



## Ethanol

**For Prelims:** Ethanol, [National Policy on Biofuels 2018](#), [E100 Pilot project](#), Ethanol Blending Programme, Distillers' Dried Grain with Solubles

**For Mains:** Ethanol Blending and its significance

[Source: IE](#)

### Why in News?

Recently, the Indian Prime Minister announced at the [G20 Energy Ministers'](#) meeting that India has rolled out **20% ethanol-blended petrol in 2023** and aims to cover the entire **country by 2025**.

- India's ethanol production has **diversified from cane molasses to various feedstocks** like rice, maize, and other grains.
- This move is part of India's commitment to reducing dependence on [fossil fuels](#) and promoting **sustainable energy solutions**.

### What is Ethanol?

- **About:**
  - Ethanol, also known as **ethyl alcohol**, is a [biofuel](#) produced from various sources such as [sugarcane](#), corn, rice, wheat, and biomass.
  - The production process involves the **fermentation of sugars by yeasts** or via **petrochemical processes such as ethylene hydration**.
  - **Ethanol is 99.9% pure alcohol** that can be **blended with petrol** to create a cleaner fuel alternative.
  - Apart from being a fuel additive, ethanol production yields valuable byproducts like **Distillers' Dried Grain with Solubles, and Potash from Incineration Boiler Ash** that find applications across various industries.
- **Byproducts of Ethanol Production:**
  - **Distillers' Dried Grain with Solubles (DDGS):**
    - DDGS is a byproduct of **grain-based ethanol production**.
    - It is the residue left after the **starch in grains is fermented and ethanol is extracted**.
    - DDGS is a valuable **animal feed with high protein content** and is used to supplement livestock diets.
  - **Potash from Incineration Boiler Ash:**
    - The ash remaining after Ethanol Production in the boiler contains up to **28% potash**.
    - This ash is a rich source of potash and **can be utilized as a fertilizer**.
- **Applications of Ethanol as Fuel:**
  - Ethanol is used as a renewable and sustainable biofuel alternative to gasoline in the transportation sector.
  - It can be blended with petrol in various proportions, such as **E10 (10% ethanol, 90%**

**petrol) and E20 (20% ethanol, 80% petrol).**

- The Indian government has implemented the [Ethanol Blending Programme](#) to promote the use of ethanol as a renewable fuel.
  - The program aims to **blend ethanol with petrol to reduce the country's dependence on imported crude oil**, cut carbon emissions, and boost farmers' incomes.
- Ethanol blends help reduce [greenhouse gas emissions](#) and air pollutants, contributing to cleaner air and mitigating [climate change](#).

## How has India Diversified its Feedstocks?

### ▪ Feedstock Diversification:

- Ethanol production in India was mainly **based on 'C-heavy' molasses**, with a **sugar content of 40-45%, yielding 220-225 liters of ethanol per tonne**.
- India explored **direct sugarcane juice for ethanol production**, increasing yield and efficiency.
- The country diversified its feedstocks by **including rice, damaged grains, maize, jowar, bajra, and millets**.
- Ethanol yields from **grains are higher compared to molasses**, with rice producing **450-480 liters and other grains 380-460 liters per tonne**.
- Sugar mills diversified to use rice, damaged grains, maize, and millet as feedstocks.
- Leading sugar companies **installed distilleries that can operate on multiple feedstocks throughout the year**.
- The government's **differential pricing policy** played a crucial role in **incentivizing the use of alternative feedstocks**. By fixing higher prices for ethanol produced from certain feedstocks, mills were **compensated for reduced sugar production**.
  - From 2018-19, the Indian government **began fixing higher prices for ethanol produced from B-heavy molasses and whole sugarcane juice/syrup**.

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## ETHANOL SUPPLIED TO OIL MARKETING COMPANIES (CRORE LITRES)

Supply Year**	C-Heavy Molasses	B-Heavy Molasses	Sugarcane Juice	Surplus Rice	Damaged Grains	TOTAL
2013-14	38.00	0	0	0	0	38.00
2014-15	67.41	0	0	0	0	67.41
2015-16	111.40	0	0	0	0	111.40
2016-17	66.51	0	0	0	0	66.51
2017-18	150.50	0	0	0	0	150.50
2018-19	145.84	32.53	0.68	0	9.50	188.55
2019-20	74.12	68.14	14.83	0	15.96	173.05
2020-21	38.96	182.71	39.17	1.90	39.26	302.00
2021-22	10.84	264.93	85.42	48.56	23.85	433.60
2022-23*	6.49	241.47	143.78	143.43	23.80	559.08*
2022-23**	3.85	158.46	122.59	57.95	8.31	351.16

Note: \*Finalised quantity; \*\*Supplied/lifted quantity till July 9, 2023;

\*Includes 0.11 crore litres from maize; \*\*Dec-Nov.

## AVERAGE ETHANOL BLENDING WITH PETROL (%)



\*Achieved till July 9, 2023

### Challenges:

- Grains yield **more ethanol but require longer processing**. The starch in the grain has to **first be converted into sucrose and simpler sugars** (glucose and fructose), before their fermentation into ethanol by using yeast (**saccharomyces cerevisiae**). Molasses already contain sucrose, glucose, and fructose.
- Quality variability of feedstocks affecting production.
- Environmental concerns related to non-traditional feedstocks.

### Benefits:

- Diversification of feedstocks will **minimize supply fluctuations and price volatility on account of any one crop**.
- The incorporation of new feedstocks for ethanol production can create **new demand for grains**.

## Types of Molasses:

- A Molasses (First Molasses):** An intermediate **by-product from initial sugar crystal extraction, containing 80-85% dry matter (DM)**. Should be inverted to prevent crystallization if stored.
- B Molasses (Second Molasses):** Similar DM content as A molasses but with **less sugar and no spontaneous crystallization**.
- C Molasses (Final Molasses, Blackstrap Molasses, Treacle):** The end by-product of sugar processing, containing **significant amounts of sucrose (about 32 to 42%)**. It does not crystallize and is used as a commercial feed ingredient in liquid or dried form.

