Climate Change and Ocean Currents

A new study suggests a **link** between **Atlantic Meridional Overturning Circulation (AMOC) and the Indian Ocean.**
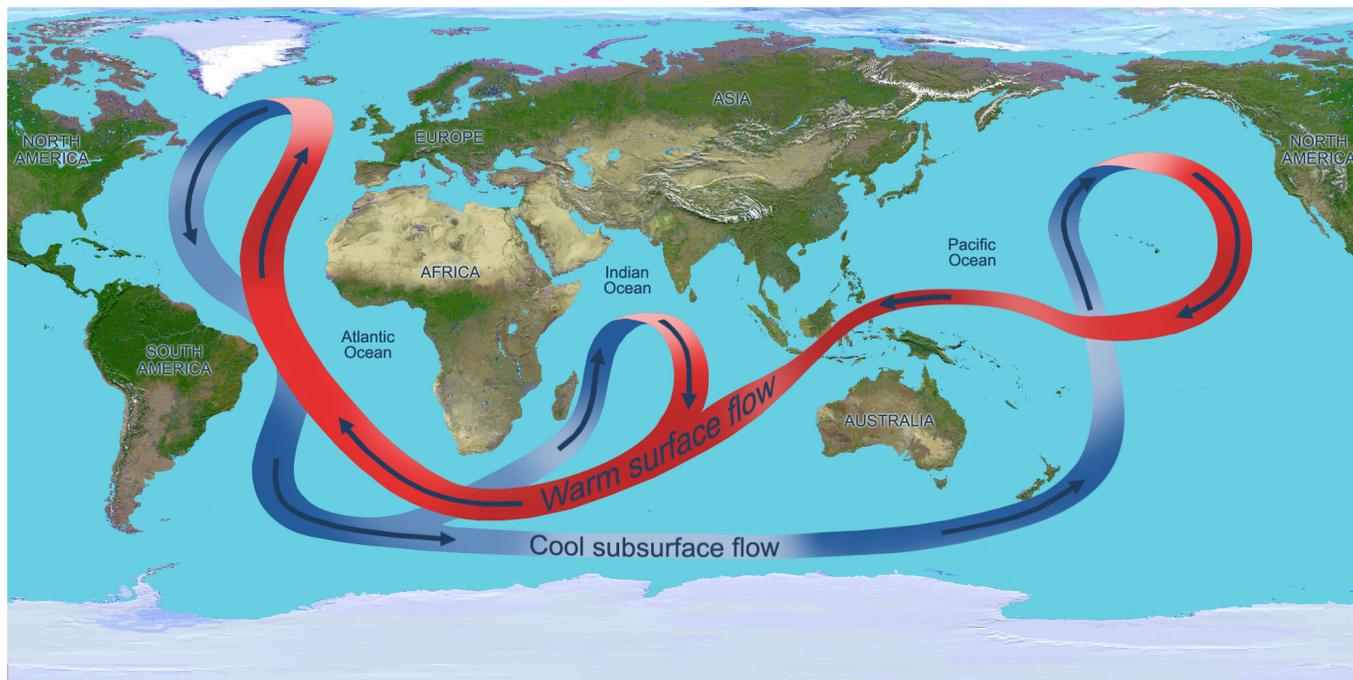
- For thousands of years, Atlantic Meridional Overturning Circulation (AMOC) has remained stable but in the last 15 years, signs show that **AMOC may be slowing,** which could have drastic consequences on the global climate.
    - However, the **rising temperatures in the Indian Ocean** can help **to boost the AMOC** and **delay slow down.**
- Warming in the Indian Ocean generates additional precipitation, which, in turn, draws more air from other parts of the world, including the Atlantic.
- With so much precipitation in the Indian Ocean, there will be less precipitation in the Atlantic Ocean.
- Lesser precipitation leads to higher salinity in the waters of the tropical portion of the

Atlantic — because there won't be as much rainwater to dilute it.
- This saltier water in the Atlantic, as it comes north via AMOC, will get cold much quicker than usual and sink faster.
- The above process would act as a jump start for AMOC, intensifying the circulation.
- But if other tropical ocean's warming, especially the Pacific's, catches up with the Indian Ocean, the advantage of intensification for AMOC may stop.
- Moreover, it isn't clear whether the slowdown of AMOC is caused by global warming alone or it is a short-term anomaly related to natural ocean variability.
- Slow down of AMOC had taken place 15,000 to 17,000 years ago which caused harsh winters in Europe, with more storms or a drier Sahel in Africa due to the downward shift of the tropical rain belt.
- Alternating oceanic system patterns like ENSO also affects rainfall distribution in the tropics and can have a strong influence on weather in other parts of the world.

Atlantic Meridional Overturning Circulation (AMOC)

- Atlantic meridional overturning circulation (AMOC) — which is sometimes referred to as the **"Atlantic conveyor belt"** — is **one of the Earth's largest water circulation systems** where ocean currents move warm, salty water from the tropics to regions further north, such as western Europe and sends colder water south.
    - As warm water flows northwards in the Atlantic, it cools, while evaporation increases its salt content.
    - Low temperature and high salt content increases the density of the water, causing it to sink deep into the ocean.
    - The cold, dense water deep below slowly spreads southward.
    - Eventually, it gets pulled back to the surface and warms again, and the circulation is complete.
    - This continual mixing of the oceans and the distribution of heat and energy around the planet contributes to the global climate.
- Atlantic Meridional Overturning Current (AMOC) **ensures the oceans are continually mixed, and heat and energy are distributed around Earth.**

El Niño-Southern Oscillation (ENSO)

- It involves temperature changes of 1°-3°C in the central and eastern tropical Pacific Ocean, over periods between three and seven years.
- El Niño refers to the warming of the ocean surface and La Niña to cooling, while "Neutral" is between these extremes.

