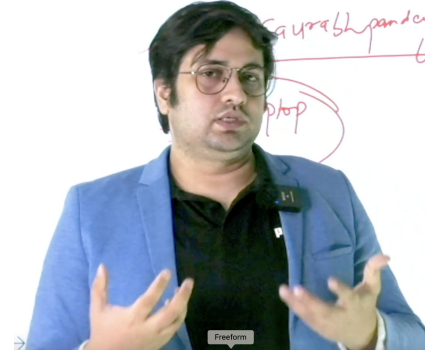


Topics - MINDS MAPS included



- New Ramsar sites in india
- Extremophiles.
- NASA's InSight (Interior Exploration using Seismic Investigations, Geodesy and Heat Transport)
- Al-Shabaab
- CEPA
- Interest Equalisation Scheme
- UN Launches New Way to Measure Nations' Economic Vulnerability
- Notable Copper Mines
- major copper-producing countries and regions:
- **Mains**



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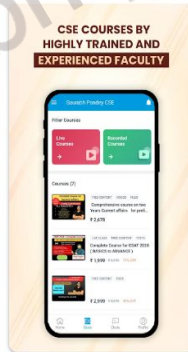
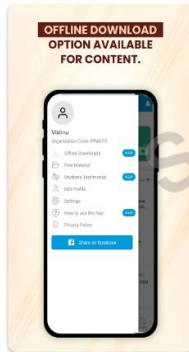
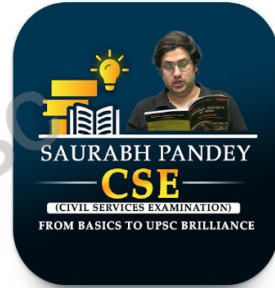
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Topic- New Ramsar sites in india

- **Three more wetlands in India had been designated Ramsar sites.**
- **This brings the total number of such sites in India to 85.**
- **The new sites are the Nanjarayan and Kazhuveli bird sanctuaries in Tamil Nadu and the Tawa reservoir in Madhya Pradesh.**

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Nanjarayan Bird Sanctuary:

Nanjarayan Bird Sanctuary is situated in the Tiruvannamalai district of Tamil Nadu.

It is a relatively small sanctuary but is significant for its role in protecting the local avifauna.

The sanctuary serves as a breeding ground for several bird species and also attracts migratory birds during different seasons.

Efforts are made to ensure the sanctuary remains free from disturbances to support the nesting and breeding activities of the birds.

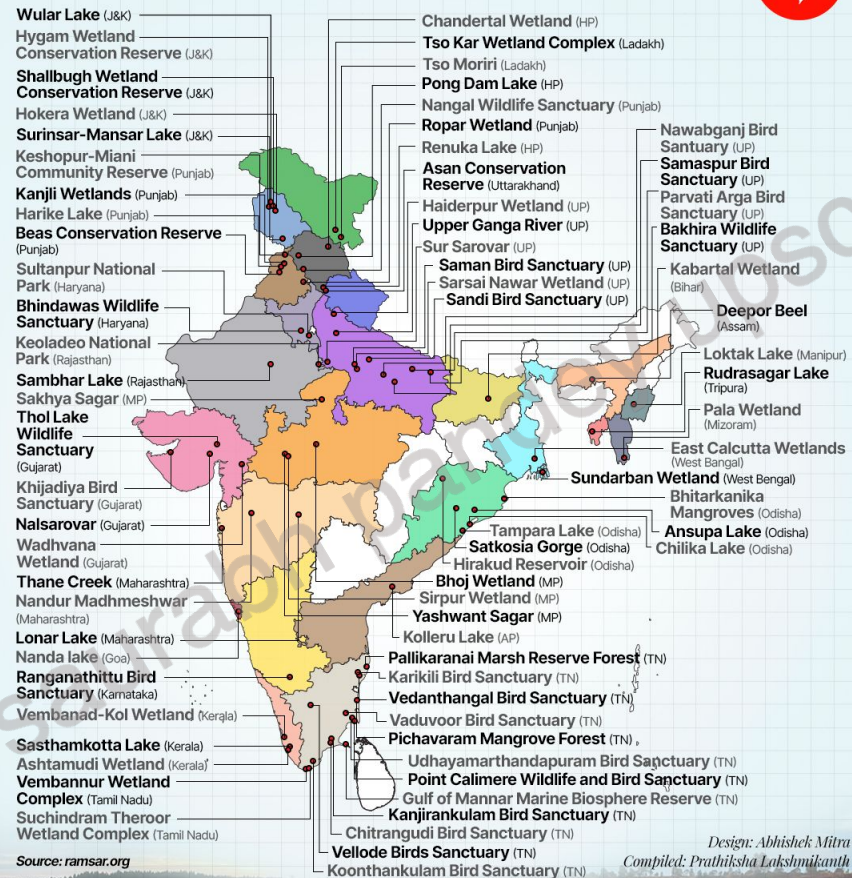
Kazhuveli Bird Sanctuary:

