

08 Aug 2021: UPSC Exam Comprehensive News Analysis

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A. GS 1 Related

Category: GEOGRAPHY

1. Tipping point

Context:

- A new study published in Nature Climate Change shows that the **Atlantic Meridional Overturning Circulation (AMOC) may have become unstable** over the last century and reached a tipping point.

Atlantic Meridional Overturning Circulation (AMOC):

- The Atlantic Meridional Overturning Circulation (AMOC) is a major current in the Atlantic Ocean and can be considered as a **large system of ocean currents**.
- AMOC is characterized by a **northward flow of warm, salty water in the upper layers of the Atlantic, and a southward flow of colder, deep waters** that are part of the thermohaline circulation

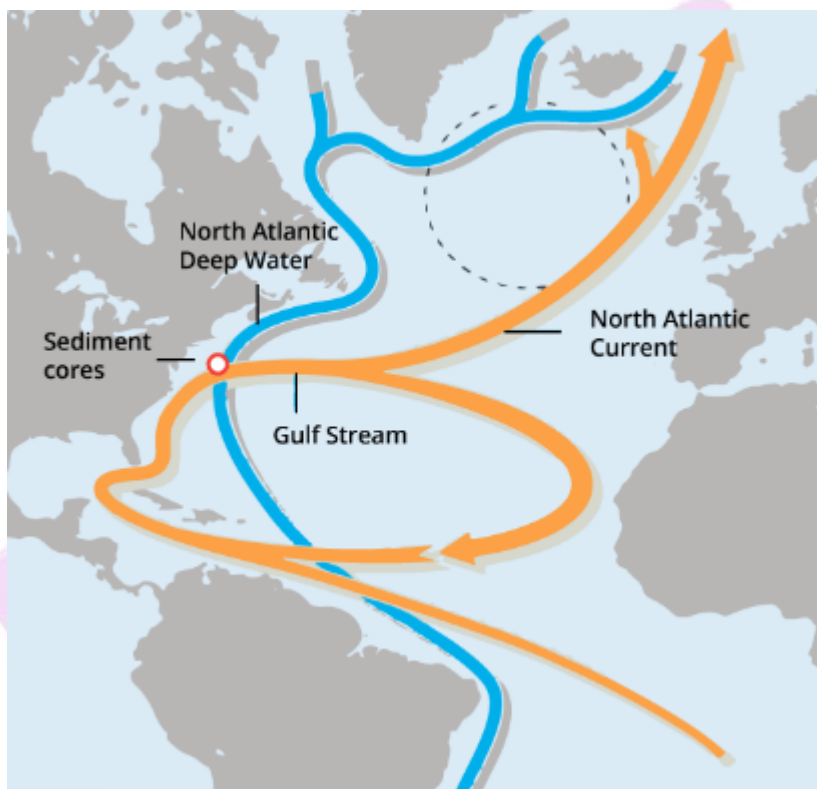


Image source: The Hindu

- Since it aids in distributing heat and energy, AMOC **maintains the temperature equilibrium of Europe and influences world weather**.

For more information on the causes and impact of the destabilization of AMOC, refer to the following article:

[Atlantic Meridional Overturning Circulation \(AMOC\)](#)

B. GS 2 Related

Nothing here for today!!!

C. GS 3 Related

Category: ENVIRONMENT AND ECOLOGY

1. Sunderbans is now drowning in plastic

Context:

- Plastic pollution in the sunderbans

Background:

- Sunderbans has been battered by many cyclones over the years, with [Cyclone Yaas \(May 2021\)](#) being the latest.
- To support the affected people, **packaged relief material** has been flowing into the Sunderbans.

Details:

- The unregulated inflow of relief materials has resulted in **accumulation of plastic waste in the Sunderbans**.
- Large amounts of plastic waste has been observed in the remote areas of the Sundarbans, like Gosaba, Mousuni, Bali, Patharpratima and Kultali.
- Several NGOs, experts, and even officials of the District Police and the Forest Department have pointed out that the **plastic accumulating on the isolated islands of the fragile ecosystem** are cause for great concern.

