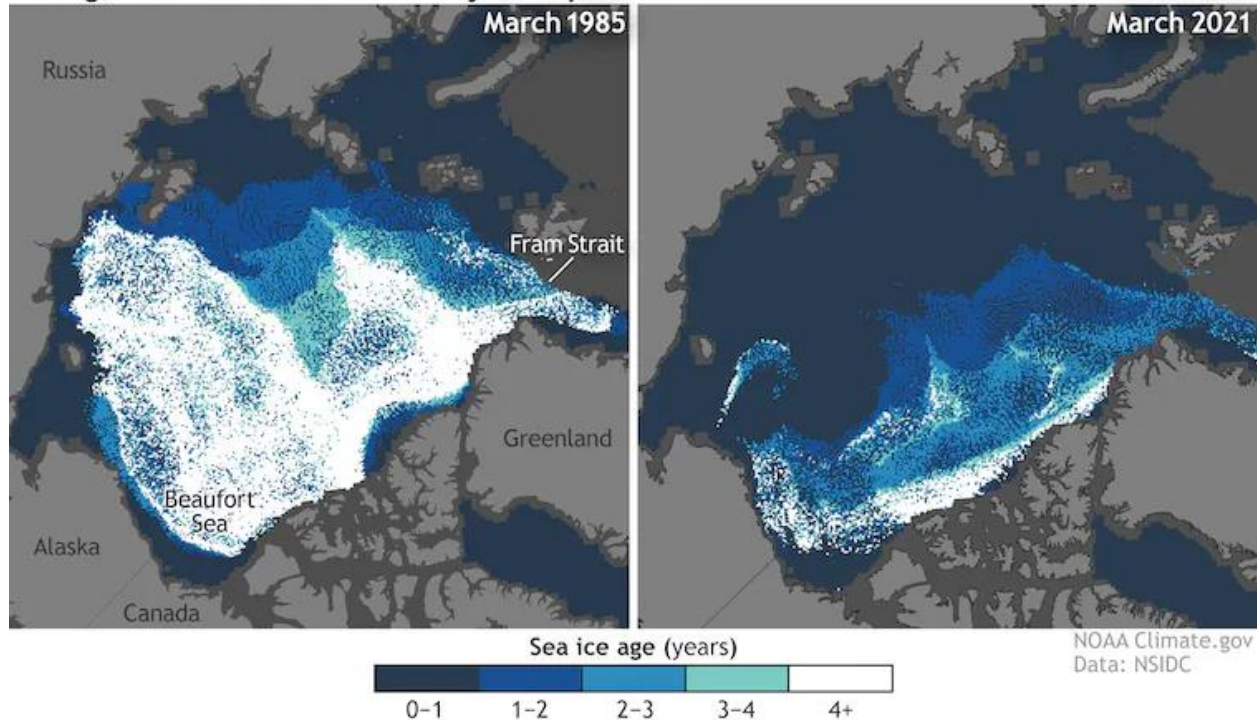


1. Arctic Report Card

Young, thin ice dominates today's ice pack



Topic: Environment and Ecology

In News: The Arctic report card has been published by US National Oceanic and Atmospheric Administration (NOAA).

More on the Topic

- Major Findings:
- The Arctic is now seeing **more rainfall when historically** it would be snowing.
- Arctic precipitation is on the rise across all seasons, and these seasons are shifting.
- **Sea ice that once protected coastlines from erosion during fall storms is forming later.** And thinner river and lake ice is making travel by snowmobile increasingly life-threatening.
- Much of this new precipitation is now falling as rain, sometimes during winter and traditionally frozen times of the year. **This disrupts daily life for humans, wildlife and plants.**
- Roads become dangerously icy more often, and communities face greater risk of **river flooding events.**
- For Indigenous reindeer herding communities, **winter rain can create an impenetrable ice layer that prevents their reindeer from accessing vegetation beneath the snow.**



- Arctic-wide, this shift toward wetter conditions can disrupt the lives of animals and plants that have evolved for dry and cold conditions, potentially altering Arctic peoples' local foods.