Kazhuveli Bird Sanctuary is located in the Ramanathapuram district of Tamil Nadu, near the Gulf of Mannar.

It is an important wetland habitat that supports a wide range of bird species, including several migratory species that visit the sanctuary during their migration routes.

The sanctuary is known for its scenic beauty and the opportunity it offers for birdwatching and nature photography.

Ramsar sites in India



Source: ramsar.org

Design: Abhishek Mitra
 Compiled: Prathiksha Lakshminathan



- **India is one of the “contracting parties” to the Ramsar Convention, signed in Ramsar, Iran, in 1971. It became a signatory in 1982.**
- **India’s Ramsar wetlands make up around 10% of the total wetland area in the country across 18 States.**
- **No other South Asian country has as many sites though this has much to do with India’s geographical breadth and tropical diversity.**
- **The United Kingdom (175) and Mexico (142) — smaller countries than India — have the most Ramsar sites, whereas Bolivia spans the largest area, with 1,48,000 sq. km under the convention’s protection.**

- **Being designated a Ramsar site does not necessarily invite extra international funds, but the Centre and States must ensure these tracts of land are conserved and saved from man-made encroachment.**
- **Acquiring this label also helps with a locale's tourism potential and its international visibility.**
- **To be a Ramsar site, a wetland must meet at least one of the nine criteria defined by the Ramsar Convention such as supporting vulnerable, endangered, or critically endangered species or threatened ecological communities; regularly supporting 20,000 or more waterbirds; or is an important source of food for fish, spawning ground, nursery and/or migration path on which fish stocks are dependent upon**

Topic- Extremophiles.

- **Scientists have isolated microbes from volcanic vents, permafrost, acid mines, deep-sea hydrothermal vents, and dark lakes buried kilometres under polar ice caps.**
- **Microbes have also been found thriving on the exteriors of spacecraft and around nuclear waste storage sites.**
- **Microbes that live in extreme natural conditions are called extremophiles.**

There are several types of extremophiles, categorized based on the extreme conditions they can tolerate:

Thermophiles: Organisms that live in high-temperature environments, such as hot springs and hydrothermal vents. Some can survive temperatures above 100°C (212°F).

Psychrophiles: These are organisms that thrive in cold environments, such as glaciers and the deep sea. They can survive and reproduce at temperatures well below freezing.

Acidophiles: Organisms that can live in acidic environments with low pH levels, often found in acidic hot springs or acid mine drainage.

Alkaliphiles: These organisms are adapted to environments with high pH levels, such as soda lakes and highly alkaline soils.

Halophiles: Organisms that require high salt concentrations to grow, commonly found in salt lakes and hypersaline environments.

Barophiles: Also known as piezophiles, these organisms prefer high-pressure environments, such as the deep sea.

Xerophiles: Organisms that can survive in extremely dry conditions, often found in deserts or other arid environments.

Oligotrophs: Organisms that can survive in environments with low levels of nutrients or organic matter.

