News Analysis (14 Jun, 2021)

47th G7 Summit

Why in News

Recently, the Indian Prime Minister addressed the **47th G7 Summit 2021** through video conferencing.

- Earlier, the Finance Ministers from the G7 nations reached a landmark accord setting a **Global Minimum Corporate Tax Rate (GMCTR).**
- Apart from **India, Australia and South Korea** were also invited to participate in the proceedings of the summit as **"guest countries".**
- This year's summit was **hosted by the UK.** The **last G-7 summit was in France in 2019,** with last year's event in the US canceled due to the **pandemic.**

Group of Seven (G7)

- It is an **intergovernmental organisation** that was formed in **1975.**
- The bloc **meets annually** to discuss issues of **common interest like global economic governance, international security and energy policy.**
- The G7 countries are the **UK, Canada, France, Germany, Italy, Japan and the US.**
  All the G7 countries and India are a part of G20.
- The G7 **does not have a formal constitution or a fixed headquarters.** The decisions taken by leaders during annual summits are non-binding.

Key Points

- **Build Back Better for the World Project:**
    - It is aimed squarely at **competing with China's** trillion-dollar **Belt and Road infrastructure initiative,** which has been widely **criticised for saddling small countries with unmanageable debt** but has **included even G7 member Italy** since launching in 2013.
    - It will collectively catalyse hundreds of billions of infrastructure investment for low- and middle-income countries (in Asia and Africa) and offer a **values-driven, high-standard and transparent partnership with G7.**
- **Democracies 11:**
    - Signed off on a joint statement (Democracies 11) by G-7 and guest countries on "open societies" that **reaffirm and encourage the values of freedom of expression,** both online and offline, as a freedom that safeguards democracy and helps people live free from fear and oppression.
        - The statement also refers to **politically motivated internet shutdowns** as one of the threats to freedom and democracy.
        - While the statement is **directed at China and Russia, India has been under scrutiny** over **Internet curbs in Jammu and Kashmir** even as the Government is locked in a face-off over its **New IT rules 2021** with tech giants.
    - Democracies 11 is facing **threats to freedom and democracy** from rising authoritarianism, electoral interference, corruption, economic coercion, manipulation of information, including disinformation, online harms and cyber attacks, politically motivated internet shutdowns, human rights violations and abuses, terrorism and violent extremism.
- **Carbis Bay Declaration:**
    - The G7 signed the **Carbis Bay Declaration.** It is aimed at **preventing future pandemics.**
    - The G7 also **pledged over 1 billion coronavirus vaccine doses for poorer nations** with half of that coming from the United States and 100 million from Britain.
        - 11 billion doses are needed to vaccinate at least 70% of the world's population by mid-2022.
    - The doses would come both directly and through the international **COVAX program**.
- **Climate Change:**
    - Renewed a pledge to **raise their contributions to meet an overdue spending pledge of USD 100 billion a year** to help poorer countries cut carbon emissions.
    - Promised **to halt and reverse biodiversity loss by 2030.**
    - Pledged to reach **net zero carbon emissions by 2050.**

- **Against China:**
  - The G-7 statement which was **not signed by India** and other outreach countries **hit out at China on "human rights and fundamental freedoms"** in **Xinjiang (Uyghur Muslims) and Hong Kong,** and the unilateral attempts to change the status quo in the **South China Sea.**
  - It also called for a transparent and timely **World Health Organization's Covid origins study in China.**
    - India had also called for the same in a **statement during the World Health Assembly.**
- **India's Stand:**
  - India is a **natural ally for the G7** countries in **defending the shared values** from a host of threats stemming from authoritarianism, terrorism and violent extremism, disinformation and economic coercion.
  - Expressed concerns that **open societies are particularly vulnerable to disinformation and cyber-attacks.**
  - It sought the support of the grouping to **lift patent protections for Covid-19 vaccines.**
  - Planet's atmosphere, biodiversity and oceans cannot be protected by countries acting in silos, and **called for collective action on climate change.**
    - India is the only G-20 country on track to meet its Paris commitments.
  - Developing countries need better access to climate finance, and **called for a holistic approach towards climate change** that covers mitigation, adaptation, technology transfer, climate financing, equity, climate justice and lifestyle change.
  - Highlighted the **revolutionary impact of digital technologies** on social inclusion and empowerment in India through applications such as **Aadhaar**, **Direct Benefit Transfer (DBT)** and **JAM (Jan Dhan-Aadhaar- Mobile) trinity.**

