

# CURRENT AFFAIRS

## WEEKLY

WEEK: 1

DECEMBER  
2021

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GS-II

- CAATSA SANCTIONS & ITS IMPACT ON THE INDO-US STRATEGIC PARTNERSHIP
- EUROPEAN UNION UNVEILS GLOBAL GATEWAY PROJECT
- ASSISTED REPRODUCTIVE TECHNOLOGY (REGULATION) BILL, 2021
- GERRYMANDERING: A CHALLENGE TO U.S. DEMOCRACY
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- HISTORY ■ TELANGANA'S RAMAPPA TEMPLE RECEIVES MASSIVE FOCUS AFTER UNESCO TAG

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- SCIENCE & TECHNOLOGY ■ ABUNDANCE OF LITHIUM IN STARS
- WORLD AIDS DAY 2021

**GS SCORE**

An Institute for Civil Services

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## — Disclaimer —

The current affairs articles are segregated from prelims and mains perspective, such separation is maintained in terms of structure of articles. Mains articles have more focus on analysis and prelims articles have more focus on facts.

However, this doesn't mean that Mains articles don't cover facts and PT articles can't have analysis. You are suggested to read all of them for all stages of examination.

# CURRENT AFFAIRS ANALYST

WEEK- 1 (DECEMBER, 2021)

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# **SECTION: A**

## **(MAINS)**

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**CURRENT AFFAIRS**

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# STUDY REVEALS A STRONG SOUTHERN OCEAN CARBON SINK: NASA

## CONTEXT:

Observations from research aircraft show that the Southern Ocean absorbs much more carbon from the atmosphere than it releases, confirming it is a very strong carbon sink and an important buffer for the effects of human-caused greenhouse gas emissions, according to a new, NASA-supported study.

## ● BACKGROUND

- In recent years various studies were conducted which suggested the Southern Ocean might be less of a sink than previously thought.
- The present study is led by the **National Center for Atmospheric Research (NCAR)**.
- The new study makes use of observations from research aircraft flown during three field projects over nearly a decade, as well as a collection of atmospheric models, to determine that the Southern Ocean takes up significantly more carbon than it releases.

## ● ANALYSIS

### What has been found?

- The findings provide clarity about the role the icy waters surrounding Antarctica play in buffering the impact of increasing greenhouse gas emissions.

- The research also highlights the power that airborne observations have to reveal critical patterns in the global carbon cycle.
- Airborne measurements show a drawdown of CO<sub>2</sub> in the lower atmosphere over the Southern Ocean surface in summer, indicating carbon uptake by the ocean.
- The findings highlight the importance of aircraft-based observations to understand carbon cycling.

### About Southern Ocean

- The Southern Ocean is a body of salt water covering the portions of the world ocean and tributary seas surrounding Antarctica below 60° S.
- It is also known as the Austral Ocean or the Antarctic Ocean.
- The Southern Ocean is indeed a significant carbon sink -- absorbing a large amount of the excess carbon dioxide emitted into the atmosphere by human activities.



**What is the basis of measurement?**

- Those studies relied on measurements of ocean acidity – which increases when ocean water absorbs CO<sub>2</sub> – taken by instruments that float in the ocean.
- When CO<sub>2</sub> is absorbed by seawater, a series of chemical reactions occur resulting in the increased concentration of hydrogen ions.
- This increase causes the seawater to become more acidic and causes **carbonate ions** to be relatively less abundant.

**Carbonate ions**

- **Carbonate ions** are an important building block of structures such as sea shells and coral skeletons.
- Decreases in carbonate ions can make building and maintaining shells and other calcium carbonate structures difficult for calcifying organisms such as oysters, clams, sea urchins, shallow water corals, deep sea corals, and calcareous plankton.

- Ocean acidification is affecting the entire world's oceans, including coastal estuaries and waterways.

**How Oceans act as a carbon sponge?**

- When human emissions of CO<sub>2</sub> enter the atmosphere, some of that gas is absorbed by the ocean, slowing the rise in global temperature and climate change.
- Cold water from the deep ocean rises to the surface through a process called upwelling.
- Once at the surface, that colder water absorbs CO<sub>2</sub> in the atmosphere – often with the help of photosynthesizing organisms called phytoplankton – before sinking again.

**◎ CONCLUSION**

As society continues to emit more CO<sub>2</sub>, understanding the location, scale and variability of carbon sinks is crucial to understand the future trajectory of climate change, and evaluating the impact of future emission reductions measures and CO<sub>2</sub> removal technologies.

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# EUROPEAN UNION UNVEILS GLOBAL GATEWAY PROJECT

## CONTEXT:

Recently, the European Commission has announced a plan, called Global Gateway, to mobilize EURO 300 billion by 2027 in public and private infrastructure investment around the world.

Although the plan doesn't mention China, it is seen as a response to China's Belt and Road strategy.

## ◎ BACKGROUND

- The EU has a long track record as a trusted partner to deliver sustainable and high quality projects, taking into account the needs of its partner countries and ensure lasting benefits for local communities, as well as the strategic interests of the European Union.
- Now, this new initiative, **Global Gateway** is about increasing investments promoting democratic values and high standards, good governance and transparency, equal partnerships, green and clean, secure infrastructures and that catalyse private sector investment.

**Better World** will mutually reinforce each other.

### Build Back Better World (B3W)

- The B3W, as it is called, is an international partnership aimed at supporting projects related to climate, health, digital technology and gender equality in developing countries.

## ◎ ANALYSIS

### What is Global Gateway Project?

- It is the new European Strategy to boost smart, clean and secure links in digital, energy and transport and strengthen health, education and research systems across the world.
- It stands for **sustainable and trusted connections** that work for people and the planet-
  - ▶ to tackle the most pressing global challenges, from climate change and protecting the environment
  - ▶ to improving health security
  - ▶ boosting competitiveness and global supply chains
- Global Gateway aims to mobilize up to **€300 billion in investments between 2021 and 2027** to underpin a lasting global recovery, taking into account our partners needs and EU's own interests.
- The project will probably extend the remit of the European Fund for Strategic Investment, or create a similar institution, which can act as a guarantor for riskier investments in the 'Global South'.
- The EU has indicated it especially wants to compete for infrastructure development projects in Africa.
- Global Gateway and the **US initiative Build Back**

### How will it be implemented?

- Through a **Team Europe** approach, Global Gateway will bring together the EU, Member States with their financial and development institutions, including the European Investment Bank (EIB), and the European Bank for Reconstruction and Development (EBRD).
- It will seek to mobilise the private sector in order to leverage investments for a transformational impact.
- The EU delegations around the world, working with Team Europe on the ground, will play a key role to identify and coordinate Global Gateway projects in partner countries.
- Under the overall steer of the president of the Commission, the high representative/vice-president of the Commission, the commissioners for international partnerships and neighbourhood and enlargement will take forward the implementation of Global Gateway, and promote coordination among all actors.

### Why EU's strategic calculus behind "Global Gateway" as an alternative to China's BRI?

- The Global Gateway (GG) represents the intentions of EU policy actions, strategies and declarations designed to reflect, and produce, a viable alternative to the BRI.
- There is growing apprehension in EU policy circles not only of the extent of the BRI's roll-out but also of the economic, social, political, and diplomatic side-effects it is garnering, especially in parts of the world where the EU's strategic interests are non-negligible and long-standing.



- For example- the **Balkans, North Africa, Sub-Saharan Africa**. The effects have got to the point where they now stand as an affront to the EU's own strategic interest, hence the drive to develop a credible alternative policy avenue to finance the construction of infrastructure in the Global South.

#### Belt and Road Initiative of China

- China launched the Belt and Road initiative in 2013.
- China's flagship project aims to develop land and sea infrastructure to better connect China to Asia, Europe and Africa for trade and development.
- Global endeavor:** 39 countries in sub-Saharan Africa have joined the initiative, as well as 34 in Europe and Central Asia, 25 in East Asia and the Pacific, 18 in Latin America and the Caribbean, 17 in the Middle East and North Africa, and six in South Asia.
  - These 139 members of BRI, including China, account for 40 percent of global GDP.
- Sixty-three percent of the world's population lives within the borders of BRI countries.

#### Criticisms of China's BRI initiative

- BRI project has been heavily criticized by the western world for the following reasons:
  - A part of China's debt trap policy
  - A tool for China to **influence poorer countries**.
  - An attempt to develop New Colonialism** or the Marshall Plan for the 21<sup>st</sup> century

#### India opposition to China's BRI plan

- India has been boycotting the BRI to protest over the \$60 billion CPEC being laid through the **Pakistan-occupied Kashmir (PoK)**.
  - The inclusion of **China-Pakistan Economic Corridor (CPEC)**, which passes through **Pakistan-occupied Kashmir (PoK)**, as a flagship project of 'OBOR/BRI', reflects lack of appreciation of India's concerns on the issue of sovereignty and territorial integrity.
- India is of the firm belief that connectivity initiatives must be based on universally recognized international norms and must follow principles of openness, transparency and financial responsibility and must be pursued in a manner that respects sovereignty, equality and territorial integrity of nations.

#### What are the differences between Global Gateway and BRI in terms of market access and quality standards?

- Transparency in procurement process:** The main difference will be noticeable in terms of the way contracts will be tendered, with an emphasis on transparency in the procurement process.
- More focus towards individual's (country) freedom:** More emphasis in EU's proposal is placed on the financial, environmental, and social sustainability of awarded contracts and projects. Keeping in mind the consideration for individual "dignity and freedom."
- However, like China's leadership leaned on the country's strong overseas presence in the world of infrastructure to devise a united strategic heading under the aegis of the BRI.
- Through the GG, the EU is attempting once again to breathe life back into its global infrastructure footprint.

#### How can Global Gateway attract countries already participating in the BRI?

- This must be the most contentious aspect of GG and a lot will ride on the EU institutions' plans for it.
- EU policymakers do seem to have finally come to terms with the comparative weakness of the EU's infrastructure financing schemes in relation to the BRI.
- That weakness is largely connected to the EU's preference for associating financing with conditionality, whether political or bureaucratic.
- GG forms part of an attempt by the European Commission to render the EU's model leaner and better suited to the needs of its partners on the demand-side of the equation.
- EU's stand to "take a values-based approach, offering transparency and good governance to our partners" can be emphasized upon in a targeted manner.

#### How Global Gateway would function alongside the OECD-led "Blue Dot Network"?

- GG is effectively the EU's very own version of the "Blue Dot Network." Their respective values dovetail one another: financing projects which are open and inclusive, transparent, economically viable, financially, environmentally, and socially sustainable
- Both initiatives are compliant with international standards, laws, and regulations.
- This is simply the result of a sustained recognition

in the West of the need to devise a plan to counter the BRI, which has taken on a multiplicity of forms: policy responses of an individual, such as the EU's "Connecting Europe and Asia" strategy etc.

long-term commitment to the sustainable recovery in each of our partner countries.

## ◎ CONCLUSION

- The Global Gateway Strategy is Europe's offer to build partnerships of equals, which reflect Europe's

- Global Gateway builds on the achievements of the 2018 EU-Asia Connectivity Strategy, the recently concluded Connectivity Partnerships with Japan and India, as well as the Economic and Investment Plans for the Western Balkans, the Eastern Partnership, and the Southern Neighbourhood.

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# CAATSA SANCTIONS & ITS IMPACT ON THE INDO-US STRATEGIC PARTNERSHIP

## CONTEXT:

The first S-400 unit is likely to be delivered to India by the end of this year. However, the US \$5.5bn deal for five long-range surface-to-air missile systems between India and Russia, to deter China, has another component—United States—as deliberations continue on whether New Delhi should get a waiver from the Countering American Adversaries Through Sanctions Act (CAATSA).

## ◎ BACKGROUND

- In 2018, India had signed a USD 5 billion deal with Russia to buy five units of the **S-400 air defence missile systems**, despite a warning from the then Trump administration that going ahead with the contract may invite US sanctions.
- The US has already imposed sanctions on Turkey under the CAATSA for the purchase of a batch of S-400 missile defence systems from Russia.
- Following the US sanctions on Turkey over the procurement of S-400 missile systems, there were apprehensions that Washington may impose similar punitive measures on India.

### S-400 missile system

- The S-400 is a mobile, surface-to-air missile system (SAM) designed by Russia.
  - It is a successor to the S-200 and S-300 air defence systems.
  - It integrates the 91N6E multi-function panoramic radar with a 600 km range, autonomous detection and targeting systems and launchers.
  - It can fire four missile types with strike ranges of between 400 km and 40 km to provide multi-layered defence against incoming fixed wing and rotary aircraft, unmanned aerial vehicles (UAVs) and ballistic missiles at altitudes of up to 30 km.
  - The S-400 is organised around the 30K6E administration system, with protection against jamming.
  - It can simultaneously locate 72 targets and track another 160 alongside, compared with PAC-3s 36 and 125 respectively.
- Russia has been one of India's key major suppliers of arms and ammunition.

## ◎ ANALYSIS

### What is CAATSA?

- Passed in August 2017, the **Countering America's Adversaries Through Sanctions Act (CAATSA)** provides for sanctions by the US against countries that do business with Moscow.
- It targets countries that buy major defence systems from Russia. America wanted to punish Russia for the annexation of Crimea in 2014 and the alleged interference in the American presidential election in 2016.
- CAATSA seeks to undermine Russia's defence and intelligence sectors and deny Moscow her share of the international military hardware market.
- The US has targeted Russia's defence exports and the oil and gas sectors because together, they contribute a major chunk to that nation's exports.

### Is US also concerned about the sanctions?

- Interestingly, India is not the only one that is worried about CAATSA.
- The US administration, too, fears that these sanctions -- if they are not waived -- would undermine the strategic/diplomatic investment it has made on India.

### What justifies an exemption for India? (Thing US must remember)

- **A strong tool to counter China:** The USA should remember that a militarily strong India with support from Russia can be an effective deterrence against China and any steps contrary to it may hinder Washington's ambitions to partner with India as a counter-balance to Beijing.
- India is not an adversary and is not in any formal alliance with the US and, unlike Turkey, India's is not a NATO signatory. As a strategic partner, India is not obligated to the US in the same manner as Ankara is.
- **Impact on relationship:** Any move to impose sanctions on India under CAATSA could threaten

America's relationship with India, a potential partner in counterbalancing China.

