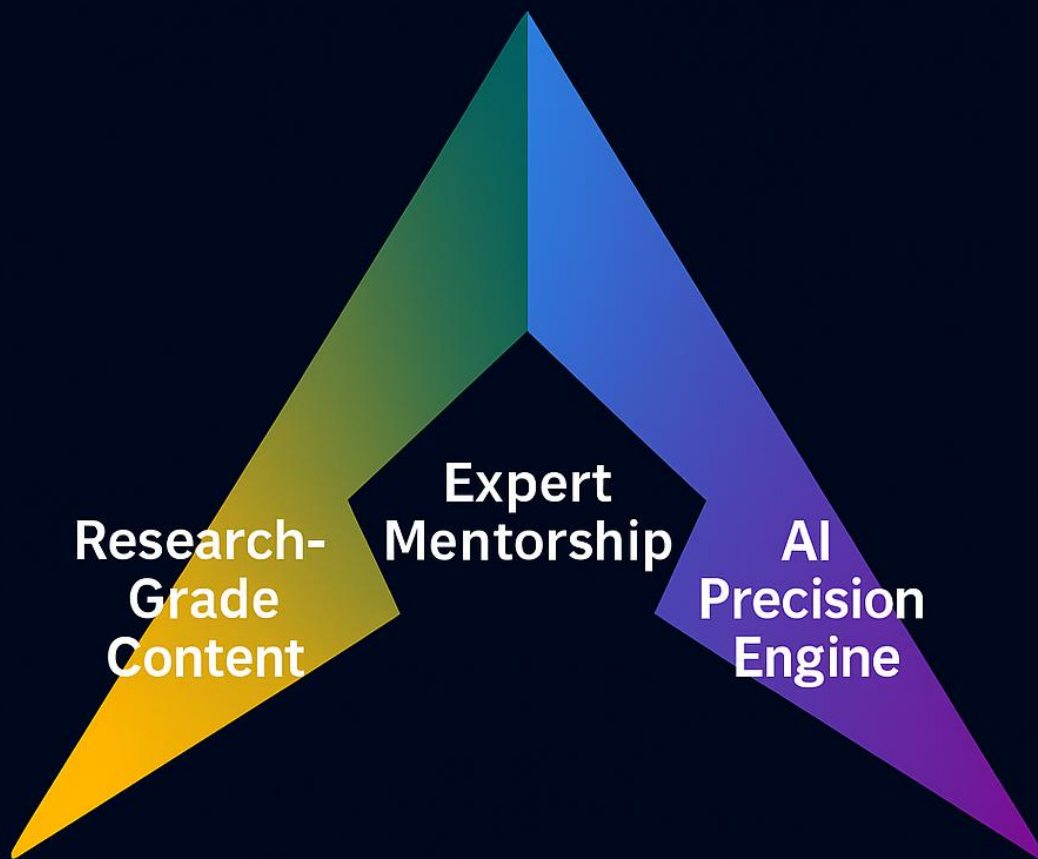


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DAILY CURRENT AFFAIRS DATED 04.07.2026