Radiophiles: Organisms that are resistant to high levels of radiation, such as those found in the vicinity of nuclear reactors or in space.

- **Extremophiles are not only of interest for their ability to survive in extreme conditions but also for their potential biotechnological applications.**
- **For example, the enzymes produced by thermophiles can be used in industrial processes that require high temperatures, such as in the production of biofuels and detergents.**

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- **Advantage to understanding how extremophiles adapt lies in a number of biological and industrial applications.**
- **For example, in the 1960s, U.S. researchers isolated a new species of bacteria from a hot spring at Yellowstone National Park and named it *Thermus aquaticus*.**
- **This microbe is able to produce a heat-resistant enzyme called Taq DNA polymerase.**
- **This enzyme is an important and valuable workhorse of molecular biology because of its application in the polymerase chain reaction (PCR).**

- **In a 2020 study, scientists reported that *Deinococcus radiodurans*, an earth-born bacteria, could survive in outer space for more than three years, stuck to the outside of the International Space Station and being blasted with ultraviolet radiation**

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Topic- NASA's InSight (Interior Exploration using Seismic Investigations, Geodesy and Heat Transport)



- **NASA's InSight (Interior Exploration using Seismic Investigations, Geodesy and Heat Transport) lander is a robotic spacecraft designed to study the deep interior of Mars.**
- **Launched on May 5, 2018, from Vandenberg Air Force Base in California, InSight successfully landed on Mars on November 26, 2018.**
- **It touched down in Elysium Planitia, a flat, smooth plain near Mars' equator.**
- **The primary mission of InSight was to investigate the planet's subsurface, including its crust, mantle, and core, by detecting marsquakes and other seismic activities.**

The lander was equipped with a suite of instruments to carry out these studies:

Seismic Experiment for Interior Structure (SEIS): A sensitive seismometer provided by the French Space Agency (CNES) and the German Aerospace Center (DLR) to detect seismic waves and provide data on the planet's internal structure.

Heat Flow and Physical Properties Package (HP3): A "self-hammering" probe nicknamed "the mole," designed to burrow into the Martian soil to measure the planet's heat flow, which can reveal information about Mars' formation and thermal evolution.

- **Radiometer (RISE):** A radio science experiment to track the location of InSight on the Martian surface, providing information about the planet's rotation and helping to understand its internal structure.
- The lander provided valuable data on Mars' seismic activity, heat flow, and surface properties, contributing to our understanding of the planet's geological history and its potential to have once supported life.
- Despite the successful deployment of SEIS and the radiometer, the HP3 probe encountered difficulties in penetrating the Martian soil, which was harder than expected. After several attempts, the "mole" was unable to burrow deeply enough to measure the heat flow accurately.

Topic- Al-Shabaab

- **Al-Shabaab is a militant Islamist group that emerged in Somalia in the early 2000s.**
- **The group's name translates to "The Youth" in Arabic, and it initially began as a youth wing of the Islamic Courts Union (ICU), which sought to enforce Sharia law and combat clan-based factionalism in Somalia.**
- **Al-Shabaab gained prominence following the ICU's defeat by Ethiopian forces in late 2006, which was supported by the United States and the Transitional Federal Government of Somalia.**
- **The group aims to establish an Islamic state in Somalia and has been involved in an insurgency against the Somali government and its African Union (AU) and international allies.**
- **Al-Shabaab has been designated as a terrorist organization by the United Nations, the European Union, the United States, and other countries due to its involvement in numerous terrorist attacks, assassinations, and acts of violence.**

The Ogaden War

- The Ogaden War, also known as the Ethiopian-Somali War, was a military conflict fought between Ethiopia and Somalia from 1977 to 1978 over the Ogaden region, which is part of eastern Ethiopia but is predominantly inhabited by ethnic Somalis.
- The war was one of the bloodiest conflicts in modern African history and had significant regional and international implications.
- Background:
- The roots of the conflict lie in the irredentist claims of Somalia, which sought to unite ethnic Somalis living in the neighboring countries of Ethiopia, Kenya, Djibouti, and parts of Sudan (now South Sudan) into a Greater Somalia. The Ogaden region, in particular, was a focal point of these claims due to its large Somali population.