Concerns:

- Plastics in the sunderbans would have both short term as well as long term ecological impact on the Sundarbans ecosystem.
 - The presence of plastic in saline water increases the **toxicity of water**.
 - It could also contribute to the **eutrophication** of water.
 - The **ingestion of plastics by the local fauna** will adversely impact their health.
 - The breakdown of plastics in the water will lead to an increase in **microplastics**, which would subsequently enter the food system.
 - Given that Sunderbans is connected to the sea, the increase of plastic in the region could lead to **plastic waste entering the ocean**.

For more information on the ill effects of plastic pollution in general refer to the following article:

[**Dangers of Plastic – RSTV The Big Picture**](#)

Recommendations:

- The local administration along with the support of local NGOs and locals should organise **cleanliness drives** to remove plastic from the Sunderbans.

- There should be **regulation of plastic usage in the region** and there should be clearly laid out guidelines to control the flow of plastic into the region. Any such plastic inflow should be properly disposed of with responsibility for the collection and disposal placed on appropriate authorities or the NGOs which are involved in relief material distribution.
- Proper measures need to be taken to **reduce single-use plastic usage in the region**.
- **More eco-friendly alternatives for plastic packaging should** be prioritized.

Category: SCIENCE AND TECHNOLOGY

1. New technique to study ultrasmall particles in cells

Context:

- Researchers from IIT Madras and IISER Kolkata have developed a new method to detect minute quantities of chemicals in solution.

Background:

Absorption spectroscopy:

- Absorption spectroscopy refers to spectroscopic techniques that measure the absorption of radiation due to its interaction with a sample.
 - The sample absorbs energy, i.e., photons, from the radiating field.
- The intensity of the absorption varies as a function of frequency and also the absorbing medium.
- Dark lines are seen in the observed absorption spectrum of the light passed through the substance, which corresponds to the wavelengths of light absorbed by the intervening substance and are characteristic of the elements present in it.
- Hence, **Absorption spectroscopy is employed as an analytical tool** to determine the presence of a particular substance in a sample and also to quantify the amount of the substance present.
- Absorption spectroscopy is performed across the electromagnetic spectrum. Infrared and ultraviolet-visible spectroscopy are particularly common in analytical applications.

Details:

- The new method uses a variation of absorption spectroscopy.
- The technique exploits the **quantum emission properties of erbium-doped sodium yttrium fluoride nanoparticles**.
 - These tiny, nano-sized particles can absorb the light being shone on them and re-emit red, blue and green light.
- The emission from these nano particles would be absorbed by substances in the sample. An analysis of the absorption spectrum would reveal the nature of the absorbing material.

Significance of the new methodology:

Surpasses the limits of conventional absorption spectroscopy:

- The new method surpasses the systemic limits imposed by conventional absorption spectroscopy based on the Abbe criterion.
 - The **Abbe criterion** sets a natural limit on the size of the object being studied using absorption spectroscopy. According to this criterion, the size of the observed object has to be at least of the order of the wavelength of the light being shone on it.
- Unlike the conventional absorption spectroscopy technique which requires a minimum of about a cubic centimetre of the sample for the analysis, **the new method developed can help detect even minute amounts of dissolved substances**. Very small molecules almost ten-millionth of a mm in diameter can also be detected using this methodology.

Potential applications:

- There are many potential applications.
 - This technique can be used to study the insides of cells and **detect even minuscule quantities of substances** present there.
 - It can also be used to **measure individual molecules**, see absorption spectroscopy of a **single DNA or protein molecule**.

Category: **ECONOMY**

1. Goyal for steps to boost handloom exports

Context:

- Speaking at the National Handloom Day programme, the Union Minister of Textiles, Commerce and Industry has called to **increase handloom exports from Rs. 2,500 crore a year to Rs. 10,000 crore in the next three years**.