## What are the Government Initiatives to Promote Ethanol Blending in India?

- [National Policy on Biofuels 2018](#)
- [E100 Pilot project](#)
- [Pradhan Mantri JI-VAN Yojana 2019](#)
- [Repurpose Used Cooking Oil \(RUCO\)](#)

### UPSC Civil Services Examination, Previous Years Questions (PYQs)

**Q. According to India's National Policy on Biofuels, which of the following can be used as raw materials for the production of biofuels? (2020)**

1. Cassava
2. Damaged wheat grains
3. Groundnut seeds
4. Horse gram
5. Rotten potatoes
6. Sugar beet

**Select the correct answer using the code given below:**

- (a) 1, 2, 5 and 6 only  
(b) 1, 3, 4 and 6 only  
(c) 2, 3, 4 and 5 only  
(d) 1, 2, 3, 4, 5 and 6

**Ans: (a)**

- The National Policy on Biofuels, 2018, allows production of ethanol from damaged food grains like wheat, broken rice, etc., which are unfit for human consumption.
- The Policy also allows conversion of surplus quantities of food grains to ethanol, based on the approval of the National Biofuel Coordination Committee.
- The Policy expands the scope of raw material for ethanol production by allowing use of sugarcane juice, sugar containing materials like sugar beet, sweet sorghum, starch containing materials like corn, cassava, damaged food grains like wheat, broken rice, rotten potatoes, unfit for human consumption for ethanol production. Hence, 1, 2, 5 and 6 are correct. Therefore, option (a) is the correct answer.

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## The 1.5°C Warming Target and Climate Projections

**For Prelims:** [1.5 degrees Celsius Warming Target](#), [El Nino](#), [Paris Agreement](#), [Intergovernmental Panel on Climate Change](#), [Coastal erosion](#), [National Action Plan on Climate Change](#), [National Adaptation Fund on Climate Change \(NAFCC\)](#), [India Cooling Action Plan](#), [LIFE Initiative](#)

**For Mains:** Background of 1.5 Degrees Celsius Warming Target, Impact of Warming on India.

**Source:** [TH](#)

## Why in News?

The [1.5 degrees Celsius warming target](#), along with this year's [El Nino](#), has garnered attention. Reports suggest the planet may cross this **temperature threshold due to the rising climate phenomenon**.

## What is the Background of 1.5 Degrees Celsius Warming Target?

- **Paris Agreement** aims to **limit the temperature increase to 2 degrees Celsius** by the end of this century. This target is considered significant, but there are a couple of important things to remember.
  - Even though countries have been talking about this issue for over 20 years, the **amount of carbon emissions released into the atmosphere has not decreased** as much as needed.
  - The **2 degrees Celsius target was not determined based on strict scientific evidence**. Instead, it was initially proposed by an economist named **William Nordhaus in the 1970s**.
  - Later on, some politicians and climate scientists adopted this target.
- The **Alliance of Small Island States** pushed for the target to be lowered to **1.5 degrees Celsius**, leading to further retrofitting of future scenarios to **meet this goal**.
  - **According to the Intergovernmental Panel on Climate Change (IPCC)**, the leading scientific body on climate change, if current trends continue, the **world is likely to reach 1.5°C of warming by 2030-2052**.
  - **Also, IPCC Special Report on the difference in impacts between 1.5°C versus 2°C** warming suggests that **tropical countries such as India** are projected to experience the largest impacts on economic growth because of climate change.

## How will Climate Change-induced Warming Impact India?

- **About:**
  - According to a recent study by the **Indian Institute of Tropical Meteorology (IITM)**, India's average temperature has increased by **about 0.7°C during 1901-2018**, with more rapid warming in recent decades.
- **Impacts:**
  - **Agriculture:** India's agriculture is heavily dependent on monsoon rains, and **any alterations in rainfall patterns due to warming** can significantly affect crop yields.
    - It would lead to **erratic monsoons, increased frequency of droughts, and extreme weather events** like heatwaves that will reduce agricultural productivity, posing a threat to food security and livelihoods of millions of farmers.
  - **Public Health:** Warmer temperatures may lead to the spread of diseases like **malaria, dengue, and other vector-borne illnesses** as the range of disease-carrying organisms expands.
    - Heatwaves can increase heat-related illnesses and mortality rates, especially among vulnerable populations, putting pressure on the healthcare system.
  - **Ecosystems and Biodiversity:** Warming can disrupt ecosystems and trigger **shifts in vegetation patterns**, altering habitats for various plant and animal species.
    - **Many endemic species in India may face extinction** or be forced to migrate to more suitable areas, leading to disruptions in the ecological balance and biodiversity loss.
  - **Coastal Vulnerability:** India has an extensive coastline, and rising sea levels due to warming can **result in coastal erosion, inundation of low-lying areas**, and increased frequency of extreme weather events like cyclones.
    - This poses a threat to coastal communities, infrastructure, and economic activities.
  - **Migration and Social Disruptions:** As climate-induced challenges intensify, there could be a rise in **climate-induced migration**, with people moving from severely impacted regions to more habitable areas.
    - This could lead to **social tensions, resource competition, and strain on urban centers**, leading to challenges for policymakers.

- **Government Initiatives:**
  - [National Action Plan on Climate Change \(NAPCC\)](#)
    - There are 8 national missions forming the core of the NAPCC including **National Solar Mission, National Mission on Sustainable Habitat etc.**
  - [National Adaptation Fund on Climate Change \(NAFCC\)](#)
  - [India Cooling Action Plan](#)
  - [LiFE Initiative](#)

## Way Forward

- **National Assessment and Data:** India must undertake a **comprehensive and continuous national assessment of climate impacts and vulnerability**, taking into account regional variations.
  - Accurate data will aid in evidence-based decision-making and targeted policy interventions.
- **Green Infrastructure and Urban Planning:** Implement **Blue- green infrastructure and sustainable urban planning** practices in cities.
  - This includes creating green spaces, promoting public transportation, and incentivizing eco-friendly building designs to reduce the urban heat island effect.
- **Carbon Pricing:** Introduce a **carbon pricing mechanism to internalize the environmental costs** of greenhouse gas emissions.
  - This could be achieved through carbon taxes or cap-and-trade systems to encourage industries to adopt cleaner technologies.
- **Promoting Circular Economy:** There is a need to promote the **adoption of a circular economy model**, where **waste is minimized, and resources are reused, repaired, or recycled**, reducing the carbon footprint of products and processes.
- **International Cooperation:** India can **collaborate with other countries and forums on joint climate initiatives**, sharing best practices, and leveraging resources to address climate change on a global scale through **Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC)**

## UPSC Civil Services Examination, Previous Year Question (PYQ)

### Prelims

**Q.1 In the context of India's preparation for Climate-Smart Agriculture, consider the following statements: (2021)**

1. The 'Climate-Smart Village' approach in India is a part of a project led by the Climate Change, Agriculture and Food Security (CCAFS), an international research programme.
2. The project of CCAFS is carried out under Consultative Group on International Agricultural Research (CGIAR) headquartered in France.
3. The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) in India is one of the CGIAR's research centres.