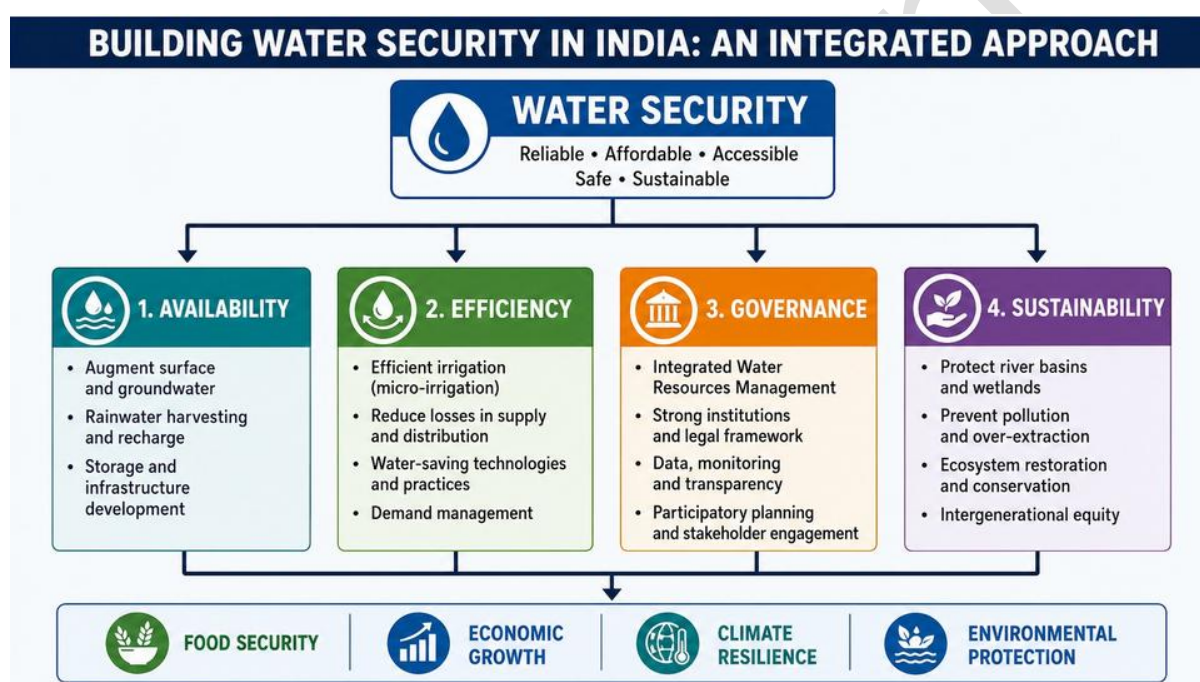
GS Paper II: Current Affairs

1. Building Water Security in a Water-Stressed India

a. Introduction

Water security has emerged as one of India's most critical developmental and environmental challenges. Rapid urbanisation, population growth, industrialisation, agricultural expansion and climate change are placing unprecedented pressure on the country's limited freshwater resources. Increasingly frequent droughts, erratic monsoons, groundwater depletion and urban water shortages demonstrate that water scarcity is no longer merely a seasonal concern but a structural challenge affecting economic growth, food security, public health and disaster resilience.

As several Indian cities face acute water shortages and major river basins experience growing water stress, the need for integrated, climate-resilient and sustainable water management has become increasingly urgent.



b. Background Context

India supports nearly one-fifth of the world's population but possesses only about 4% of global freshwater resources. Rising demand from agriculture, domestic consumption, industry and urbanisation has significantly increased pressure on available water resources.

Recent assessments indicate that 11 of India's 15 major river basins are experiencing varying degrees of water stress, with several approaching or falling below internationally recognised water-scarcity thresholds. Climate change has further intensified these challenges by increasing rainfall variability, groundwater depletion and the frequency of floods and droughts.

These structural pressures reveal that India's water challenge is not merely one of resource availability but also of infrastructure, governance and efficient utilisation.

c. Key Issues

Ageing Water Infrastructure

- Many water supply systems suffer from inadequate maintenance.

- Ageing infrastructure reduces efficiency and reliability of water delivery.

High Urban Water Losses

- Urban water distribution networks experience substantial transmission and distribution losses.
- Large volumes of treated water are lost before reaching consumers.
- Operational costs increase while effective water availability declines.

Inadequate Wastewater Treatment

- A significant proportion of wastewater remains untreated.
- Valuable water resources are discharged into rivers, contributing to pollution and reducing opportunities for reuse.

Inefficient Agricultural Water Use

- Agriculture consumes the largest share of India's freshwater resources.
- Flood irrigation continues to dominate despite the availability of more efficient irrigation technologies.

Weak Water Data Systems

- Limited river basin-level information on:
 - Surface water availability.
 - Groundwater extraction.
 - Sector-wise water consumption.
- Weak data limits scientific planning and equitable water allocation.

These issues collectively contribute to increasing water insecurity and require a shift towards integrated and climate-resilient water governance.

d. Major Challenges

Climate Change

- Erratic monsoons.
- Prolonged heatwaves.
- Changing rainfall patterns.
- More frequent droughts and floods.

These factors increase uncertainty regarding future water availability.

Urban Water Insecurity

- Rising demand.
- Limited storage capacity.
- Inefficient distribution systems.
- Unsustainable groundwater extraction.

Rapid urban expansion has also reduced natural groundwater recharge areas.

