UNCCD's Drought Atlas

For Prelims: **UNCCD COP16**, **United Nations Convention to Combat Desertification (UNCCD)**, **winter monsoons**.

For Mains: Issue of Desertification and land degradation and steps to deal with the issue.

Source: DTE

Why in News?

At the **UNCCD COP16** in Riyadh, the **UN Convention to Combat Desertification (UNCCD)** and the **European Commission's Joint Research Centre** launched the **World Drought Atlas** – a comprehensive global publication on drought risks and solutions.

What is the UN Convention to Combat Desertification (UNCCD)?

- Established in **1994**, it is the **only legally binding international treaty** that connects environmental and developmental goals to **sustainable land management**.
- It focuses on **arid, semi-arid, and dry sub-humid regions**, known as drylands, which contain some of the most vulnerable ecosystems and communities.
- The Convention's **197 member countries** work together to improve living conditions in drylands, restore land and soil productivity, and mitigate drought impacts.
- The UNCCD **collaborates** with the other **two Rio Conventions** to address the interconnected issues of land, climate, and biodiversity:
    - The **Convention on Biological Diversity (CBD)**
    - The **United Nations Framework Convention on Climate Change (UNFCCC)**

What are the Key Findings of the UNCCD's Drought Atlas?

- **Systemic Nature of Drought Risks:** Drought is a systemic risk affecting multiple sectors globally. It projects that **by 2050, 75% of the world's population (nearly 3 in 4 people)** will be affected by drought conditions if current trends continue.
    - In 2022 and 2023 alone, **1.84 billion** people **(nearly 1 in 4 globally)** were affected by drought, with about **85% in low- and middle-income countries**.
- **Economic Consequences:** Droughts can severely impact agriculture, energy production, and trade. UNCCD asserts that the economic costs of the damages done due to droughts is underestimated by **2.4 times** amounting to **USD 307 billion per year.**
- **Drought Vulnerability in India:** India is particularly vulnerable to **drought** due to its diverse climatic conditions and reliance on monsoon rains for agriculture.
    - The Atlas underscores that approximately **60% of India's agricultural land is rain-fed**, making it susceptible to fluctuations in rainfall patterns.

- The **2016 drought in Southern India** was due to exceptionally **low rainfall during both summer and winter monsoons**.
- **Rapid urbanization** has caused water mismanagement in **cities like Chennai,** leading to a severe crisis despite ample rainfall.
    - The **UNCCD report blames human activities** and occasional lack of rain for drought and resource degradation.

What are Droughts?

- **About:**
    - Droughts are extended periods of significantly reduced water availability, causing imbalances in water supply, quality, and demand. These periods can be **brief or last for years**, affecting plant growth and lowering water tables.
        - They arise from climate factors like low precipitation as well as human activities such as water extraction, usage, and land management.
    - Droughts can occur naturally due to weather patterns, but **climate change is increasing their frequency and severity.**
- **Drought Scenario in India:**
    - As per, **Drought Atlas of India (1901–2020)**, approximately **two-thirds of India is susceptible to drought**. As an agriculture-based nation with 1.4 billion people, droughts greatly impact agricultural productivity.
        - Between **1901 and 2020, around 56% of India's area experienced** moderate to exceptional drought conditions, impacting **300 million people** and 150 million cattle.
        - Additionally, crop damage (between 1901 and 2020) led to an estimated economic loss of about **USD 8.7 billion**, reducing the **agricultural GDP by 3.1%**.
- **Initiatives taken to Combat Drought:**
    - The **Integrated Drought Management Programme** is a joint initiative between the **Global Water Partnership (GWP)** and **WMO**.
        - The Programme aids governments and stakeholders in implementing drought management by offering policy, technical, and management guidance, and sharing scientific knowledge and best practices.
    - **UNCCD's Drought Initiative** emphasizes on setting up drought preparedness systems.
    - Every year, **17th June** is celebrated as the **World Day to Combat Desertification and Drought (WDCDD)**.
    - **UNCCD's Drought Resilience, Adaptation and Management Policy (DRAMP) Framework,** advocates for ongoing science-policy collaboration to understand drought risks, collect data, and design equitable solutions, ensuring resilience for economies, societies, and ecosystems.

What are the Key Recommendations of the World Drought Atlas?