**Which of the statements given above are correct?**

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

**Ans: (d)**

**Q.2 Which of the following best describes/describe the aim of 'Green India Mission' of the Government of India? (2016)**

1. Incorporating environmental benefits and costs into the Union and State Budgets thereby implementing the 'green accounting'.
2. Launching the second green revolution to enhance agricultural output so as to ensure food security

to one and all in the future.

3. Restoring and enhancing forest cover and responding to climate change by a combination of adaptation and mitigation measures.

**Select the correct answer using the code given below.**

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

**Ans: (c)**

**Q.3 With reference to 'Global Climate Change Alliance', which of the following statements is/are correct? (2017)**

1. It is an initiative of the European Union.
2. It provides technical and financial support to targeted developing countries to integrate climate change into their development policies and budgets.
3. It is coordinated by World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD).

**Select the correct answer using the code given below:**

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

**Ans: (a)**

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## **Mains**

**Q.1** Describe the major outcomes of the 26th session of the Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC). What are the commitments made by India in this conference? **(2021)**

**Q.2** 'Climate Change' is a global problem. How will India be affected by climate change? How Himalayan and coastal states of India will be affected by climate change? **(2017)**

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## **Mhadei Wildlife Sanctuary**

**[Source: IE](#)**

### **Why in News?**

Recently, in a significant development for tiger conservation efforts, the **Goa bench of the Bombay High Court** has issued a **directive to the Goa government** to notify the **[Mhadei Wildlife Sanctuary](#) and its surrounding areas as a tiger reserve** under the **[Wildlife Protection Act, 1972](#) within three months** from 24<sup>th</sup> July 2023.

- The decision comes **after a prolonged legal battle and demands from environmentalists**

**and conservationists**, and it carries implications for wildlife protection and forest dwellers in the region.

Note:

- Tiger Reserves are notified by **State Governments** as per provisions of **Section 38V** of the **Wildlife (Protection) Act, 1972** on advice of the [National Tiger Conservation Authority](#).

## What are the Key Facts about Mhadei Wildlife Sanctuary?

- **Location and Landscape:**
  - Located in the **Northern part of Goa**, Sanguem taluka, near **Valpoi town**.
  - Encompasses picturesque waterfalls, including **Vazra Sakla Falls and Virdi Falls**.
  - Known for its nesting grounds of **critically endangered [Long-billed vultures](#)** near **Vazra Falls**.
  - Diverse landscape with thick **moist [deciduous forests](#)** and some **evergreen species**.
  - Notable for **sacred groves protecting rare and indigenous trees**.
- **Flora and Fauna**
  - Rich biodiversity with **[Indian gaur](#), Tigers, Barking deer, Sambar deer, Wild boar, Indian hare, and more**.
  - Attracts **herpetologists** due to the presence of various snakes, including **the 'big four' venomous snakes** which are **Indian krait, Russell's viper, Saw-scaled viper and Spectacled cobra**.
  - Designated an **International Bird Area** for hosting several bird species like **Malabar parakeet and Rufous babbler**.
  - Represents a crucial habitat for **tiger conservation in Goa**.
- **Unique Geographical Features:**
  - Home to the **three highest peaks in Goa: Sonsogod (1027 mts), Talavche Sada (812 mts), and Vageri (725 mts)**.
  - **Mhadei River**, a lifeline of Goa, originates in Karnataka, passes through the sanctuary, and meets the Arabian Sea at Panaji.
  - The sanctuary acts as a catchment area for the Mhadei River.





### UPSC Civil Services Examination, Previous Year Question (PYQ)

**Q1. Consider the following protected areas: (2012)**

1. Bandipur
2. Bhitarkanika
3. Manas
4. Sunderbans

**Which of the above are declared Tiger Reserves?**

- (a) 1 and 2 only  
(b) 1, 3 and 4 only  
(c) 2, 3 and 4 only  
(d) 1, 2, 3 and 4

**Ans: (b)**

**Exp:**

- Bandipur Tiger Reserve: It was formed by including most of the forest areas of the then Venugopala Wildlife Park, established under government notification dated 19th February 1941 and the area was enlarged in 1985 extending over an area of 874.20 sq km and named as Bandipur National Park. This reserve was brought under Project Tiger in 1973. It is situated in the contiguous landscape spread in the districts of Southern Karnataka namely the Mysore and Chamarajanagar. It is a distinctive landmass located at the trijunction area of the States of Karnataka, Tamil Nadu and Kerala. Faunal biodiversity includes common leopard, royal Bengal tiger, jungle cat, sloth bear, Asian elephant, wild boar, grey heron, shaheen falcon, little bustard-quail, common cobra, green vine snake etc. Hence, 1 is correct.
- Sunderbans Tiger Reserve: In 1875 under the Forest Act, 1865 (Act VIII of 1865), a large part of Sunderbans forest was declared as "reserved". Post-independence, it was declared a wildlife

sanctuary in 1977 and established as a national park on 4th May, 1984. In the year 1978, Sundarbans was declared a national park, and in 1973, it was declared a tiger reserve under Project Tiger. It is located in the state of West Bengal. Some of the common species of plants which are found include sundari tree, golpati, champa, dhundul, genwa and hatal. There are about 78 species of mangroves in these forests. This reserve is home to Royal Bengal Tiger along with other animals such as fishing cats, macaques, leopard cats, Indian grey mongoose, wild boar, flying fox, pangolin, and Indian grey mongoose. Hence, 4 is correct.

- **Manas Tiger Reserve:** In the year 1907 the forest was declared as Reserve forest. Post independence, in 1950, Manas Reserve forest was declared as a Wildlife Sanctuary. With the launch of Project Tiger in 1973, Manas Tiger Reserve was officially declared. UNESCO declared it as a World Heritage Site (Natural) in 1985 and further designated as Biosphere Reserve under Man and Biosphere Programme of UNESCO in 1989. It is located at the merger of terai grasslands and the bhabar grasslands ascending to semi-evergreen forests and then to Bhutan Himalayas in the state of Assam. This tiger reserve is an example of inter country tiger conservation and it extends from Assam in India to Royal Manas in Bhutan. It is very rich in the population of Royal Bengal Tigers. The last population of the pygmy survives in the wilds of Manas and nowhere else in the world. Hence, 3 is correct.
- **Bhitarkanika Wetland:** It is represented by as many as 3 protected Areas, namely “the Bhitarkanika National Park”, “the Bhitarkanika Wildlife Sanctuary” and “the Gahirmatha Marine Sanctuary”. The Bhitarkanika National Park is a prime habitat of leopard cat, fishing cat, wild boar, spotted deer, sambar, dolphin, salt water crocodile. However, Bhitarkanika has not been declared as a tiger reserve. Hence, 2 is not correct. Therefore, option (b) is the correct answer