Source:IE

National AI Portal

Why in News

The **'National AI Portal',** celebrated its **first anniversary on 28th May, 2021.**

Key Points

- **About the National AI Portal:**
  - It is **a joint initiative by the Ministry of Electronics and IT (MeitY), National e-Governance Division (NeGD) and NASSCOM.**
    - **NeGD:** In 2009, NeGD was created as an Independent Business **Division under the Digital India Corporation** (a not-for-profit company set up by MeitY).
    - **NASSCOM:** A **not-for-profit industry association**, is the **apex body for the IT and IT enabled products and services sector** in India.
  - It serves as **a central hub for Artificial Intelligence (AI) related news, learning, articles, events and activities etc.**, in India and beyond.
- **About Artificial Intelligence (AI):**
  - It describes the **action of machines accomplishing tasks** that have historically required human intelligence.
  - It includes technologies like **machine learning, pattern recognition, big data, neural networks, self algorithms etc.**
  - AI involves complex things such as **feeding a particular data into the machine and making it react as per the different situations.**
  - AI is being **used across different industries** including finance and healthcare.
  - As per a report by PwC, India reported **a 45% increase in the use of AI**, the highest among all countries, following the outbreak of the virus.
- **Recent Examples of Use of AI in India:**
  - **For the Covid-19 Response:** An **AI-enabled Chatbot**was used by **MyGov** for ensuring communications.
  - **In Judicial System:** An AI based **portal 'SUPACE'** is aimed at assisting judges with legal research.
  - **In Agriculture:** ICRISAT has developed an **AI-power sowing app**, which utilises weather models and data on local crop yield and rainfall to more accurately predict and advise local farmers on when they should plant their seeds.
  - **In Disaster Management**: An **AI-based flood forecasting model** that has been **implemented in Bihar** is now being expanded to cover the whole of India to ensure that around 200 million people get alerts and warnings 48 hours earlier about impending floods.
  - **In Banking & Financial Services Industry:** Few banks in India have adopted AI **to increase digitisation to improve customer experience and use algorithms in risk** management (for example, fraud detection).

- **Initiatives Taken to Boost Use of AI:**
    - The **National Strategy for Artificial Intelligence** (NITI Aayog, June 2018) which is focused on inclusive AI (AI for all), and the **New Education Policy** (NEP, 2020) which addresses the need to inculcate AI in the curriculum are the right strategic steps to encourage core and applied research.
    - The **Ministry of Tribal Affairs (MTA)** has inked a **MoU with Microsoft** to support the **digital transformation of schools such as Eklavya Model Residential Schools (EMRS)** and Ashram Schools, among others under the Ministry.
    - **US India Artificial Intelligence (USIAI) initiative** has been launched to scale up the science and technology relationship between India and the United States.
    - In 2020, India joined the **'Global Partnership on Artificial Intelligence (GPAI)'** as a founding member to support the responsible and human-centric development and use of AI.
    - **'RAISE 2020 - Responsible AI for Social Empowerment 2020**', a mega virtual summit, was jointly organised by the NITI Aayog and the MeitY.
    - The larger aim of the program **"Responsible AI for Youth"** is to provide an equal opportunity to all Indian youths - in urban, rural and remote corners of India - to become human-centric designers who can create real AI solutions to solve economic and social impact issues of India.
- **Barriers to Adoption of AI:**
    - **Limited understanding of AI**: Many Indian companies may have not yet understood the full benefits of leveraging AI in their companies.
    - **Low Investments and Less Evolved Startup Ecosystem:** Startup/investment funding ecosystem in India is yet to scale up in terms of AI startups and service providers.
    - **Limited Availability of AI Trained Talent:** There is limited infrastructure to 'democratise' and scale-up important AI skills such as deep learning and neural networks.