- **Aligned objectives:** The US and India are aligned in several crucial areas:
  - a free and open Indo-Pacific
  - anti-terrorism
  - ending the pandemic
  - resilient global supply-chains, trade, cyber security, space, education, climate change
  - commitment to democracy
- **India's growing influence:** India's crucial role as part of the "Quad" grouping and its pivotal role in the Indo-Pacific region cannot be ignored.
- **Acknowledging close relationship:** US have to acknowledge the close defence relationship shared by India and Russia before threatening the former with sanctions.

### How 'dependent' is India on Russia?

- Russia provided nearly two-thirds (62 percent) of all Indian arms imports.
- The Naval fleet is almost entirely of Russian origin, while the Army is dependent for spares, particularly for its Main Battle Tanks.
- The wide-ranging relationship also includes joint production of the Brahmos missile, mass production of AK-203 rifles, and licensed production of Sukhoi-30s among others.

### Why India 'chooses' Russia?

- In contrast to the United States, Russia's technology is more compatible with India's arsenal, making

it an attractive and more convenient option for India.

- Joint production and transfer of technology are some of the most valuable aspects of the India-Russia defence relationship.
- Russia's technology, combined with India's low production cost, supports India's effort to indigenize its weapons.

### What if US actually put sanction on India?

#### Sanctions would:

- **Impact of cooperation:** It would put on hold the Major Defense Partnership the two countries share, derail Quad cooperation
- **Negative effect on sectors:** It will have a negative ripple effect on more than 40 ongoing dialogues between the two democracies, including those related to: defense trade, military exercises, and vaccine diplomacy
- **Further push towards Russia:** It would push India back to Russia as a preferred and reliable source of weapons, increasing rather than decreasing the strength of Russia's defense sector
- **Strengthening China:** It would weaken a common front deterring China's most destabilizing activity in the region
- **Cut-off market for US:** It would cut off India's critical long-term market for the U.S. defense industry.
- **Public backlash:** The public backlash would place a political chill on relations, and it is unlikely that the damage would be limited to the defense sector.

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# GERRYMANDERING: A CHALLENGE TO U.S. DEMOCRACY

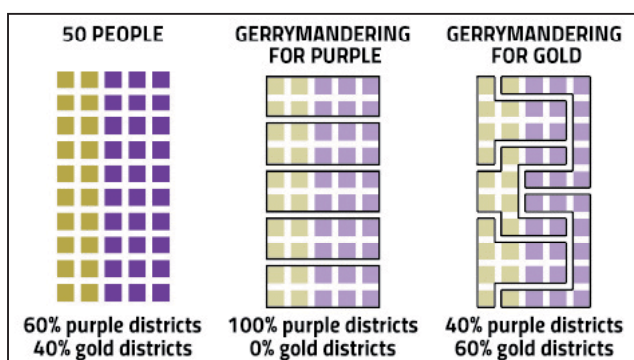
## CONTEXT:

Recently, the results of the 2020 census of the US population were released. Following this, the use of Gerrymandering was made in all legal constituencies of the U.S. Congress and the District every decade.

## ● ANALYSIS

### What is Gerrymandering?

- Gerrymandering or redistricting is the process of redrawing electoral boundaries. However, this work has been criticized for undermining democracy in the US.
- The objective behind redefining is to ensure that the election of government officials includes the purpose of real democracy, by transforming the spread of the human world.
- Gerrymandering, this name is derived from the name of Gov. Elbridge Gerry of Massachusetts, his superiors passed a law in 1812 defining new states of the senate.



### Why is it a threat in US democracy?

- Gerrymandering empowers extremism in both parties by creating noncompetitive districts in which politicians have to worry about winning only primary elections.
- It diminishes minority representation because districts with high minority populations are often broken apart to reduce their voting power.
- It rejects one of the core values and promises of our country: that politicians answer to the people, not the other way around.

### How this concept can be compared to India?

- India is a parliamentary democracy with elections being held to national and state legislature every five years. Elections are held on a first-past-the-

post basis in explicitly demarcated electoral constituencies.

- **Delimitation Commission:** Political restrictions are administered by the Boundary Commission of India or Delimitation Commission. Delimitation is an act of redrawing the boundaries of Lok Sabha and the seats of the Assembly to represent the changes in the people. In this process, the number of seats allocated to the state can also change.
- **Indian Constitution:**
  - ▶ Under Article 82 of the Indian Constitution, the Demarcation Commission was established by the Central Government after Parliament passed the Demarcation Act after the census.
  - ▶ Under Article 170, states are further geographically subdivided under the Boundaries Act after each census.
- **Delimitation Commissions till date:** Boundary Commissions have been suspended four times - 1952, 1963, 1973 and 2002 under Acts 1952, 1962, 1972 and 2002.
  - ▶ The first demarcation work was done by the President (with the help of the Electoral Commission) in 1950-51. There were no cuts after the 1981 and 1991 censuses.
- The **42nd Amendment Act of 1976** banned the allocation of seats in Lok Sabha provinces and the division of each State into districts until 2000 at the 1971 level.
- In addition, the **Amendment Act 84 of 2001** extended this ban to amendment for another 25 years (that is, until 2026), without compromising the total number of seats based on those persons in 1971.
- The **84th Amendment Act of 2001** also empowered the government to effect the restructuring and rehabilitation of polling stations in the provinces on the basis of the 1991 census.
- Later, the **87th Amendment Act of 2003** provided for the determination of polling stations based on the 2001 census and not the 1991 census.
- Therefore, the current state of border crossing in India is frozen until 2026 as the census in 2001.

**Delimitation Commission**

- Delimitation literally means the act or process of fixing limits or boundaries of territorial constituencies in a country or a province having a legislative body.
  - The Delimitation Commission in India is a high power body whose orders have the force of law and cannot be called in question before any court.
- These orders come into force on a date to be specified by the President of India in this behalf.
  - The copies of its orders are laid before the House of the People and the State Legislative Assembly concerned, but no modifications are permissible therein by them.
  - **Composition:** Retired Supreme Court judge, Chief Election Commissioner, Respective State Election Commissioners

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# ASSISTED REPRODUCTIVE TECHNOLOGY (REGULATION) BILL, 2021

## CONTEXT:

Recently, Lok Sabha passed the Birth Control Bill, 2021 which aims to regulate and assist reproductive technology clinics and banks, prevent the misuse of technology and promote ethical services.

## ● ANALYSIS

### Key-Highlights of the ART (Regulation) Bill, 2021

- **Definition of ART:** Under the Bill, ART will include all methods that attempt to detect pregnancy by carrying sperm or oocyte (an immature egg) outside the human body, and transmitting the gamete or embryo into the female reproductive system.
- **Establishment of ART Banks:** The Bill defines an ART bank as an organization established to provide sperm or semen, oocyte, or oocyte donors to ART clinics or their patients.
- **ART Clinical Management:** The Bill provides for the establishment of a National Register of Clinics and Banks, which will serve as a database of all clinics and banks in the country. The Registry will provide registration at ART clinics that will be valid for five years and renewable for another five years. Registration may be cancelled or terminated if the organization violates the provisions of the Bill.
- **National and State Boards:** The Bill also provides for the establishment of National Boards and Government Marriages to regulate ART services. The National Board will advise the Central Government on policy matters relating to assisted reproductive technology.
- **ART Service Provider Rules:** ART procedures can only be performed with the informed consent of both the person seeking ART services and the gamete provider.
- **Rights of the Child Born on ART:** The Bill provides that a child born with the help of reproductive technology will be considered a natural child of an authorized couple and that child will be entitled to all the rights and privileges available to the natural child only from the authorized couple under any law currently in force.
- **Pre-implantation implantation:** The bill stipulates that pre-implant genetic testing will be used to test an embryo for any known, pre-existing, genetic, or genetic diseases. The National Board will set pre-installation conditions.

- **Cases:** Cases under this bill include clinics that provide sex selection, abandonment or exploitation of children born with ART, trafficking, buying, or importing human embryos and abusing a couple or donors involved in any way. Proposed prison sentences for offenses range from five to 12 years, with fines ranging from Rs 5 lakh to Rs 25 lakh.

### What is Assisted Reproductive Technology (ART)?

- Assisted Reproductive Technology (ART) incorporates medical procedures used primarily to address infertility.
- It includes oral contraceptives that treat a woman's egg and a man's sperm.
- **Examples of ART services include**
  - gamete donation (sperm or oocyte)
  - in-vitro-fertilization (egg fertilization)
  - pregnancy (the baby is not biologically related to the baby mother)

### What are the rules regarding the use and acquisition of gametes and embryos?

- A woman cannot be treated with gametes or embryos taken from more than one man or woman during one treatment cycle
- The clinic cannot mix sperm in two people for these procedures
- The foetuses should not be separated and used to combine twins to increase value
- The donor's gamete or embryo should be stored for a period not exceeding 10 years.
- Otherwise, there will be regulations for harvesting oocytes or embryos. For example, a person who donates an oocyte would be a woman who is always married and has at least one living child under the age of three. In addition, he can donate oocytes only once in his lifetime, and no more than seven oocytes should be collected from him.

### What is the need for an ART Control Bill?

- **ART growth:** ART market size is expected to reach \$ 45 billion by 2026 (as per market speculation). Among Asian countries, India's ART market is ranked third. Undoubtedly, this too has led to the crisis in legal, social, and moral issues. The bill is important to protect women and children affected by abuse. In addition, about 80% of ART clinics in India are not registered. Therefore, to control unethical processes, ART control is essential.
- **Recommendations of Parliamentary Select Committee:** The select committee that reviewed the Surrogacy Control Bill said it would be prudent to introduce the ART Bill before the Births Bill to establish a system for regulating ART clinics.

**Note:** Surrogacy is a form of infertility treatment where a third party is involved and that third person, the woman, will be the mother of the spouse. For ART, it is not always necessary for a third party to be involved.

### What are the benefits of the ART Control Bill?

- **Evaluation of ART procedures:** India does not currently have standard ART clinics currently available. The passage of this bill will ensure the universal implementation of ART throughout India.
- **Prevent patient abuse:** The bill provides provisions to protect the rights of donors, an authorized couple and children born without ART. Therefore, it is unlikely that violators will operate within the system and exploit patients for maximum profit.
- **Protect reproductive rights:** Without the registration and proper website of medical facilities and clinics that provide ART services, it is not possible to control services such as the discovery and termination of Medical Pregnancy.

Therefore, the ART Regulation Bill will complement other related legislation and simplify reproductive rights.

### What are the challenges associated with the ART Control Bill?

- **Excludes:** The bill does not include lesbians, gays, lesbians, or transgender people (LGBTQ) or unmarried men (the Bill includes single women) in exercising the right to ART,
- **Lack of support for the poor:** As ART procedures are expensive, the bill does not provide access to ART technology for the poor and disadvantaged sections. Therefore, the bill violates Article 14 (equality before the law and equal protection of the law) of the Constitution.
- **Many bodies:** Both the ART Act and the Surrogacy Bill aim to establish multiple themes, which may result in duplication or lack of control.

### What should the government do?

- **Make the bill inclusive:** The bill should include LGBTQIA + single men in the ambit. In addition, ART service providers should establish informal ethics committees and accredited counselling services within their facilities.
- **Cost control:** The cost of the process should be monitored successfully so that even the poor can benefit. In addition, the government can establish ART facilities at selected public hospitals to help the poor and marginalized.
- **Consider the Surrogacy Bill and the ART Bill together:** The Acquisition Arbitration Bill and the ART Bill were pending in Rajya Sabha. It would be good if both Bills are considered together before they are passed. So the government must consider itself together.

Thus, all constitutional, ethical, medical and legal and regulatory grievances must be addressed prior to the passing of the ART Control Bill.

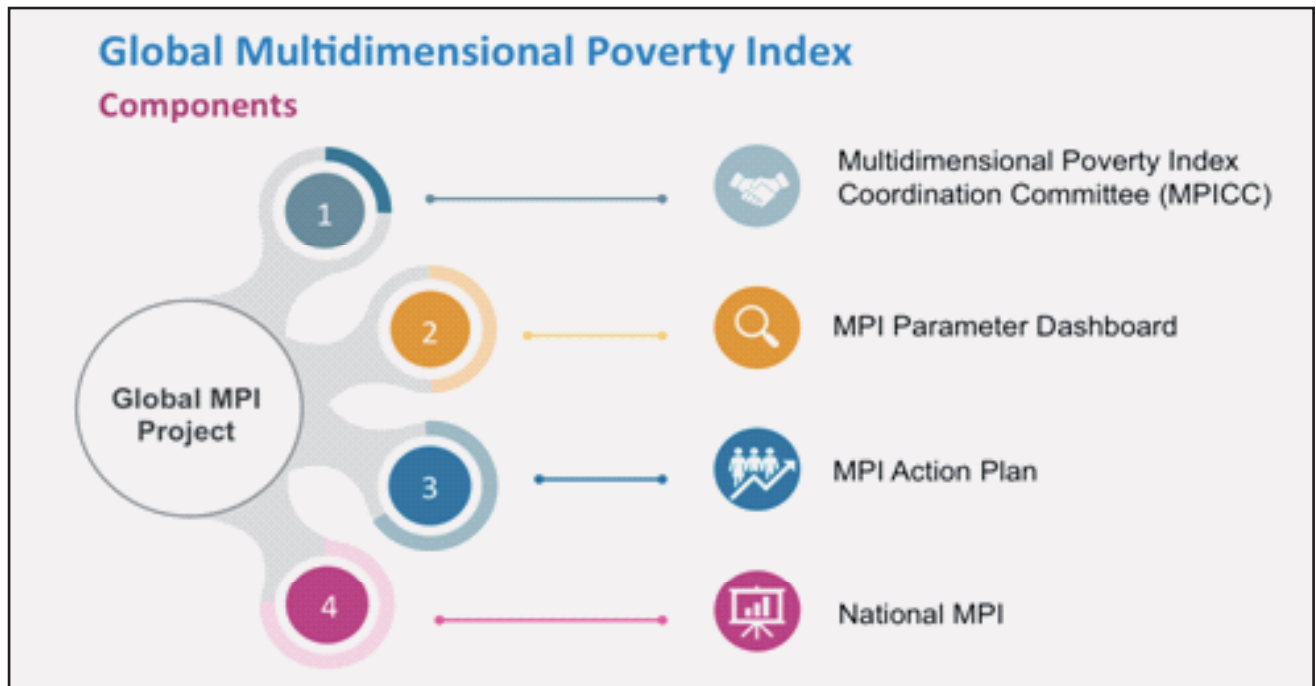
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# NATIONAL MULTIDIMENSIONAL POVERTY INDEX: NITI AAYOG

## CONTEXT:

The government think tank NITI Aayog has released the National Multidimensional Poverty Index (MPI).