**Q2. From the ecological point of view, which one of the following assumes importance in being a good link between the Eastern Ghats and the Western Ghats? (2017)**

- (a) Sathyamangalam Tiger Reserve
- (b) Nallamala Forest
- (c) Nagarhole National Park
- (d) Seshachalam Biosphere Reserve

**Ans: (a)**

- Sathyamangalam Wildlife Sanctuary and Tiger Reserve is a protected area along the Western Ghats in the Indian State of Tamil Nadu.
- Sathyamangalam forest range is a significant wildlife corridor in the Nilgiri Biosphere Reserve between the Western Ghats and the rest of the Eastern Ghats and a genetic link between the four other protected areas which it adjoins, including the Biligiriranga Swamy Temple Wildlife Sanctuary, Sigur Plateau, Mudumalai National Park and Bandipur National Park.
- First declared as a wildlife sanctuary in 2008 and enlarged in 2011, it covers a forest area of 1,411.6 sq km and is the largest wildlife sanctuary in Tamil Nadu. In 2013, it became the fourth tiger reserve as a part of Project Tiger in the State of Tamil Nadu.
- Nallamala Forest is one of the largest undisturbed stretches of forest in South India. It is located in the Nallamala Hill, which is a part of the Eastern Ghats. It is spread over 5 districts, namely Kurnool, Guntur, Kadapa, Mahabubnagar and Prakasam. The forest has a good tiger population and a part of the forest belongs to the Nagarjunsagar-Srisailem Tiger Reserve.
- Nagarhole National Park is situated in two districts of Mysore and Kodagu in the State of Karnataka. Nagarhole National Park forms a part of the Nilgiri Biosphere Reserve and together with **Bandipur National Park and Mudumalai Wildlife Sanctuary to its South-East and Wayanad to the South-West, is one of the last remaining and best protected habitats for endangered species like the Elephant and the Tiger.**
- Seshachalam hills are the hill ranges spread in parts of Chittoor and Kadapa districts of Andhra Pradesh and have been designated as Seshachalam Biosphere Reserve in 2010. The Biosphere Reserve has large reserves of red sandalwood. **Therefore, option (a) is the correct answer.**

# Prospects for a Joint G-20 Communiqué

**For Prelims:** Prospects for a Joint G-20 Communiqué, [G-20 Summit](#), [War in Ukraine](#), [BRICS Summit](#).

**For Mains:** Prospects for a Joint G-20 Communiqué.

[Source: TH](#)

## Why in News?

The upcoming [G-20 Summit](#) in New Delhi in September 2023 is facing obstacles in issuing a **Joint Communiqué** due to opposing stances from **Russia and China** concerning paragraphs related to the [War in Ukraine](#).

- As the summit approaches, the Indian negotiators are striving hard to find **common ground** and ensure a **resolution to the logjam**.

## What Is the Significance of a Joint Communiqué?

- The G-20 grouping, comprising the world's major economies, has traditionally managed to reach a consensus **and issue a joint declaration at the end of each summit**.
- A failure to do so in India being the Chair would be **unprecedented and may raise questions** about the sustainability of the **G-20 in its current form**.
- Previous summits, such as **Brisbane in 2014 and Indonesia in 2022**, faced challenges but eventually **succeeded in producing a document**.
- Despite challenges, the Sherpa track is set to begin draft negotiations for the "Delhi Declaration" from August 2023.
  - The Sherpas will attempt to address areas of differences, including U.S.-China tensions over **debt sustainability and privacy issues** over digital public infrastructure.
  - Regarding the Ukraine issue, officials may leave a **"placeholder" reference to "geopolitical issues"** until a more acceptable language is agreed upon.

## What are the Various Perspectives on G-20 Documents?

- **India's Stance:**
  - **Maintains Bali Paragraphs:**
    - Until now, India has continued to include the **"Bali Paragraphs" (G 20 Leaders Declaration in Bali 2022 Summit)** in its documents, citing the hard work **invested in their formulation**.
    - These paragraphs consist of references to **UN resolutions "deploring" Russia's war in Ukraine**, and statements that **"most members" strongly condemn the conflict**.
    - The use of Indian Prime Minister's phrase, **"This era is not of war,"** is also deemed universal and **unrelated to any specific country or conflict**.
  - **For Economic Issues Not Security Issues:**
    - **The G-20 is not a forum for security issues**, but for economic issues arising from security concerns, like the impact of the Ukraine war on fuel, food and fertilizer prices, **is unimpeachable**.
  - **Developing Countries not Responsible for Ukraine Conflict:**
    - India maintains that the Ukraine conflict is not its **priority at the G-20 and that developing countries should not be held responsible** for the issue.
    - Instead, India wishes to focus on priorities like the **induction of the African Union into the G-20**, [Digital Public Infrastructure](#), gender-led empowerment, and

reform of multilateral development banks.

▪ **Russia and China's Opposition:**

- Russia and China oppose the language on Ukraine, with Russia arguing that the Bali statements no **longer reflect the current situation** as it does not include increased U.S. and European military support to Ukraine, **or the increased sanctions against Russia that followed** and omit relevant developments.
- China contends that the **G-20 should not discuss "geopolitical issues"** as it has focused primarily on **economic matters** in the past two decades.

## What is G20?

- The Group of Twenty (G20) was founded in 1999 **after the Asian financial crisis as a forum for the Finance Ministers and Central Bank Governors** to discuss global economic and financial issues.
- The G20 was upgraded to the level of Heads of State/Government in the wake of the global economic and financial crisis of 2007, and, in 2009, was designated **the "premier forum for international economic cooperation"**.
- The G20 comprises 19 countries (Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Türkiye, United Kingdom and United States) and the **European Union**.
- The G20 members represent about **two-thirds of the world's population, 85% of global gross domestic product, 80% of global investment and over 75% of global trade**.

## Way Forward

- India is seeking suggestions from other G-20 countries, including **Indonesia and Brazil**, to find common ground on the Ukraine conflict.
- The role of leaders, particularly the Indian Prime Minister, will be **crucial in resolving the impasse**.
- Diplomatic efforts during the **BRICS Summit** in South Africa in 2023 may also influence the situation.