Way Forward

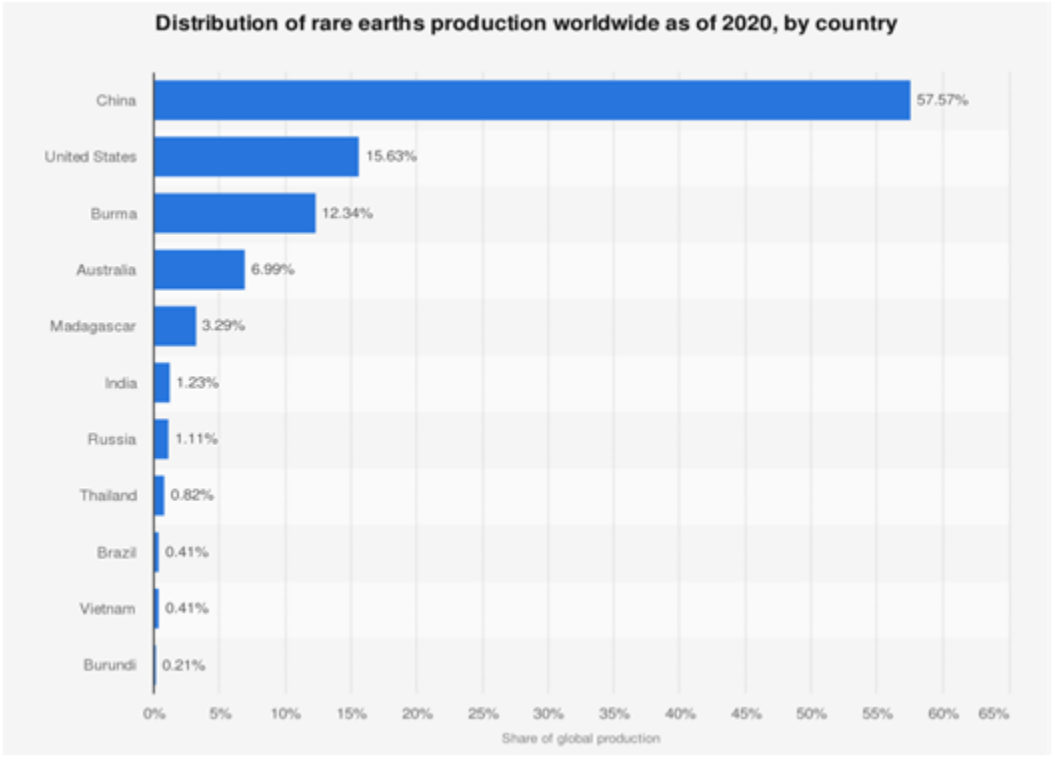
- **Global Lessons:** Countries like China, USA and Israel currently lead the way in terms of AI adoption. India can consider a few learnings from these countries to further scale-up its AI ecosystem while keeping in mind the overall social development and inclusiveness agenda.
- **Clear Central Strategy and Policy Framework:** AI adoption in India can be accelerated through the formulation of more focused policies related to innovation, for example, patent control and security. **Malicious use of AI** should be managed as well.
- **Collaboration among Government, Corporates and Academia:** These three critical stakeholders need to work synergistically to undertake actions like nurturing entrepreneurship, promoting re-skilling, encouraging research and development, and driving the policies on the ground.

Source: PIB

Rare Earth Metals and China's Monopoly

Why in News

China's dominance in the **rare earth metals, key to the future of manufacturing,** is posing a major concern for the West.



Key Points

- **China's Monopoly:**
  - **China** has over time acquired **global domination of rare earths,** even at one point, it produced **90% of the rare earths** the world needs.
  - Today, however, it has come down to **60%** and the remaining is produced by other countries, including the **Quad (Australia, India, Japan and United States).**
  - Since 2010, when China curbed shipments of Rare Earths to Japan, the US, and Europe, production units have come up in Australia, and the US along with smaller units in Asia, Africa, and Latin America.
  - Even so, the dominant share of processed Rare Earths lies with China.

