



EDITORIAL ANALYSIS

Time: 10 min

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The world needs to stop taking water for granted

Syllabus: GS2/ Government policies & interventions, GS3/ Resources

In Context

- The theme for World Food Day (October 16th) of 2023 – ‘**Water is Life, Water is Food**’ – calls for urgent action in managing water wisely.

Water availability & significance

- Water availability affects every aspect of human life, especially food and nutrition security.
 - For instance, about 60% of India’s net sown area is rainfed, contributing to 40% of the total food production.
- However, rainfed agriculture depends directly on water availability. **Rain and soil moisture** variations can severely affect food and nutrition security.
- **Climate change & criticality of water resources:**
 - The Government of India has assessed the impact of climate change in 2050 and 2080 using climate projections and crop simulation models.
 - **Rice:** Without adaptation measures, rainfed rice yields in India are projected to reduce by 20% in 2050, and by 47% in 2080 scenarios, while irrigated rice yields are projected to decline by 3.5% in 2050 and 5% in 2080 scenarios.
 - **Wheat:** Wheat yields are projected to decrease by 19.3% in 2050 and 40% in 2080.
 - **Maize:** Kharif maize yields could decline by 18% and 23% by 2050 & 2080 respectively.
 - In every scenario, climate change without adequate adaptation measures reduces crop yields and lowers the nutritional quality of produce.
- **UN’s stress on management of water resources:**
 - With less than seven years left to achieve the UN Sustainable Development Goals (SDGs), the **Food and Agriculture Organization** of the United Nations (FAO), the **International Fund for**

Agricultural Development (IFAD) and the **United Nations World Food Programme (WFP)** – the UN's food agencies – lay stress on the need to adopt innovative and collaborative approaches for improved management, conservation and availability of scarce water resources.

Issues & challenges

- **Overall:**
 - Decades of poor water management, misuse and pollution, and the climate crisis have degraded freshwater supplies and ecosystems.
 - This has added to the vulnerability of small-scale producers to climate shocks and land degradation in some of the world's most fragile ecosystems.
- **Agriculture:**
 - Irrigated agriculture accounts for 72% of global freshwater withdrawals.
 - This sometimes has **lasting damaging effects** on the sustainability of significant ecosystems, such as **seasonal rivers and deep aquifers**.
 - About **40% of the planet's total land area is degraded**, leaving farmers with less productive land.
 - **Small-scale farmers**, who make up more than 80% of farmers globally, are **especially affected**.
 - They often lack access to finance, technology and irrigation to maintain a level of production that can sustain their livelihoods.
- **Variable weather events:**
 - Countries have been facing severe challenges such as **drought, floods, unseasonal rains and prolonged dry spells**.
 - Extreme weather events and variability in water availability are severely affecting agricultural production, **changing agro-ecological conditions** and shifting growing seasons.
 - Changes in rainfall and higher temperatures also **affect crop productivity, reducing food availability**.

Suggestions

- **Adapt to climate change:**
 - There is an urgent need to **adapt to climate change** by promoting **technologies** and practices that make **rainfed production more resilient and sustainable**.
 - Sustainable water management is critical to address the impending food and nutrition security threats.
- **Irrigation:**

- Irrigation can be an effective measure to make agriculture more resilient.
- In most cases it enables farmers to transform their livelihoods by growing, consuming and selling high-value crops such as nutritious fruits and vegetables.
- **Micro-irrigation:**
 - Micro-irrigation (**drip and sprinkler**), which can save about 50 percent of water in the cultivation of different crops, should be promoted in the over-exploited blocks to reduce the exploitation of groundwater.
- **Monitoring:**
 - The exploitation and sale of groundwater by large corporations should be monitored on a continuous basis.
- **Rainwater harvesting:**
 - Both Central and State governments must take continuous steps to store rainwater in all possible ways to increase recharge.
 - Rainwater harvesting system must be made mandatory in every household, particularly in big cities where groundwater has been declining alarmingly.
- **Awareness:**
 - People from all walks of life must continue to be made aware of water literacy and on the hazardous effects of rapidly declining groundwater.

United Nations's Initiatives in India

- **Soil and water conservation:**
 - The World Food Programme (WFP) supports soil and water conservation.
 - It involves building or fixing of irrigation canals, dams, ponds, and dykes, as well as flood barriers through food assistance in exchange for labour.
- **Micro-irrigation infrastructure:**
 - International Fund for Agricultural Development (IFAD) supports Indian States in leveraging the **Mahatma Gandhi National Rural Employment Guarantee Act scheme (MGNREGA)**.
 - Through safeguards during design and planning and encouraging participatory institutional development, IFAD ensures that micro-irrigation infrastructure is environmentally and socially sustainable and financially viable.
- **Climate-smart agriculture:**

- The Food and Agriculture Organization (FAO) supports the **sustainable transformation of agrifood systems** and **climate-smart agriculture practices** to improve water-use efficiency.
- **Crop forecasting framework:**
 - The FAO, in **Andhra Pradesh, Karnataka, Himachal Pradesh, and Maharashtra**, is piloting a **crop forecasting framework** and model incorporating climate (weather), soil characteristics and market information to aid rainfed farmers in making informed decisions contributing to food security.

Way ahead

- To achieve global food and nutrition security, **political commitment is needed** as much as concrete investment.
- The **needed policies and investments must:**
 - Promote innovative and proven technologies that allow farmers to increase their productivity, adapt to climate change and become more resilient to shocks;
 - Promote environmentally and socially sustainable and financially viable irrigation and water management strategies;
 - Reduce their climate footprint of agricultural production, as well as bio-hazards and environmental pollution;
 - Bring sanitation and drinking water supplies closer to rural households;
 - Adopt efficient food and water recycling strategies and strengthen institutional arrangements and capacity for sustainable and equitable water regulations, management, access and ownership.

Daily Mains Question

[Q] Sustainable water management is critical to address impending food and nutrition security threats. Analyse.