## UPSC Civil Services Examination, Previous Year Questions (PYQs)

**Q. In which one of the following groups are all the four countries members of G20? (2020)**

- (a) Argentina, Mexico, South Africa and Turkey
- (b) Australia, Canada, Malaysia and New Zealand
- (c) Brazil, Iran, Saudi Arabia and Vietnam
- (d) Indonesia, Japan, Singapore and South Korea

**Ans: (a)**

**Q. Consider the following statements about G-20: (2023)**

1. The G-20 group was originally established as a platform for the Finance Ministers and Central Bank Governors to discuss the international economic and financial issues.
2. Digital public infrastructure is one of India's G-20 priorities.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans: (c)

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## Transforming Cantonment Towns

**For Prelims:** Transforming Cantonment Towns, British-era concept of cantonment towns, Cantonments Act, 1924, Cantonments Act, 2006.

**For Mains:** Transforming Cantonment Towns.

[Source: PIB](#)

### Why in News?

The Ministry of Defense has decided to **demerge civil areas from Military Stations** and integrate them with municipalities in their respective states, aiming to move away from the **British-era concept of cantonment towns**.

- The decision, which affects many cantonment towns established during the pre-independence era, is set to reshape the **administrative landscape and promote better civil-military relations**.

### How are Cantonment Administrations Controlled in India?

- **About Cantonment:**
  - Comprising both military and civilian population, **cantonments are different from military stations**, which are meant purely for the training and accommodation of the armed forces.
- **Background:**
  - Cantonment towns in India have their origins in the **colonial era when the British established military stations** to maintain control and secure their territorial interests.
  - These towns were exclusively **reserved for military personnel and were governed separately** from civilian areas.
  - Over time, the demarcation between **military and civilian spheres led to distinct communities**, with limited **interaction between them**.
- **Cantonments and their structure:**
  - Cantonments are classified into four categories — **class I to class IV** — depending on the size of the area and population.
  - While a class I cantonment has eight elected civilians and eight **government/military members on the board**, a **class IV cantonment has two elected civilians** and two government/military members.
  - This board is responsible for various aspects of the cantonment's administration.
    - The station commander of the cantonment is the **ex-officio president of the board**, and an **officer of the Defence Estates Organisation** is the chief executive and the member-secretary.
    - The board has equal representation of elected and nominated/ex-officio members to balance the official representation.
- **Administrative Control:**
  - An inter-services organisation of the **Ministry of Defence** directly controls cantonment administration.
  - In terms of **Entry 3 of Union List (Schedule VII)** of the Constitution of India, **Urban Self**

**Governance of the Cantonments** and the Housing Accommodation therein is the **subject matter of the Union of India.**

- There are more than **60 Cantonments** in the country which have been notified under the **Cantonments Act, 1924** (succeeded by the Cantonments Act, 2006).
- **Administrative structure and regulation of the Urban Governance by the Municipalities:**
  - **At the Central level:** The subject of 'urban local government' is dealt with by the following three ministries:
    - Ministry of Housing and Urban Affairs.
    - Ministry of Defence in the case of cantonment boards
    - Ministry of Home Affairs in the case of Union Territories.
  - **At State Level:**
    - **Urban governance is part of the state list** under the Constitution. Thus, the administrative framework and regulation of **ULBs varies across states.**
    - The Constitution (**74th Amendment**) **Act, 1992** provided for the **establishment of [Urban Local Bodies \(ULBs\)](#)** (including municipal corporations) as institutions of local self-government.
      - It also empowered **state governments to devolve certain functions, authority, and power to collect revenue to these bodies, and made periodic elections for them compulsory.**
- **Issues:**
  - Civilians living in cantonment areas have long **complained of issues regarding different restrictions and** said cantonment boards have **failed to resolve them.**
    - The civilian residents complain that cantonment boards have been **unable to come up with a solution to their daily difficulties** that come with living inside cantonments — such access to home loans, free movement within the premises, for example.

## What is the Significance of Demerging of Cantonment Areas?

- **Strengthening Civil-Military Relations:** The demerger of military stations and civilian areas is likely to foster better understanding and cooperation between the armed forces and the civilian population. It can also enhance mutual trust and respect, leading to smoother interactions in times of peace and crisis.
- **Local Governance and Civic Amenities:** The integration of civilian areas into municipal governance can lead to **improved civic amenities and infrastructural development.** Residents may have a more significant say in local governance matters, resulting in better urban planning and public services.
- **Historical Heritage and Urban Planning:** Many cantonment towns have a rich historical heritage dating back to the colonial era. The decision may raise questions about preserving the historical significance of these regions while **facilitating modern urban planning.**
- **Legal and Administrative Challenges:** The transition from a cantonment town to a merged municipality may bring about various legal and administrative challenges. The government will need to address these issues to ensure a smooth and efficient transition.

## What are the Concerns Raised from the Demerger?

- It is felt by the experts that if cantonments are abolished, it would **adversely impact training and administration of the Army** in these areas and would also be a security hazard.

## Way Forward

- The government's decision to demerge **military stations from civil areas** in cantonment towns signifies a fundamental change in administration, aiming to bridge the gap between the military and civilian communities.
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# Rajasthan Platform-Based Gig Workers (Registration and Welfare) Bill, 2023

**For Prelims:** [Gig Economy](#), **Gig workers**, [E-commerce](#), [Code on Social Security, 2020](#), **Labour Rights**

**For Mains:** Gig Economy in India, Issues Associated with the Gig Workers in India, Social Security Blanket for Gig Workers.

[Source: TH](#)