- **Heavy dependence on China (India and the World):**
    - **India has the world's fifth-largest reserves of rare earth elements,** nearly twice as much as Australia, but it **imports most of its rare earth** needs in finished form from China.
    - In 2019, the **US imported 80%** of its rare earth minerals from China while the **European Union gets 98%** of its supply from China.
- **Opportunity for India:** There are three possible approaches to maximising India's rare earth potential.
    - **New Department for Rare Earths (DRE):**
        - India should create the **new Department for Rare Earths (DRE) under the Ministry of Petroleum & Natural Gas** which could secure access to **Rare Earth Elements (REEs)** of strategic importance by offering viability gap funding to companies to set up facilities in the upstream sector.
        - This could make Indian **Rare Earth Oxide (REOs)** globally competitive.
    - **Downstream Processes and Applications:**
        - Alternatively, it could focus on downstream processes and applications, such as manufacturing rare earth magnets and batteries.
        - This would require a focus on **port infrastructure** and **ease of doing business** measures to allow Indian manufacturers **to import REOs** from white-listed producers cheaply.
    - **Coordination with Other Agencies:**

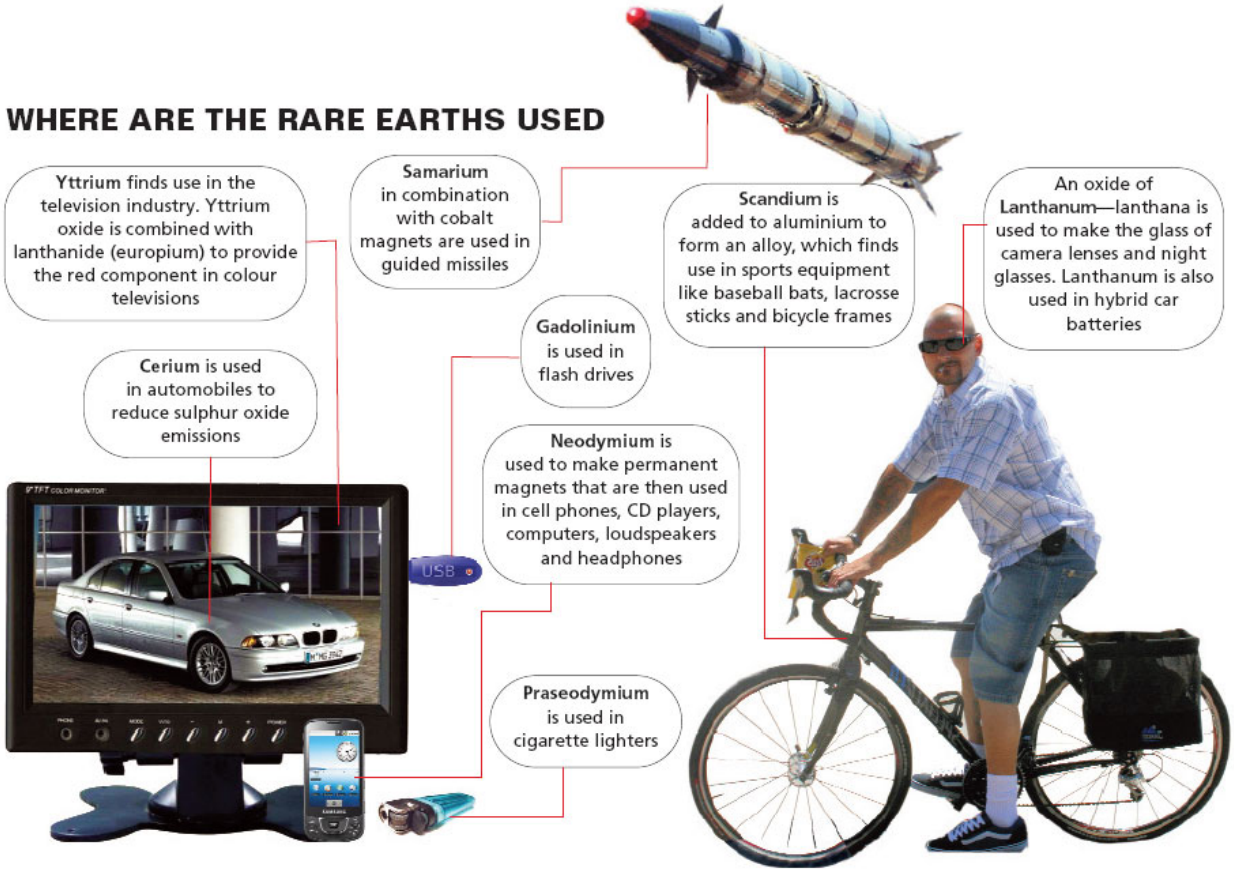
        Finally, it could coordinate with other agencies to partner directly with groupings such as the **Quad,** building up a strategic reserve as a buffer against global supply crises.

