets with running water and hand washing facilities, and to maintain the toilets for three to five years while charging the annual expenses to their Corporate Social Responsibility (CSR) budgets.

**Importance of School Toilets:**

**Constitutional Promises:** As mandated by the Right to Education Act, all children are required to spend six hours in school every day. During this period, they would want to use the toilets.

The Act mandates that all schools must have separate toilets for boys and girls.

**Health & Nutrition:** The provision of water, sanitation and hygiene facilities in school secures a healthy school environment and protects children from illness and exclusion.

- Hygiene in school also supports school nutrition.

The simple act of washing hands with soap before eating the school mid-day meal assists to break disease transmission routes.

**Enrolments & Dropouts:** Lack of toilets for girls, is a reason for dropouts. A school latrine generally increased female enrolment more than male enrolment.

**Child as a Change Agent:** Having a clean school fosters a child's pride in his or her school and community.

It enables every child to become an agent of change for improving water, sanitation and hygiene practices in their families and within their community.

**Way Forward**

- Regular monitoring is essential for the success of such a programme related to basic facilities.
- In addition to an adequate provision of funds, cleaning, sanitation training, maintenance of toilets and other things, the issue of fixing accountability must be addressed. Else we will keep

visiting the basic issues over and over again, reformulating strategies and recommissioning funds.

## **SCIENCE AND TECHNOLOGY**

### **Science & Technology Indicators report for 2019-20**

According to the latest Science & Technology Indicators (STI) report for 2019-20, India performs very dismally in the field science & technology innovation.

- The STI report is released by the Department of Science and Technology (DST).

#### **Key Points**

##### **Patent Data:**

- Between 2005-06 and 2017-18, a total of 5,10,000 patent applications were filed in India. However, nearly three-quarters were filed by foreign entities or individuals.
- In other words, in these 13 years, just 24% of patent claims came from Indians.
- Patent filing in India is governed by Patents Act, 1970. Recently, the Office of the Principal Scientific Adviser to the Government of India and the DST have jointly initiated the formulation of a new national Science Technology and Innovation Policy (STIP 2020).
- A patent is the granting of a property right by a sovereign authority to an inventor.
- This grant provides the inventor exclusive rights to the patented process, design, or invention for a designated period in exchange for a comprehensive disclosure of the invention.
- According to the World Intellectual Property Organisation (WIPO), India stands at the 7th position on number of patents filed.
- China tops the list, followed by the USA and Japan.

##### **Reasons for Dismal Performance:**

- Poor investment in research and development (R&D) by the government, and the private sector.
- The pathetic state of higher education.
- Lack of employable personnel, who have neither the skills nor the aptitude in a variety of fields.
- Lack of funds and a lack of conducive environment for start-ups.
- However, as per a recent report by the IBM Institute for Business Value, most Indian start-ups have failed because they lack pioneering ideas based on new technologies.
- The Indian start-ups also do not come up with unique business models and prefer to copy successful ideas from elsewhere and focus on creating value merely by fine-tuning these successful concepts to local markets.
- The Makeshift solutions or Jugaad enjoys respectability in India. It has been termed frugal innovation by some peoples.

##### **Suggestions:**

- To spark the innovation in India, research content at major institutions, especially at universities, needs to be increased.
- The national labs can be linked to universities to create new knowledge ecosystems.
- Greater public engagement of the science and research establishment and attracting more scientists from across the world in India.
- Increasing scientific temper among students.
- Strengthening higher education in India.
- There is a need to increase funding in R&D and to create a conducive environment for innovation.
- Participation of the private sector in R&D needs to be increased.

##### **Way Forward**

- The makeshift solutions provide short term solutions, but to increase innovation, there is a need for pure research, which can be done when Indians will come up with new and original ideas.
- Experience of developing countries shows that Science & Technology Innovation policies that are well integrated into national development strategies and combined with institutional and organizational changes can help raise productivity, improve firm competitiveness, support faster growth and create jobs.

## **ENVIRONMENT AND DIVERSITY**

### **World Risk Index 2020**

According to the World Risk Index (WRI) 2020, India is 'poorly prepared' to deal with 'climate reality', due to which it is vulnerable to extreme natural disasters.