Significance of Handloom sector:

- The Handloom sector plays a very important role in the country's economy. It is an **employment intensive sector**. It is one of the largest economic activities **providing direct employment to over 65 lakhs persons** engaged in weaving and allied activities.
- This sector contributes nearly 19% of the total cloth produced in the country and also adds substantially to **export earnings**.
 - The Indian cotton handloom fabrics and made-ups occupy a place of eminence in the markets of USA, UK, Germany, France, Sweden, Belgium, the Netherlands, Japan and Australia. The main items exported belong to the segment of home furnishing, which constitutes about 90% of our total handloom exports.
- Handloom is unparalleled in **its flexibility and versatility**, permitting experimentation and encouraging innovations. The strength of Handloom lies in introducing innovative designs, which cannot be replicated by the Power loom sector.
- Handloom forms a **part of the heritage of India** and exemplifies the richness and diversity of our country and the artistry of the weavers.

Steps proposed:

- A **committee consisting of all relevant stakeholders** like weavers, trainers, equipment makers, and marketing experts should be formed to recommend ways to achieve the target set for handloom exports.
- Measures should be taken to increase the production capacities of handloom sector from the current Rs. 60,000 crore to over Rs. 1.25 lakh crore to increase exports.
- An **e-commerce portal** will help the handloom weavers and handicraft artisans sell their products directly. This will not only help the artisans realize better prices for their products but will also help increase their market reach both within India as well as other countries.
- The **Design Resource Centre** in Tamil Nadu can provide design inputs to promote export of handloom products by facilitating product diversification and adaptation to meet modern market requirements.

D. GS 4 Related

Nothing here for today!!!

E. Editorials

Category: ECONOMY

1. Why is retrospective tax being scrapped?

Context:

- Finance Minister has introduced the **Taxation Laws (Amendment) Bill in the Lok Sabha** to nullify the provision for retrospective tax.

Background:

- The **Retrospective tax clause introduced in 2012** has been criticized as being **against the principle of tax certainty and damaging to India's image as a possible foreign investment destination**.
- The affected companies like Vodafone and Cairn Energy have filed and won international arbitration rulings that held the **Indian government in breach of bilateral investment protection agreements** over the imposition of retrospective taxes.

Details:

- The Bill proposes to **do away with retrospective taxation on the sale of assets in India by foreign entities** executed before May 2012.

For more information on the terms of the proposed amendments refer to the following article:

[UPSC Comprehensive News Analysis 06th Aug 2021](#)

Reasons for the proposed amendment:

Avoid legal sanctions:

- The government has been fighting legal cases against Vodafone and Cairn Energy on this aspect.

- Vodafone got a favourable ruling in September 2020 at the Permanent Court of Arbitration at The Hague. Also an Arbitral Tribunal ruled in favour of Cairn, awarding it a compensation.
- Cairn has even applied in courts in the U.S., Canada, Singapore, Mauritius and the Netherlands for seizure of Indian assets.
- The **loss of the arbitration cases** and **Cairn's pursuit of India's assets abroad** may have forced the government to propose the amendments.

Need for economic recovery:

- **Quick recovery of the economy after the COVID-19 pandemic** is the need of the hour and foreign investment has an important role to play in this regard.
- The proposed change will go a long way in undoing the damage done by the retrospective tax clause on India's image as a foreign investment destination and **help attract higher inward investments**.

2. How will digital voucher payment system work?

Context:

- The recent launch of the **e-RUPI platform**

Details:

For detailed information on the working of the e-RUPI refer to the following article:

[e-RUPI Digital Payment System](#)

Significance:

- The e-RUPI platform can be scaled to work as a new **digital payment system**, which could be used to send the government's monetary benefits directly to beneficiaries' mobile phones. This can **help ensure government benefits and services reach their intended beneficiaries in a timely and 'leak-proof' manner**. Thus the platform can help plug holes in the existing government welfare payment disbursement system.
- The digital system will also help to track and trace how the subsidies and benefits given to citizens are used. This will **provide valuable inputs to evidence based policy making in the administration**.
- The e-RUPI will also allow the government agencies to keep track of how much of the allocated funds have been disbursed to citizens. This will bring in a sense of transparency and accountability in the welfare administration and also help the government revert back the unused funds. This will **help stop misuse of funds**.

