

An Overview of International, National and State Agencies in India Related to Water Resources

P.G. Dodewar^{1*}, P.S. Brahmanand² and Bipin Kumar³

¹Ph.D. Scholar, ICAR-Indian Agricultural Research Institute, New Delhi, 110 012, India

²Project Director, Water Technology Centre, ICAR-IARI, New Delhi, 110 012, India

³Scientist, Water Technology Centre, ICAR-IARI, New Delhi, 110 012, India

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Abstract

Water management is a critical concern globally, with increasing challenges due to population growth and climate change. This paper provides an overview of key international, national, and state agencies in India that manage and conserve water resources. Agencies such as UN-Water and the World Health Organization (WHO) offer global leadership, while India's Ministry of Jal Shakti and Central Water Commission address national issues. State-level bodies, like the Maharashtra Water Resources Regulatory Authority, focus on regional water management. Collaborative efforts across these levels are essential to ensure sustainable water management and address water scarcity and pollution challenges.

Keywords: Water resources management, Water agencies, Climate change and water

Introduction

Water is a fundamental resource essential for life, economic development and environmental sustainability. As the global population grows and climate change intensifies the demand for water and the challenges of managing it sustainably have become increasingly complex. In response various international, national and state agencies have been established to oversee the management, conservation and equitable distribution of water resources. These agencies play a pivotal role in addressing issues related to water scarcity, pollution and inefficient usage while also ensuring that water resources are managed in a way that supports sustainable development. International agencies such as the United Nations Water (UN-Water) and the World Health Organization (WHO) provide global leadership, setting guidelines and facilitating cooperation among nations. National agencies in India, including the Ministry of Jal Shakti and the Central Water Commission (CWC) focus on formulating and implementing policies that address the country's specific water-related challenges. At the state level various agencies work to manage water resources in accordance with regional needs and priorities. This

overview examines the roles and responsibilities of key international, national, and state agencies in India related to water resources, highlighting their contributions to sustainable water management.

Table 1. International, National and state agencies of India related to water

Sr. No.	Institute/Board/Agencies	Headquarter
International Agencies Related to Water		
1	United Nations Water (UN-Water)	Geneva, Switzerland
2	World Water Council (WWC)	Marseille, France
3	Global Water Partnership (GWP)	Stockholm, Sweden
4	World Health Organization (WHO)	Geneva, Switzerland
5	International Water Management Institute (IWMI)	Colombo, Sri Lanka
National Agencies in India Related to Water		
1	Ministry of Jal Shakti	New Delhi
2	Central Water Commission (CWC)	New Delhi
3	National Water Development Agency (NWDA)	New Delhi
4	Central Ground Water Board (CGWB)	Faridabad, Haryana
5	National Mission for Clean Ganga (NMCG)	New Delhi
6	Central Pollution Control Board (CPCB)	New Delhi
State Agencies in India Related to Water		
1	Maharashtra Water Resources Regulatory Authority (MWRRA)	Mumbai
2	Tamil Nadu Water Supply and Drainage Board (TWAD)	Kamarajar Salai, Chepauk, Chennai
3	Gujarat Water Resources Development Corporation (GWRDC)	Gandhinagar, Gujarat
4	Karnataka Neeravari Nigam Limited (KNNL)	Bangalore, Karnataka
5	Punjab Water Resources Management and Development Corporation (PWRMDC)	Ajitgarh, Punjab

Key Challenges and Opportunities in Water Management

Water management in India faces several challenges, including the over-exploitation of groundwater, pollution of water bodies, inefficient irrigation practices and the impacts of climate change. The growing population and increasing demand for water add further stress to existing resources. However, there are also opportunities to improve water management through the adoption of modern technologies and the implementation of integrated water resource management (IWRM) practices. International, national and state agencies in India related to water resources are actively working to address these problems, focusing on sustainable solutions and collaborative efforts across multiple levels.

International Agencies Related to Water

International agencies play a vital role in shaping global water policies, coordinating international efforts, and providing technical expertise to address water-related challenges worldwide.

