

Proof of Work (PoW) Protocol

❖ Context

- The European Parliament provided major relief to the crypto industry by rejecting a clause in the Markets in Crypto Assets (MiCA) legislation that would have effectively banned all PoW based cryptocurrencies including bitcoin.

❖ Key Highlights

❖ About the PoW

- It is a **consensus based protocol** used by **blockchain platforms**, including Bitcoin and Ethereum.
- In PoW, **every miner** on the network **competes to validate transactions**, the first one to validate is awarded with a new crypto.
- The miner with **most computing power win** in such competition but that also requires **large amount of electricity**.
- Bitcoin mining consumes 121.36 Twh (terawatt hours) per year which is more than the electricity consumption of countries like Argentina, Malaysia, & Sweden.

❖ Proof of Stake (PoS)

- Newer crypto platforms such as Cardano & Solana are built on PoS system.
- In this, **miners stake their own crypto currencies to join the network**.
- Miners with highest stakes get to validate the transactions, thus reducing overall energy consumption even by 99.5%.

❖ Its position in India

- India has more traders than miners.
- **Only 0.05%** of the monthly **computing power** put into mining Bitcoins worldwide **comes from India**.
- India had also **banned the import of specific machines** needed for crypto mining in 2017.
- The upcoming crypto bill is expected to list out rules and penalties for crypto mining in India.

❖ MiCA Bill

- Introduced in 2020, the bill sought to **curb the harmful impact of crypto mining on the environment**.
- The rejected clause asked for a 'minimum environment sustainability' standard to be enforced, by all PoW based platform or face a ban on mining and trading.

Deep Ocean Mission (DOM)

❖ Context

- Recently, the **Ministry of Earth Sciences** has launched the **Deep Ocean Mission (DOM)**.
- **Indian Space Research Organization (ISRO)** is one of the collaborators of the Ministry of Earth Sciences for implementation of Deep Ocean Mission.

❖ Key Highlights

- **National Institute of Ocean Technology (NIOT)**, is developing a **manned submersible** with a capacity to **carry three human beings to 6000 m ocean depth**.
 - NIOT is an autonomous institute under the Ministry of Earth Sciences.
- **The Vikram Sarabhai Space Center (VSSC)** of ISRO is involved in **developing a titanium alloy human sphere** of 2.1 m diameter for the manned submersible.
- The overall estimated cost of the Deep Ocean Mission is Rs. 4077 crores for a period of five years (2021 to 2026).
- The development of the mission has been going on **since 2018**.

❖ About The Mission

- **Aim:**
 - The focus of the mission will be on **deep-sea mining, ocean climate change advisory services, underwater vehicles and underwater robotics related technologies**.
- **Nodal Ministry:**
 - Ministry of Earth Sciences.

❖ Components of the Mission

- The mission focuses the **following six thematic areas:**
 1. Development of Technologies for Deep Sea Mining, Manned Submersible, and Underwater Robotics.
 2. Development of Ocean Climate Change Advisory Services.
 3. Technological innovations for exploration and conservation of deep-sea biodiversity.
 4. Deep Ocean Survey and Exploration.
 5. Energy and freshwater from the Ocean and
 6. Advanced Marine Station for Ocean Biology which will be implemented by the institutions of MoES and its partner institutions.

❖ Significance

- The mission will give a **boost to efforts to explore India's vast Exclusive Economic Zone and Continental Shelf**.
- The plan will enable India to develop capabilities to **exploit resources in the Central Indian Ocean Basin (CIOB)**.
- It will pave the way for further studies and research into **deep-sea biodiversity**.
- As the ocean will be monitored continuously, **every slight change in climate will be noted**, leading to better data collections and hence improved actions.

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News in Between the Lines

Cheetah



❖ Context

- The cheetah, which became extinct in India after Independence, is **all set to return with the Union Government launching an action plan.**
- According to the plan, **about 50 of these big cats will be introduced in the next five years**, from the African savannas, home to cheetahs.

❖ Key Highlights

- The Asiatic cheetah is the **only large carnivore to have gone extinct** in India in the 1950s due to hunting and loss of habitat.
- With help from the **Wildlife Institute of India** and the **Wildlife Trust of India**, the ministry will be translocating cheetahs from **South Africa, Namibia and Botswana**. The big cats will live at **Kuno Palpur National Park** in Madhya Pradesh as it will be the most suitable for cheetah translocation in terms of habitat and an adequate prey base. **Asiatic Cheetahs** around 40-50 found only in Iran.
- **Protection Status of Asiatic Cheetah.**
 - **IUCN: Critically Endangered (African Cheetah is in Vulnerable Category).**
 - **CITES: Appendix 1 (Same as African Cheetah).**

World Sparrow Day



❖ Context

- World Sparrow Day is **observed every year on March 20.**
- The **first such event was held in 2010.**

❖ Key Highlights

- It is an **initiative by the Nature Forever Society of India** along with the Eco-Sys Action Foundation (France) and other national and international organizations to raise awareness about the bird.
- World Sparrow Day is an **effort to create awareness about all these species** which are spread across three continents namely Asia, Africa and Europe. **World Sparrow Day 2022 theme:**
 - "Monitor the Sparrows & other common birds".

