

GOVERNANCE**2021 State of the Education Report for India: UNESCO**

On the Occasion of the World Teachers' Day (5th October), the United Nations Educational, Scientific and Cultural Organization (UNESCO) launched its 2021 State of the Education Report (SOER) for India: "No Teacher, No Class".

Key Points**About:**

- The findings are largely based on analysis of Periodic Labour Force Survey (PLFS) and the Unified District Information System for Education (UDISE) data (2018-19).
- It aims to serve as a reference for enhancing the implementation of the National Education Policy (NEP) and towards the realization of the Sustainable Development Goal (SDG) 4 (target 4c on teachers). **Target 4c:** By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States.

Findings of the Report:

- **Lack of Teachers:** There are nearly 1.2 lakh single-teacher schools in the country of which an overwhelming 89% are in rural areas. The report projects that India needs 11.16 lakh additional teachers to meet the current shortfall.
- **Performance of States (Women Teachers):** Tripura has the least number of women teachers, followed by Assam, Jharkhand and Rajasthan. Chandigarh leads the chart followed by Goa, Delhi, Kerala.
- **Increase in Number of Teachers in Private Sector:** The proportion of teachers employed in the private sector grew from 21% in 2013-14 to 35% in 2018-19. The Right to Education Act stipulates that the Pupil-Teacher Ratio (PTR) should be 30:1 in classes 1-5 and 35:1 in higher grades.
- **Lack of Digital Infrastructure:** The overall availability of computing devices (desktops or laptops) in schools is 22% for all India, with rural areas seeing much lower provisioning (18%) than urban areas (43%). Access to the internet in schools is 19% all over India - only 14% in rural areas compared to 42% in urban areas.
- **Increment in Gross Enrolment Ratio (GER):** For elementary schools, it has increased from 81.6 in 2001 to 93.03 in 2018-19 and stands at 102.1 in 2019-20. GER is the number of students enrolled in a given level of education, regardless of age, expressed as a percentage of the official school-age population corresponding to the same level of education. Overall retention is 74.6% for elementary education and 59.6% for secondary education in 2019-20.

Recommendations:

1. Increase the number of teachers and improve working conditions in North Eastern states, rural areas and 'aspirational districts'.
2. Increase the number of physical education, music, art, vocational education, early childhood and special education teachers.
3. Value the professional autonomy of teachers.
4. Build teachers' career pathways.
5. Provide teachers with meaningful Information and Communication Technology (ICT) training.
6. Develop teaching governance through consultative processes, based on mutual accountability.

Initiatives Taken

1. NIPUN Bharat Mission
2. NISHTHA 2.0 (Teachers' Training Programme)
3. New National Education Policy (NEP), 2020
4. Sarva Shiksha Abhiyan
5. PM Poshan Scheme
6. Right To Education (RTE) Act, 2009
7. Beti Bachao Beti Padhao

ECONOMY**PM MITRA Parks**

Recently, the Union Cabinet approved the setting up of seven Mega Integrated Textile Region and Apparel (PM MITRA) Parks at an outlay of Rs. 4,445 crore. The MITRA park aims to integrate the entire textile value chain from spinning, weaving, processing/dyeing, printing to garment manufacturing at one location.

Key Points**About:**

- PM MITRA park will be developed by a Special Purpose Vehicle which will be owned by the Central and State Government and in a Public Private Partnership (PPP) Mode.
- Each MITRA Park will have an incubation centre, common processing house and a common effluent treatment plant and other textile related facilities such as design centres and testing centres.
- The Master Developer will not only develop the Industrial Park but also maintain it during the concession period.

Funding:

- Under the scheme, the centre will provide development capital support for the development of common infrastructure of Rs 500 crore for each greenfield MITRA park and upto Rs 200 crore for each brownfield park. Greenfield describes a completely new project that has to be executed from scratch, while a brownfield project is one that has been worked on by others.

Eligibility for Incentives:

- An additional Rs 300 crore will be provided as Competitiveness Incentive Support for the early establishment of textiles manufacturing units in each of these parks.
- Investors who set up “anchor plants” that employ at least 100 people will be eligible for incentives of upto Rs 10 crore every year for upto three years.

Significance:

- **Reduce Logistics Cost:** It will reduce logistics cost and strengthen the value chain of the textile sector to make it globally competitive.
 1. High logistics costs are considered a key hurdle to India's goal of boosting textile exports.
 2. India had witnessed disruption in supply of key raw materials from China in the recent past as global supply chains got affected during the pandemic.
- **Generate Employment:** Each MITRA park is expected to directly generate 1 lakh jobs and indirectly generate a further 2 lakh jobs.
- **Attract FDI:** The parks are crucial to attract Foreign Direct Investment (FDI). From April 2000 to September 2020, India's textile sector received Rs 20,468.62 crore of FDI, which is just 0.69% of the total FDI inflows during the period.