### What is Global Multidimensional Poverty Index 2021?

- **Earlier published by:** Earlier, the Global Multidimensional Poverty Index 2021 was released by the United Nations Development Program (UNDP) and the Oxford Poverty & Human Development Initiative (OPHI).
- **Aim:** MPI aims to measure poverty in all its many aspects and actually complements existing poverty statistics based on individual spending expenditures.
- **Global MPI:** According to the Global MPI 2021, the Indian standard is 66 out of 109 countries. National MPI aims to eliminate the global MPI and create a global-oriented MPI for India to design broad-based Transformation Programs with the ultimate goal of improving India's position at Global MPI levels.
- **Dimension:** It has three equal dimensions - health, education and standard of living.
- **Categories:** These three categories are represented by 12 indicators such as food, schooling, schooling years, drinking water, sanitation, housing, bank accounts among others.
- **Approach:** The national MPI scale uses an internationally accepted and dynamic approach developed by the Oxford Poverty and Human Development Initiative (OPHI) and UNDP.
- **Base year:** This basic report of the national MPI rating is based on the 2015-16 National Family Health Survey (NFHS-4).
- **Why NFHS-4:** NFHS-4 data was used to identify the concept of various basic poverty to determine the situation before the full introduction of centralized government programs.
- **Indicators:** NFHS-4 preceded the full implementation of programs (of central government) affecting housing, drinking water, sanitation, electricity, cooking oil, investment, and other major efforts to improve schooling, nutrition, maternal and child health, etc.
- **Suggestion:** However, it should be noted here that NFHS-5 data suggests improvements in access to clean cooking fuel, sanitation, and electricity which means a reduction in demand.

### Key-Findings of the Index:

- **Poverty Levels:**

- ▶ Bihar has the highest number of people in the country followed by Jharkhand and Uttar Pradesh who are poor in terms of rank.
- ▶ Kerala has registered the poorest poverty rates, followed by Pondicherry, Lakshadweep, Goa and Sikkim.
- ◉ **Malnourished People:** Bihar also has the highest number of malnourished people, followed by Jharkhand, Madhya Pradesh, Uttar Pradesh, and Chhattisgarh.

### India's performance

- ◉ Under the Cabinet Secretary's **Global Indices for Reforms and Growth (GIRG)** initiative, the country's performance is being monitored across 29 global indices including
  - ▶ Human Development Index (HDI)
  - ▶ Global Hunger Index (GHI)
  - ▶ Global Competitiveness Index (GCI)
  - ▶ Human Capital Index (HCI)
  - ▶ Global Innovation Index (GII), among others
- ◉ This exercise is aimed at leveraging the monitoring mechanism of important social, economic, and other internationally recognised indices, enabling the utilisation of these indices as tools for bringing about reforms to improve outcomes and correspondingly reflect them in India's performance in these indices globally.
- ◉ **NITI Aayog** is the nodal Ministry for the Multidimensional Poverty Index (MPI). According to Global MPI 2021, India's rank is 66 out of 109 countries.

### Importance of the index

- ◉ **Contribution to Establish a Community Policy Tool:** The development of the Index is an important contribution to the development of a social policy tool that monitors various poverty, informing evidence-based and focused interventions, thus ensuring that no one is left behind.
- ◉ **Showing All Image of Poverty:** This paints a complete picture of poverty in the country, and also provides an in-depth and in-depth analysis of the areas of interest such as districts - regions or regions, as well as specific sectors and complementing financial poverty statistics available.
- ◉ **Assistance in Achieving the SDGs:** It is a contribution to measuring progress towards the 1.2 Sustainable Development Goals (SDGs) aimed at reducing "at least half of men, women and children of all ages living in poverty in all its aspects."

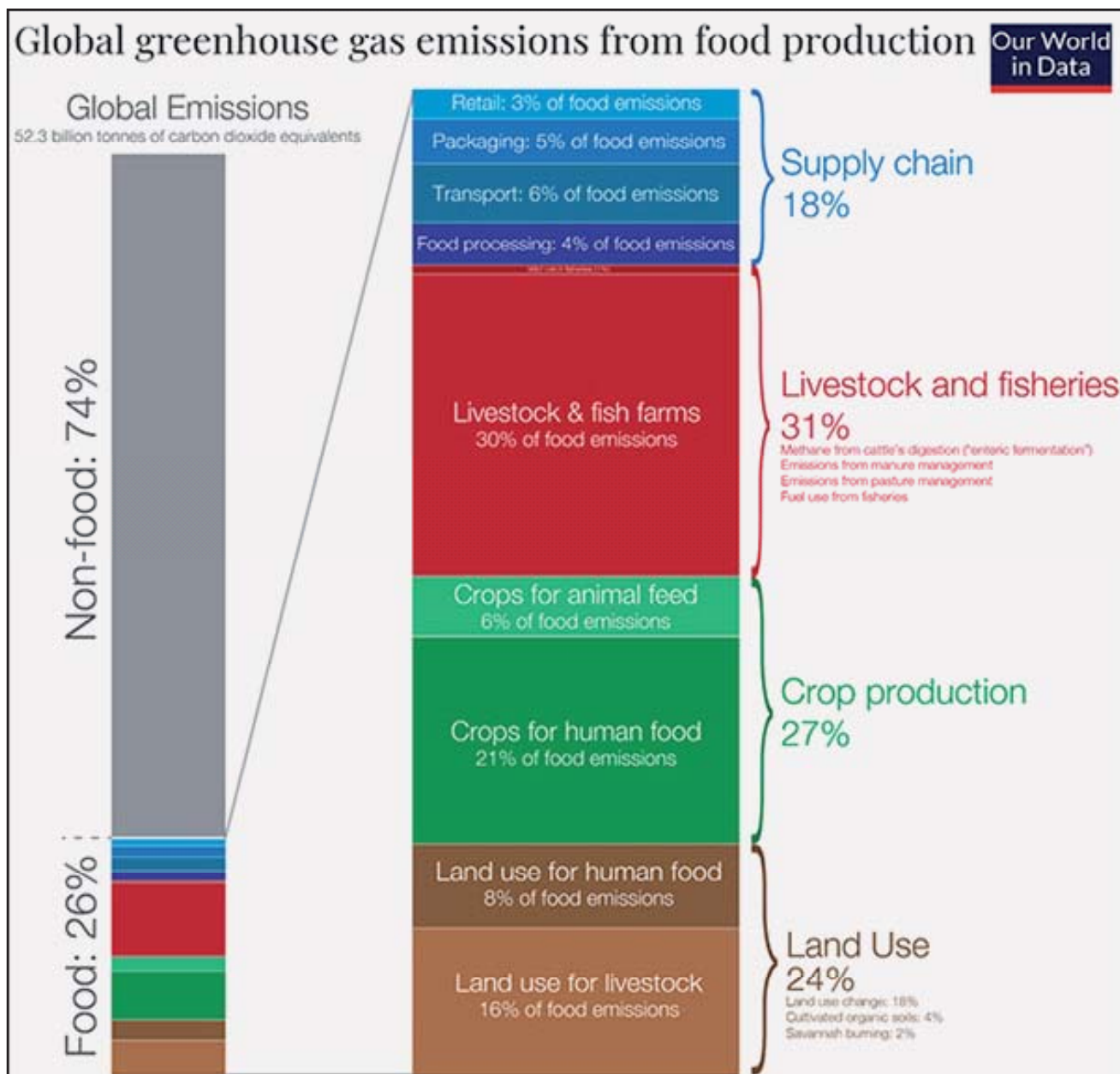
However, Preliminary observations from NFHS 5 (2019-20) suggests improvement in access to clean cooking fuel, sanitation, and electricity which translates to reduction in deprivation. Additionally, the State reports released for 22 States and UTs suggest reduction in deprivation in school attendance, drinking water, bank accounts and housing. These improvements indicate an overall direction of significant reduction in the incidence of multidimensional poverty in the forthcoming index based on NFHS 5 (2019-20) household micro data.

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## GLOBAL NUTRIENT REPORT 2021

### CONTEXT:

According to a recent report by the Global Nutrition Report (GNR, 2021), India has made little progress in terms of 'anaemia' and 'child abuse'.



### Important Findings

- **Global Food Targets:** With the current level of progress, global targets will not be achieved by 2025 globally and in many countries around the world.
- **Variation in Data Access:** There are significant differences in data availability and progress in targeting global nutrition in 194 countries. Only

seven countries are on track to meet four of the six nutritional goals for mothers, infants and young children by 2025, and no country is 'on track' to stop the growth of obesity in adults or to achieve a 30% reduction in salt / sodium intake. .

- **Impact of Covid-19:** The Covid-19 epidemic is hindering progress toward achieving global nutrition goals. An estimated 155 million more people have been thrown into extreme poverty

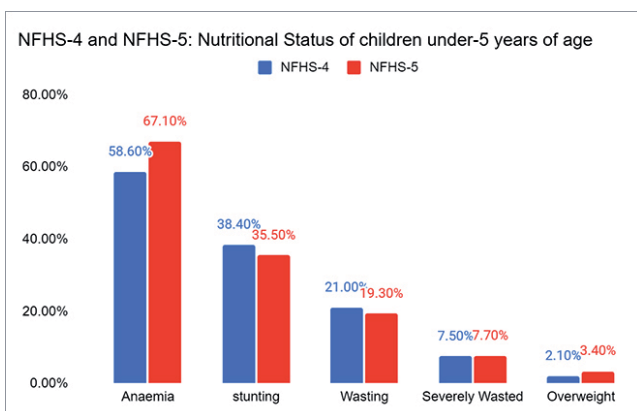
worldwide, and people with food borne illness are experiencing side effects of Covid-19.

- **Small Food Development Developments:** The last ten years have seen little progress in food development, and a quarter of all deaths among adults are due to malnutrition.
- **Greenhouse Gas Emissions Worldwide:** Food production currently produces more than a third of all greenhouse gases worldwide, and it uses a large and growing amount of natural resources.
- **Principles of Sustainable Development:** No region is in the process of meeting the Sustainable Development Goals aimed at limiting the health and environmental risks associated with food and the food system.

### Global Nutrition Targets

- In 2012, the World Health Assembly (the decision-making body of the World Health Organization) identified six nutrition targets to be met by 2025. These are:
- Reduce stunting by 40% in children under 5.
- Reduce the prevalence of anaemia by 50% among women in the age group of 19-49 years.
- Ensure 30% reduction in low-birth weight.
- Ensure no increase in childhood overweight.
- Increase the rate of exclusive breastfeeding in the first six months up to at least 50%
- Reduce and maintain childhood wasting to less than 5%.

### Data Related to India



- **Indian Women with Anaemic:** More than half of Indian women 15-49 years old have anaemia. There has been an increase in Indian women with anaemia from 2016 from 52.6% to 53% by 2020.
- **Child Abuse:** More than 17% of Indian children under the age of 5 are affected. India is also

among the 23 countries that have made little or no progress in reducing 'child abuse'. Waste means children who are underweight for their height.

- **Child Surprise:** More than 34% of children under the age of 5 are still affected. India is among 53 countries 'on the road' to meet the challenge of hardship. Toughness is defined as the minimum length of years.
- **Childhood Obesity:** The country is among 105 countries 'on track' to meet the goals of 'childhood obesity'.
- **India Conference Targets:** India meets 7 of the 13 global targets of nutritious foods including sodium, high blood pressure (both men and women), obesity (both men and women) and diabetes (both men and women).

### Reason for lacking behind

- **Inequality and social exclusion:** In recent years, India has become self-sufficient in grain production and has enjoyed steady economic growth. Despite this success, there is no alleviation of poverty, food insecurity and malnutrition in the country.
  - In a report, WFP revealed, almost 21.25% Indian population lives on USD 1.90/day with a huge spectrum of inequality and social exclusion.
- **Growing prevalence of food insecurity:** In 2019, India had 6.2 crore more people living with food insecurity, which increased by 3.8% between 2014 and 2019. The COVID 19 pandemic and subsequent lockdown has made food insecurity worse by disrupting the food distribution system across large parts of India.
- **Inadequate focus:** In 2019, NITI Aayog's 'Strategy for New India @ 75' report found that India's main nutrition program platform, **Integrated Child Development Services (ICDS)** has inadequate focus on the first 1000 days of the child's life. This report argued that the program mainly delivers services to children aged 3 to 6 years old, whereas children under 2 to 3 years of age should be given the highest priority to ensure optimum growth and development among young children.
- **Poor implementation of PDS System:** There are persistent problems in India's PDS such as fake supply of ration cards leaving the poor left out, selling the commodities on the open market, not supplying permitted amounts of food grains by the fair price shops, replacing good quality food grains with cheap varieties, etc.

### Suggestions to meet the target

- **Holistic approach:** The first step for India to

combat the dual burden of malnutrition, nutrition inequality, and food insecurity is to fill the gaps in the nutrition composition of the daily diet.

- **Maintaining good diet:** Ensuring sustainable eating by adding nutrient-dense, climate-smart crops such as millets to the Indian daily diet could be rewarding in preventing nutritional deficiency and diet related NCDs.
- **Policy initiatives** are urgently needed to transform the existing food system by involving all stakeholders.