        With adjustments to the existing policy, India could emerge as a **rare earths supplier to the world** and use these resources to power a **high-end manufacturing economy** geared to the needs of the 21st century.

Rare Earth Elements

- They are a set of **seventeen metallic elements.** These include the **fifteen lanthanides** on the **periodic table** in addition to **scandium and yttrium** that show similar physical and chemical properties to the lanthanides.
- The **17 Rare Earths** are cerium (Ce), dysprosium (Dy), erbium (Er), europium (Eu), gadolinium (Gd), holmium (Ho), lanthanum (La), lutetium (Lu), neodymium (Nd), praseodymium (Pr), promethium (Pm), samarium (Sm), scandium (Sc), terbium (Tb), thulium (Tm), ytterbium (Yb), and yttrium (Y).
- These minerals have **unique magnetic, luminescent, and electrochemical properties** and thus are **used in many modern technologies,** including consumer electronics, computers and networks, communications, health care, national defense, etc.

- Even **futuristic technologies** need these REEs (For example high-temperature superconductivity, safe storage and transport of hydrogen for a post-hydrocarbon economy, environmental global warming and energy efficiency issues).
- They are called **'rare earth'** because earlier it was **difficult to extract them from their oxides forms technologically.**
- They occur in **many minerals** but typically **in low concentrations** to be refined in an economical manner.



India's Current Policy on Rare Earths

- Exploration in India **has been conducted by the Bureau of Mines and the Department of Atomic Energy.** Mining and processing has been performed by some minor private players in the past, but is **today concentrated in the hands of IREL** (India) Limited (formerly Indian Rare Earths Limited), a Public Sector Undertaking under the Department of Atomic Energy.
- India has granted government corporations such as **IREL a monopoly** over the primary mineral that contains **REEs: monazite beach sand,** found in many coastal states.
- IREL produces **rare earth oxides** (low-cost, low-reward “upstream processes”), selling these to foreign firms that extract the metals and manufacture end products (high-cost, high-reward **“downstream processes”**) elsewhere.

- **IREL's focus** is to provide **thorium —** extracted from monazite — to the **Department of Atomic Energy.**

Source: TH

PASIPHAE: A Sky Surveying Project

Why in news

The **Wide Area Linear Optical Polarimeter (WALOP),** a **vital instrument for the PASIPHAE Project,** is being **developed at Inter-University Centre for Astronomy and Astrophysics (IUCAA), India.**

> **Polar-Areas Stellar-Imaging in Polarisation High-Accuracy Experiment (PASIPHAE)** is **an international collaborative sky surveying project.**

Astronomical Polarimetry

- Polarimetry, **a technique to measure the polarisation of light,** is a powerful tool that allows astronomers to infer information about celestial objects, from passing comets to distant galaxies, that can not be obtained using other techniques.
- **Polarization** is **a property of light that represents the direction that the light wave oscillates.**
- Two decades ago, an Indian astrophysicist Sujan Sengupta, put forth an idea, that the light emitted by a **cloudy brown dwarf**, or reflected off an **extrasolar planet**, will be polarised.