Other Related Initiatives:

- The Production Linked Incentive Scheme for man-made fibre segment (MMF) apparel, MMF fabrics and ten products of technical textiles for five years has been approved.
- A National Technical Textiles Mission has already been launched to promote research and development in that sector.

SOCIAL ISSUE**Demand for Right to Health**

Recently, the demand for the enactment of a legislation on the right to health has been revived in Rajasthan. The health activists have affirmed that the law would streamline medical services and guarantee the availability of essential facilities to citizens.

Key Points**About:**

- **Right to Health:** The right to health, as with other rights, includes both freedoms and entitlements:
 1. Freedoms include the right to control one's health and body (for example, sexual and reproductive rights) and to be free from interference (for example, free from torture and non-consensual medical treatment and experimentation).

2. Entitlements include the right to a system of health protection that gives everyone an equal opportunity to enjoy the highest attainable level of health.
 - **Significance:**
 1. The people are entitled to the right to health and it puts a compulsion for the government to take steps toward this.
 2. Enables everyone to access the services and ensures that the quality of those services is good enough to improve the health of the people who receive them.
 3. Protects people from the financial consequences of paying for health services out of their own pockets and reduces the risk of people getting pushed into poverty.
 - **Challenges:**
 1. The existing public primary health care model in the country is limited in scope. Even where there is a well-functioning public primary health centre, only services related to pregnancy care, limited childcare and certain services related to national health programmes are provided.
 2. Expenditure on public health funding has been consistently low in India (approximately 1.3% of GDP).
 - ✓ As per OECD, India's total out-of-pocket expenditure is around 2.3% of GDP.
 - ✓ The government is committed to spend 2.5% of GDP on health by 2025.
 - Sub-optimal health system. Due to this, it is challenging to tackle Non-communicable Diseases, which is all about prevention and early detection.
 1. It diminishes preparedness and effective management for new and emerging threats such as pandemic like Covid-19.

Obligations of Government:

- **Constitutional:**
 - 1) Fundamental Rights: Article 21 of the Constitution of India guarantees a fundamental right to life & personal liberty. The right to health is inherent to a life with dignity.
 - 2) Directive Principles of State Policy (DPSP): Articles 38, 39, 42, 43, & 47 put the obligation on the state in order to ensure the effective realization of the right to health.
- **Judicial Pronouncements:**
 - 1) The Supreme Court in Paschim Bangal Khet Mazdoor Samity case (1996) held that in a welfare state, the primary duty of the government is to secure the welfare of the people and moreover it is the obligation of the government to provide adequate medical facilities for its people.
 - 2) In Parmanand Katara Vs Union Of India (1989) judgement, the Supreme Court had ruled that every doctor whether at a government hospital or otherwise has the professional obligation to extend his services with due expertise for protecting life.
- **International Commitments:** Universal Declaration of Human Rights: India is a signatory of the Article 25 of the Universal Declaration of Human Rights (1948) by the United Nations. It grants the right to a standard of living adequate for the health and well-being of humans including food, clothing, housing and medical care and necessary social services.

Way Forward

- The health should be shifted to the Concurrent list of the seventh schedule under the Constitution. Presently, 'Health' is under the State List.
- There is a need for a Developmental Finance Institution (DFI) dedicated to healthcare investments.
- A comprehensive public health legislation incorporating the right to health may be passed by the Parliament.
- There is a need to create a designated and autonomous agency to perform the functions of disease surveillance, information gathering on the health impact of policies of key non-health departments, maintenance of national health statistics, enforcement of public health regulations, and dissemination of information to the public.

2. First Malaria Vaccine: Mosquirix

Recently, the World Health Organisation (WHO) endorsed the world's first Malaria Vaccine in the hope that it will spur stalled efforts to curb the spread of the parasitic disease. Malaria is a life-

threatening disease caused by parasites that are transmitted to people through the bites of infected female Anopheles mosquitoes. It is preventable and curable.