Challenges:

- Mobile is an essential device to access the e-RUPI vouchers. The **lack of universal mobile ownership and the gender gap in it would be a major challenge in implementation of the e-RUPI**.
 - As per available estimates, India's smartphone penetration rate is 42% in the financial year 2020 and it could reach 51% only by 2025.

- A 2018 research by Harvard University notes a **33-percentage point gender gap in mobile phone ownership in India**.
- Also the rural areas have lower mobile ownership as compared to urban areas. The poor families have very limited mobile ownership.

F. Prelims Facts

1. Location of Dara Shikoh's grave still a mystery

Dara Shikoh:

- Dara Shikoh was the **eldest son and heir-apparent of the Mughal emperor Shah Jahan**.
- He was killed on the orders of his brother Aurangzeb in 1659 after losing the war of succession.
- Dara Shikoh was known for his tolerance and academic aspects.
 - He authored the work **The Confluence of the Two Seas (Majma-ul-Bahrain)**, which argues for the harmony of Sufi philosophy in Islam and Vedanta philosophy in Hinduism.
 - He completed the **translation** of the **Upanishads** from their original Sanskrit into Persian in 1657 so that they could be studied by Muslim scholars. His translation is often called **Sirr-i-Akbar**.
 - He was also a great patron of arts.

Alamgirnama:

- **Alamgirnama is the court history of Emperor Aurangzeb (1658-1707)** written by Mirza Muhammad Qazim.

2. Made-in-India carrier

- **India's first indigenous aircraft carrier (IAC-1)** would be named Vikrant after the first carrier operated by the Indian Navy.
- It has been **designed by the Directorate of Naval Design and built by the public sector shipbuilder Cochin Shipyard**.
- Its degree of indigenisation is about 76%.
- Currently, **Vikramaditya is the only aircraft carrier in service with the Indian Navy**.

1. Ladakh glacier retreat due to warming, low winter precipitation, finds study

- A recent study has indicated that the **Pensilungpa Glacier located in Ladakh's Zaskar Valley is retreating** due to an **increase in temperature and a decrease in precipitation during winters**.
 - **Climate change is** causing variations in both temperature and snowfall.
- The study also points at the **significant influence of debris cover on the mass balance** and retreat of the glacier's endpoint, especially in summer.

- Mass balance defined as the difference between accumulation and ablation is crucial to the survival of a glacier.
- Debris-covered glaciers are valley glaciers that have a layer of rocks and sediment on top of the ice surface. Many of the world's alpine glaciers are covered by debris to some extent, and this debris affects the rate of ice melting. This, in turn, impacts the overall mass balance of glaciers.

2. 'Ancestral Dravidian tongues spoken on Indus Valley sites'

- A recent publication has provided crucial evidence that **ancestral Dravidian languages were possibly spoken by a significant population in the Indus Valley Civilisation**.
- This finding is based on common proto-words between the ancestral Dravidian languages and those documented in Indus Valley Civilization.
- This the study claims points to **deep linguistic ancestry between the two regions**.

Brahui:

- **Brahui is a northern Dravidian language** spoken primarily by the Brahui people in the central part of Balochistan Province, in Pakistan and in scattered parts of Iran, Afghanistan and Turkmenistan.

Burushaski:

- **Burushaski is a language isolate spoken by Burusho people** who reside almost entirely in northern Gilgit-Baltistan, Pakistan, with a few hundred speakers in northern Jammu and Kashmir, India.

Binjor, Rajasthan:

- Rajasthan's Binjor is considered to be an **Indus Valley civilisation site**.
- Located in the Ghaggar river (Ghaggar-Hakra River) valley it is widely considered as an Early Harappan and Mature Harappan site (Indus Valley Civilization).
- Archaeologists have come across **signs of industrial activity** going back at least 4500 years in Rajasthan's Binjor.

H. UPSC Prelims Practice Questions

Q1. Which of the given statement/s is/are correct?

1. Dara Shikoh translated Bhagavad Gita and Upanishads into Persian.
2. He is the author of Alamgirnama.
3. His book "Majma-ul-Bahrain" is a comparative study of Vedanta and Sufism.
4. Italian traveller Niccolao Manucci's 'Travels of Manucci' has a graphic description of Dara Shikoh's burial.