- **More finance** is needed to meet additional requirements to address pandemic-induced nutritional loss.
- **Monitoring:** At the same time India needs a better data management system, greater accountability in the food distribution system, efficient resource management, adequate nutrition education, reinforcement of manpower and systematic monitoring to aim at achieving global nutrition targets by 2030.

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# FRAMEWORK AGREEMENT A HURDLE IN NAGA PEACE ACCORD

## CONTEXT:

The 2015 Framework Agreement between the Centre and the National Socialist Council of Nagalim (Isak-Muivah) to finalise the Naga Peace Accord is now turning out to be the key stumbling block in reaching an agreement between the two sides and finding a permanent solution to the longstanding Naga issue.

## ◎ BACKGROUND

- The government has been negotiating with
  - **National Socialist Council of Nagaland (IM)**, the most prominent Naga group fighting the Indian state since the 1970s
  - **Naga National Political Groups (NNPG)**, an umbrella of about seven outfits
- The Indian state has been negotiating with Naga rebels since 1997 but reached a breakthrough in 2015 when they signed a framework agreement with NSCN (IM) and another agreement with NNPG in 2017.
- But no final arrangement has been reached till now.

## ◎ ANALYSIS

### The bone of contention

- The Naga conflict is rooted in the year-old Naga Nationalism, according to which many Naga groups demanded an independent Nagaland.
- **Declaration of independent Nagaland:** On August 14 1947, **Naga National Council NCC** led by **Angami Zapu** declared independent Nagaland.
  - **Establishment of Naga Army:** In 1952, Zapu established the **Naga Federal Government** and **Naga Federal Army**.
  - **AFSPA:** This was met with a military response by the Indian state and AFSPA was enacted in the region.
- **Shillong Accord:** In the 1970s, dialogue was initiated to resolve the issue and in 1976 the **Shillong Accord** was signed.
  - However, the accord was rejected by prominent NNC leaders, since they were not ready to accept complete Indian sovereignty.
- In the early 1980s top Naga Leaders like Isak Chishi Swu, Thuingaleng Muivah, S S Khaplang left NNC and formed the National Socialist Council of Nagaland NSCN.

### The State Profile

- Nagaland borders the State of Assam, Arunachal Pradesh, Manipur and Burma, inhabited by 16 major tribes and various sub-tribes.
- The Naga tribes always had socio-economic and political links with tribes in Assam and Myanmar.
- The **British East India Company** took control of Assam in 1826. By 1892, all of Nagaland except the Tuensang area was governed by the British.
- It was politically amalgamated into Assam, which was a part of the province of Bengal for long periods.
- In 1957, the Naga Hills became a district of Assam.
- Statehood was officially granted in 1963 and the first state-level democratic elections were held in 1964.



### The 2015 Agreement

- Naga Leaders like Isak Chishi Swu, Thuingaleng Muivah, S S Khaplang left NNC and formed the **National Socialist Council of Nagaland (NSCN)**.

- ▶ Their aim was to establish a sovereign Naga state.
- In 1988 the group split into two
  - ▶ NSCN (IM) led by Muivah and Isak
  - ▶ NSCN(K) led by Khaplang
- After many rounds of talk, the group signed a framework agreement for the **Naga Peace Accord** in August 2015.

### What are the roadblocks in the peace process?

- **Adamant demands:** The Naga leaders seem adamant about their demands. These demands appear to be the roadblock in the peace process. The NSCN (IM) in particular remained adamant on its stance of:
  - ▶ shared sovereignty
  - ▶ greater Nagalim i.e stretching the borders beyond the state of Nagaland
  - ▶ a separate constitution and separate flag
- **Different views on interpretation:** It is said that both sides differed on the interpretation of the framework agreement.

#### Involved groups

- Currently, groupings like the NNPG—which includes outfits like the Federal Government of Nagaland and the Naga Nationalist Council—and NSCN-K, along with NSCN-IM, are involved in the peace talks.

### Why issues are still persistent in Nagaland?

- **Support from locals:** Ethnic identity has been critical in sustaining armed movements in the region and even within individual states. The local population often supports militant groups because they are seen as protectors of the ethnic identity.
- **Taking advantage of agreement:** A large number of armed groups are now in ceasefire agreements with the government. This has helped reduce violence, but there has also been a downside because of the very generous terms of some of the agreements.
  - ▶ As an example, the NSCN (IM) has been permitted to establish camps in Nagaland and

Manipur where they carry arms and almost run a parallel government. The Suspension of Operations (SoO) agreement with the Kuki groups in Manipur, now 16 years old, has created exclusive camps for them, and the government pays a stipend for each member of the group.

- Some groups under ceasefire have taken advantage of the agreements to continue with fundraising and extortion, often with greater impunity because they feel they are now shielded from government actions.

#### Violence in Northeastern India

- Insurgency-related violence in the Northeastern states has significantly declined since its peak in the 2008-09 period.
- According to data from the South Asian Terrorism Portal, insurgency-related deaths in Assam, Nagaland and Manipur have decreased from 1,070 in 2008 to 17 in 2020.
- However, as is often the case in internal conflicts, the absence of violence is not an automatic indicator of normalcy.

### What are the pathways to resolve conflicts?

- **Assimilation:** There is need for assimilation by stressing that an emphasis on ethnic identity weakens the idea of a cohesive nation that should serve as the primary ideological beacon.
- **Empowerment, reconciliation and autonomy:** There could also be accommodation of diversity by meeting the aspirations of different groups through political empowerment, reconciliation and grant of autonomy.
- **Cultural understanding:** An understanding of cultures and identity and their role in promoting conflicts in the region must be at the heart of finding ways to bring lasting peace.

### ◎ CONCLUSION

At present, the ball is the government's court. The various Naga groups seem to be united in their demand that what has been committed in the framework agreement should be taken to its logical conclusion.

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# DEMANDS FOR REMOVAL OF IMPORT DUTY ON COTTON

## CONTEXT:

Tamil Nadu chief minister recently urged the Indian government to remove 11 per cent import duty on cotton.

### ◎ BACKGROUND

- Textile industry is the second largest employment provider in the state and Tamil Nadu accounts for 1/3rd size of the textile business of the country.
- Due to this, a large number of apparel and textile units may soon become unviable resulting in closure and consequent large-scale unemployment and industrial unrest, Stalin was quoted as saying by a news agency.
- Earlier, Cotton Association of India (CAI) has expressed concerns of India losing its competitiveness to China, Pakistan and Bangladesh in the international market.
- With 10 per cent customs duty on cotton varieties including extra-long staple (ELS), the export-oriented garments and cotton-made-up become costlier thereby giving an edge to the close competitors.

### ◎ ANALYSIS

#### What are the major demands?

- Removal of 11 per cent import duty on cotton.
- Revamp' of the commercial terms and conditions prescribed by the CCI for e-auction of cotton by reducing the minimum lot size to 500 bales which is sustainable for the MSMEs.
- Extension 5 per cent interest subvention to spinning mills for procurement.

#### Reasons for the demand

- One of the major reasons for the cotton price volatility is the imposition of 5 per cent basic customs duty (BCD), 5 per cent agriculture infrastructure development cess (AIDC) and 10 per cent social welfare cess in the budget 2021-22.
- Another reason for spurt in cotton prices is the bulk discount offered by the Cotton Corporation of India (CCI) to the traders who procured almost 70 per cent of Minimum Support Price (MSP) cotton auctioned by CCI at a lower rate during the cotton season due to availability of 90 days free period and thereafter speculated the market.

- The present crisis has led to mass cancellation of export orders and hardships in fulfilling long term export commitments.
- If the import duty is not removed, our domestic prices will go up further and create more hardship to the domestic textile sector viz. spinning, weaving and garment industry.

#### Present scenario of cotton cultivation in India

- India has the distinction of having the largest area under cotton cultivation which is about 42% of the world area under cotton cultivation between 12.5 million hectares to 13.5 million hectares.
- India is one of the largest producers of cotton in the world accounting for about 26% of the world cotton production. The yield per kgs hectare which is presently 459 kgs/ha is still lower against the world average yield of about 757 Kgs /ha.
- Cotton production is expected to reach 37.10 million bales and consumption is expected to reach 114 million bales in FY21—13% growth over the previous year.
- The production of raw cotton in India is estimated to have reached 35.4 million bales in FY20<sup>^</sup>. During FY19, production of fibre in India stood at 1.44 million tonnes (MT) and reached 2.40 MT in FY21 (till January 2021), while that for yarn, the production stood at 4,762 million kgs during same period.
- India's home textile exports grew at a healthy rate of 9% in FY21 despite the pandemic.

#### Indian cotton production zones

- The planting period of cotton normally is from March to September, while the harvesting period is from October to February. There are mainly three cotton-producing zones in India, such as:
  - Northern zone (Hirsutum and Arboreum Zones)**, comprising Punjab, Haryana and Rajasthan.
  - Central zone (Hirsutum, Arboreum, Herbaceum and Hybrid Zones)**, comprising Maharashtra, Madhya Pradesh and Gujarat.



- **Southern zone (Hirsutum, Arboreum, Herbaceum, Barbadense and Hybrid Zones)** comprising Andhra Pradesh, Karnataka and Tamil Nadu.
- About 70% of total cotton are produced in Gujarat, Maharashtra and Andhra Pradesh. The northern region produces short and medium staple cotton, the southern region normally produces long staples cotton, while the central region produces long and medium staples. The peak marketing season for the crop is during November to March.

### **Technology Mission on Cotton**

- Technology Mission on Cotton was launched in February, 2000 with the objective to increase cotton production, productivity and improvement in cotton quality, to increase the income of cotton growers and ensuring abundant supply of quality cotton to the textile mills.
- Since then, the TMC is being implemented through its four Mini Missions (MM) for achieving the above objectives.
  - **Mini Mission-I** deals with the research and development of cotton production technologies and Indian Council of Agricultural Research (ICAR) is the nodal agency for its implementation.

- **Mini Mission-II** deals with extension & development activities for increasing production and productivity, which is being implemented by the Department of Agriculture & Cooperation.
- **Mini Mission III** deals with the objectives of improvement of marketing infrastructure through setting up new market yards and activation/ improvement of existing market yards.
- **Mini Mission-IV** is looking after the modernisation of ginning and pressing factories.
- The Mini Mission-III & IV are implemented by the Ministry of Textiles.

### **◎ CONCLUSION**

India is working on major initiatives, to boost its technical textile industry. Owing to the pandemic, the demand for technical textiles in the form of PPE suits and equipment is on rise. Government is supporting the sector through funding and machinery sponsoring. The future for the Indian textiles industry looks promising, buoyed by strong domestic consumption as well as export demand.

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# ZERO DEFECT ZERO EFFECT SCHEME

## CONTEXT:

According to data shared by MSME ministry, nearly 25000 MSME registration has been done under zero defect, zero effect scheme launched by Prime Minister in October 2016.

## ◎ BACKGROUND

- In India, the MSME industries play as a backbone for the Indian economy as it accounts for 30 percent of the Indian GDP.
- It accounts for 45 percent of the total industrial employment, 50 percent of India's total exports and 95 percent of industrial units of the country.
- Almost 6000 types of products are manufactured in the MSME industries as the data provided by its website.
- These MSMEs need to get themselves registered before establishment. The registration provides the enterprises to avail of financial aid and benefits.
- The financial aids and benefits include low-interest bank loans without any collateral security and Government assistance for the growth of MSME.

## ◎ ANALYSIS

### What is Zero Defect Scheme?

- The scheme is an extensive drive to create proper awareness in MSMEs about ZED manufacturing and motivate them for assessment of their enterprise for ZED and support them.
- After ZED assessment, MSMEs can reduce wastages substantially, increase productivity, expand their market as IOPs, become vendors to CPSUs, have more IPRs, develop new products and processes etc.

### Aim

- The MSMEs can be a part of this scheme by manufacturing goods of certain prescribed standards that could be exported outside.
- The major aim behind the compliance with the standards is that the products shall face good response and acceptance in the global markets.
- The other perks are tax rebates and concessions on the exported goods.

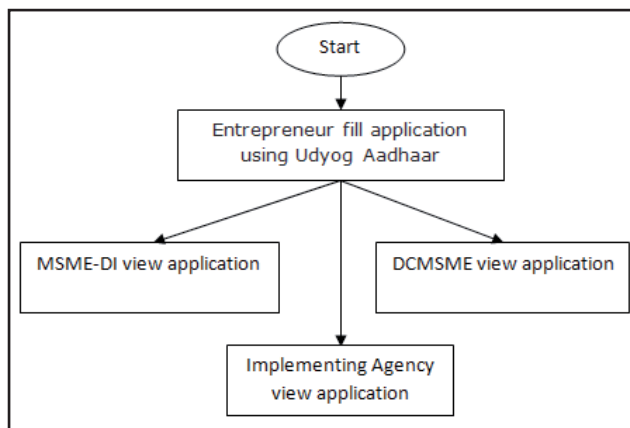
### Objective

The objective of the scheme for promotion of Zero Defect and Zero Effect (ZED) manufacturing amongst micro, small and medium enterprises (MSMEs) and

ZED Assessment for their certification so as to:

- Develop an Ecosystem for Zero Defect Manufacturing in MSMEs.
- Promote adaptation of Quality tools/systems and Energy Efficient manufacturing.
- Enable MSMEs for manufacturing of quality products.
- Encourage MSMEs to constantly upgrade their quality standards in products and processes.
- Drive manufacturing with adoption of Zero Defect production processes and without impacting the environment.
- Support 'Make in India' campaign.
- Develop professionals in the area of ZED manufacturing and certification.

### Flow of scheme



### Implementing unit

- **Quality Council of India (QCI)** has been appointed as the National Monitoring & Implementing Unit (NMIU) for implementation of ZED.
  - ▶ QCI has reported that 3217 MSMEs has been registered as on 25.07.2017 for ZED Certification.
  - ▶ The MSME-wise details are
    - Micro: 1332
    - Small: 1522
    - Medium: 363

**Revised classification of Enterprises**

The revised classification of the enterprises is based on the criteria provided below:

- An enterprise shall be called a micro-enterprise where the investment in machinery and equipment shall be not more than 1 crore rupees and turnover shall be not more than 5 crore rupees.
- An enterprise shall be known as a small-enterprise where the investment in machinery and equipment shall be not more than ten crore rupees and the turnover shall not exceed more than fifty crore rupees.
- An enterprise shall be known as a medium-scale enterprise where the investment in machinery and equipment is not more than fifty crore rupees and the turnover is not more than two-hundred-fifty crore rupees.