## Why in News?

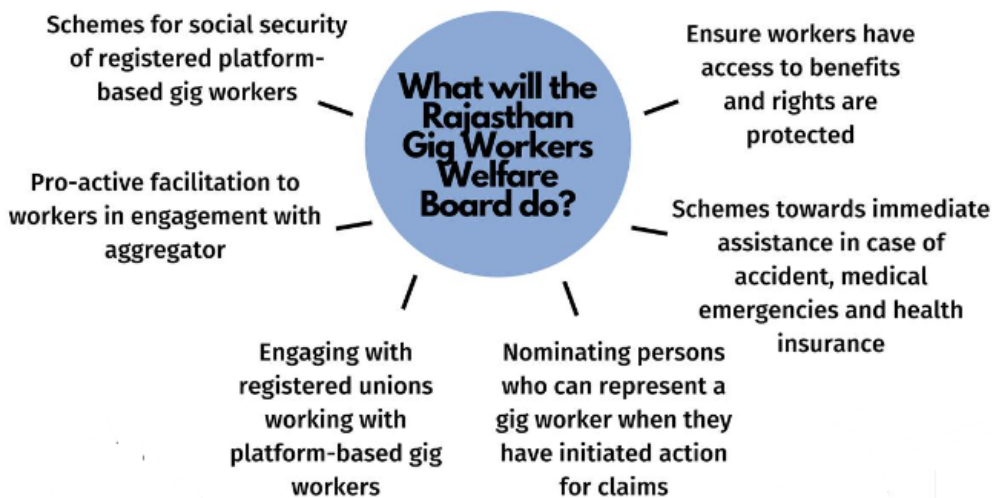
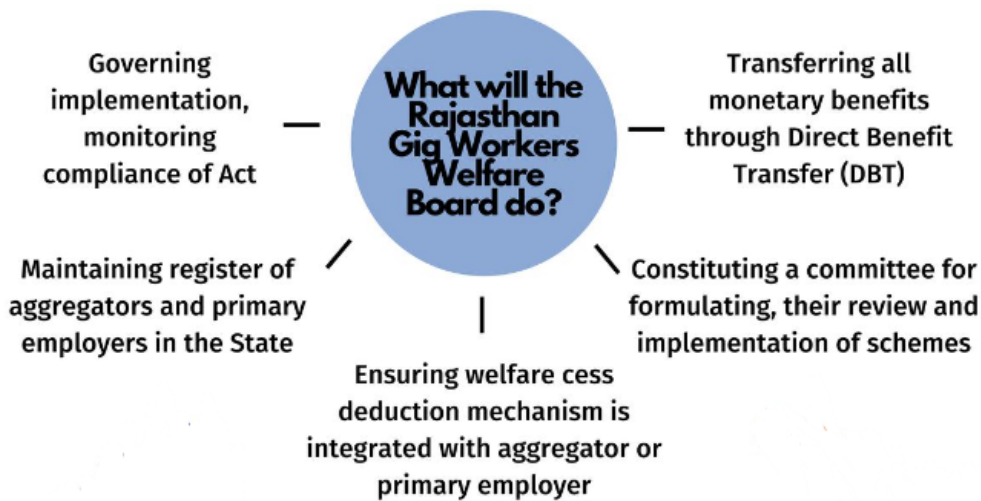
The Rajasthan Assembly recently passed a significant Bill aimed at extending [social security](#) benefits to **gig workers**.

- This bill aims to address the **lack of protection and benefits for gig workers**, who were **previously classified as "partners"** rather than **employees** in companies like Ola, Uber, Swiggy, Zomato, and Amazon.
- Earlier, the [Code on Social Security, 2020](#) mandated **social security funds for gig workers**, including life, disability, health benefits, and more.

## What is the Rajasthan Platform-Based Gig Workers (Registration and Welfare) Bill, 2023?

- **About:**
  - The Rajasthan Platform-Based Gig Workers (Registration and Welfare) Bill acknowledges the **significant contributions of gig workers to the economy** and aims to provide them with essential protection and support.
  - The primary objective of this bill is to **extend social security and welfare benefits to gig workers operating in the state**.
- **Key Features:**
  - **Registration of Gig Workers:**
    - The bill mandates the **registration of all gig workers with the state government** to bring them **under the ambit of labor regulations**.
    - The state government will maintain a comprehensive database of all gig workers operating in Rajasthan.
    - Each gig worker will be **assigned a unique ID**, which will facilitate **tracking their employment history and entitlements**.
  - **Access to Social Security Schemes:**
    - Gig workers will be granted access to a range of social security schemes.
    - These schemes may include **health insurance, accident coverage, and other welfare measures** to provide financial support during emergencies.
  - **Grievance Redressal Mechanism:**
    - The bill ensures that gig workers have the **right to be heard and address any grievances they may have**.
    - This provision seeks to protect the **rights of gig workers** and provide them with a **platform to resolve work-related issues**.
  - **Establishment of Platform-Based Gig Workers Welfare Board:**
    - This board will be responsible for **overseeing the welfare and rights of gig workers in the state**.
    - Welfare Board — comprising State officials, **five representatives** each from **gig workers and aggregators**, and **two others** (“one from Civil Society and another who evince interest in any other field”).

- At least one-third of the nominated members should be women.
- This representation aims to ensure that the **interests of both parties are considered** when making decisions related to welfare and regulation.
- **Platform-Based Gig Workers Fund and Welfare Fee:**
  - The bill introduces a "**Platform-Based Gig Workers Fund and Welfare Fee**" to finance the social security measures for gig workers.
  - The fund will be utilized to **provide financial support and welfare benefits** to gig workers during challenging times.
- **Fee Levied on Aggregators:**
  - Aggregators will be required to **pay a fee for each transaction involving a platform-based gig worker.**
  - The **specific percentage of the fee** will be determined by the state government to contribute to the welfare fund.
- **Penalties for Non-Compliance:**
  - The bill includes provisions for penalties in case of non-compliance by aggregators.
  - Aggregators failing to pay the welfare fee on time will be charged an **interest rate of 12% per annum from the due date.**
  - The state government can impose **finances of up to Rs 5 lakh for the first contravention and up to Rs 50 lakh for subsequent violations** of the Act by aggregators.