Options:

- a. 1, 2 and 4 only

- b. 3 and 4 only
- c. 2 and 3 only
- d. 1, 3 and 4 only

Answer: d

Explanation:

- Dara Shikoh was the eldest son and heir-apparent of the Mughal emperor Shah Jahan.
- Dara Shikoh was known for his tolerance and academic aspects.
 - He authored the work The Confluence of the Two Seas (Majma-ul-Bahrain), which is a comparative study of Vedanta and Sufism and he argues for the harmony of Sufi philosophy in Islam and Vedanta philosophy in Hinduism.
 - He completed the translation of Upanishads from their original Sanskrit into Persian in 1657 so that they could be studied by Muslim scholars. His translation is often called Sirr-i-Akbar.
 - Dara Shikoh also translated Bhagavad-gita into Persian.
- Italian traveller Niccolao Manucci's 'Travels of Manucci' has a graphic description of Dara Shikoh's burial.
- Alamgirnama is the court history of Emperor Aurangzeb (1658-1707) written by Mirza Muhammad Qazim.

Q2. Which of the given statements with respect to the twin Keck Observatory telescopes is/are correct?

1. They are the world's most scientifically productive optical and infrared telescopes.
2. They are located in Atacama Desert of northern Chile.
3. The project is funded by scientific organisations of Canada, China, India, Japan and USA.

Options:

- a. 1 and 3 only
- b. 1 only
- c. 2 only
- d. 1, 2 and 3

Answer: b

Explanation:

- The twin Keck Observatory telescopes sit atop Maunakea on Hawai'i, and are the world's most scientifically productive optical and infrared telescopes. Each telescope weighs 300 tons and operates with nanometer precision.

- The W. M. Keck Foundation (U.S. based) funded both the original Keck I telescope and six years later, its twin, Keck II.

Q3. Which of the given statements with respect to PM-DAKSH Yojana is/are correct?

1. It is a National Action Plan for skilling of marginalized persons covering SCs, OBCs, EBCs, Sanitation workers.
2. It is being implemented by the Ministry of Skill Development and Entrepreneurship.
3. Its components include up-skilling/reskilling, short term training programme, long term training programme and entrepreneurship development program.

Options:

- a. 1 and 2 only
- b. 3 only
- c. 1 and 3 only
- d. 1, 2 and 3

Answer: c

Explanation:

- The PM-DAKSH Yojana is a National Action Plan for skilling of marginalized persons covering SCs, OBCs, EBCs, Sanitation workers. It includes up-skilling/reskilling, short term training programme, long term training programme and entrepreneurship development program.
- It is being implemented by the Ministry of Social Justice and Empowerment

Q4. Which of the given pairs is/are correctly matched?

| GI Tagged product | State |
|----------------------|----------------|
| 1. Puanchei shawl | Assam |
| 2. Ilkal Sarees | Andhra Pradesh |
| 3. Tangaliya Shawl | Gujarat |
| 4. Chakhesang Shawls | Nagaland |

Options:

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

Answer: c

Explanation:

- Puanchei shaw- Mizoram
- Ilkal Sarees- Karnataka

Q5. In India, cluster bean (Guar) is traditionally used as a vegetable or animal feed, but recently the cultivation of this has assumed significance. Which one of the following statements is correct in this context?

- a. The oil extracted from seeds is used in the manufacture of biodegradable plastics
- b. The gum made from its seeds is used in the extraction of shale gas
- c. The leaf extract of this plant has the properties of anti-histamines
- d. It is a source of high quality biodiesel

Answer: b

Explanation:

- Guar gum is derived from guar seeds, a legume crop that grows in semi-arid regions of Rajasthan, Gujarat and Haryana. Drilling companies use it to thicken water that is mixed with sand and pumped through shale rock cracks to extract gas.

I. UPSC Mains Practice Questions

1. Discuss the effect of climate change on the Atlantic Meridional Overturning Circulation (AMOC). (10 Marks, 150 Words)[GS-1, Geography]
2. Should the vaccine quota for private hospitals be ended? Critically Evaluate. (10 Marks, 150 Words)[GS-2, Health]