Reasons for Increased Arctic Precipitation:

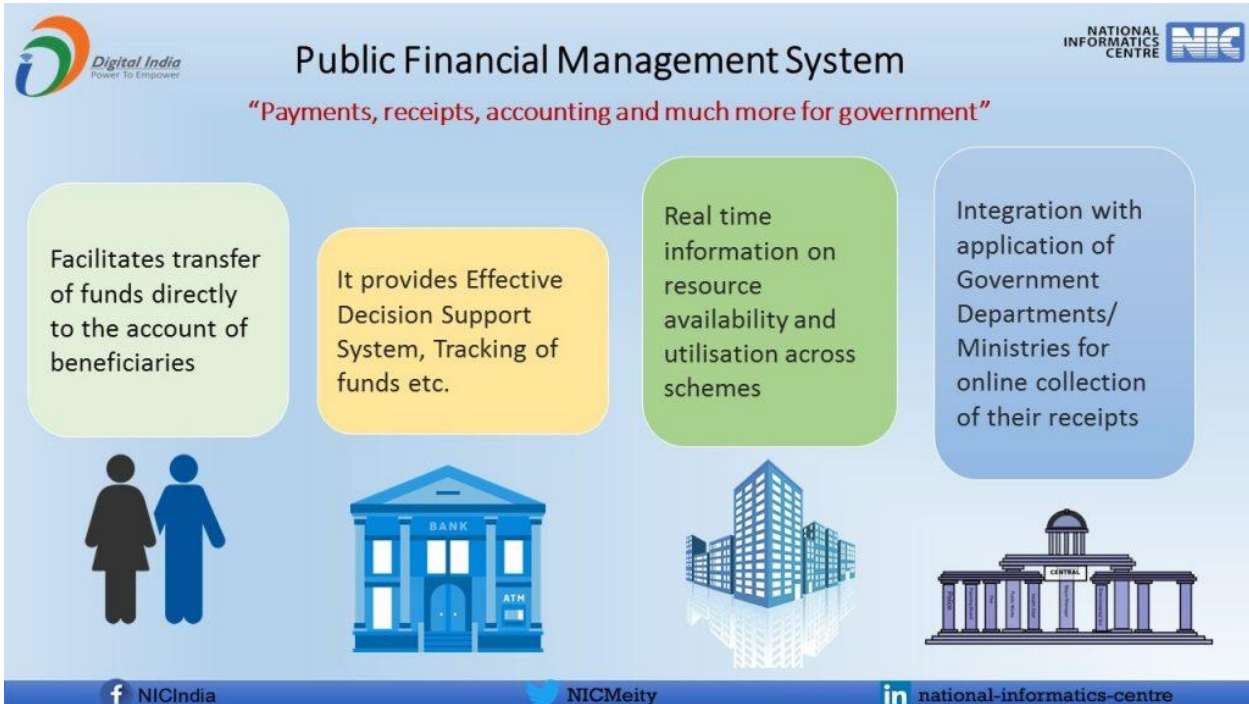
- There are multiple reasons for this increase in Arctic precipitation.
- As sea ice rapidly declines, more open water is exposed, which feeds increased moisture into the atmosphere. The entire Arctic region has seen a more than 40% loss in summer sea ice extent over the 44-year satellite record.
- The Arctic atmosphere is also warming more than twice as fast as the rest of the globe, and this warmer air can hold more moisture.

Aftereffects of melting Arctic Ice:

- Under the ground, the wetter, rainier Arctic is **accelerating the thaw of permafrost**, upon which most Arctic communities and infrastructure are built.
- The result is **crumbling buildings, sagging and cracked roads, the emergence of sinkholes and the collapse of community coastlines along rivers and ocean.**
- Wetter weather also disrupts the building of a reliable winter snowpack and safe, reliable river ice, and often **challenges Indigenous communities' efforts to harvest and secure their food.**

Source: Indian Express

2. Public Financial Management System



Public Financial Management System
 "Payments, receipts, accounting and much more for government"

Facilitates transfer of funds directly to the account of beneficiaries

It provides Effective Decision Support System, Tracking of funds etc.

Real time information on resource availability and utilisation across schemes

Integration with application of Government Departments/ Ministries for online collection of their receipts

Digital India Power To Empower

NATIONAL INFORMATICS CENTRE **NIC**

Icons: People, Bank, Buildings, Government Building

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Topic: Economy

In News: The Public Accounts Committee (PAC) has stressed fiscal prudence in financial planning by incorporating scientific methods into budgeting, projecting and utilisation of funds.

More on the Topic:

- Implementation of PFMS has been dealt with casual approach and the financial planning lacks proper planning.
- Human resource deployment, infrastructure, and technological schemes advancement is lacked in the PFMS.
- Absence of full coverage of all Direct Benefit Transfer (DBT) schemes is another drawback.