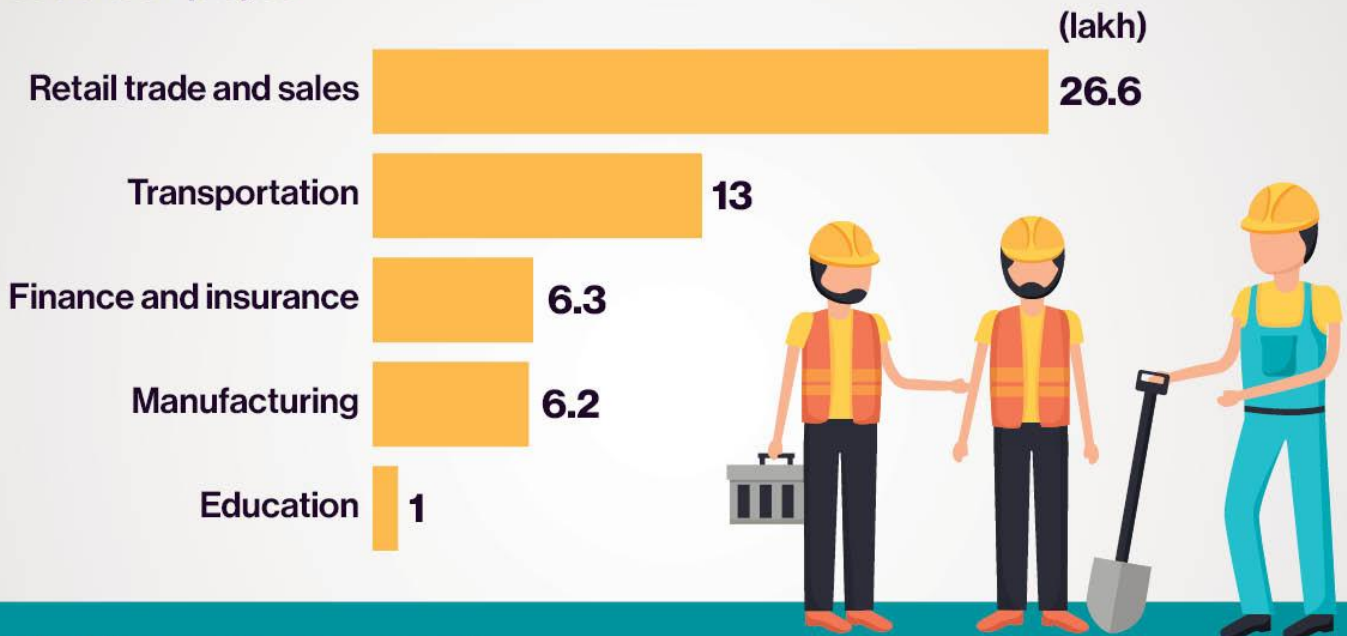


## Who are Gig Workers?

- A 'gig worker' is currently defined as someone who **“earns from such activities outside of the traditional employer-employee relationship and who works on a contract”** for various platforms or aggregators, such as Swiggy, Zomato, Ola, Uber, Urban Company, etc.
- Gig workers are **different from regular employees**, as they have **flexible work hours and multiple sources of income**.
  - They are paid on the **basis of the tasks or services they complete**, rather than on a monthly or hourly basis.
- Gig workers provide various services, such as **food delivery, ride-hailing, home services, e-commerce, content creation, graphic design, web development, etc.**
  - They use their **own devices, vehicles, and tools to perform their work**.
- Gig workers are estimated to be **around 15 million in India**, according to a report by [Boston Consulting Group](#) and Michael & Susan Dell Foundation. They are expected **to grow to 90 million by 2028**.
- A [Gig economy](#) is a **free market system in which temporary positions** are common and organizations contract with independent workers for short-term engagements.

# GIG WORKFORCE IN INDIA

NITI Aayog, in its report, India's Booming Gig and Platform Economy, said that gig workforce in India is expanding. As of 2019-20, here's what the following sectors employed:



NITI Aayog report stated:



## • Code on Social Security, 2020:

- The Code on Social Security, 2020 aims to **amend and consolidate laws related to social security** to extend it to all employees and workers in organized or unorganized sectors.
- The Code can be applied to **establishments subject to size-threshold through notification by the central government.**
- Separate **Social Security Funds will be set up by the Central and State Governments** for unorganized workers, gig workers, and platform workers.
- Registration provisions are specified for **unorganized workers, gig workers, and platform workers.**
- A **National Social Security Board** will be established to recommend and monitor schemes for these categories of workers.
- Funding for schemes of gig workers and platform workers may **come from contributions by central and state governments, as well as aggregators.**
- Penalties for certain offenses have been reduced, including obstructing inspectors and

- unlawfully deducting contributions from wages.
- During an **epidemic**, the central government may defer or reduce employer and employee contributions (under **Employee State Insurance (ESI)** and [Provident Fund \(PF\)](#) for up to **three months**.

## UPSC Civil Services Examination, Previous Year Question (PYQ)

Q. Examine the role of 'Gig Economy' in the process of empowerment of women in India. (2021)

## Motions in Parliament

[Source: IE](#)

### Why in News?

Recently, a **Member of Parliament** moved [adjournment motion](#) in the [Lok Sabha](#) citing the need for urgent discussions on **ethnic violence in Manipur**.

- A motion is a formal proposal made by a member in a House of Parliament to initiate a **debate or a decision on a matter**.

### What are the Different Types of Motions Used in Parliament?

- **Adjournment Motion:**
  - A motion for adjournment is moved to **discuss a definite matter of urgent public importance** and must be of immediate concern, with the [Speaker's consent](#).
  - It needs the **support of 50 members to be admitted**. As it interrupts the normal business of the House, it is regarded as an extraordinary device.
  - This motion is **available in the Lok Sabha but not in the Rajya Sabha**.
  - It is important to note that the **passage of an adjournment motion does not require the government to resign**, but it is considered a **strong censure of the government**.
- **Closure Motion:**
  - It is a motion moved by a member to **cut short the debate on a matter before the House**. If the motion is approved by the House, debate is stopped forthwith, and the matter is put to vote.
- **Motion with a Vote:**
  - This type of motion is brought under **Rule 184 in the Lok Sabha**. It allows for a **debate with a vote on a specific question**, and the outcome of the vote determines Parliament's position on the issue.
  - If such a motion is passed, **it obliges the government to follow Parliament's decision on the matter**.
  - However, **motions with a vote are relatively rare** and are usually reserved for matters of significant national importance.
- **Short Duration Discussion:**
  - Under **Rule 193 of the Lok Sabha rules** and Rule 176 of the Rajya Sabha rules, short duration discussions can take place.
  - A short duration discussion **allows MPs to discuss a specific issue of public importance without voting on it**. The debate usually takes place for a **fixed duration**,

**not exceeding two hours.**

- The purpose of such discussions is to bring attention to important issues and allow diverse perspectives to be heard without taking any formal decisions.
  - **No-Confidence Motion:**
    - This is a **motion moved in the Lok Sabha (and not in the Rajya Sabha)** to test the confidence of the government.
    - The motion needs the support of 50 members to be admitted.
    - If a [no-confidence motion](#) is passed, **the government must resign.**
    - No-confidence motions are significant political events that **usually occur when there is a perception of the government losing majority support.**
  - **Confidence Motion:**
    - It is passed when the **governments formed with wafer-thin majority** have been called upon by the President to **prove their majority on the floor of the House**
    - Passage indicates the government's continued mandate to govern.
  - **Privilege Motion:**
    - A member can initiate this motion when they **believe a minister has violated the privileges of the House or its members** by withholding crucial information about a case or providing inaccurate and manipulated facts.
    - The primary aim of this motion is to **express disapproval and criticize the respective minister's actions.**
  - **Motion of Thanks:**
    - It is a parliamentary procedure to express gratitude for the [President's Address at the commencement of Lok Sabha.](#)
    - At the end of the discussion, the motion is put to vote. This **motion must be passed** in the House. Otherwise, **it amounts to the defeat of the government.**
  - **Cut Motion:**
    - Proposed to **reduce the amount of a [demand in the budget.](#)**
    - Their passage by the Lok Sabha amounts to the expressions of want of parliamentary confidence in the government and may lead to its resignation.
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## Rapid Fire Current Affairs