Inefficient Agricultural Practices

- Continued dependence on flood irrigation.
- Low water-use efficiency.
- Excessive groundwater withdrawal in several regions.

Fragmented Water Governance

- Responsibilities are divided among multiple ministries and agencies.
- Weak institutional coordination limits integrated planning.
- Data gaps hinder evidence-based decision-making.

Addressing these challenges requires moving beyond supply augmentation towards comprehensive water demand management and integrated governance.

e. Key Strategies for Water Security

Climate-Resilient Water Infrastructure

- Design reservoirs, water supply systems and drainage infrastructure based on future climate projections rather than historical rainfall patterns.
- Incorporate climate-risk assessments into infrastructure planning.

Wastewater Recycling and Reuse

- Treat wastewater as a valuable resource.
- Promote reuse for:
 - Industrial cooling.
 - Construction.
 - Landscaping.
 - Non-potable urban applications.
- Reduce dependence on freshwater resources.

Improve Irrigation Efficiency

- Expand micro-irrigation systems such as:
 - Drip irrigation.
 - Sprinkler irrigation.
- Improve water productivity while reducing groundwater extraction.

Promote Crop Diversification

- Encourage cultivation of less water-intensive crops where agro-climatic conditions permit.
- Improve farm incomes alongside water conservation.

Data-Driven Water Governance

- Develop comprehensive river basin accounting.
- Expand:
 - Smart metering.
 - Remote sensing.
 - GIS mapping.
 - Digital monitoring systems.
- Improve planning, allocation and demand management.

Implementing these strategies effectively requires institutional reforms and coordinated policy interventions across sectors.

f. Way Forward

Adopt Integrated Water Resources Management (IWRM)

- Manage surface water, groundwater and ecosystems together.
- Adopt river basin-level planning.
- Balance competing sectoral demands sustainably.

Strengthen National Water Programmes

Accelerate implementation of:

- Atal Bhujal Yojana.
- Jal Jeevan Mission.
- Pradhan Mantri Krishi Sinchayee Yojana (PMKSY).

with greater emphasis on sustainability and demand management.

Expand Circular Water Economy

- Increase wastewater treatment capacity.
- Promote recycling and reuse by urban local bodies.
- Reduce dependence on freshwater withdrawals.

Strengthen Groundwater Governance

- Improve groundwater regulation.
- Promote artificial recharge.
- Encourage community participation.
- Strengthen demand-side management.

Integrate Water Security with Urban Planning

- Align water management with:
 - Land-use planning.
 - Flood management.
 - Wetland conservation.
 - Disaster resilience.
- Strengthen coordination among water, agriculture, urban development and disaster management agencies.

Conclusion

Water security is central to India's environmental sustainability, agricultural productivity, urban resilience and economic development. As climate variability intensifies and demand continues to rise, the country must transition from a resource extraction model to a resource management model. An integrated approach combining river basin planning, climate-resilient infrastructure, efficient water use, scientific governance and community participation will be essential for ensuring long-term water security and sustainable development.

Reader's Note — About This Current Affairs Compilation

Dear Aspirant,

This document is part of the PrepAlpine Current Affairs Series — designed to bring clarity, structure, and precision to your daily UPSC learning.

While every effort has been made to balance depth with brevity, please keep the following in mind:

1. Orientation & Purpose

This compilation is curated primarily from the UPSC Mains perspective — with emphasis on conceptual clarity, analytical depth, and interlinkages across GS papers.

However, the PrepAlpine team is simultaneously developing a dedicated Prelims-focused Current Affairs Series, designed for:

- factual coverage
- data recall
- Prelims-style MCQs
- objective pattern analysis

This Prelims Edition will be released separately as a standalone publication.

2. Content Length

Some sections may feel shorter or longer depending on topic relevance and news density. To fit your personal preference, you may freely resize or summarize sections using any LLM tool (ChatGPT, Gemini, Claude, etc.) at your convenience.

3. Format Flexibility

The formatting combines:

- paragraphs
- lists
- tables
- visual cues

—all optimised for retention.

If you prefer a specific style (lists → paras, paras → tables, etc.), feel free to convert using any free LLM.

4. Monthly Current Affairs Release

The complete Monthly Current Affairs Module will be released soon, optimized to a compact 100–150 pages — comprehensive yet concise, exam-ready, and revision-efficient.

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