**Stages of assessment**

- There are 3 stages of assessment to be ZED certified under five categories — Bronze, Silver, Gold, Diamond, and Platinum.
- Out of 503 MSMEs, 131 were granted Bronze certification, 132 received Silver certification, 62 received Gold certification. Diamond certification was awarded to only four MSMEs.
- The certification cost in grading is subsidised up to 80 per cent of the expenditure by the government and a Rs 5 lakh grant is given to interested MSMEs for improving their rating and adopting measures for moving towards zero effect.

**Parameters for ZED rating**

- There are 50 parameters for ZED rating and additional 25 parameters for ZED Defence rating

under ZED Maturity Assessment Model.

- The MSMEs are provided financial assistance for the activities to be carried out for ZED certification i.e., Assessment / Rating, Additional rating for Defence angle, Gap Analysis, Handholding, Consultancy for improving the rating of MSMEs by Consultants and Re-Assessment / Re-Rating.

**Allocation of fund**

- The fund allocated for the scheme in FY21 stood at 51.75 crore while expenditure was Rs 2.86 crore as of January 11, 2021, as per the MSME Ministry's FY21 annual report.

**Eligibility/Applicability**

- All MSMEs having Udyam Registration and also MSMEs which are included as per executive orders issued by the office of DC, MSME consistent with MSME Act from time to time.

**Nature of Assistance**

- Reimbursement of 80% for Micro, 60 % for Small and 50% for Medium for ZED Certification.

**CONCLUSION**

Micro, Small and Medium Enterprises are the small scale industries that are engaged in manufacturing and service providing. The MSMEs are known as the backbone of the Indian economy as it shares almost one-third of the Indian GDP. The revised process of registration has changed the classification of the MSMEs taking the investment and turnover aspects combined. The enterprises can now undergo registration via the online "Udyog Portal" and avail the benefits provided by the government.

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# IS NUCLEAR ENERGY GOOD FOR THE CLIMATE?

## CONTEXT:

The climate change has shifted the world's focus towards 'nuclear energy' to help wean all economies off polluting fossils fuels. But it creates a heated issue that whether nuclear energy is good for the climate or not.

This brief attempts to analyse the correct nature of nuclear energy and its significance for the climate.

## ◎ BACKGROUND

- Climate change is happening at a faster rate and it is visible in almost all areas.
- The latest figures on global carbon dioxide emissions call into question the world's efforts to tackle the climate crisis.
- CO<sub>2</sub> emissions are set to soar 4.9% in 2021, compared with the previous year, according to a study published earlier this month by the **Global Carbon Project (GCP)**.
- In 2020, emissions dropped 5.4% due to the COVID-19 pandemic and associated lockdowns.
- The energy sector continues to be the largest emitter of greenhouse gases, with a share of 40% — and rising.
- This raises the demand of an alternative source of energy which is good for the climate.

### What is nuclear energy?

- Nuclear energy comes from splitting atoms in a reactor to heat water into steam, turn a turbine and generate electricity.

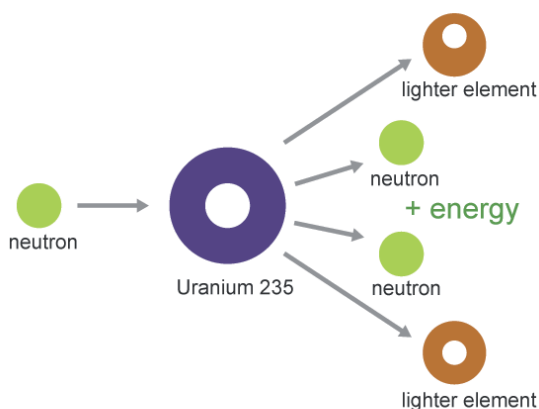
### Atoms

- Atoms are the tiny particles in the molecules that make up gases, liquids, and solids.
- Atoms themselves are made up of three particles called protons, neutrons, and electrons.
- An atom has a nucleus (or core) containing protons and neutrons, which is surrounded by electrons.
- Protons carry a positive electrical charge, and electrons carry a negative electrical charge. Neutrons do not have an electrical charge.

### What are the benefits of Nuclear Energy?

- Nuclear energy offers many advantages and its unique value cannot be found in any other energy source.
- Protection of national security:** Leadership in nuclear energy maintains safety and nonproliferation standards globally, supports a resilient electrical grid at home, and fuels a strong navy.
- Solution for climate change.** It provides large amounts of 24/7 carbon-free electricity now (approximately), which is irreplaceable in protecting the environment.
- Reduction in air pollution:** Nitrogen oxide, sulfur dioxide, particulate matter and mercury; all things are present in polluted air. Nuclear energy provides power 24/7 without a trace of those pollutants (approximately).
- Production of electricity reliably.** Around-the-clock electricity is a must for our nation to prosper in the 21st century and nuclear energy helps in maintaining that.
- Employment generation:** Nuclear energy provides more than 100,000 well-paid, long-term jobs and supports local economies with millions of dollars in state and local tax revenues.
- Nuclear boosts international development:** Nuclear energy helps developing nations meet sustainable development goals.

### How fission splits the uranium atom



Source: Adapted from National Energy Education Development Project (public domain)

- **Nuclear powers electric vehicles.** Electrified transportation promises to reduce carbon emissions. When powered by carbon-free nuclear energy, electric vehicles can reach their full potential.
- The benefits of nuclear energy extend far beyond carbon-free electricity too. Nuclear powers space exploration, sterilizes medical equipment, provides potable water through desalination, supplies radioisotopes for cancer treatment and much more.

### Is nuclear power really a zero-emissions energy source?

- The answer is no. Nuclear energy is also responsible for greenhouse gas emissions. In fact, no energy source is completely free of emissions, but more on that later.
- **Transportation and processing:** When it comes to nuclear, **uranium extraction**, transport and processing produces emissions.
- **Construction & demolition of plants:** The long and complex construction process of nuclear power plants also releases CO<sub>2</sub>, as does the demolition of decommissioned sites.
- **Nuclear waste:** And, last but not least, nuclear waste also has to be transported and stored under strict conditions — here, too, emissions must be taken into account.

- At COP26, environmental initiative **Scientists for Future (S4F)** presented a paper on nuclear energy and the climate.
- The group came to a very different conclusion.
- Taking into account the current overall energy system, nuclear energy is by no means CO<sub>2</sub> neutral.

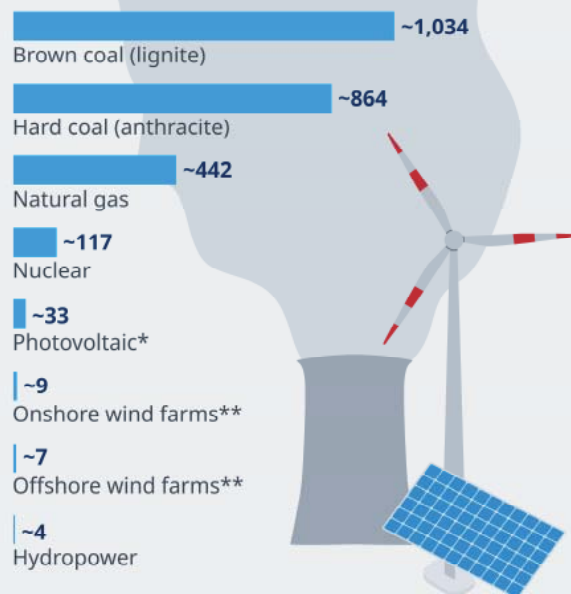
### How much CO<sub>2</sub> does nuclear power produce?

- The results vary significantly, depending on whether only the **process of electricity generation** is considered, or take into account the **entire life cycle of a nuclear power plant**.
- A report released in 2014 by the **UN's Intergovernmental Panel on Climate Change (IPCC)**, for example, estimated a range of **3.7 to 110 grams of CO<sub>2</sub> equivalent per kilowatt-hour (kWh)**.
- It's long been assumed that nuclear plants generate an average of 66 grams of CO<sub>2</sub>/kWh.
- New power plants, for example, generate more CO<sub>2</sub>

during construction than those built in previous decades, due to stricter safety regulations.

### How does electricity affect the environment?

CO<sub>2</sub> equivalent (gram per kilowatt-hour)\*



\* complete life cycle

\*\* solar panels using silicon

\*\*\* most recent generation of wind turbines

Source: German Environment Agency (Umweltbundesamt) 2020, WISE

### How climate-friendly is nuclear compared to other energies?

- If the entire life cycle of a nuclear plant is included in the calculation, nuclear energy certainly comes out ahead of fossil fuels like coal or natural gas.
- But the picture is drastically different when compared with renewable energy. According to a study
- nuclear power releases 3.5 times more CO<sub>2</sub> per kilowatt-hour than photovoltaic solar panel systems.
- Compared with onshore wind power, that figure jumps to 13 times more CO<sub>2</sub>.
- When up against electricity from hydropower installations, nuclear generates 29 times more carbon.

### Other important arguments against nuclear power

- **Availability issue:** Construction of power plants takes too long to complete and the costs too high to have a noticeable effect on climate change.

It takes too long for nuclear energy to become available.

- **An expensive affair:** Nuclear power plants are about four times as expensive as wind or solar, and take five times as long to build.
- **Blocked financial resources:** Due to the high costs associated with nuclear energy, it also blocks important financial resources that could instead be used to develop renewable energy.

- **Affected by climate change:** In addition, nuclear energy itself has been affected by climate change. During the world's increasingly hot summers, several nuclear power plants have already had to be temporarily shut down or taken off the grid.
- A combination of excessive costs, environmental consequences and lack of public support were all arguments against nuclear power.

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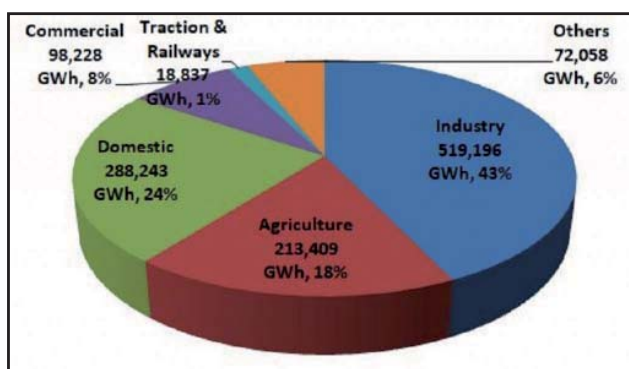


## CENTRE'S DECARBONISATION SCHEME NOT EFFECTIVE ENOUGH: CSE REPORT

### CONTEXT:

New Delhi-based non-profit Centre for Science and Environment (CSE) reports has made findings that only feeble reduction of CO<sub>2</sub> emissions in the thermal sector under Perform Achieve and Trade (PAT) scheme during the last ten years (since 2012).

### ◎ BACKGROUND:



- Thermal power plants (TPP) under this scheme in the last decade had reduced just 1-2 per cent of overall carbon dioxide emissions emitted by them.
- The industrial sector accounts for **43 percent of the overall consumption of energy in India**-making it the major contributor to the country's energy and environmental footprint.
- Non-transparency, loose targets and overlooking of deadlines have resulted in the **inefficiency of the PAT scheme**.

### ◎ ANALYSIS:

- Centre for Science and Environment (CSE)** analyzed the efficacy of the PAT scheme for the thermal power plants.
- The analysis clearly shows that in both **Cycles 1 and 2**, TPPs (**Thermal Power Plants**) had the most lenient target and underperformed in meeting the target among other sectors.

CO <sub>2</sub> emission from electricity generation	PAT 1		PAT 2	
	Achieved CO <sub>2</sub> reduction	Reduction percent	Achieved CO <sub>2</sub> reduction	Reduction percent
Million tonne of CO <sub>2</sub>	Million tonner of CO <sub>2</sub>	%	Million tonne of CO <sub>2</sub>	%

825.6	13.6	1.57%	11.9	1.44%
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### Comparison of CO<sub>2</sub> emission and emission reduction from electricity generation

- The total emission reduction from TPPs is 24.85 million tonnes of oil equivalent, **which is only 3 percent** of the total emission from the sector. **This highlights the fact that the target given to TPPs is very less compared to the overall emission reduction from the sector.**
- Electricity generation contributes to 40 per cent of this total emission, which is 825.6 million tonnes of CO<sub>2</sub> in one year. The overall CO<sub>2</sub> emission reduction achieved by thermal power plants in PAT cycles 1 and 2 is 13 and 11.9 million tonnes respectively.

### Steps taken so far:

- The **National Action Plan on Climate Change (NAPCC)** was released in 2008 to check the increasing energy consumption of industries and related carbon emissions.
- One of them was the eight under the NAPCC was National **Mission for Enhanced Energy Efficiency (NMEEE)**.
- Union Ministry of Power and **Bureau of Energy Efficiency (BEE)** were tasked with the preparation and the implementation plan for the **NMEEE**.

### About BEE:

- Set up on 1st March 2002 by Government of India.
- Under the provision of the Energy Conservation Act, 2001.
- It is a statutory body under the Ministry of Power.
- To assist in developing policies and strategies with a thrust on self-regulation and market principles with the primary objective of reducing the energy intensity of the Indian economy within the overall framework of the Energy Conservation Act, 2001.

- This can be achieved with the active participation of all stakeholders, resulting in accelerated and sustained adoption of energy efficiency in all sectors.

- **'Perform, Achieve and Trade' (PAT)** is a competitive mechanism **under NMEEE** for reducing energy use in large industries.