#### **Key Points**

##### **World Risk Index:**

- It is calculated on a country-by-country basis, through the multiplication of exposure and vulnerability and describes the disaster risk for various countries and regions.
- Released annually since 2011, it indicates which countries are in the greatest need to strengthen measures for coping with and adapting to extreme natural events.
- It is part of the World Risk Report 2020 released by the **United Nations University Institute for Environment and Human Security (UNU-EHS)**, Bundnis Entwicklung Hilft and the University of Stuttgart in Germany.
- Among continents, Oceania is at the highest risk, followed by Africa and the Americas.

**Oceania:**

- Small island states, especially in the South Pacific and the Caribbean, are disproportionately represented among high-risk countries.
- Vanuatu (South Pacific Ocean) is the country with the highest disaster risk worldwide. It is followed by Tonga (South Pacific Ocean) and Dominica (Caribbean Sea).
- They are at a high exposure to extreme natural events which include the rise in sea level as a result of global warming.
- The small island states have limited financial resources and have made small contributions to climate change, but are affected the most by its consequences.
- They are needed to be compensated for the climate damage and losses already incurred and merely providing financial resources for adaptation to climate change is not sufficient.

**Africa:**

- It has been identified as a hotspot of vulnerability. More than two-thirds of the most vulnerable countries in the world are located on the continent.
- The size of semiarid regions in Africa is expected to increase, with over half of Africa's land area vulnerable to desertification.
- Large areas of Africa are marginalized and already under significant financial stress.
- The Central African Republic is the most vulnerable country, followed by Chad, the Democratic Republic of Congo, Niger and Guinea-Bissau.

**South Asia and India:**

- India has ranked 89th among 181 countries on the WRI 2020 and is fourth-most-at-risk in South Asia, after Bangladesh, Afghanistan and Pakistan.
- Sri Lanka, Bhutan and the Maldives have fared better than India in their abilities to cope with extreme disasters. India also lags behind these three neighbours in terms of lack of adaptive capacities or the preparedness to deal with extreme events.
- A comparison with the WRI 2019, shows that all south Asian countries have slipped on their ability to adapt to the reality of climate emergency.
- Countries with a score above 52.73, are 'very poor' in their adaptive capacities for extreme natural disasters.
- India has also slipped on strengthening adaptive capacities which is concerning as it highlights the inability of systems, institutions, and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences.
- It becomes more important given that India's first ever comprehensive climate change assessment report highlighted the impacts of the climate crisis. (IITM), Pune and is operationalized by the India Meteorological Department (IMD).

**INDIAN ECONOMY**

**Plastic Parks Scheme**

The Ministry of Chemicals & Fertilizers has approved setting up of 10 Plastic Parks in the country.

- The Parks are being set up in the states of Assam, Madhya Pradesh, Odisha, Tamil Nadu, Jharkhand, Uttarakhand and Chhattisgarh.
- A Plastic Park is an industrial zone devoted to plastic enterprises and its allied industries.

**Key Points**

**Background:**

- The share of India in world trade of plastics is very low. India's share in the USD 1 trillion global plastic exports market is about 1%.
- The Indian Plastics industry is large but highly fragmented with dominance of tiny, small and medium units and thus lacks the capacity to tap this opportunity.
- The Scheme for setting up of Plastic Parks has been formulated with a view to synergize and consolidate the capacities through cluster development.

**Features of the Scheme:**

- **Demand-Driven:** Supports setting up of a need based 'Plastic Parks' - an ecosystem with requisite state of the art infrastructure and enabling common facilities to assist the plastic sector move up the value chain and contribute to the economy more effectively.

**Major Objectives:**

- Increase the competitiveness, polymer absorption capacity and value addition in the domestic downstream plastic processing industry through adaptation of modern, research and development led measures.
- In the petrochemical supply chain, the plastics industry can be classified into two categories.
- First, the manufacturing of polymers, which is called 'upstream'.
- The second one is conversion of processable polymers (plastic raw materials) into useful end products, which are classified as 'downstream'.
- Achieve environmentally sustainable growth through innovative methods of waste management, recycling, etc.