❖ About House Sparrow

- The humble **house sparrow** is one of the **world's most common** and widespread species. Apart from the house sparrow, there are other **twenty-six distinct species of Sparrow.**
- **Habitat:**
 - Though found in widely varied habitats and climates, it **typically avoids extensive woodlands, grasslands, and deserts away from human development.**
- **Distribution:**
 - The House Sparrow (*Passer domesticus*) is perhaps the **most widespread, commonly seen wild bird in the world.**
 - It has been **transported all over the world by European settlers** and can now be found on two-thirds of the landmasses of the world including New Zealand, Australia, North America, India and Europe.
 - It is **only absent from areas like China, Indochina, Japan and areas of Siberia and Australia** to east and **tropical Africa and northern areas of South America** to the west (Summers-Smith, 1988).
- **Protection Status:**
 - **IUCN- Least Concern (LC).**

Arctic Region

❖ Context

- **India aspires to have a permanent presence** with more research and satellite ground stations **in the Arctic region**, suggests a perusal of its Arctic Policy document officially unveiled last week.

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❖ India in Arctic Region

- India has had a **research base in the region since 2008** and also has **two observatories**.
- India now has a **single station, Himadri, in Ny-Alesund, Svalbard**, a Norwegian archipelago, where research personnel are usually present for 180 days.
- India is in the process of procuring an **ice-breaker research vessel** that can navigate the region.
- **India has sent 13 expeditions to the Arctic since 2007** and runs 23 active science projects.
- **Significance:**
 - **Arctic weather influences the Indian monsoon** and hence has been of interest to Indian researchers for decades.
 - **Climate change and the melting of ice caps** imply changes to the Arctic weather.
 - Beyond science, India also expects business opportunities.

❖ About Arctic Council

- Eight nations- **Canada, Denmark, Finland, Norway, Iceland, Russia, Sweden and the United States** make up the Arctic Council.
- **India has the status of 'Observer' member** - 12 other countries have such a status in the Arctic Council and participates in several meetings that are mostly themed around research.

Asani Cyclone



❖ Context

- Recently, **People living in coastal areas of Andaman and Nicobar Islands** were evacuated to safety as the archipelago experienced heavy rain and strong winds due to Cyclone Asani.

❖ Key Highlights

- The **depression over the southeast Bay of Bengal** intensified first into a deep depression and later into a cyclonic storm.
- The Cyclone has been named **Asani**, which was suggested by India's southern neighbour Sri Lanka.
- It is **expected to travel along and off the coast of the Andaman and Nicobar Islands** before it intensifies into a depression.

Carbon Border Tariff



❖ Context

- Recently, European Union countries have backed the bloc's plan to impose a **world-first carbon dioxide emissions tariff** on imports of polluting goods.

❖ Key Highlights

- CO2 emissions costs will be **introduced on imports of steel, cement, fertilizers, aluminium and electricity**.
- **Aim:**
 - To protect European industry from being undercut by cheaper goods made in countries with weaker environmental rules.
- The costs would not kick in until 2026, but a three-year transition phase would begin in 2023.
- **Concerns:**
 - It may become a protectionist device, unduly shielding local industries from foreign competition in so-called 'green protectionism'.

Trade Secrets

❖ Context

- The draft agreement among WTO members regarding waiver of IPR in respect of manufacturing of vaccines does not include automatic sharing of trade secrets by the right holder with a potential manufacturer for free.

❖ What are trade secrets?

- Trade secrets are **intellectual property (IP) rights on confidential information which may be sold or licensed**.



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- Confidential information includes **formulas, practices, processes, designs, instruments, patterns, or compilations of information.**
- According to the Agreement on Trade-Related Aspects of Intellectual Property Rights, commonly referred to as the **TRIPS Agreement**, **three factors define a trade secret.**
 - is not generally known to the public;
 - confers economic benefit on its holder because the information is not publicly known; and
 - where the holder makes reasonable efforts to maintain its secrecy.
- The unauthorised acquisition, use or disclosure of such secret information in a manner contrary to honest commercial practices by others is regarded as an unfair practice and a violation of the trade secret protection.

Dynamic Map



❖ Context

- **Bihar has become the first state** in the country to introduce the concept of a dynamic map for villages.