#### Perform Achieve and Trade (PAT) scheme:

- It is a regulatory instrument to reduce specific energy consumption in energy-intensive industries, with an associated market-based mechanism to enhance the cost-effectiveness through certification of excess energy saving which can be traded.
- The energy savings achieved by notified industries is converted into tradable instruments called **Energy Saving Certificates (ESCs)**. The **ESCs after issuance by the Bureau of Energy Efficiency are traded at Power Exchanges**.
- The government shortlists industries and restricts the amount of energy they can consume and defines a time limit of three years in the PAT scheme.
- These three years of time are called one PAT cycle. The industries are chosen after in-depth, sector-wise analysis by the government.
- Industries that participate in this scheme are called **designated consumers (DC)**. Those that overachieve their targets are issued **energy savings certificates (ESCs)** that can be traded with industries that have not achieved their targets.
- Non-achievers have to buy the **ESCs** after the three years for compliance. Announcements for **Six cycles since 2012 have been made so far**.

PAT cycles	No. of sectors involved	No. of DCs involved	No. of thermal power plants	Status of cycles
Cycle 1	8	478	144	Trading of ESCs done
Cycle 2	11	621	154	Evaluation of ESCs
Cycle 3	6	116	37	Under evaluation
Cycle 4	8	109	17	Implementation phase
Cycle 5	8	110	17	Ongoing
Cycle 6	6	135	-	Ongoing

#### Sectors, DCs involved and status of PAT cycles

#### Sectors covered by the scheme:

- PAT scheme covered about 13 energy-intensive sectors.
- The sectors included are thermal power plants (TPP), cement, aluminium, iron and steel, pulp and paper, fertiliser, Chlor-alkali, petroleum refineries, petrochemicals, distribution companies, railways, textile and commercial buildings (hotels and airports).

#### ◎ WAY FORWARD:

- It is projected that total energy savings of about 26 MTOE translating into avoiding of about 70 million tonnes of CO<sub>2</sub> will be achieved by March 2023. This seems optimistic but the **energy reduction target should be made stringent in order to meet up with the global climate commitments with respect to greenhouse gas emission mitigation. Targets must be interlinked to material CO<sub>2</sub> reduction.**

**Millions of tonnes of oil equivalent (MTOE) is a unit of energy used to describe the energy content of all fuels, typically on a very large scale.**

- Reasons sighted in the report such as **non-transparency, loose targets and overlooking deadlines** need to be resolved first in order to gain desirable results from the scheme.

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# THE SILENT DROUGHT IN MAKING

## CONTEXT:

Water-related hazards like floods and droughts are increasing because of climate change. The number of people suffering water stress is expected to soar, exacerbated by population increase and dwindling availability.

### ◎ BACKGROUND

- The world is seriously behind schedule on the UN Sustainable Development Goal No. 6 (SDG 6) to ensure availability and sustainable management of water and sanitation for all.
- In 2020, 3.6 billion people lacked safely managed sanitation services, 2.3 billion lacked basic hygiene services and more than 2 billion live in water-stressed countries with lack of access to safe drinking water.
- 75 countries reported water efficiency levels below average, including 10 with extremely low levels.
- The current rates of progress need to quadruple in order to reach the global targets by 2030.

### ◎ ANALYSIS

#### What actually causes a drought?

- A period of uncertain, drier-than-normal conditions resulting in water-related problems, leads to a drought.
- With little or no rain falling, the soils can dry out and plants can find hard to survive. When this trend occurs from weeks to years, water scarcity prevails: stream flows decline, water levels in lakes and reservoirs fall, the depth to water in wells increases.
- If the dry weather persists and water-supply problems develop, the dry period can become an incumbent drought.

#### Water Scarcity:

- Water crisis is usually viewed in terms of an increasing imbalance between water supply and demand.

Per capita Water Availability	Status
< 1700 cubic meters	Water stress
< 1000 cubic meters	Water scarcity
< 500 cubic meters	Absolute scarcity

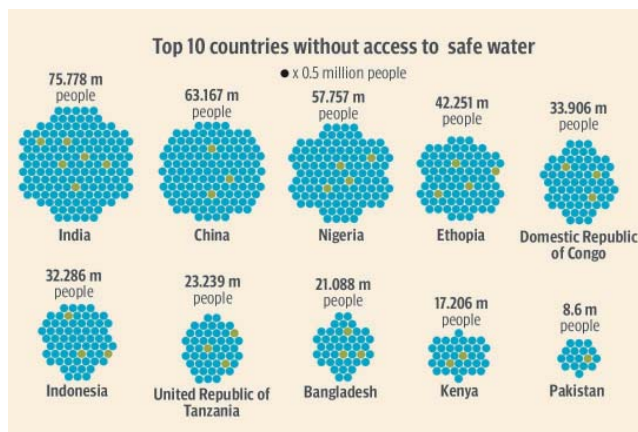
#### What is the status of ground water depletion in India?

- India is home to 16% of the world's population, but only holds 4% of the world's freshwater resources.
- About 33 per cent of wells registered a decline in groundwater levels in the range of 0 to 2 metres, the **Ministry of Jal Shakti**.
- The analysis of water level data indicated that about 33 per cent of the wells monitored have registered decline in groundwater levels in the range of 0–2 metres.
- Decline of more than 4 metres has also been observed in a few pockets of Delhi, Chennai, Indore, Coimbatore, Madurai, Vijayawada, Dehradun, Jaipur, Allahabad, Ghaziabad, Kanpur and Lucknow.
- Groundwater pollution and the effects of climate change, including erratic rainfall in the drier areas, put additional stress on groundwater resources which serve about 85% of domestic water supply in rural areas, 45% in urban areas, and over 60% of irrigated agriculture.

#### Water extraction in India

- According to the **United Nations Educational, Scientific and Cultural Organization (UNESCO)**, India is the world's largest extractor of groundwater.
- The groundwater level in India is estimated to have declined by 61% between 2007 and 2017.
- The depletion of this vital resource not only threatens people's access to drinking water but also food security by resulting in a reduction in food crops by up to 68% in severely-hit regions.
- Rainfall in India
- India receives about 400 million hectare metres of rain annually, but nearly 70% of surface water is unfit for human consumption due to pollution.

- India is ranked 120th out of 122 countries in the water quality index.
- An estimated 200,000 people die every year due to inadequate water.



### Agricultural sector & level of water consumption

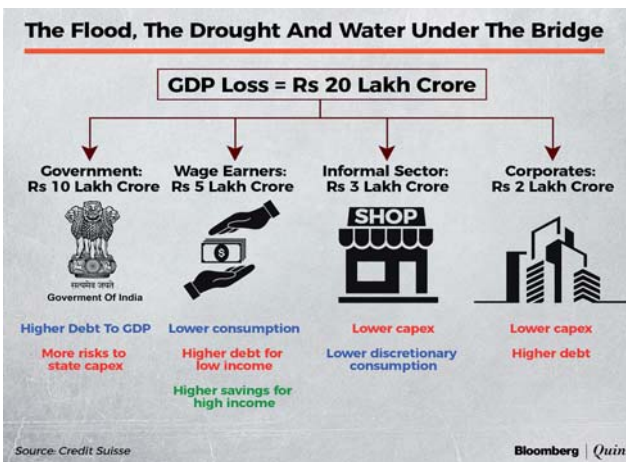
- India is the world's second-largest producer of wheat and rice and is home to more than 600 million farmers.
- The country has achieved impressive food-production gains since the 1960s, due in part to an increased reliance on irrigation wells, which allowed Indian farmers to expand production into the mostly dry winter and summer seasons.
- But those gains have come at a cost: The country that produces 10% of the world's crops is now the world's largest consumer of groundwater, and aquifers are rapidly becoming depleted across much of India.
- If Indian farmers lose all access to groundwater in overexploited regions, and if that irrigation water is not replaced with water from other sources, then winter cropped acreage could be reduced by up to 20% nationwide.

### Impact of overexploitation of water resources

- Multiple threats:** Current overexploitation rates pose threats to livelihoods, food security, climate-driven migration, sustainable poverty reduction and urban development.
- Increased vulnerability:** Drought makes small farmers highly vulnerable to drought and climatic changes, like erratic monsoon, eroding their capacity to take risks, restricting their investments in farming, and bringing down productivity.
- Poverty:** Drought and poverty are interconnected

with millions of very poor people living in drought-prone areas.

#### • GDP Loss (Economic loss)



### Drought management in India (Government Initiatives)

- Studies of India's drought management approaches over the last several decades reveal that the country largely depended on **crisis management approaches**. However, based on the experience of tackling the **1966 drought-induced food crisis**, serious efforts were made to replace ad hoc crisis management with an anticipatory drought management approach.
- In the early 1970s, the **Drought Prone Areas Programme (DPAP)** and the **Desert Development Programme (DDP)** were implemented to revive the ecology in hot and cold deserts.
- The DPAP and DDP programmes were redrafted to make watershed development a unit of drought proofing.
- Other watershed-based programmes were also launched, including the
  - National Watershed Development Programme for Rain-fed Areas (NWDPA)
  - Watershed Development Programme for Shifting Cultivation (WDPSC)

### Required measures

- Early warning system:** Invest in end-to-end drought and flood early warning systems in at-risk LDCs, including for drought warning in Africa and flood warning in Asia.
- Integrated Water Resources Management:** Integrated Water Resources Management (IWRM) is vital to achieving long-term social, economic and environmental well-being.
- Sustainable solution:** To reduce water-related disasters and support water resource management,

climate services for water and end-to-end early warning systems, as well as sustainable investments, are required.

- **Financial support:** Additional funding and investment is essential to support adaptation.
- **Gap filling:** It is important to fill the data gaps for climate services in the water sector.

## ◎ CONCLUSION

While groundwater depletion is becoming a global threat to food security, and the extent of current and projected groundwater depletion are well documented, the potential impacts on food production remain poorly quantified. There is need for comprehensive analysis of depleting groundwater and further collaboration is required for effective management of water resources for a better future.

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# CODE OF ETHICS IN DIGITAL MEDIA SPACE

## CONTEXT:

The Parliamentary Standing Committee on Communications and Information Technology presented a report on 'Ethical Standards in Media Coverage' in the Parliament.

### ◎ BACKGROUND

- The parliamentary panel asked the government to ensure code of ethics is followed in the digital media space while preserving the 'right to freedom of expression'.
- The Government brought out '**The Information Technology (Guidelines for Intermediaries and Digital Media Ethics Code) Rules, 2021** to ensure transparency and accountability for social media platforms with a robust oversight mechanism by the government.
- The rules were notified on February 25, 2021.
- These rules seek to regulate social media intermediaries such as Google, Facebook, WhatsApp, and Twitter, as also digital media, including OTT and digital news platforms.
- The Ministry of Electronics and Information Technology (MeiTY) will execute the guidelines for social media intermediaries, and the information and broadcasting ministry will oversee the code of ethics for digital media.
- These rules are intended to create a level playing field for print, television, and digital media.
- They also create a regulatory framework for digital media.
- Per the rules, all intermediaries and digital media platforms must set up a three-tier grievance redress mechanism and submit monthly compliance reports.
- Complaints must be acknowledged in 24 hours and disposed of in 15 days.
- The I&B secretary is authorized to block or take down content in the interim

#### Regulation of Media, Digital media and Social media in India

- In 1966, began to establish a self-regulatory organisation called the Press Council. In India, a statutory body, the **Press Council of India (PCI)**, governs the conduct of the print media.

- The body that regulates and governs the media and entertainment sector in India is enshrined in the Cable Networks Act, 1995 and the **Prasar Bharti Act, 1990**. These are regulated by the **Ministry of Information and Broadcasting and PrasarBharti**.
- Films being released on screens are already subject to the certification from **Central Board of Film Certification (CBFC)**, a statutory body formed under the act of the Parliament, the Cinematograph Act, 1952.
- Several OTT platforms and operators like Hotstar, Netflix are not governed till now, however they are increasingly adopting self-regulation codes.
- The 'Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules 2021': The Rules have been framed under the Information Technology Act, 2000, by the **Ministry of Electronics and Information Technology (MeiTY)**, which administers the Act.
- These rules seek to regulate content in social media platforms (intermediaries) like Twitter and Facebook, a consequence of the government feeling that unbridled content on these platforms is sometimes inimical to the country's interests.

### ◎ ANALYSIS

#### What is digital media?

- Digital news media includes online journalism, blogging, digital photojournalism, citizen journalism and social media.
- Digital media ethics deals with the distinct ethical problems, practices and norms of digital news media.
- It includes questions about how professional journalism should use this 'new media' to research and publish stories, as well as how to use text or images provided by citizens.

**Media ethics**

- Media ethics is the sub-division of **applied ethics** dealing with the specific ethical principles and standard of media, including broadcast media, film, theatre, arts, print media and the internet.
- The field covers many varied and highly controversial topics, ranging from war journalism to advertising.

**Digital Media Ethics**

- Digital media ethics deals with the distinct ethical problems, practices and norms of digital news media.
- Digital news media includes online journalism, blogging, digital photojournalism, citizen journalism and social media.
- It also includes questions about how professional journalism should use this new media to research and publish stories, as well as how to use text or images provided by citizens.

**Need for Ethics for Digital media**

- **Anonymity**
  - ▶ While online media allows more anonymity, in offline media usually requires identity of writers
  - ▶ The question arises that what should be the ethical guidelines for anonymity offline and online.
- **Fake news**
  - ▶ The ethical challenge is to articulate guidelines for dealing with fake news in an online world that are consistent with the principles of accuracy, verification, and transparency
- **Defining journalism**
  - ▶ The ethical challenge is to redefine what independent journalism in the public interest means for a media where many new types of journalism are appearing and where basic principles are being challenged.
- **Social media commentary**
  - ▶ The ethical challenge is to develop social media guidelines that allow reporters to explore the new media world but also to draw reasonable limits on personal commentary.
- **Using citizens content**
  - ▶ Digital Newsrooms need to put in place a process for citizen-supplied material, which may be bogus or biased.

- ▶ And citizens should be given due credit for the content.
- ▶ It should also be done without encroaching on the privacy of citizens.