- **Governance:**
    - Countries should develop and implement comprehensive national drought plans to enhance preparedness and resilience against drought events.
    - Strengthening international collaboration is essential for sharing knowledge, resources, and best practices to effectively manage drought risks across borders.
    - Developing financial mechanisms, such as microinsurance for smallholder farmers, can provide safety nets for vulnerable populations affected by drought.
- **Land Use Management:**
    - Sustainable agriculture practices, such as **land restoration via reforestation, soil conservation, crop diversification and agroforestry**, are essential for building resilience against drought.
    - These measures **reduce runoff and increase stormwater retention**, **improving soil quality**, providing **shade for livestock and reducing evapotranspiration**, which strengthens vegetation's resilience to drought

- **Management of Water Supply and Use:**
  - **Investment in Infrastructure:** Increased investment in infrastructure for water supply and management, such as wastewater reuse and groundwater recharge systems, is necessary to enhance water security during droughts

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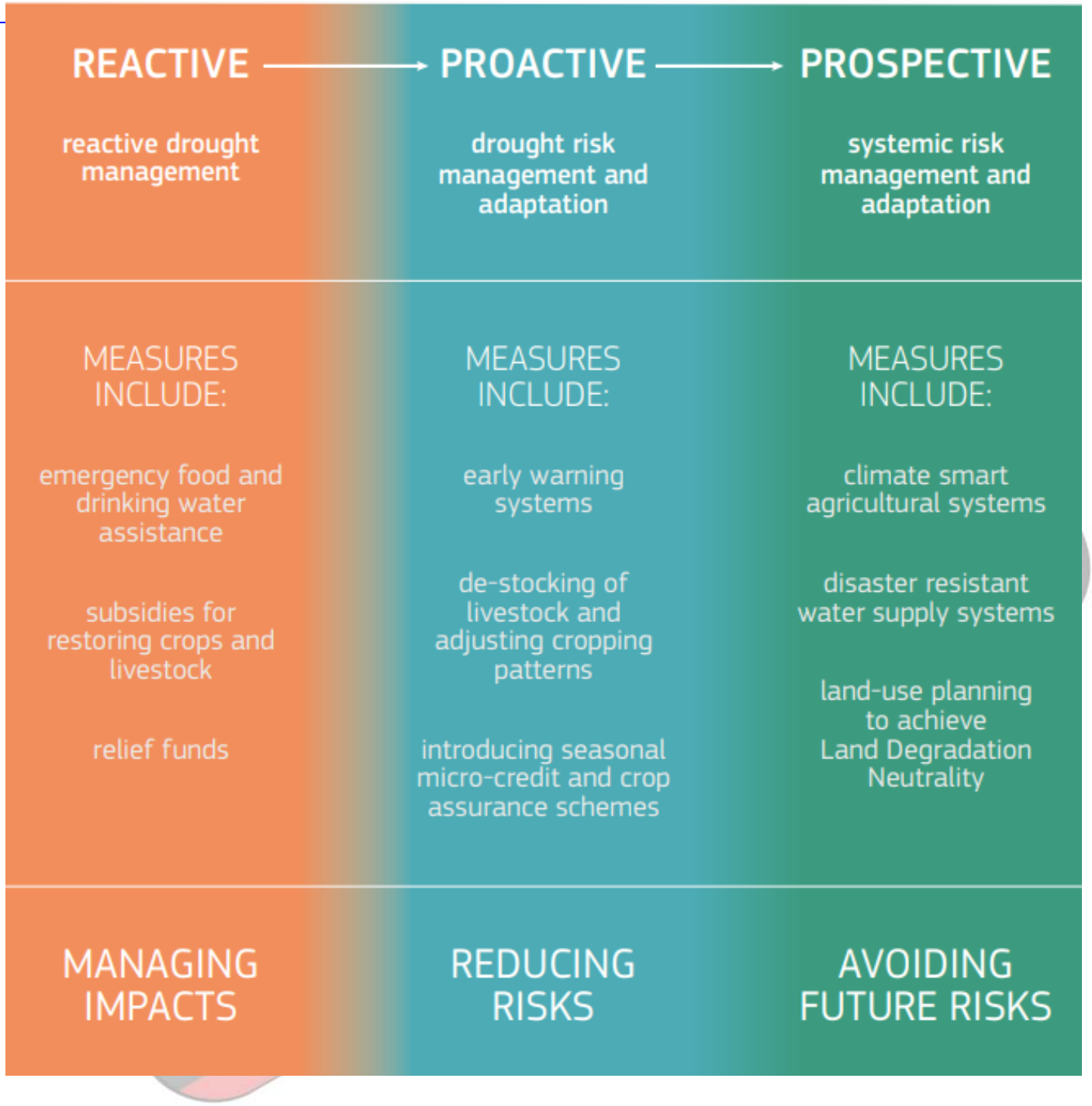

Drishti Mains Question

Q. Discuss how socio-economic factors influence drought resilience in India and suggest actionable strategies for improving preparedness against future droughts.

UPSC Civil Services Examination, Previous Year Question (PYQ)

Mains:

Q. Drought has been recognized as a disaster in view of its spatial expanse, temporal duration, slow onset, and lasting effects on vulnerable sections. With a focus on the September 2010 guidelines from the National Disaster Management Authority (NDMA), discuss the mechanisms for preparedness to deal with likely El Nino and La Nina fallouts in India. (2014)