❖ Key Highlights

- The state assembly has recently passed the **Bihar Land Mutation Amendment Bill 2021**. The bill has got the Governor's assent.
- The bill has made the **mutation of survey maps mandatory**.
- It means, everytime a mutation takes place, i.e. land ownership changes, it will entail three changes - **textual, change in land parcel and modification of survey map**. With the help of dynamic map, anyone can see the updated status of village map and figure out whether a concerned plot belongs to person X or person Y.
- The initiative is aimed at **reducing the land disputes**.

5432



❖ Context

- Terming the real goal of US's Indo-Pacific strategy to create Indo-Pacific version of NATO, China said recently that US is staging a 5432 posture in the Asia Pacific.

❖ Key Highlights

- **5:** refers to the **Five Eyes (FVEY)** : An intelligence alliance involving Australia, New Zealand, Canada, US & UK. These countries are parties to the UK-USA Agreement (1946) which deals with cooperation in signal intelligence.
- **4:** refers to the **Quad group** of India, Australia, Japan and US.
- **3:** refers to the **AUKUS** security partnership of Australia, UK & US - under which US and UK will help Australia to acquire nuclear powered submarines apart from cooperation on cyber capabilities, AI, quantum technologies.
- **2:** refers to the **bilateral military alliances** being strengthened by the US in the region.

Maitri Scholarships



❖ Context

- As an outcome of the **India-Australia virtual summit**, Australia may announce **initiatives worth of Rs. 1500 crores** in areas including education, clean tech, critical minerals, space, foreign trade, skills, innovation and defence exchanges.

❖ Key Highlights

- India-Australia relationship elevated to level of "**Comprehensive Strategic Partnership**" at the first virtual summit in June 2020.
- The two countries will launch the **scholarships on the lines of Fulbright or Rhodes**, called as Maitri scholarships. The **Fulbright Program**, founded by Senator J. William Fulbright in 1946, is one of several US Cultural Exchange Programs with the goal to improve intercultural relations, cultural diplomacy, and intercultural competence between the US and other countries through the exchange of persons, knowledge, and skills.

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DDGS



- The **Rhodes Scholarship** is an international postgraduate award for students to study at the University of Oxford. Established in 1903, it is the **oldest graduate scholarship** in the world. It is considered among the most prestigious international scholarship programmes in the world.

❖ Other key initiatives

- Launching of a new centre of excellence in Bengaluru in critical and emerging technologies.
- Launching of Australia-India young defence officers' exchange program, named after CDS General Bipin Rawat.

❖ Context

- The Centre informed in RS that **production of ethanol** from grain like maize gives DDGS - a **co-product** which is a **very high source of protein** and is also used as **cattle feed/poultry feed**.

❖ Key Highlights

- DDGS refers to **Dried Distillers Grains with Solubles**.
- Distillers grains** are a cereal byproduct of the distillation process.
- Grains, such as corn, are ground and added to hot water. The starch in the grains undergoes saccharification by enzymes, turning the starch into sugars that are released into the water. The water containing sugar is removed which is then fermented to produce alcohol. The remaining residue is distillers grain.
- There are two common types of distillers grains:
 - Wet distillers grains (WDG)** contain primarily unfermented grain residues (protein, fibre, fat and up to 70% moisture). WDG has a shelf life of four to five days.
- Dried distillers grains with solubles (DDGS)** is **WDG** that has been dried with the concentrated thin stillage to 10–12% moisture. DDGS have an almost indefinite shelf life.

AquaMAP



❖ Context

- The Principal Scientific Adviser to the Government of India, inaugurated the new water management and policy centre, AquaMAP, at IIT Madras.

❖ Key Highlights

- AquaMAP is a **national water centre** and IIT Madras is **collaborating with IIT Dharwad** around the broad theme of '**Data Science for Water Security and Agriculture Sustenance**'.
- The centre aims at providing **solutions for complex and challenging water problems**.
- The strategy is designing and evolving smart and optimal water management practices and implementing them in the field, at different locations across the country, as a scalable model by leveraging best practices in management and innovative technologies.

Muthappan Theyyam



❖ Context

- Recently, a video of the art form dancer got viral in social media in Kerala.

❖ Key Highlights

- Theyyam** is ancient ritualistic art and dance form where the performers assumes the form of a god, goddess, warrior, spirit or local deity.
- There are nearly **400 forms of Theyyam** worshipped across temples, shrines, sacred groves and households primarily **in the districts of Kannur and Kasargod**. Among the most common deities, brought to life through *Theyyam*, is **Muthappan**, a hunter god believed to be a personification of **Vishnu and Shiva**.
- Theyyam is often called the '**theatre of the oppressed**' as it is mainly performed by members of the lower-castes and communities such as Malayan, Velan, Vannan, Peruvannan, among others, who have historically suffered in pre-independent, feudal Kerala.

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