Key Points

- **About the PASIPHAE Survey:**
    - It is an **opto polarimetric survey** aiming to **measure the linear polarization from millions of stars.**
    - The survey **will use two high-tech optical polarimeters to observe the northern and southern skies,** simultaneously.
    - The survey **will be conducted** concurrently from the **South African Astronomical Observatory in Sutherland,** South Africa in the **southern hemisphere,** and the **Skinakas Observatory in Crete, Greece,** in the **north.**
    - It will focus on **capturing starlight polarisation** of very faint stars that are so far away that polarisation signals from there have not been systematically studied.
    - The distances to these stars will be obtained from measurements of the **GAIA satellite.**
        - GAIA is on a **mission to chart a three-dimensional map of our Galaxy,** the Milky Way, in the process revealing the composition, formation and evolution of the Galaxy. It is **a European Space Agency astronomical observatory mission.**
    - Scientists from the University of Crete, Greece, Caltech, USA, **IUCAA, India,** the South African Astronomical Observatory and the University of Oslo, Norway, are involved in this project, steered by the Institute of Astrophysics, Greece.
- **Importance of the Project:**
    - Since its birth about 14 billion years ago, the **universe has been constantly expanding,** as evidenced by the presence of **Cosmic Microwave Background (CMB) radiation** which fills the universe.
        - The **Milky Way Galaxy contains a lot of dust clouds** that are present in the form of clusters. When **starlight passes through these dust clouds,** they **get scattered and polarised.**
    - The PASIPHAE polarimetric map **will be used to perform magnetic tomography of the Milky Way Galaxy.**
        - That is, it will **deduce the 3-dimensional structure of the magnetic field and the dust that resides in our own Galaxy.**
        - This map will **provide invaluable information for future CMB B-mode experiments** searching for inflationary **gravitational waves.**
        - The **B-mode experiment** was used **to test the theory of cosmic inflation** and distinguish between inflationary models of the very early universe by making precise measurements of the polarization of the Cosmic Microwave Background (CMB).
        - According to the **theory of inflation,** the **early Universe expanded exponentially fast for a fraction of a second** after the **Big Bang.**
    - Beyond studies of the early Universe, the survey will **lead to leaps forward in some of the most actively pursued areas in Astrophysics,** including high-energy astrophysics, stellar astrophysics, and interstellar medium dynamics.

- **Wide Area Linear Optical Polarimeter (WALOP):**
  - It was **planned in 2013** after the success of the **RoboPol experiment survey during 2012-2017.**
    - WALOP and its predecessor RoboPol **share the photometry (measurement of the brightness of celestial objects) principle.**
    - But the **WALOP will be capable of observing hundreds of stars concurrently** present both in the northern and the southern skies as opposed to RoboPol, which has a much smaller field of view in the sky.
  - **Working Principle:**
    - WALOP will operate on the principle that at any given time, the data from a portion of the sky under observation will be split into four different channels.
    - Depending on the manner in which light passes through the four channels, the polarisation value from the star is obtained.

      That is, each star will have four corresponding images which when stitched together will help calculate the desired polarisation value of a star.
  - **Installation:**

    A WALOP each will be mounted on the 1.3-metre Skinakas Observatory, Crete, and on the 1-metre telescope of the South African Astronomical Observatory located in Sutherland.

Source: IE

Operation Olivia for Olive Ridley Turtles

Why in News

Recently, the **Indian Coast Guard** has pressed into service an aircraft for **'Operation Olivia'** to protect **Olive Ridley turtles.**

Indian Coast Guard

- It is an **Armed Force, Search and Rescue and Maritime Law Enforcement agency** under the Ministry of Defence. It was established in 1978.
- It has a w**ide range of task capabilities for both surface and air operations.** It is one of the **largest coast guards in the world.**

Key Points

- **Operation Olivia:**
  - Every year, the Indian Coast Guard's "Operation Olivia", **initiated in the early 1980s**, helps **protect Olive Ridley turtles as they congregate along the Odisha coast** for breeding and nesting from November to December.
    - It also **intercepts unlawful trawling activities.**
  - Round-the-clock surveillance is conducted from **November till May** utilising Coast Guard assets such as **fast patrol vessels**, air cushion vessels, interceptor craft and Dornier aircraft to enforce laws near the rookeries (colony of breeding animals).
    - From November **2020 to May 2021,** the **Coast Guard devoted 225 ship days and 388 aircraft hours to protect 3.49 lakh turtles** that laid eggs along the Odisha coast.