Source: IE

Threats to Children

On the 30th anniversary of the **Convention on the Rights of the Child (CRC), the United Nations Children's Fund (UNICEF)** raised alarms on major growing and future challenges facing children.

UNICEF outlined the following eight growing challenges for the world's children.

Prolonged Conflicts

- **Problem:**
    - One in four children live in countries affected by violent fighting or disaster.
    - Children and young people's **education is disrupted** by conflict and natural disaster.
- **Solution: A digitally inclusive world** that allows young people, no matter their situation, to get access to education.

Pollution and the Climate Crisis

- **Problem:**
    - Climate change is becoming a key force behind the recent continued rise in global hunger, and as escalating droughts and flooding degrade food production, the next generation of children will bear the greatest burden of **hunger and malnutrition.**
    - Air pollution, toxic waste and groundwater pollution is **damaging children's health.**
- **Solution:**
    - Governments and businesses need to work together to tackle the root causes by **reducing greenhouse gas emissions** in line with the **Paris Agreement.**
    - They also need to work hand in hand to **reduce fossil fuel consumption**, develop **cleaner agricultural,** industrial and transport systems and invest in scaling **renewable energy sources.**

A decline in mental health

- **Problem:**
    - **Mental illness among adolescents has been on the rise** in the years since the adoption of the CRC.
    - **Depression** is among the leading causes of disability in the young.
- **Solution:**
    - **Rehabilitation for children and young people affected by mental health issues** need to be prioritized.
    - The **stigma and taboo surrounding mental illness needs to be challenged** so that treatment can be sought and support is provided.

Mass Migration and Population Movements

- **Problem:**
  - When **migration** is driven by desperation, children often take perilous journeys across deserts, oceans and armed borders, encountering **violence, abuse and exploitation** on the way.
  - One of the **greatest migrations** the world has ever seen is happening within borders, with millions migrating internally **from rural to urban areas.**
- **Solution:**
  - It is essential that child migrants have their rights upheld. Governments can protect child migrants by **prioritizing the best interests of children in the application of immigration laws.**
  - Social policies and programmes designed to support child survival and development should pay **greater attention to the poorest and most marginalized urban children.**

Statelessness

- **Problem:** Every child has a right to a legal identity, to birth registration and a nationality. It is expected that, **almost 1,00,000 babies born today, may never have an official birth certificate,** reason being parents are stateless or from a persecuted or marginalized community.
- **Solution: Registering children at birth is the first step** in securing their recognition before the law, safeguarding their rights, and ensuring that any violation of these rights does not go unnoticed.
  > The United Nations has set a goal that every human being on the planet will have a legal identity by 2030.

Future Skills for Future Work

- **Problem:** Too often, it is seen that young people **lack access to an education that will prepare them for contemporary job and business opportunities** i.e. giving them the skills and outlook they need for a twenty-first century economy.
- **Solution:** There is a need to **prepare young people to become productive** and engaged citizens.

Data Rights and Online Privacy

- **Problem:**
  - Too often, **children do not know what rights they have over their own data** and do not understand the implications of their data use, and how vulnerable it can leave them.
  - **Privacy terms and conditions** on social media platforms are often **barely**

understood by highly educated adults, let alone children.
- ○ **Personal information** created during childhood may be shared with third parties, traded for profit or **used to exploit young people** – particularly the most vulnerable and marginalized.
- **Solution:**
    - ○ Such design systems need to be developed that **maximize the positive benefits of big data and artificial intelligence,** while preserving privacy, providing protections from harm and empower people – including children – to exercise their rights.
    - ○ The **Convention on the Rights of the Child makes it clear that children have a specific right to privacy** and there is no reason this should not apply online.
    - ○ Equipping young people with the **knowledge and skills to claim their digital rights** is essential.
    - ○ Private sector internet service providers and **social media must develop transparent, ethical standards** and implement heightened scrutiny and protection for the full range of data concerning children.

Online Misinformation

- **Problem:** Studies indicate that many children and young people today **have a hard time distinguishing fact from fiction online** and as a consequence, the generation is finding it more difficult to know who and what to trust.
- **Solution:**
    - ○ A higher level of **digital and media literacy** can act as a protective filter.
    - ○ The society needs to work harder to **prepare savvy young citizens to resist manipulation** and retain a trusting connection to reliable and verifiable information and institutional knowledge.

Convention on the Rights of the Child

- It is a treaty **adopted** by the United Nations General Assembly in **1989.**
- It recognises a child as every human being under 18 years old.
- It sets out the **civil, political, economic, social and cultural rights of every child,** regardless of their race, religion or abilities.
    - It includes rights such as Right to Education, Right to Rest and Leisure, Right to Protection from Mental or Physical Abuse including Rape and Sexual Exploitation.
- It is the **world's most widely ratified human rights treaty.**

Source: TH

PACEsetter Fund Programme

The **Ministry of New and Renewable Energy** recently awarded grants to the awardees of the second round of PACEsetter fund programme.

- The PACEsetter fund was constituted by **India and the USA** in 2015 as a joint fund.
- The **mission** of the PACEsetter Fund is to accelerate the commercialization of innovative off-grid clean energy access solutions by providing early-stage grant funding that would allow businesses to develop and test innovative products, business models and systems.
- The Fund's main purpose is to improve the viability of off-grid renewable energy businesses that sell small scale (less than 1 megawatt) clean energy systems to individuals and communities without access to grid-connected power or with limited/intermittent access.

Source: PIB