Recommendations:

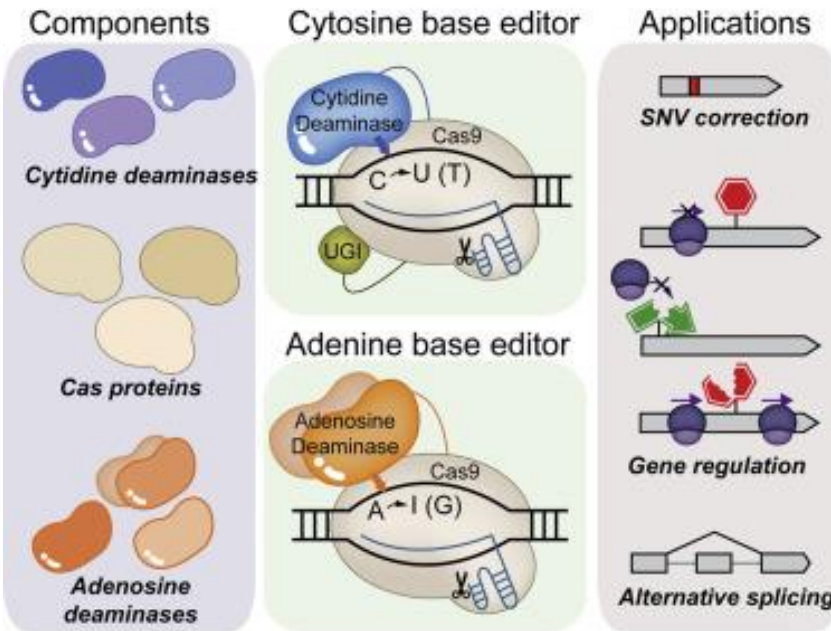
- There is a need for **Incorporating scientific methods into budgeting, projecting and utilisation of funds for fiscal prudence.**
- **Swift inclusion of all implementing agencies and integration of payment-transfer software within fixed timelines** to ensure transparency, accountability and revenue saving.
- Thorough assessment of nature of **DBT scheme and its components prior to integration in PFMS.**

About PFMS:



- The Public Financial Management System (PFMS) is a **web-based online software application developed and implemented by the** Ministry of Finance, Government of India.
- PFMS started during 2009 with the objective of **tracking funds released under all Plan schemes of Government of India**, and real time reporting of expenditure at all levels of Programme implementation.
- Subsequently, **the scope was enlarged to cover direct payment to beneficiaries under all Schemes.**
- The primary function of PFMS today is **to facilitate sound Public Financial Management System** for Government of India by establishing an efficient fund flow system as well as a payment cum accounting network.
- PFMS has established interface with the treasury systems of all the 28 States and the 2 Union Territories with Legislatures.
- This facilitates **exchange of data regarding budget, allocation and expenditure against the central transfer of funds for Centrally Sponsored Schemes of the Government of India.**

Source: PIB



3. Base Editing

Topic: Science and Technology

In News: Base editing might help to cure T-cell acute lymphoblastic leukaemia.

More on the Topic:

- The human genome has four types of bases, which are found in DNA: **adenine (A), cytosine (C), guanine (G), and thymine (T)**. These bases are the “letters” that spell the genetic code that holds the instructions of life.
- The genome comprises more than 3 billion of these base pairs in 2 intertwining double strands of DNA; the sequence of these bases encodes genes. Misspellings of even a single letter of a gene, known as a point mutation, can result in disease.
- T-cells had become cancerous because of a mis-arrangement in the sequence of bases.
- Scientists used **base-editing to create a new type of T-cell from a healthy donor** that would not attack other cells, not kill each other, survive chemotherapy and finally, hunt down all other T-cells in patient’s body.
- When T-cells become cancerous there will be mis-arrangement in the sequence of bases.
- The scientists have create **a new type of T-cell from a healthy donor that would not attack other cells, not kill each other, survive chemotherapy and finally, hunt down all other T-cells in patient’s body.**



About Base Editing:

- With advances in genetic technology, **scientists have been able to zoom into a precise part of the genetic code to alter the molecular structure of just one base**, effectively changing its genetic instructions.
- Base editors have two principal components:
- **A CRISPR protein**, bound to a guide RNA, that leverages the established DNA-targeting ability of CRISPR, but modified to not cause a double-stranded break.
- **A base editing enzyme, such as a deaminase**, which carries out the desired chemical modification of the target DNA base.
- This proprietary combination is designed **to enable the precise targeting and editing of a single base pair of DNA or multiple bases at the same time**.
- When introduced into a cell, the CRISPR protein targets the desired genomic location by recognising a complementary section on the DNA to the section encoded in the guide RNA.
- The base editor binds the target DNA and exposes a narrow editing window. The deaminase then makes the desired edit to a target base.