- **In 1960, British Somaliland and Italian Somaliland merged to form the independent Somali Republic. The new nation immediately laid claim to the Ogaden and other areas, leading to tensions with its neighbors.**
- **The War:**
- **In July 1977, Somalia invaded the Ogaden region, taking advantage of Ethiopia's internal strife and the overthrow of Emperor Haile Selassie. The Somali forces initially made significant gains, capturing most of the Ogaden and reaching the outskirts of the strategic city of Jijiga.**



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Topic- **CEPA**

Definition: A CEPA is a trade agreement between countries to enhance economic cooperation.

Objectives:

Enhance trade and investment.

Promote economic growth and development.

Strengthen bilateral relations.

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Key Features

Tariff Reduction: Lowering or eliminating tariffs on goods.

Market Access: Improved access to each other's markets.

Investment Protection: Safeguards for investors.

Cooperation Areas: Focus on sectors like technology, services, and agriculture.

Economic Sectors

Trade in Goods

Services

Investment

Technology Transfer

Rules and Regulations

Rules of Origin

Tariff Reductions

Non-Tariff Barriers

Recent Developments

India seeks review with UAE on CEPA terms^[^1].

Kenya and UAE forge comprehensive agreement^[^2].

Morocco signs CEPA with UAE^[^3].

Challenges

Implementation Issues

Compliance with regulations

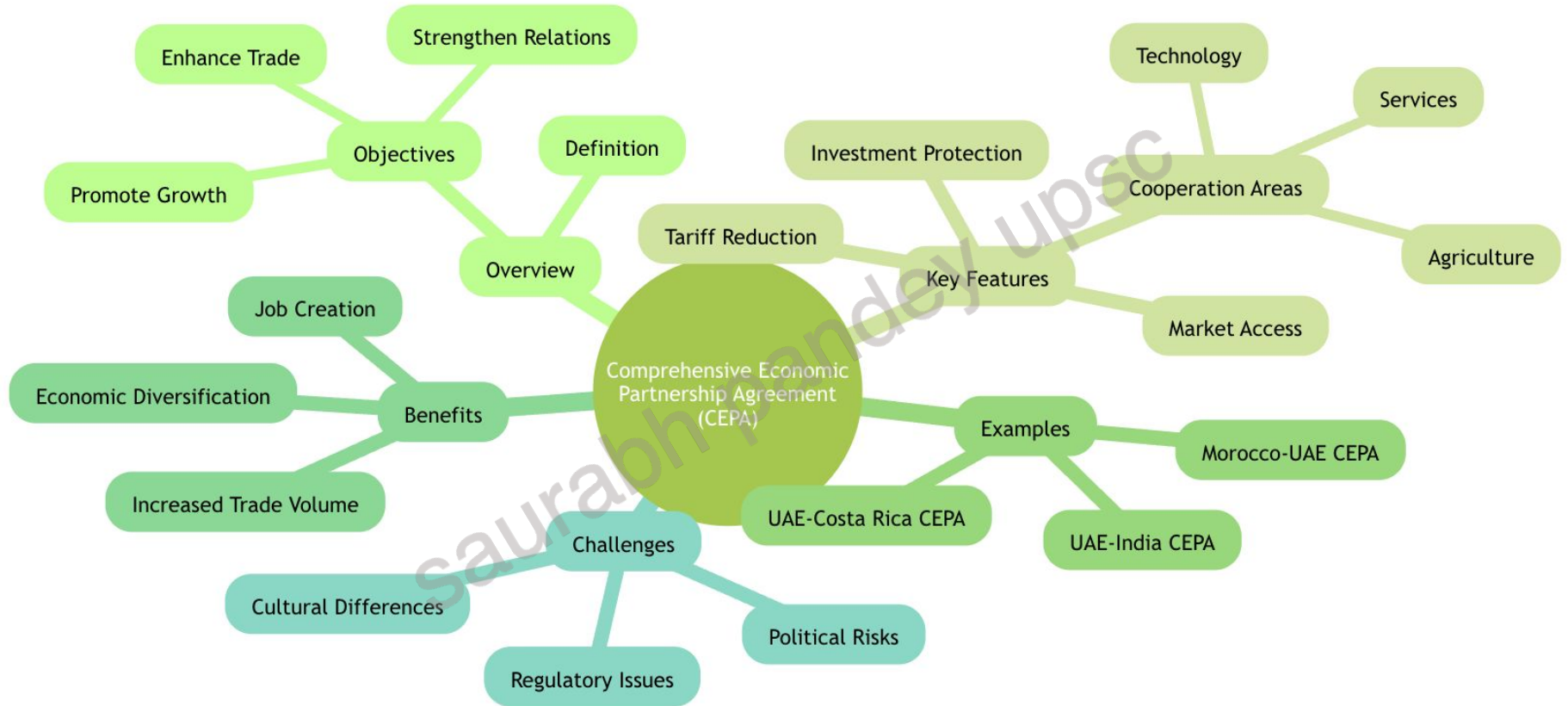
Divergent interests among countries

Future Prospects

Expansion of agreements

New partnerships

Increased trade volume



Topic- Interest Equalisation Scheme

Overview

The Interest Equalisation Scheme aims to help exporters by providing subsidies on interest rates for export credit.

Introduced to support small and medium enterprises (SMEs) in India.

Objective: To make export financing more accessible.

Target Group: Exporters of specific products and MSMEs.

Launch Date: Initially launched in April 2015.

Key Components

Export Credit: Subsidies on pre-and post-shipment export credits.

Interest Rates: Reduction of interest rates by 3% to 5% for eligible exporters.

Capping: Maximum subsidy capped at ₹1.66 crore per Import-Export Code (IEC).

Eligible Products: 410 identified products are supported under this scheme.

Duration: Recently extended until June 30, 2024.

Benefits

Financial Relief: Lowers the cost of borrowing for exporters.

Enhances Competitiveness: Helps Indian exports compete better in global markets.

Encourages Export Growth: Supports overall economic growth by boosting exports.