**Funding Pattern:**

- The Central Government provides grant funding up to 50% of the project cost, subject to a ceiling of Rs. 40 crore per project.
- The remaining project cost is funded by the State Government, beneficiary industries and by loan from financial institutions.

**Implementation:** A Special Purpose Vehicle (SPV) shall complete the setting up of the Plastic Park in a period of three years from the date of final approval.

- The SPV is a distinct legal entity formed by the State Government or its agency.
- The Central Institute of Petrochemicals Engineering and Technology (CIPET) has established a Centre for Skilling and Technical Support (CSTS) at Vijayawada in Andhra Pradesh which provides Diploma programmes and skill development training programmes in the field of Plastics Engineering & Technology.
- CIPET is a premier government of India institute.

**Challenges for the Plastic Industry:**

- Increased volume of plastic waste. As per reports on the status of India, only 60% of this waste gets recycled.
- The major challenge is segregation and re-aggregation of plastic waste streams such as packaging waste, including laminated plastic.
- Pollution caused by plastic waste is tormenting the environment including aquatic resources necessitating urgent action, that is why the plastic sector needs better management.
- A lack of upgrading quality and diversification in the product range.
- India has committed to phase out the use of single-use plastic by 2022.

**Way Forward**

- Plasticulture, i.e. the use of plastics in agriculture, horticulture, water-management, food grains storage and related areas should be promoted. Recycling of plastics is one of the foremost steps towards innovation and sustainability in this industry.
- Further, the government needs to work on the draft 'National Plastic and Packaging Industry Development Policy 2019'.

**INTERNATIONAL AFFAIRS**

**G4 Foreign Ministers Meeting**

Recently, Foreign Ministers from the Group of 4 (G4), consisting of India, Brazil, Japan and Germany, participated in a virtual meeting.

G4 is a group of countries that are seeking permanent membership of the United Nations Security Council (UNSC).

**Key Points**

- G4 will seek concrete and time-bound outcomes during the 75th session of the UN General Assembly.
- The UN will celebrate its 75th anniversary on 24th October 2020.
- The Ministers reaffirmed their common resolve to finally take decisive steps towards the early and comprehensive reform of the Security Council that was envisaged by Heads of State and Government in the 2005 World Summit.
- The 2005 World Summit was held at United Nations Headquarters in New York.

- All governments expressed strong and unambiguous commitment to achieve the Millennium Development Goals by 2015.
- It set up two new bodies, a Peacebuilding Commission to help countries in transition from war to peace, and a strengthened Human Rights Council.

**G4 on UNSC Reforms**

- Ensuring greater representation for Africa: Africa needs to be represented in both the permanent and non-permanent categories of UNSC to correct the historical injustice against this continent with regard to its under-representation in the Security Council.
- Enhanced role of developing countries and of major contributors to the UN: To make UNSC more legitimate, effective and representative, it is needed to increase the number of permanent (from 5 to 11) and non-permanent (from 10 to 14) seats.
- The permanent seats shall be elected in the following manner: Two from African States; Two from Asian States; One from Latin American and Caribbean States ; One from Western European and Other States.
- Non-permanent members shall be elected according to the following pattern : One from African States ; One from Asian States ; One from Eastern European States ; One from Latin American and Caribbean State
- The UNSC reforms proposed earlier had been opposed by the five permanent members (P5) of UNSC as they demanded veto power for new members as well (Rizali Plan). However, later the new countries decided to forego the veto power for new countries which was accepted by P5 countries (Rizali Reform Plan).

**Text-Based Negotiations:** The G4 will work with other reform-minded countries and groups to start text-based negotiations (TBN)

- India is a proponent of TBN at the UN. Countries opposed to UNSC reform, including China, are hesitant to have TBN for intergovernmental negotiations on the grounds that the matter is too sensitive for text.

**Concerns over IGN:** Two sessions in February and March 2020 of Inter-Governmental Negotiations (IGN) on UNSC reform were adjourned due to Covid-19, which could have taken place virtually.