Key Points

About:

- RTS,S/AS01, trade name Mosquirix, is an injectable vaccine targeting *P. falciparum*, the most prevalent malaria strain in Africa. It is the first and only vaccine to show partial protection in young children. It was developed by British drugmaker GlaxoSmithKline in 1987.
- The active substance in Mosquirix is made up of proteins found on the surface of the *Plasmodium falciparum* parasites (PFP). RTS,S aims to trigger the immune system to defend against the first stages of malaria when the PFP enters the human host's bloodstream through a mosquito bite and infects liver cells.
- It also helps protect against infection of the liver with the Hepatitis B virus.

Potency:

- The vaccine's effectiveness at preventing severe cases of malaria in children is only around 30%, but it is the only approved vaccine. The European Union's drugs regulator approved it in 2015, saying its benefits outweighed the risks.
- Its side effects are rare, but sometimes include a fever that may result in temporary convulsions.

Challenges:

- **Inconvenient:** A child must receive four injections before age 2, sometimes at intervals that do not match the routine vaccine schedules for most other diseases.
- **Partly Effective:** Testing in more than 10,000 African children from 2009 to 2014 showed that, even after four doses, the vaccine prevented only about 40% of detectable malaria infections.
- **Not Long Lasting:** It is unclear how long even those relatively low levels of protection last; previous trials followed vaccinated children for four years. Experts also worry that parents whose children are vaccinated will become less vigilant about using mosquito nets, and less likely to seek medical care when their children develop fevers.
- **Develop Resistance:** The vaccine reduced the occurrence of severe malaria by about 30%, and the occurrence of severe anemia - a complication that often kills children - by about 60%. It did not protect well against parasite strains that were poor genetic matches, raising a concern that, over time, parasites could evolve resistance to the vaccine as they have to drugs.

Burden of Malaria:

Global:

- In 2019, there were an estimated 229 million cases of malaria worldwide, and the estimated number of malaria deaths that year stood at 4,09,000.
- Children aged under 5 years are the most vulnerable group affected by malaria in 2019, they accounted for 67% (2,74,000) of all malaria deaths worldwide.

India:

- In 2019, India had an estimated 5.6 million cases of malaria compared to about 20 million cases in 2020, according to WHO.

Countries that Eliminated Malaria:

- Over the last two decades, 11 countries have been certified by the WHO Director-General as malaria-free: United Arab Emirates (2007), Morocco (2010), Turkmenistan (2010), Armenia (2011), Sri Lanka (2016), Kyrgyzstan (2016), Paraguay (2018), Uzbekistan (2018), Algeria (2019), Argentina (2019), and El Salvador (2021).
- Countries that have achieved at least 3 consecutive years of zero indigenous cases of malaria are eligible to apply for the WHO certification of malaria elimination.

Way Forward

The next steps for the WHO-recommended malaria vaccine will include funding decisions from the global health community for broader rollout in endemic countries, and country decision-making on whether to adopt the vaccine as part of national malaria control strategies.

IMPORTANT FACTS FOR PRELIM
Nobel Prize for Chemistry, 2021

The 2021 Nobel Prize in Chemistry was awarded to Benjamin List and David MacMillan for the development of asymmetric organocatalysis. Last year, the honour went to Frenchwoman Emmanuelle Charpentier and American Jennifer Doudna, for developing the gene-editing technique known as CRISPR-Cas9 - DNA snipping "scissors".

Nobel prizes in physics and medicine for 2021 have already been announced.

Key Points
About the Development:

- They have developed a new and ingenious tool for molecule building: **organocatalysis**.
- Many research areas and industries are dependent on chemists' ability to construct molecules that can form elastic and durable materials, store energy in batteries or inhibit the progression of diseases. This work requires catalysts.
- **According to researchers, there were just two types of catalysts available:** metals and enzymes. Catalysts are any substance that increases the rate of a reaction without itself being consumed.
- **In 2000, they, independent of each other, developed a third type of catalysis.** It is called asymmetric organocatalysis and builds upon small organic molecules.

Significance:

- Its uses include research into new pharmaceuticals and it has also helped make chemistry greener.
- Both these sets of catalysts (metals and enzymes) had limitations.
- Heavier metals are expensive, difficult to mine, and toxic to humans and the environment.
- 1. Despite the best processes, traces remained in the end product; this posed problems in situations where compounds of very high purity were required, like in the manufacture of medicines.
- 2. Also, metals required an environment free of water and oxygen, which was difficult to ensure on an industrial scale.
- Enzymes on the other hand, work best when water is used as a medium for the chemical reaction. But that is not an environment suitable for all kinds of chemical reactions.