- ✚ **United Nations Water (UN-Water):** UN-Water is the United Nations inter-agency coordination mechanism for all water-related issues. It facilitates collaboration between UN member states and over 30 UN entities working on water and sanitation issues. UN-Water's primary objectives include coordinating water related efforts to achieve Sustainable Development Goal 6 (Clean Water and Sanitation), promoting policy dialogue, and supporting member states in developing and implementing water management policies. It also plays a critical role in monitoring and reporting on global progress in water and sanitation (UN-Water).
- ✚ **World Water Council (WWC):** The World Water Council (WWC) is an international multi-stakeholder platform established in 1996. It brings together various organizations, including governments, NGOs and private sector entities to promote awareness, build political commitment and trigger action on critical water issues. The WWC organizes the World Water Forum, a significant global event aimed at tackling global water challenges. The council focuses on raising global awareness, building political commitment and advocating for better water governance (WWC).
- ✚ **Global Water Partnership (GWP):** The Global Water Partnership (GWP) is an international network that promotes integrated water resources management (IWRM) as a means to achieve sustainable water use. Established in 1996, GWP consists of over

3,000 partner organizations across 183 countries. It provides a platform for dialogue and collaboration among stakeholders, including governments, civil society and the private sector. GWP's work includes developing tools and methodologies, facilitating knowledge exchange and supporting countries in implementing IWRM practices (Global Water Partnership).



-  **World Health Organization (WHO):** The World Health Organization (WHO) plays a crucial role in addressing water, sanitation, and hygiene (WASH) issues globally. WHO develops guidelines and standards for drinking water quality, promotes safe management of water resources and works to prevent waterborne diseases. Through its WASH program, WHO collaborates with governments and other organizations to improve access to safe drinking water, sanitation and hygiene services, particularly in developing countries (WHO, WASH).




Fig.1. International Agencies Related to Water

-  **International Water Management Institute (IWMI):** The International Water Management Institute (IWMI) is a research organization dedicated to improving water and land management in developing countries. IWMI conducts research on water

resources management, irrigation practices and agricultural water use to enhance food security and reduce poverty. The institute works closely with governments, NGOs and international agencies to develop sustainable water management practices and policies (IWMI).

National Agencies in India Related to Water

National agencies in India are responsible for formulating, implementing, and overseeing water resource management policies to ensure sustainable and equitable distribution across the country.

-  **Ministry of Jal Shakti:** The Ministry of Jal Shakti is the central government ministry in India responsible for managing water resources. Established in 2019 by merging the Ministry of Water Resources, River Development & Ganga Rejuvenation and the Ministry of Drinking Water and Sanitation, it oversees various national programs related to water conservation, irrigation, drinking water supply and sanitation. The ministry's key initiatives include the Jal Jeevan Mission which aims to provide piped water supply to all rural households by 2024 and the Namami Gange project, focused on the rejuvenation of the Ganga River (Ministry of Jal Shakti, Government of India).