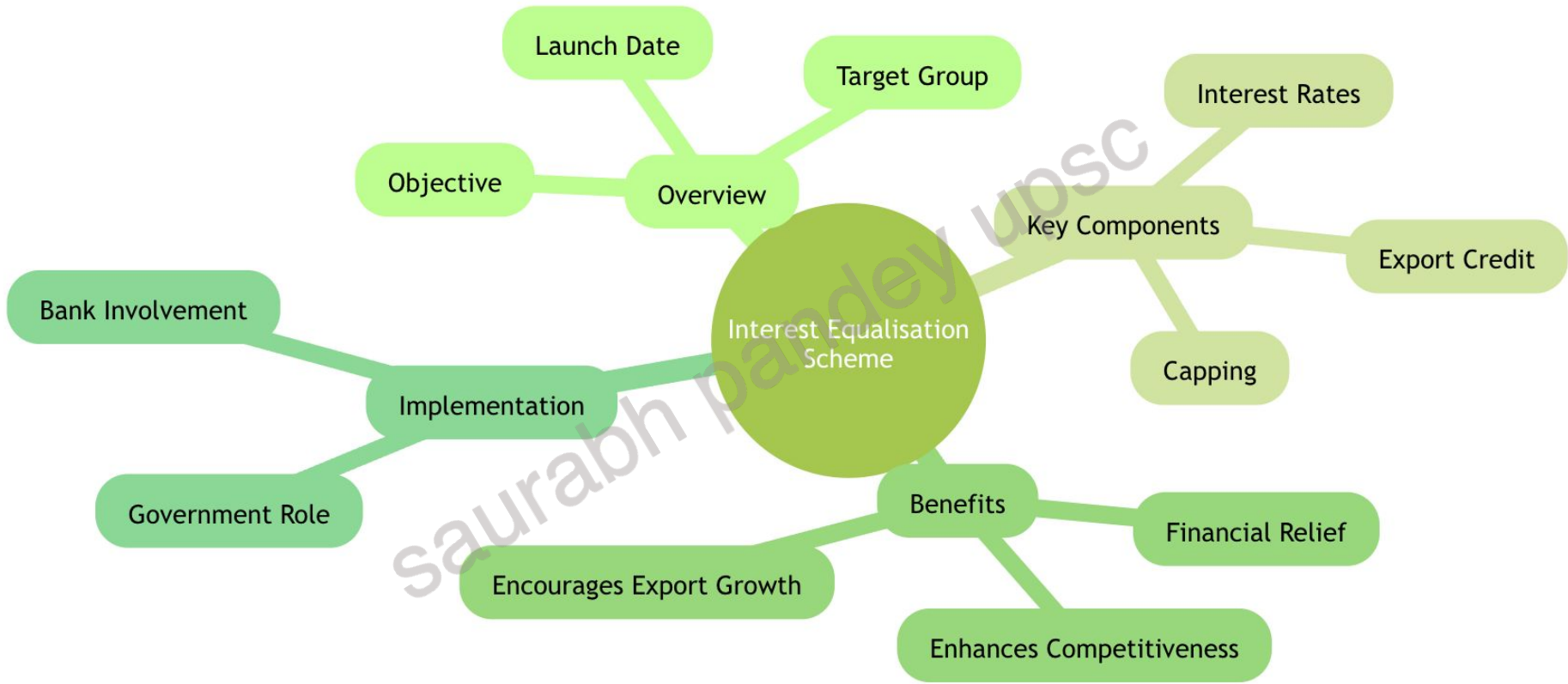
Supporting MSMEs: Provides critical support to small businesses in the export sector.

Stabilizes Cash Flow: Ensures smoother financial operations for exporters.

Implementation

Government Role: The Commerce Ministry oversees the implementation and extension of the scheme.

Bank Involvement: Banks are incentivized to provide lower-interest loans to exporters.