- The countries expressed concern that IGN lacks the necessary openness and transparency and is constrained by flawed working methods.
- IGN should also have included a reflection of the Common African Position as enshrined in the Ezulwini Consensus and the Sirte Declaration.
- The Ezulwini Consensus (2005) is a position on international relations and reform of the United Nations, agreed by the African Union. It calls for a more representative and democratic Security council, in which Africa, like all other world regions, is represented.
- The Sirte Declaration (1999) was the resolution adopted to establish the African Union.
- Groups Opposed to UNSC Reforms: An informal "coffee club" or Uniting for Consensus Group has opposed UNSC reforms.
- Most members of the club are middle-sized states who oppose bigger regional powers grabbing permanent seats in the UN Security Council.
- While Italy and Spain are opposed to Germany's bid for UNSC's permanent membership, Pakistan is opposed to India's bid. Similarly, Argentina is against Brazil's bid and Australia opposes Japan's.
- India's Position: India, will commence a two-year non-permanent term on the UNSC in January, 2021
- It has long sought a permanent seat at the Council.
- Four of the five permanent members of the Security Council – USA, UK, France and Russia support giving India a permanent seat at the Council. Only China is opposed to this.
- India is also seeking reforms to democratize the UN, such as UNSC reforms and UN peacekeeping reforms.

**Intergovernmental Negotiations**

- IGN is a group of nation-states working within the United Nations to further reform of the United Nations Security Council (UNSC)
- The IGN is composed of several different international organizations, namely:
- African Union
- G4 nations
- Uniting for Consensus Group (UfC)

- L.69 Group of Developing Countries
- Arab League
- Caribbean Community (CARICOM).

**IMPORTANT FACTS FOR PRELIM**

**New Brucellosis Vaccine by ICAR**

**Brucella abortus S19Δ per vaccine**” is developed by the Indian Council of Agricultural Research’s - Indian Veterinary Research Institute (ICAR-IVRI) for brucellosis prevention in the dairy sector.

**Key Points**

**Brucellosis:** It is a bacterial disease caused by various Brucella species, which mainly infect cattle, swine, goats, sheep and dogs.

- It is also known as Malta fever or Mediterranean fever.
- Brucellosis is a zoonotic disease and endemic in India causing huge economic losses to dairy industry due to:
- Infertility
- Abortion
- Birth of weak off springs
- Reduced productivity

**Old Vaccine:**

- B. abortus S19 strain: In India, calf-hood vaccination is practiced using live attenuated Brucella abortus S19 strain for control of the disease.
- B. abortus S19 strain is a very strong immunogen and provides lifelong immunity.
- An immunogen refers to a molecule that is capable of eliciting an immune response by an organism's immune system.

**Drawbacks:**

- Residual virulence to humans and animals.
- Not suitable for vaccination in adult animals.
- Causes abortion when used in pregnant animals.
- Interferes with sero-diagnosis of clinical infection.

**New Vaccine:** To overcome some of these drawbacks, a modified strain of B. abortus S19 has been developed at ICAR-IVRI. The newly developed strain is named as B. abortus S19Δ per.

- It is developed under the Department of Biotechnology (DBT) funded “Brucellosis network program”.
- The programme aims at studying the epidemiological status of Brucella infections in India and to develop novel diagnostics and vaccines.
- In the process of modifying the S19 strain, lipopolysaccharide (LPS) structure of the organism was altered through deletion mutation.
- Lipopolysaccharide is the major component of the outer membrane of Gram-negative bacteria.
- A deletion mutation occurs when part of a DNA molecule is not copied during DNA replication.
- Vaccine potential of S19Δ per has been evaluated in experimental small animal models and also in buffalo calves.
- The vaccine has great demand in India and will be of immense help in the national control programme on brucellosis.
- The vaccine has DIVA capability.
- DIVA means differentiating infected from vaccinated animals. These vaccines, also termed as marker vaccines, can differentiate between naturally infected and vaccinated animals.

**DAILY ANSWER WRITING PRACTICE**

**Qns. India being a responsible regional power, should invest in regional frameworks for disaster management. Discuss the statement in light of the increasing vulnerability of the South Asian region. (250 words)**

**Ans.**

South Asia is exposed to a variety of hazards due to the geo-climatic characteristics of the region. From a development perspective disaster management is vital for building a more equitable and sustainable future. Making investments in prevention and preparedness is a necessary part of systematic efforts to increase resilience to disaster.

- A regional framework can help India and other regional countries to lift the social-economic conditions of their people. It can also help India build good relations with its neighbours.