Source: Hindu

4. Youth Co: Lab for social entrepreneurs

Topic: Government Schemes



Youth Co:Lab India 2022-2023 Application Form

For the 5th Edition, Youth Co:Lab 2022-23 is looking to support passionate youth entrepreneurs with solutions that solve real problems and/or create meaningful innovation opportunities in the following themes

Themes:

1. Digital and Financial Literacy for Youth
2. Gender Equality and Women Economic Empowerment
3. Developing FinTech Solutions focused on Biodiversity Conservation
4. Promoting Biodiversity-friendly Lifestyles through Technological Solutions in Finance
5. Accelerating Circular Economy through Upcycling Innovations
6. Behavioral Nudges for LIFE

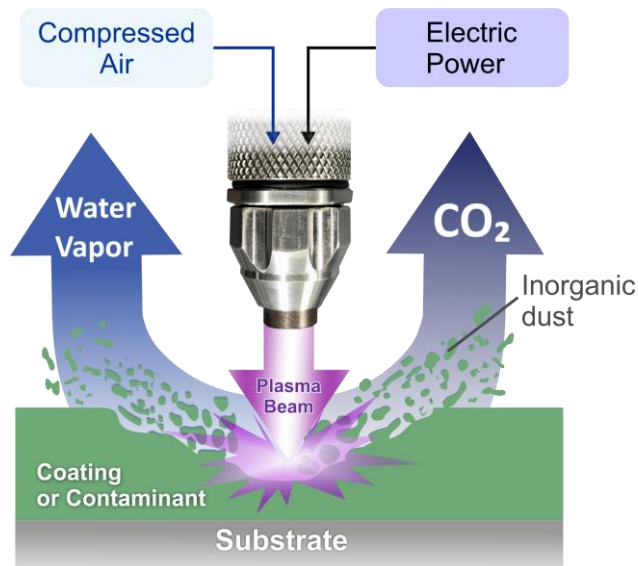
In News: The Atal Innovation Mission (AIM) of NITI Aayog in collaboration with UNDP India on Thursday launched the fifth edition of Youth Co: Lab to support young social entrepreneurs.

More on the Topic:

- **Youth Co: Lab is an initiative launched in 2019 by UNDP India in partnership with AIM to establish a common agenda for Asia-Pacific countries** to invest in and empower youth to accelerate implementation of the Sustainable Development Goals (SDGs) through leadership, social innovation, and entrepreneurship.
- Through Youth Co: Lab, **30 early-stage start-ups would be supported by the springboard programme**, and the best would be provided a seed grant for scaling up their start-up.
- Entrepreneurs between the age brackets of 18-29 can apply for the programme.
- The five focus thematic areas for Youth Colab 2022-23 are: Digital and Financial Literacy for Youth, Gender Equality and Women Economic Empowerment, Developing FinTech Solutions focused on Biodiversity Conservation, Promoting Biodiversity-friendly Lifestyles through Technological Solutions in Finance, Accelerating Circular Economy through Upcycling Innovations, and Behavioural Nudges for LiFE (Lifestyle for Environment).

5. Plasma Waters' continuous-flow cold plasma technology

Topic: Science and Technology





In News: Plasma Waters' continuous-flow cold plasma technology turns water into Plasma Activated Water (PAW), a natural microbicide and growth enhancer.

More on the Topic:

- PAW provides a natural alternative that can **replace the damaging impact from pesticides** and can boost plant growth, disease resistance and stress tolerance levels.
- It also enhances freshness and longevity after harvest resulting in reduction in food wastages from farm to plate value chain.

Source: Business Standard

6. Turnkey Works

Topic: Economy



In News: NMDC has released Standard Bidding Document for Turnkey Works.

More on the Topic:

- A turnkey project is a delivery method in which a single entity—a contractor—works with a project owner under a single contract to complete all stages of a project from detail engineering through construction.
- Under this a firm agrees **to fully design, construct and equip a manufacturing/ business/ service facility and turn the project over to the purchaser when it is ready for operation for a remuneration.**
- Some of the few examples of Turnkey Projects include Engineering Projects, large construction projects i.e Construction of Airports, Ports, skyscrapers, Bridges, In IT (turn-key implementation of information systems), and more.



- It is one of modes of carrying out international business project.
- It will help NMDC retain and comply with four axioms of public procurement i.e., transparency, equity, fairness, and competitiveness.

Source: Business Standard

7. UNESCO Convention of 1970

Topic: Culture



In News: Tamil Nadu has stopped auction of stolen Nataraja idol in France utilising UNESCO convention 1970.

More on the Topic:

- The 1970 Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property **urges States Parties to take measures to prohibit and prevent the illicit trafficking of cultural property.**
- Under the 1970 Convention, cultural property is under protection.
- Cultural property includes anything of scientific, historical, artistic, and or religious significance, as defined by Article I of the convention. However, every state can define its own cultural property, as long as it is an item of importance and within the categories defined in Article I.
- The Convention recommends the enforcement of **the protection of cultural property in "three main pillars", each being preventive measures, restitution provisions, and international cooperation.**

Source: Business Standard