Topic-UN Launches New Way to Measure Nations' Economic Vulnerability

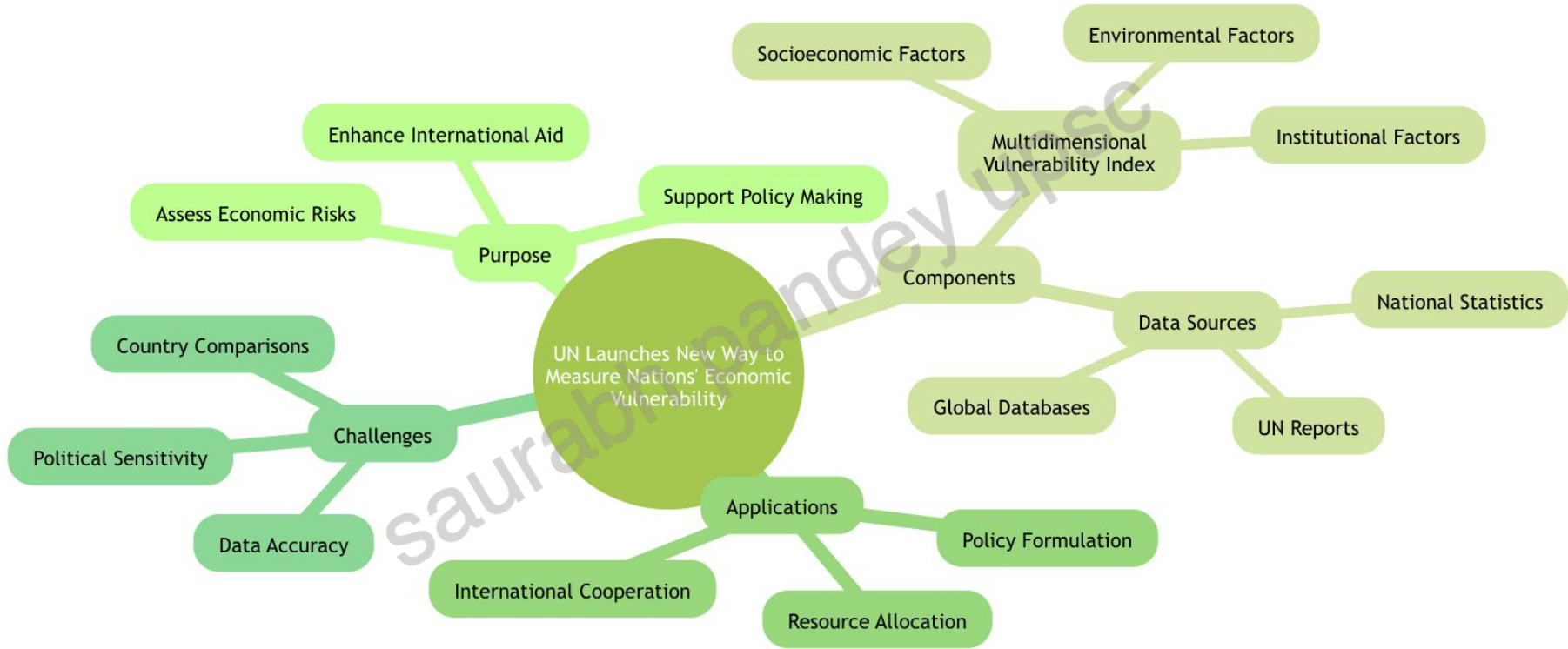


Overview

- **The UN has introduced a new method to assess the economic vulnerability of nations.**
- **This framework aims to provide better insights into the challenges faced by countries, especially those developing or under financial stress**