- **Olive Ridley Turtles:**
  - **Features:**
    - The Olive ridley turtles are the **smallest and most abundant of all sea turtles found in the world.**

    - These turtles are **carnivores** and get their name from their olive colored carapace.
    - They **migrate thousands of kilometers** between feeding and mating grounds in the course of a year.
    - They are best known for their unique **mass nesting called Arribada**, where thousands of females come together on the same beach to lay eggs.
  - **Habitat:**
    - They are **found in warm waters** of the Pacific, Atlantic and Indian oceans.
    - The Odisha's **Gahirmatha Marine Sanctuary** is known as the world's largest rookery of sea turtles.
  - **Threats:**
    - They are **extensively poached for their meat, shell and leather,** and their eggs.
    - However, the most severe threat they face is the **accidental killing through entanglement in trawl nets and gill nets** due to uncontrolled fishing during their mating season around nesting beaches.
    - An ever-increasing **debris of plastics, fishing nets, discarded nets, polythene and other garbage** dumped by tourists and fishing workers.
  - **Other Initiatives:**

    To reduce accidental killing in India, the Odisha government has made it mandatory for trawls to use **Turtle Excluder Devices (TEDs)**, a net specially designed with an exit cover which allows the turtles to escape while retaining the catch.

Source: TH

Innovations for Defence Excellence

Why in News

Recently, the Defence Minister has approved the budgetary support of Rs. 498.8 crore to **Innovations for Defence Excellence (iDEX)** challenge under the **Defence Innovation Organisation (DIO)** for the next five years.

> Earlier, the Defence Minister released an E-booklet titled '20 Reforms in 2020' highlighting the major **reforms undertaken by the Ministry of Defence (MoD) in 2020.**

Key Points

- **About:**
  - The iDEX initiative was launched by the **Prime Minister in April 2018.**
  - It aims to achieve **self - reliance and foster innovation and technology development in Defence and Aerospace** by engaging Industries including Micro, Small and Medium Enterprises (**MSMEs**), start-ups, individual innovators, R&D institutes and academia.
  - iDEX is **funded and managed by the DIO**, and functions as the executive arm of DIO.
  - DIO is a **'not for profit'** company registered under **Section 8 of the Companies Act 2013.**
  - Its two founding members are **Hindustan Aeronautics Limited (HAL) & Bharat Electronics Limited (BEL)** - Defence Public Sector Undertakings (DPSUs). HAL and BEL are **navratna companies**.
  - It will provide the engaging industries with **funding and other support to carry out Research & Development.**
    - Self-reliance in manufacturing of defence equipment is a crucial factor for **maintaining India's strategic autonomy.**
    - **India's arms imports fell 33% between 2011-15 and 2016-20**, said a report released by the **Stockholm International Peace Research Institute (SIPRI)**.
  - iDEX has partnered with leading incubators in the country to provide hand holding, technical support and guidance to the winners of iDEX challenges.

- **Other Related Initiatives:**
  - **Defence Industrial Corridors:**

    To support the growth of the Defence sector and enhance manufacturing capacity in the sector, two **Defence Industrial Corridors are being set up in India, one in Uttar Pradesh** and another in **Tamil Nadu.**
  - **Strategic Partnership (SP) Model:**
  - **Artificial Intelligence in Defence:**
    - **N Chandrasekaran Task Force** was set up in 2018 to study implications of AI in national security.
    - **Defence Artificial Intelligence Project Agency (DAIPA)** was created in March, 2019.
    - DAIPA aims for greater thrust on **Artificial Intelligence (AI)** in Defence, formulation of an AI roadmap for each Defence PSU and Ordnance Factory Board to develop AI-enable products.

Source:TH