**Reach of Social Media**

- All significant social media platforms with more than 50 lakh (5 million) users, which means Facebook, Twitter, Instagram and Koo, for instance, are very much categorized as large social media platforms.
- As of March this year,
- WhatsApp has more than 390 million users in India
- Facebook had clocked 320 million users in India, as of January 2021 numbers from research firm Statista, making this the largest market for the company ahead of the US (190 million) and Indonesia (140 million).
- Twitter also has more than 17.5 million users in India, as per the numbers from January this year.
- The made in India social media platform Koo has crossed 60 lakh users.

**Other ethical issues emerging out of digital media**

- Plagiarism has become an often-accepted practice and international cultural norm due at least in part to the ease and temptation of copying online sources.
- Digitally altering images or video is common in advertising and sometimes in news.
- Using anonymous sources is frequently an accepted practice in journalism.
- Omni-directional imaging is more than science fiction.
- WikiLeaks and the transparency of public records have changed how the public understands government, the military and big business around the world.
- Artificial intelligence and computerized news writing are commercial realities.

**Observations of the Panel**

- The committee expressed grave concern that media is gradually losing its credibility and integrity where values and morality are being compromised and there are rampant instances of violations of code of conduct of ethics by the media reflected in the form of paid news, fake news, TRPs manipulation, media trials, sensationalism, biased reporting, etc.
- The panel observed that social media platforms,



like Facebook, WhatsApp, Instagram, Twitter, etc. have placed journalism in the hands of the citizens.

- Citizens use their personal recording devices including cell phones to capture events and post them on the internet
- The panel said that though, the Ministry of Electronics and Information Technology does not have a record of the number of internet websites in India
- The committee impressed upon the Ministry of Information and Broadcasting (MIB) to ensure that adequate consultations take place with all stakeholders and that oversight of digital media may be exercised while fully preserving their right to freedom of expression
- The committee expects the ministries to promote better inter-ministerial coordination, systematic awareness creation about these new rules/guidelines, etc., so that the rules are implemented effectively to ensure accountability of online/OTT platforms.

### How other countries deal with social media intermediaries?

- **United States:** As most of the bigger social media intermediaries have their headquarters in the US, the most keenly watched is Section 230 of the 1996 Communications Decency Act, which provides Internet companies a safe harbour from any content users post of these platforms.

- Experts believe it is this provision in the US law that enabled companies such as Facebook, Twitter, and Google to become global conglomerates.

- Like Section 79 of India's IT Act, Section 230 of the Communications Decency Act states that "no provider or user of an interactive computer service shall be treated as the publisher or speaker of any information provided by another information content provider".

- **Australia:** Australia passed the Sharing of Abhorrent Violent Material Act in 2019, introducing criminal penalties for social media companies, possible jail sentences for tech executives for up to three years and financial penalties worth up to 10% of a company's global turnover.
- **Russia:** Russia's data laws from 2015 required social media companies to store any data about Russians on servers within the country.
- **China:** Sites such as Twitter, Google and WhatsApp are blocked in China. Their services are provided instead by Chinese providers such as Weibo, Baidu and WeChat.

### ◎ CONCLUSION

There is a need to bring code of ethics for digital media such that the credibility of media improves and transparency and accountability increases in the digital media sphere.

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## PILOT PROJECTS LAUNCHED TO REVIVE TRADITIONAL NAMDA CRAFT

◎ **CONTEXT:** Recently, Minister of Skill Development & Entrepreneurship (MSDE) has launched two projects—

- **Revival of Namda craft of Kashmir as a special pilot project under Pradhan Mantri Kaushal Vikas Yojana (PMKVY) 3.0**
- **upskilling of artisans and weavers of Kashmir under Recognition of Prior Learning (RPL), component of PMKVY.**

### Key-objectives of the Scheme

- To **boost and preserve the traditional Namda craft** of Kashmir and upskill the local weavers and artisans to enhance their productivity through RPL assessment and certification.
  - Due to low availability of raw material, lack of skilled manpower and marketing techniques, the export of this craft has **declined almost 100 percent between 1998 and 2008.**
- The Namda project will benefit **2,250 people of 30 Namda Clusters** and RPL initiative targets to **upskill 10,900 artisans and weavers of Jammu and Kashmir.**
- This will also improve the access of **existing artisans of Namda crafts cluster** in Kashmir and will **improve their prospects of employability.**

### What is Namda Craft?

- Namda craft **is widely thought to have originated in the 11th century during the reign of Mughal emperor Akbar.**
- **Namda craft is a rug made of sheep wool through a felting technique instead of the normal weaving process.**
- **Namda Craft is extensively used in Kashmir households for floor covering and mattresses.**
- **The process of preparing a namda includes:**
  - **Carding:** The process of removal of dirt and foreign particles from wool and achieving uniform and consistent thickness.
  - **Creating the border:** After carding, the border is created to define the outline under which filling will be done.
  - **Creation of layer:** The wool is then spread evenly within that border and thick layers are created. For the third layer, the most unused and unclean wool is used as it is the bottom most layer.
  - **Sprinkling soap solution:** A solution of soap and water is sprinkled over the layers with the help of a container and broom.
  - **Rolling the namda:** After sprinkling the soap solution, the mat is then tightly rolled and tied up with a rope and is then compressed by rolling to and fro on the floor with the help of hands and feet. This process is repeated for about an hour that allows the fusion of the fibres together—technically known as 'fibre to fibre' fusion.



- **Drying:** After rolling the mat for an hour, the rope is untied and the mat is unrolled to discover the well-shaped namda. The derived plain namda is then dried in the sun to remove any moisture present in the rug.
- **Aari work:** At the end, the namda is embellished with beautiful ari work, which is optional.

#### Kashmir and craft

- Kashmir is world famous for its handicrafts.
- A few of these are pashmina weaving, sozni embroidery, kani shawl weaving, Kashmiri carpet, Kashmiri tilla work, papier machie, calico painting and basohli painting.

## TELANGANA'S RAMAPPA TEMPLE RECEIVES MASSIVE FOCUS AFTER UNESCO TAG

### ◎ CONTEXT:

Telangana's Ramappa temple, a 13th century architectural icon and an engineering marvel that earned the coveted UNESCO heritage tag recently, was the highlight of the presentation given by Telangana government officials at an ongoing tourism and culture ministers' conference in Bengaluru.

#### About the Ramappa Temple

- Named after its **architect, Ramappa, the temple** is also known as **Ramalingeswara Temple**.
- Situated in **Telangana's Warangal**, Ramappa temple stands on a **six-feet high star-shaped platform** with walls, pillars and ceilings adorned with intricate carvings that attest to the unique skill of the **Kakatiyan sculptors**.
  - The temple is known for the **bracket figures** which spring from outer pillars and are shown as supporting the roof projections.
- The temple is dedicated to **Lord Shiva**, where Lord Ramalingeswara is worshipped.
  - The temple's presiding deity is **Ramalingeswara Swamy**.



#### Important features of the temple

- The structure is of the pyramidal type, consisting of four storeys
- Decorated beams and pillars of carved granite and dolerite
- Distinctive and pyramidal Vimana (horizontally stepped tower) made of lightweight porous bricks called floating bricks that reduced the weight of the roof structures.
- The temple's sculptures are of high artistic quality and illustrate regional dance customs and the culture of **Kakatiyas**.

### Construction

- The temple **was constructed in 1213 AD** during the reign of the **Kakatiya Empire**.
- It was constructed by **Recharla Rudra**, a general of **Kakatiya king Ganapati Deva**.
- At present, the temple falls under the protection of the **Kakatiya Heritage Trust (KHT)**, which has been pushing it for the **World Heritage tag since 2012**.

#### About kakatiya dynasty

- **The 12th and the 13th centuries** saw the emergence of the **Kakatiyas**.
- They were at first the feudatories of the **Western Chalukyas of Kalyana**, ruling over a small territory near Warangal.
- The dynasty saw powerful leaders like **Ganapathi Deva and Rudramadevi**.
- **Prataparudra I**, also known as **Kakatiya Rudradeva**, was the son of the **Kakatiya leader Prola II**.
  - ▶ It was under his rule that the Kakatiyas declared sovereignty. He ruled the kingdom till **1195 A.D.**
- It was under the rule of **Prataparudra I** that **usage of Telugu language** in inscriptions began.
- Before the establishment of Orugallu/Warangal as the capital, Hanamakonda was the first capital of the Kakatiyas.
- **The great Italian traveller Marco Polo** visited the Kakatiya Kingdom sometime during **Rudramadevi's tenure** as the ruler of the Kakatiya Dynasty and made note of her administrative style; admiring her extensively.

## BARBADOS BECOMES THE WORLD'S NEWEST REPUBLIC

### ◎ CONTEXT:

Recently, **Barbados** has officially removed **Queen Elizabeth II** as its head of state and become the **World's newest republic**, around 400 years after it became a British colony.

### About

#### ■ The country profile

- Barbados is an island country in the Lesser Antilles of the West Indies, in the Caribbean region of the Americas, and the most easterly of the Caribbean Islands.
- It is in the western part of the North Atlantic, east of the Windward Islands and the Caribbean Sea.
- Its neighbours include Saint Lucia, to the north, Saint Vincent and the Grenadines, to the west, and Trinidad and Tobago to the south.
- Barbados is outside the principal Atlantic hurricane belt.
- On November 30, 1966, Barbados gained its independence.
- **Dame Sandra Prunella Mason** and **Mia Amor Mottley** are the current President and Prime minister of Barbados.
- Barbados is part of **Caribbean Community (CARICOM)** which was formed in 1973.

- While it is an Atlantic island, Barbados is closely associated with the Caribbean and is ranked as one of its leading tourist destinations.

### Key-Highlights

- **After** removed Queen Elizabeth II as the head of the state.
- **Dame Sandra Prunella Mason** took over as the President of Barbados.
  - **Mason** was selected to become the **first president** of Barbados in **October 2021**.
  - **Mason** was selected as President of Barbados, at a joint meeting of both the **Houses of Parliament of Barbados**.
- His name was announced by **Speaker of the House of Assembly, Arthur Holder**.

- Barbados will not be the first former British colony in the Caribbean to become a republic.
- **Guyana took that step in 1970**, less than four years after gaining independence from Britain. **Trinidad and Tobago** followed suit in **1976** and **Dominica in 1978**.

### Background

- Barbados is said to have been made a '**slave society**' by the British.
- Barbados first became an English colony in 1625. It was a part of the British Empire for over 400 years, a link in the lines of **trade, commerce and oppression** that English mercantilism and colonialism fostered for centuries.
  - It gained its independence in 1966.
- Slaves, indentured labour, a lack of democracy — the Caribbean was home to some of the most institutionalised and invisibilised horrors in history.

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## INDIA JOINS G20 TROIKA

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### ◎ CONTEXT:

Recently, India joined the G20 '**Troika**' and with this **India has started the procedure** for taking over the **G20** presidency next year. The G20 Troika is made of Indonesia, India and Italy.

### About

#### ■ What is Troika?

- Troika means a group of three people working together. It is an English word.
- The Troika of G20 is made of the current, next and immediate past host countries.
- The Troika ensures continuity and provides presidency support. With this move, India has started the procedure for taking over the G20 presidency.

#### What is G20 forum?

- The G20 is the premier forum for international economic cooperation, which reflects a recognition that global prosperity is interdependent and the economic opportunities and challenges are interlinked.
- The G20 comprises nineteen countries with some of the world's largest economies, as well as the European Union (EU).

- The countries are Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, South Korea, Turkey, the United Kingdom (UK), and the United States. Spain is invited as a permanent guest.

- India will assume the G20 presidency on December 1, 2022 from Indonesia, and will convene the G20 Leaders' Summit for the first time in India in 2023.
- Indonesia took over the G20 presidency this year.

### What is the need of Troika in G20?

- The G20 operates without a permanent staff or secretariat. The chair of the group rotates annually among its members.
- The current chair establishes secretariat temporarily. This secretariat organises meetings and coordinates the working of the group.
- Thus, there is need for Troika to help with the secretariat so that there is continuity in the works of G20.

### What is importance of G20?

- The G20 (19 countries and the European Union) was born in 1999 as a consultation forum between finance ministers and central bank governors of the world's major economies.
- Following the 2008 economic crisis, it became a forum between Heads of State and Governments, aimed at improving coordination on the main global issues.
- At present, G20 nations represent 60% of the global population, 80% of global GDP and 75% of global exports.
- The objectives of the G20 are:
  - Policy coordination between its members in order to achieve global economic stability, sustainable growth
  - To promote financial regulations that reduce risks and prevent future financial crises
  - To create a new international financial architecture.

### India and G20:

- As a founding member of the G20, India has used the platform to raise issues of vital importance and those that impact on the most vulnerable around the world.
- The global economic agenda making forum is to be presided over by India in 2022, it's a challenge as well as an opportunity for India to foster its presence in the international arena.
- But due to the rising toll of unemployment rates and poverty in the domestic portion, it's hard to take the lead effectively.

### What are the achievements of G20 groupings?

- The main achievements of the G20 include
- Increased participation of emerging countries in global issues
- The reform of international financial institutions
- The monitoring of national financial institutions

- The improvement in the regulations of the economies whose problems led to the economic crisis and the creation of safety nets to prevent problems in the future.

**A few examples of the crucial role of G20 include:**

- Quick deployment of emergency funding during the 2008 global financial crisis
- Its role in the ratification of the Trade Facilitation Agreement
- G20 driven reforms to the international tax system
- In recent times, the ambit of issues under discussion has been expanded to include climate change, agriculture, health, education, water etc.

**What are the challenges associated with G20 Grouping?**

**The major criticisms include:**

- **Informal structure** of G20
- **Influences decision-making of smaller countries**
- **Not able to address challenges within member nations**
- **No Enforcement mechanism**
- **Under-representation of the African continent:** Except for South Africa, none of the African nations is a member of the G20.
- **Not legally binding**

**What can be done to revive the G20 Grouping?**

- Formalization of G20
- Focus more on domestic commitments
- Make it more representative

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## INDIA-ISRAEL WOMEN IN STEM CONFERENCE

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- ◎ **CONTEXT:** Recently, the **India-Israel Women in Science, Technology, Engineering and Mathematics (STEM)** conference was held.