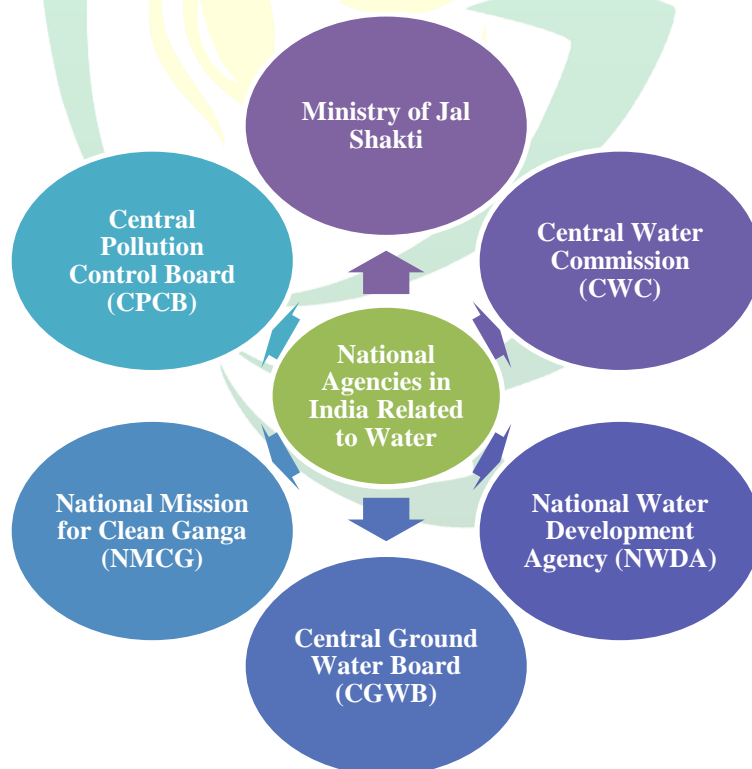


Fig. 2. National Agencies in India Related to Water



- ✚ **Central Water Commission (CWC):** The Central Water Commission (CWC) is a premier technical organization in India under the Ministry of Jal Shakti. It is responsible for initiating, coordinating and furthering studies related to the control, conservation and utilization of water resources. CWC plays a key role in the design and implementation of water resource projects, flood forecasting, dam safety and interstate river water disputes resolution. It also provides technical guidance, consultancy and training to state governments and other stakeholders (CWC, India).
- ✚ **National Water Development Agency (NWDA):** The National Water Development Agency (NWDA) was established in 1982 to carry out detailed studies and surveys for the interlinking of rivers in India. NWDA's primary objective is to prepare feasibility reports for linking rivers and constructing reservoirs to optimize water resources. The agency also evaluates the impact of these projects on agriculture, hydropower generation and water supply. NWDA plays a crucial role in the National Perspective Plan, which aims to transfer water from surplus to deficit areas to address regional imbalances in water availability (NWDA).
- ✚ **Central Ground Water Board (CGWB):** The Central Ground Water Board (CGWB) is the apex organization under the Ministry of Jal Shakti for the exploration, development and management of groundwater resources in India. CGWB conducts groundwater surveys, monitors groundwater levels and quality, and provides technical assistance for groundwater management projects. The board is also involved in regulating and promoting sustainable groundwater use to prevent over-exploitation and depletion of this vital resource (CGWB).
- ✚ **National Mission for Clean Ganga (NMCG):** The National Mission for Clean Ganga (NMCG) is an umbrella program launched by the Indian government to clean and rejuvenate the Ganga River. NMCG coordinates efforts to reduce pollution, conserve and rejuvenate the river, and promote sustainable management of its resources. The mission focuses on wastewater treatment, riverfront development, afforestation and public awareness campaigns to ensure the Ganga remains clean and free flowing. NMCG works in collaboration with various state agencies, NGOs and international organizations (NMCG).


- ✚ **Central Pollution Control Board (CPCB):** The Central Pollution Control Board (CPCB) is a statutory organization under the Ministry of Environment, Forest and Climate Change responsible for regulating pollution in India. CPCB monitors water quality across the country, sets environmental standards and provides technical assistance for pollution control. The board also plays a critical role in enforcing laws related to water pollution, such as the Water (Prevention and Control of Pollution) Act, 1974. CPCB's efforts are crucial in maintaining water quality and ensuring the sustainability of water resources (CPCB).

State Agencies in India Related to Water

State agencies in India focus on managing water resources within their respective regions, addressing local needs, and implementing state-specific water conservation and distribution projects.

- ✚ **Maharashtra Water Resources Regulatory Authority (MWRRA):** The Maharashtra Water Resources Regulatory Authority (MWRRA) is the first independent water regulatory authority in India established in 2005. MWRRA is responsible for regulating water resources in Maharashtra including allocation, distribution and tariff setting for water use. The authority ensures equitable distribution of water, promotes efficient use and resolves disputes related to water resources in the state. MWRRA also plays a role in promoting sustainable water management practices and policies at the state level (Government of Maharashtra, Water Resources Department).
- ✚ **Tamil Nadu Water Supply and Drainage Board (TWAD):** The Tamil Nadu Water Supply and Drainage Board (TWAD) is a statutory organization established in 1971, responsible for the provision of water supply and sewerage facilities in Tamil Nadu. TWAD works on planning, designing and implementing water supply and drainage schemes, particularly in rural and urban areas. The board also plays a significant role in ensuring safe drinking water availability and improving sanitation facilities across the state (TWAD Board).
- ✚ **Gujarat Water Resources Development Corporation (GWRDC):** The Gujarat Water Resources Development Corporation (GWRDC) was established in 1971 to develop groundwater resources in Gujarat. GWRDC focuses on the exploration, conservation and sustainable use of groundwater in the state. The corporation

undertakes projects related to the construction of tube wells, recharge structures and the promotion of micro-irrigation techniques. GWRDC plays a crucial role in managing the state's groundwater resources and ensuring water security for agriculture and drinking purposes (GWRDC).