### Heli Summit 2023 and UDAN 5.2

Recently, the Ministry of Civil Aviation inaugurated the **Heli Summit 2023 and [UDAN 5.2](#)** in **Khajuraho, Madhya Pradesh**, focusing on **regional connectivity through helicopters and small aircraft.**

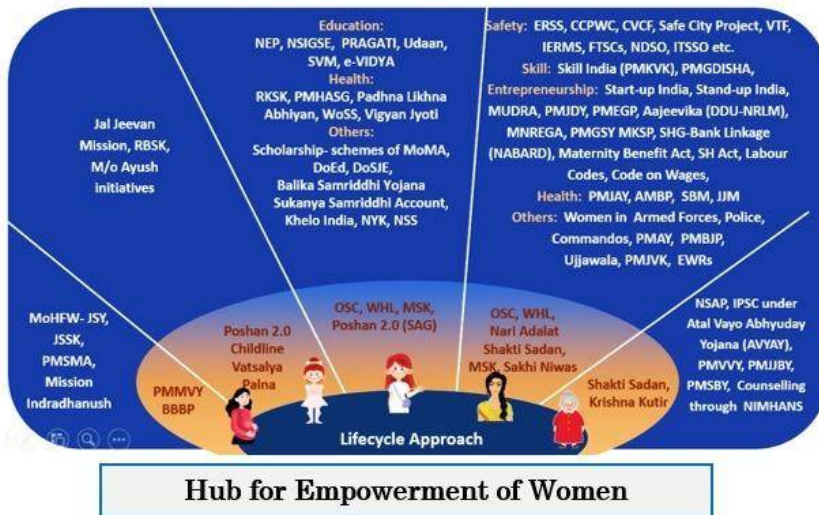
- Heli Summit 2023, jointly organized by the **Ministry of Civil Aviation, Government of Madhya Pradesh, Pawan Hans Ltd., and Federation of Indian Chambers of Commerce and Industry (FICCI)**, emphasizes regional connectivity through helicopters and small aircraft.
- UDAN 5.2 aims to **achieve last-mile connectivity** with **small aircraft (Category 1A <9 seats and Category 1 <20 seats)** in remote and regional areas.
- UDAN 5.2 increases the **viability gap funding (VGF)** and reduces **fare caps to enhance accessibility.**
- **HeliSewa mobile application** is launched to create an **ecosystem between helicopter operators and district authorities for seamless operations.**

Read more: [UDAN 5.0 Scheme](#)

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### Mission Shakti- Hub for Empowerment of Women

## Women's Universe – GoI Initiatives



Recently, **National Institute of Public Cooperation and Child Development (NIPCCD)** under Ministry of Women and Child Development organised the **First Capacity Building Programme** on '[Mission Shakti- Hub for Empowerment of Women](#)' for State Nodal Officers and State Mission Coordinators.

- NIPCCD is an **autonomous Institute** under the Ministry of Women and Child Development that works to **promote voluntary action, research, training and documentation in the field of women and child welfare.**
- It was **established in 1966** and has its **headquarters in Delhi** and four regional centres in **Bangalore, Guwahati, Indore and Lucknow.**
- **Mission Shakti** scheme focuses on making women **economically empowered, ensuring their safety from violence, and increasing their participation in the labor force.**
  - 'Mission Shakti' comprises two sub-schemes - '**Sambal**' for safety and security of women and '**Samarthya**' for their empowerment.
    - Sambal includes components like **One Stop Centre, Women Helpline, [Beti Bachao Beti Padhao](#), and Nari Adalats** for gender justice.
    - Samarthya incorporates schemes like **Swadhar Greh, Working Women Hostel, National Creche Scheme, and Pradhan Mantri Matru Vandana Yojana**, along with a new component of Gap Funding for Economic Empowerment.
  - **Hub for Empowerment of Women** It is an **initiative under the Samarthya sub-scheme.**

## Batagaika Crater: A Disturbing Symbol of Accelerating Permafrost Thaw



Russia's Batagaika crater, the world's largest **1km-long permafrost** crater, expands due to [global](#)

[warming](#) and thawing permafrost.

- Deforestation triggered underground permafrost melting, causing the crater's growth in the **Sakha Republic, Russia**. It also holds dangerous organic carbon, **exacerbating global warming**.
- Russia is warming is occurring at an alarming rate, **approximately 2.5 times faster than the global average**.
- As a result, large areas of the country's long-frozen tundra, **covering about 65% of its landmass**, are experiencing significant thawing, releasing **potent [greenhouse gases](#) like methane**.
- Permafrost is **any ground that remains completely frozen—32°F (0°C) or colder—for at least two years straight**.
  - These permanently frozen grounds are most common in regions with high mountains and in Earth's higher latitudes: **near the North and South Poles**.

**Read more:** [Permafrost](#), [Global warming](#)

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## WHO's Updated HIV and Mpox Guidelines

The [World Health Organization \(WHO\)](#) presented updated guidance on [human immunodeficiency virus \(HIV\)](#) during the **12<sup>th</sup> International AIDS Society Conference**.

- The guidelines stress the **significance of HIV viral suppression and undetectable virus levels** in improving individual health and curbing virus transmission.
- Additionally, the **WHO urged countries to integrate [mpox \(monkeypox\)](#) detection, prevention, and care with existing HIV and sexually transmitted infection programs**.
  - Mpox is a viral illness caused by the **monkeypox virus, a species of the genus Orthopoxvirus**.
  - It can be transmitted to humans through physical contact with someone who is infectious, with contaminated materials, or with infected animals.
  - A multi-country outbreak of mpox in **2022-2023 reported over 82,000 cases, with around 32,000 linked to HIV**.
- The guidelines highlighted the **effectiveness of [antiretroviral therapy \(ART\)](#) in preventing HIV transmission** when achieving undetectable virus levels.

**Read more:** [World Health Organization, HIV](#), [Monkeypox](#)

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PDF Reference URL: <https://www.drishtias.com/current-affairs-news-analysis-editorials/news-analysis/26-07-2023/print>