Organocatalysis:

- Organic compounds are mostly naturally-occurring substances, built around a framework of carbon atoms and usually containing hydrogen, oxygen, nitrogen, sulphur, or phosphorus.
- Life-supporting chemicals like proteins, which are long chains of amino acids (carbon compounds containing nitrogen and oxygen) are organic.
- Enzymes are also proteins, and therefore, organic compounds. These are responsible for many essential biochemical reactions.
- Organocatalysts allow several steps in a production process to be performed in an unbroken sequence, considerably reducing waste in chemical manufacturing.
- Organocatalysis has developed at an astounding speed since 2000. Benjamin List and David MacMillan remain leaders in the field, and have shown that organic catalysts can be used to drive multitudes of chemical reactions. Using these reactions, researchers can now more efficiently construct anything from new pharmaceuticals to molecules that can capture light in solar cells.

Asymmetric Organocatalysis:

- The process called asymmetric organocatalysis, has made it much easier to produce asymmetric molecules - chemicals that exist in two versions, where one is a mirror image of the other.
- Chemists often just want one of these mirror images - particularly when producing medicines - but it has been difficult to find efficient methods for doing this.
- Some molecules with mirror versions have different properties. An example is the chemical called carvone, which has one form that smells like spearmint and a counterpart that smells like the herb, dill.
- Different versions of the same molecule might have different effects when ingested. Then it becomes important to be able to make only the mirror image of a drug that has the desired physiological effect.

2. New Tiger Reserve: Chhattisgarh

Recently, the National Tiger Conservation Authority (NTCA) has designated the combined areas of the Guru Ghasidas National Park and Tamor Pingla Wildlife Sanctuary as a Tiger Reserve. NTCA is a statutory body under the Ministry of Environment, Forests and Climate Change, established in 2005 for strengthening tiger conservation.

Key Points

About:

- It is located in the northern part of Chhattisgarh, bordering Madhya Pradesh and Jharkhand.
- Approval was granted under Section 38V(1) of the Wildlife (Protection) Act, 1972.
- This will be the fourth Tiger Reserve in Chhattisgarh, after the Udanti-Sitanadi, Achanakmar and Indravati Reserves.

Significance:

- Guru Ghasidas National Park was the last known habitat of the Asiatic cheetah in the country.
- It connects Jharkhand and Madhya Pradesh and provides a corridor for tigers to move between the Bandhavgarh (Madhya Pradesh) and Palamau Tiger Reserves (Jharkhand).

Guru Ghasidas National Park:

• About:

1. Named after the Satnami reformist hero of the place, Guru Ghasidas, is the result of the carving of Chhattisgarh from Madhya Pradesh in the year of 2000. It is located in the Koriya district of Chhattisgarh.
2. The park has undulating topography and it falls under the Tropical climate zone.

• Biodiversity:

1. Flora: The vegetation consists mainly of mixed deciduous forest with teak, sal and bamboo trees.
2. Fauna: Tiger, Leopard, Chital, Nilgai, Chinkara, Jackal, Sambar, Four-horned Antelope etc.

Tamor Pingla Wildlife Sanctuary:

• About:

1. It is located in the Surajpur district of Chhattisgarh bordering Uttar Pradesh. It is named after Tamor hill and Pingla Nalla.
2. Tamor hill and Pingla Nalla are considered to be the old and prominent features of the sanctuary area.

• Biodiversity:

1. Flora: Mixed deciduous forests dominate the sanctuary. Sal and bamboo forests are seen all through.
2. Fauna: Tigers, Elephants, leopards, bears, sambar deer, blue bulls, chital, bison and many such animals are found here.

DAILY ANSWER WRITING PRACTICE

Qns. In the context of Supreme court ruling on fire-crackers, can green crackers lead its way to an alternative and clean replacement of conventional firecrackers? Comment. (250 words)

Ans:

Introduction

In October 2018, in a landmark judgment, the Supreme Court of India mandated the use of green crackers for Deepavali, prescribing specific norms for the manufacture. Last year, 'green crackers' were made available in markets, though the reach has been limited. These are milder avatars of traditional firecrackers in terms of the sound and smoke generated when burnt. Thus, making it important for us to have an understanding of what are Green Crackers.

Body

Green crackers: Overview

- Indian Council of Scientific and Industrial Research (CSIR) has developed green crackers, which are new and improved formulations of the previous sound-emitting crackers and other fireworks.
- These crackers are named as follows: –
 1. Safe Water Releaser (SWAS), which minimises Potassium Nitrate and Sulphur use, but matches the sound intensity of conventional crackers;
 2. Safe Minimal Aluminium (SAFAL), where Aluminium use is low and

3. Safe Thermite Crackers (STAR) with low Sulphur and Potassium Nitrate.
 - These crackers are to be identified using unique QR codes to guide consumers.
 - The Supreme Court had also previously ordered that the Petroleum and Explosives Safety Organisation should certify the composition of fireworks only after being assured that they were not made of banned chemicals.