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Karnataka Neeravari Nigam Limited (KNNL): Karnataka Neeravari Nigam Limited (KNNL) is a government owned company responsible for implementing irrigation projects in Karnataka. Established in 1998, KNNL focuses on the construction, operation and maintenance of major and medium irrigation projects in the state. The company aims to enhance agricultural productivity through efficient water management and ensure equitable distribution of irrigation water. KNNL also works on modernizing existing irrigation systems and promoting water conservation practices (KNNL).

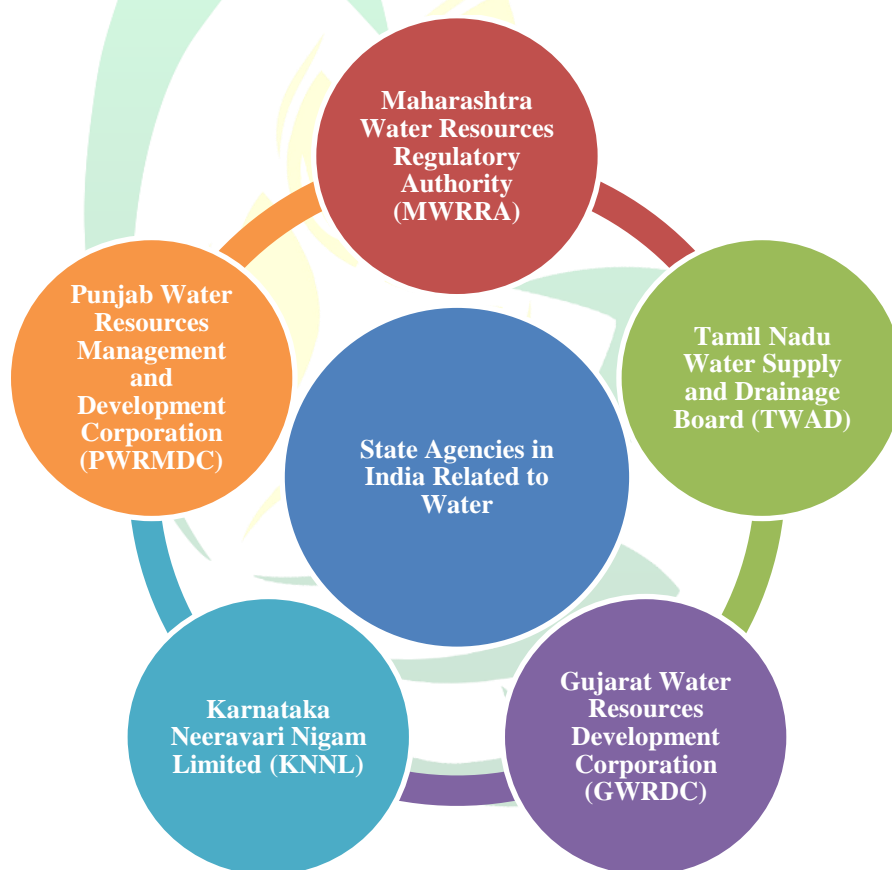


Fig. 3. State Agencies in India Related to Water

Punjab Water Resources Management and Development Corporation (PWRMDC)

The Punjab Water Resources Management and Development Corporation (PWRMDC) is a state government agency responsible for managing water resources in Punjab. PWRMDC



focuses on the development and maintenance of irrigation infrastructure, groundwater management and the promotion of efficient water use in agriculture. The corporation undertakes projects related to canal irrigation, construction of watercourses and installation of tubewells. PWRMDC plays a key role in ensuring the availability of water for agriculture and drinking purposes in the state (PWRMDC).

Conclusion

Effective management of water resources is critical for India's sustainable development. The involvement of international, national and state agencies ensures a multi-layered approach to addressing water-related challenges. By working together, these agencies can promote sustainable water use, improve water quality and ensure equitable access to water for all. Continued efforts are needed to overcome the challenges and seize the opportunities for better water management in India.

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