**About STEM**

- The **STEM acronym** was introduced in **2001** in the **U.S. National Science Foundation (NSF)**.
- The **idea to promote STEM education** in India has been supported by the **National Council for Science and Technology Communication** along with the **Department of Science and Technology, GOI**.
- It is a curriculum that promotes the idea of educating students in disciplines such as **science, technology, engineering and mathematics**.
- This aims at establishing a robust platform for **innovation for the next generation**.

- **India** is one of the countries that produce the **highest number of scientists and engineers**, the growth of STEM has picked up significantly over the last few years.
  - **Under Article 51A** of the Constitution of India, it is a duty of every citizen of India to **develop the scientific temper, humanism and the spirit of inquiry and reform**.



### Objective

- The conference intended to establish a **flexible working environment for women** along with the need for **socio-cultural changes**.
- To achieve **gender parity** in the field of **STEM**.

### Significance

- A robust STEM education creates **critical thinkers, problem-solvers, and next-generation innovators**.
- According to the National Science Foundation, it is predicted that 80% of the jobs created in the next decade will require some form of math and science skills.

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## DBT-NBRC DEVELOPS SWADESH PROJECT

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### ◎ CONTEXT:

Recently, the **Department of Biotechnology (DBT)-National Brain Research Centre (DBT-NBRC)** has recently developed **project SWADESH**, a unique brain initiative focusing on certified neuroimaging, neurochemical, neuropsychological data and analytics that are made accessible to researchers for managing brain disorders.

### About

#### ■ What is the SWADESH Project?

- **SWADESH** is the first large-scale multimodal neuroimaging database.
- It is designed specifically for the Indian population with big-data architecture and analytics for various disease categories under one platform.
- **Objectives:**
  - To strengthen **Alzheimer's disease (AD)** research
  - To help the scientific community come up with promising treatments
- **Technical support:** It is supported by **JAVA-based workflow environments and Python**. Backed by a dedicated storage system, it provides quality control, data analysis reports, and data backups.
  - **Python and Java** are both computer programming languages.

### Proposed Health subjects

- SWADESH proposes a big-data architecture that **manages and analyzes six modules**, namely neurodegenerative [AD, mild cognitive impairment (MCI), and Parkinson's disease (PD)], neuropsychiatric (schizophrenia and bipolar disorder), neurodevelopmental (autism and epilepsy), COVID-19-related disorders, other disorders, and health subjects.

### Significance

- It will be useful in conducting multimodal brain studies to understand Alzheimer's disease and several neurological disorders.
- Its development will facilitate the integration of multi-site data and collaborative research worldwide.

**About DBT**

- **The Department of Biotechnology (DBT)** functions under the **Ministry of Science and Technology**.
- It promotes and improves biotechnology development in India through its development and implementation in agriculture, healthcare, animal sciences, the environment and industry.

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## WORLD AIDS DAY 2021

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**◎ CONTEXT:**

**World AIDS Day** is observed on **1st December every year** all over the world to spread awareness about the disease and remember all those who lost their lives to it.

**About the Day**

- World AIDS Day aims **to build new and effective policies and programmes to strengthen the systems of health and also to increase the capacity of health sectors towards HIV or AIDS**.
- **Important objectives of the day are:**
  - **Guidance:** To guide member states for increasing the **prevention and control measures for HIV or AIDS globally**.
  - **Awareness:** To make awareness among the people about **antiretroviral medicines** that can help them to **fight against HIV infection**.
  - **Technical support:** To offer technical support to the member states for implementing the **plan for prevention, treatment for HIV or AIDS** which will include **testing, counseling, antiretroviral therapy, etc.**
  - **Encouragement:** To encourage students from **schools, colleges to contribute to the campaign organised for AIDS**.
  - **Prevention:** To decrease the number of **patients infected by HIV or AIDS**.

**Background**

- The history of **World AIDS Day dates back to the year 1987**.
- This day was conceived by **James W. Bunn and Thomas Netter**, two public information officers for the Global Programme on AIDS.
  - These officers worked for the World Health Organization in the Global Programme on AIDS.
- **James W. Bunn and Thomas Netter** took their proposal for World AIDS Day to the **director of the Global Programme on AIDS Jonathan Mann** who liked the idea. Since then, he recommended the **first World AIDS day to be commenced on December 1, 1988**.
- **The United Nations Program** on HIV/AIDS, abbreviated to **UNAIDS** came into existence in **1996** and then World AIDS day was organized.
  - Various themes were structured that were proposed as one of the major changes in organizing World's AIDS Day.

**World AIDS Day Theme**

- The theme for 2021 is **"End inequalities. End AIDS"**.

- The theme for 2020 was “**Ending the HIV/AIDS Epidemic: Resilience and Impact**”

#### Human Immunodeficiency Virus (HIV)

HIV (human immunodeficiency virus) is a virus that attacks **CD4**, a type of **White Blood Cell (T cells)** in the body's immune system.

- ▶ T cells are those cells that move around the body detecting anomalies and infections in cells.
- After entering the body, HIV multiplies itself and destroys CD4 cells, thus severely **damaging the human immune system**.
  - ▶ Once this virus enters the body, it can never be removed.
- **The CD4 count of a person infected with HIV reduces significantly.** In a healthy body, **CD4 count is between 500- 1600**, but in an infected body, it can go **as low as 200**.

## ABUNDANCE OF LITHIUM IN STARS

- ◎ **CONTEXT:** Recently, scientists have found a clue to the mystery behind the high abundance of Lithium in some evolved stars.

#### Key-findings

- Scientists from the **Indian Institute of Astrophysics (IIA) Bangalore** have for the first time confirmed that all the **lithium-rich stars are burning helium in their core**.
  - IIA Bangalore is an autonomous institute of the **Department of Science & Technology (DST)**, Government of India
- They have speculated that lithium production is linked to the **violent helium-core flash**.
- The observations were gathered on the **3.9 m Anglo-Australian Telescope** at the **Australian Astrophysical Observatory**.
- **The survey GALAH** – named after a common **Australian bird**, provided a collection of about **500,000 stars** with **well-determined physical and chemical properties, including lithium abundances**.
- This exercise revealed the rare presence of **lithium-rich giants** in all the **Sun-like low-mass stars**.
- They created virtual stars of various masses and metallicity and compared the properties of these virtual stars with that of real stars from the **GALAH survey** that confirmed that all the lithium-rich stars are burning helium in their core.

#### About Lithium

- It is a chemical element with the **symbol Li**.
- It is a **soft, silvery-white metal**.
- Under standard conditions, it is the **lightest metal and the lightest solid element**.
- It is **highly reactive and flammable**, and must be **stored in mineral oil**.
- Lithium has become the **new 'white gold'** as the demand for **high performing rechargeable batteries is rising**.
- **Rising global lithium demand** and surging prices have drawn increased interest in the so-called '**lithium triangle**' that spans parts of **Argentina, Bolivia and Chile**.

#### Lithium reserve in India

- Researchers at the Atomic Minerals Directorate have estimated lithium reserves of **14,100 tonnes** in a small patch of land surveyed in **Southern Karnataka's Mandya district** recently.
- This is also to be **India's first ever Lithium deposit site found**.

## KYHYTYSUKA SACHICARUM: NEW MARINE REPTILE DISCOVERED

### © CONTEXT:

Recently, an international team of researchers has discovered a new marine reptile named *Kyhytysuka sachicarum*.

#### Key-Points

- *Kyhytysuka* means "**the one that cuts with something sharp**". The word belongs to the indigenous language of **central Columbia**.
- The new species has been named ***Kyhytysuka sachicarum*** to honour the **Muisca culture of central Columbia**.
  - **The Muisca** is also called **Chibcha**. They were conquered by the **Spanish in 1537**. They were mainly agrarians. They also extracted salt from the sea.
- The fossil is a stunningly preserved meter-long skull, is one of the last surviving **ichthyosaurs** – ancient animals that look eerily like living swordfish.
- **Ichthyosaur-**
  - They are the members of an **extinct group of aquatic reptiles**, most of which were very similar to porpoises in **appearance and habits**.
  - They had a very wide geographic distribution, and their fossil remains span almost the **entire Mesozoic Era**.
  - They are first known from the **Triassic Period of Asia**, where they began as long-bodied, undulating swimmers without many of the specializations seen in later species.

#### Features of *Kyhytysuka*

- It was a mid – sized ophthalmosaurian. The Ophthalmosaurus belonged to the **Jurassic period**.
- It had **extremely large sized eyes, dolphin – shaped body**.
- The jaws had many robust teeth.
- It had several adaptations.
- It was a macro predatory vertebrate hunter, which means it hunted larger vertebrates. Vertebrates are organisms with backbone. Organisms without backbone are called **invertebrates**.
- The species was mostly found in **shallow waters**.
- The dentary is the longest bone of the species. It measures 720 mm.
- The dentition is the most unique feature of the species.
- The teeth are seated in continuous grooves. The teeth are slightly curved posteriorly. Also, an alternating wave – like pattern is observed.

# BANGLADESH STATUS CHANGED TO A DEVELOPING NATION

- ◎ **CONTEXT:** The country Bangladesh has transitioned from a less-developed country (LDC) to a developing nation status.

## About

### ■ What is LDC?

- The LDC classification was introduced by the UN in 1971 to identify countries that are "deemed highly disadvantaged in their development process, for structural, historical and also geographical reasons".
- LDCs are thus specially designated as those that "are in need of the highest degree of attention from the international community" as they represent the members of the international community that face the "risk of deeper poverty and remaining in a situation of underdevelopment".
- The LDC category identifies countries faced with crushing developmental challenges.

### ■ What are developing countries?

- There are no WTO definitions of "developed" and "developing" countries.
- Members announce for themselves whether they are "developed" or "developing" countries.
- However, other members can challenge the decision of a member to make use of provisions available to developing countries.
- A developing country is also known as a low and middle income country (LMIC).
- It is less developed than countries classified as "developed countries" but these nations are ranked higher than "less economically developed countries."
- These countries are characterized by:
  - being less developed industrially
  - widespread poverty
  - low education and literacy levels
  - government corruption
  - a lower Human Development Index when compared to other countries
  - health risks such as having low access to safe water, as well as sanitation and hygiene problems

## India-Bangladesh relationship

- The India-Bangladesh CEO Forum will meet soon for the first time, even as the two countries work towards finalising a Comprehensive Economic Partnership Agreement (CEPA) to deepen trade and economic ties as partners rather than competitors.
- India highlighted that improving connectivity is "imperative" for expanding and realising the potential for bilateral trade and investments.
- Bangladesh is India's biggest trade partner in South Asia with a volume of over \$10 billion.
- India has sent over one crore COVID-19 vaccine doses to the country and has extended concessional credit lines of about \$8 billion, the highest for any single country.

- A bilateral textile industry forum has also been constituted to facilitate cooperation in the textile sector.
- India is also developing two Indian economic zones at Mirsarai and Mongla.
- India has identified five focus areas that could strengthen bilateral economic ties:
  - Technology
  - Connectivity
  - Entrepreneurship
  - Health
  - Tourism

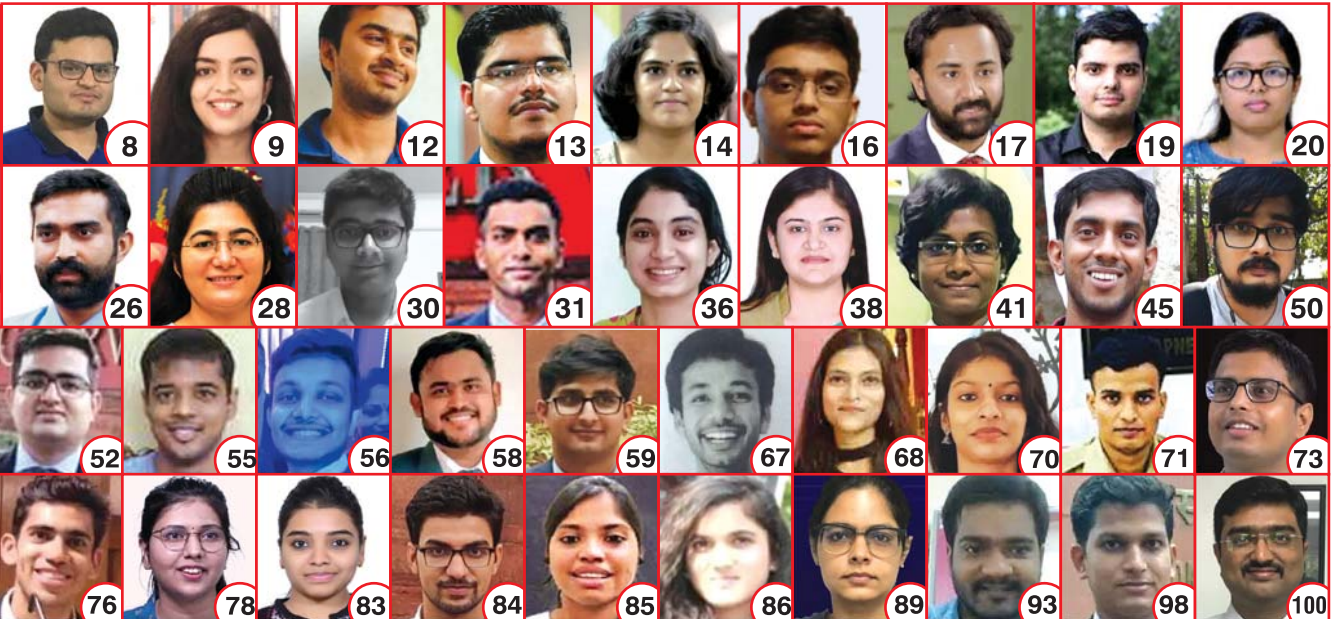
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## TOP 100

**ALL INDIA  
RANKING**

**CSE  
2020**



**SUCCESS IS A PRACTICE WE DO!**

## TOP 100

**ALL INDIA RANKING**

**CSE  
2019**



## TOP 100

**ALL INDIA  
RANKING**

CSE  
2018



## TOP 100

**ALL INDIA  
RANKING**

CSE  
2017