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figure 1.1: mindmap



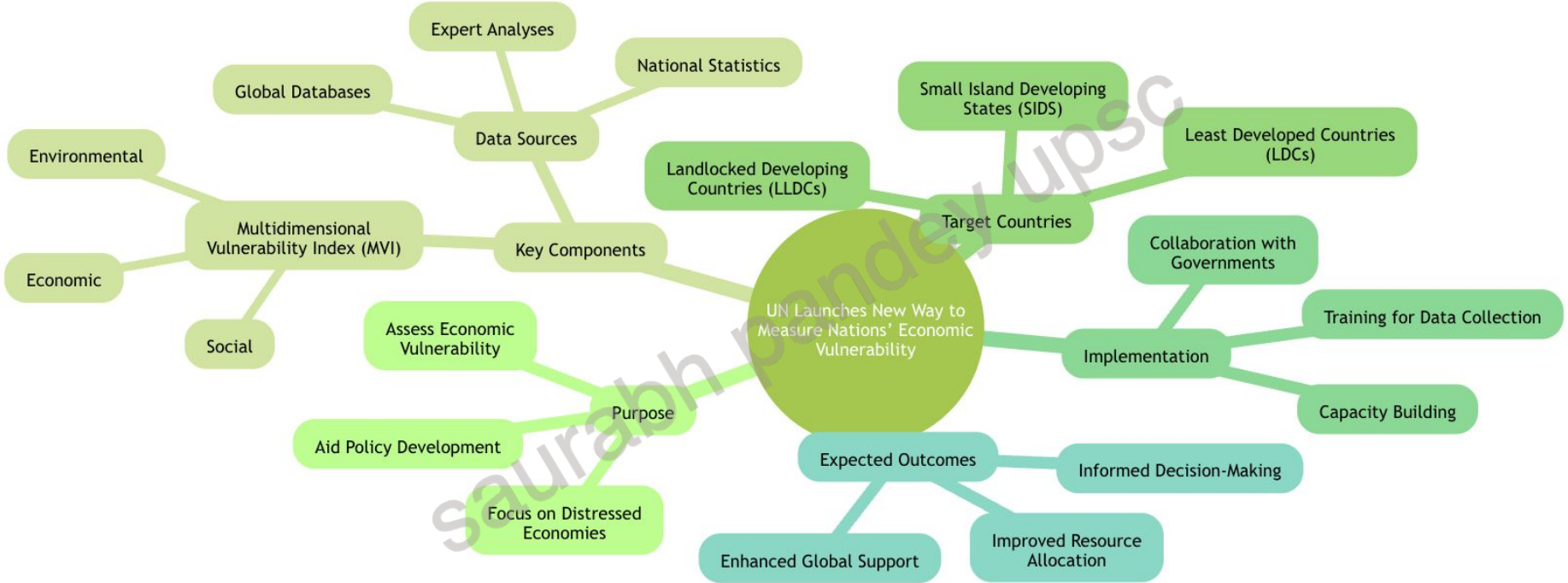


Figure 12: Image

Topic - Notable Copper Mines

Escondida Mine, Chile

- **World's Largest Copper Mine:** The Escondida mine's status as the largest copper mine underscores its significance in global copper production.
- **Operational Scale:** The mine's annual output and operational scale contribute significantly to Chile's dominance in copper mining.
- **Challenges and Innovations:** Addressing environmental and operational challenges, the Escondida mine exemplifies the industry's pursuit of sustainable practices.

Morenci Mine, United States

- **Historical Legacy:** The Morenci mine's historical legacy and continued operations reflect the enduring significance of copper mining in the U.S.
- **Technological Advancements:** The integration of advanced technologies and sustainable practices characterizes the mine's modern operations.
- **Community Engagement:** The Morenci mine's engagement with local communities exemplifies the social and economic impact of copper mining.

: Oyu Tolgoi Mine, Mongolia

- **Global Significance:** The Oyu Tolgoi mine's emergence as a major copper producer highlights Mongolia's growing presence in the global mining landscape.
- **International Collaboration:** The mine's development involves international partnerships and investments, shaping its operational and economic dynamics.
- **Sustainable Development:** Oyu Tolgoi's commitment to sustainable development aligns with global trends in responsible mining practices.

•

Grasberg Mine, Indonesia

- **Complex Operations:** The Grasberg mine's complex operations and unique geological characteristics present distinctive challenges and opportunities in copper mining.
- **Environmental Considerations:** Addressing environmental impacts and conservation efforts is integral to the mine's long-term operational strategy.
- **Economic and Social Impact:** The Grasberg mine's contributions to local economies and communities underscore the multifaceted impact of copper mining.

major copper-producing countries and regions:

Chile: The world's leading copper producer, accounting for approximately 28% of global copper mine production. Chile has some of the largest copper reserves in the world and is home to several major copper mines.

Peru: Another significant producer in South America, with copper being one of its main exports. Peru's copper production ranks among the top in the world.

China: While China is not among the top copper reserve holders, it is a major producer and the world's largest consumer of copper due to its extensive industrial and infrastructure development.

Democratic Republic of Congo (DRC): Africa's largest copper producer, with significant reserves and several active mining projects.

United States: Despite a decline in production, the United States remains a significant copper producer, with major mines located in Arizona, Utah, New Mexico, and Montana.

Australia: Known for its vast mineral resources, Australia is a substantial copper producer with significant exports.

Zambia: Often referred to as the "Copperbelt," Zambia is a major African producer of copper, with the industry playing a crucial role in its economy.

Russia: Russia has significant copper reserves and is among the top producers globally, with major mining operations contributing to its status as a key player in the copper market.

Mexico: With its rich mineral deposits, Mexico ranks among the top copper-producing countries, contributing to the global supply of this essential metal.

Kazakhstan: Although better known for its oil and uranium, Kazakhstan also has significant copper reserves and is a notable producer.

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