**Vulnerability of the South Asia region to various disasters**

- South Asia's geo-climatic conditions as well as its high degree of socio-economic vulnerability, makes it one of the most disaster prone regions in the world.
- South Asian countries are typically marked by large populations, high poverty, low literacy and poor indicators of human development.
- Poverty is widespread especially in the rural areas of Indian sub-continent.
- Climate Change: The monsoon carries more than 70% of South Asia's annual precipitation in a brief four-month period.
- A poorly timed monsoon, can result in human suffering and economic loss due to either flooding or drought.
- Cyclones are the second most commonly occurring hazard in the region.
- Climate change has a direct effect on the monsoon pattern and cyclones occurrences in the region.
- Active Seismic Zones: The world's youngest mountain belt, the Himalaya and Hindu Kush, envelopes South Asia all along its northern fringe, from Afghanistan in the west to Bangladesh in the east.
- With over 600 million people living along the fault line across the Himalayan belt, where the earthquake exposure is very high.
- Tsunami Challenge: In the South Asia Seas region, major population centers live on key fault lines and in coastal areas that are exposed to hazards like Tsunami in 2004.
- Lack of Coordination: Ineffective regional disaster relief mechanisms result in an uncoordinated relief effort which hampers disaster recovery process.

**Way Forward**

- Utilising existing Regional Disaster Relief Mechanisms in the South Asia region.
- Institutions such as SAARC institutions (SAARC Disaster Management Centre, South Asia Rapid Response to Natural Disasters), Bimstec Centre for Weather and Climate can be utilised effectively.
- Risk Identification: Any effective strategy to manage disaster risk must begin with an identification of the factors that cause disasters.
- Hazard mapping of the region will serve as the base layer of information and provides data on the probability of occurrence and intensity of a hazard event.
- Risk Mitigation: Reducing disaster risk calls for all stakeholders to alter their perceptions and prioritize resilience in a country's planning and development efforts.
- In this context, SAR should devise and implement a regional disaster risk reduction mechanism based on Sendai Framework.

**Conclusion**

- With climate uncertainty, humanitarian emergencies in the South Asia region are poised to grow. India must invest in regional frameworks for disaster management and take the lead in setting up a road map for greater cooperation.
- Building capacities through training and joint exercises and coordinating comparative advantages for collective action will help India leverage goodwill among its neighbours through its disaster relief programmes.

**DAILY QUIZ**

1. Recently in news, Chandrasekhar limit refers to?
  - a) **The theoretical maximum mass a white dwarf star can have and still remain a white dwarf.**
  - b) Maximum possible mass of a black hole.
  - c) The largest explosion of a star that takes place in space.
  - d) The greatest stress that can be applied to a material without causing deformation.
2. With reference to India's Artificial Intelligence (AI), consider the following statements:
  1. The Ministry of Electronics and Information Technology has released the National Strategy on Artificial Intelligence.
  2. India has joined the Global Partnership on Artificial Intelligence (GPAI) as a founding member.Which of the statements given above is/are correct?
  - a) 1 only
  - b) **2 only**
  - c) Both 1 and 2
  - d) Neither 1 nor 2
3. With reference to the Foreign Contribution (Regulation) Amendment Bill, 2020, consider the following statements:
  1. It prohibits public servants from receiving foreign contributions.
  2. It makes the Aadhaar number mandatory for receiving foreign contributions.Which of the statements given above is/are correct?
  - a) 1 only
  - b) 2 only
  - c) **Both 1 and 2**
  - d) Neither 1 nor 2
4. With reference to Jnanpith Award, consider the following statements:
  1. The award is given for literary work in Indian languages only.
  2. The award is open only for Indian citizens.Which of the statements given above is/are correct?
  - a) 1 only
  - b) **2 only**
  - c) Both 1 and 2
  - d) Neither 1 nor 2
5. With reference to Lok Adalat, consider the following statements:
  1. It is a component of Alternative Dispute Resolution.
  2. It has a constitutional status.
  3. It deals with only civil matters.Which of the statements given above is/are correct?
  - a) **1 only**
  - b) 2 and 3 only
  - c) 1 and 2 only
  - d) 1, 2 and 3