WHAT ARE 'GREEN CRACKERS'?

Firecrackers that have "less dangerous" and "less harmful" chemicals than conventional ones

Being Developed by
CSIR's National Environmental Engineering Research Institute

Production after they are approved by Petroleum and Explosives Safety Organisation (PESO)

Green Because

- ▶ They have a chemical formulation that produces water molecules
- ▶ This substantially reduces emission level and absorbs dust
- ▶ Is basically a light and sound show that produces lower emissions
- ▶ Promise **30-35% reduction** in particulate matter, nitrous oxide and sulphur oxide

Also In The Works
E-CRACKERS BEING DEVELOPED BY CSIR'S CENTRAL ELECTRONICS ENGINEERING RESEARCH INSTITUTE

OTHER INITIATIVES

- Crackers with lower aluminium to reduce emissions substantially
- 'Anar' or flower pot made using eco-friendly material that can reduce particulate matter by 40%
- Bijli crackers that eliminate use of ash as desiccants
- Firecrackers without antimony, lithium, mercury, arsenic and lead as directed by PESO last year

Council of Scientific and Industrial Research

Benefits of green crackers

- They are less harmful and less dangerous than the conventional ones. They are the crackers with reduced emission and decibel level.
- They are known as 'green' firecrackers because they have a chemical formulation that produces water molecules, which substantially reduces emission levels and absorbs dust.
- It promises a reduction in particulate matters and harmful gases, like nitrous oxide and sulphur oxide, by 30- 35 per cent.
- The green crackers will be 25-30 per cent cheaper to manufacture and manufacturers would not have to make any changes in their facilities.
- Components in firecrackers are replaced with others that are less dangerous and less harmful to the atmosphere.
- Broadly, it avoids the use of ash or filler materials and use charcoal as per specifications by Petroleum and Explosives Safety Organisation (PESO).

Challenges in implementation and transition to green crackers

- The petitioners belonging to cracker industry argue that out of about 2,000 manufacturers, only 120 had the capacity and inclination to work with the court to green the crackers;
- The claim that cracker industry provides jobs to many and there is no alternate livelihood option, needs to be resolved.
- Evidently, the new cracker formulations have not had many takers. Firecrackers are not labelled with information on the person responsible for legal compliance, as ordered by the court.

- At the recent hearing, the Supreme Court Bench of Justices M.R. Shah and A.S. Bopanna took on record the CBI report and noted that there had been a “flagrant violation” of previous orders. It took note of the large volume of crackers burnt almost every day.
- The fixing of accountability, as to which law implementing body will ensure prevention of burning crackers is still missing.

Conclusion

Sudden transition may affect people’s jobs, but this is needed for sustainability of the planet as well as to preserve people’s health. Government in tandem with all stakeholders must ensure that conventional crackers are banned completely and make sure it is implemented. This way, manufacturers will be forced to switch to green crackers, who can then employ the same people by providing essential skills to their existing workers.

DAILY QUIZ

Q1. Consider the following statements about Election Commission of India (ECI).

1. Since inception, the Election Commission of India is a multi-member body consisting of three election commissioners.
2. Election commissioner or a regional commissioner cannot be removed from office except on the recommendation of the chief election commissioner.
3. They determine the territorial areas of the electoral constituencies throughout the country.

Which of the above statements is/are correct?

- (a) 1 and 2 only (b) 3 only (c) **2 and 3 only** (d) 1 and 2 only

Q2. With reference to Inner Line Permit (ILP), consider the following statements:

1. It is aimed at facilitating cross-border trade and movement of people.
2. It is proposed by the Ministry of Home Affairs (MHA).

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**

Q3. Consider the following statements about the Jal Jeevan Mission:

1. It is under the Ministry of Jal Shakti.
2. It envisages supply of 55 litres of water per person per day to every rural household through Functional Household Tap Connections (FHTC) by 2024.

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

Q4. The United Nations (UN) has six main organs, which one of the following is not the organ of UN?

- a. Economic and Social Council
- b. Trusteeship Council
- c. Secretariat
- d. **International Criminal Court**

Q5. Consider the following statements:

1. Panama Canal connects the Atlantic Ocean with the Pacific Ocean
2. Suez Canal connects the Mediterranean Sea to the Red Sea
3. Kra Canal connects the Gulf of Thailand with the South China Sea

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