

Water Resources Regulation in India

Examining the framework for efficient water governance with focus on Maharashtra

Introduction

The water sector in India has always been plagued by multiple challenges such as inefficient use of water resources, conflicts between various categories of water users, inadequacy of funds to complete resource development projects, fiscal issues in meeting operational and maintenance costs from water tariff revenue and lack of a uniform approach in water planning and development. These challenges have necessitated an assessment of the existing approach to water governance and formulation of a new water policy. The Maharashtra Water Resources Regulatory Authority (MWRRA) was set up as an independent regulatory authority to pioneer the water sector reforms in India. Within a short span of time, the Maharashtra model for governance of water resources has been emulated by other states like Andhra Pradesh, Jammu and Kashmir, Gujarat, Arunachal Pradesh and Uttar Pradesh among others. Moreover, in 2011, the Planning Commission of India, proposed a model state water regulatory system, similar to the MWRRA. However, despite the uniqueness of the MWRRA model, its implementation has faced several challenges in the last decade of its existence. A review of the functioning of the MWRRA is, therefore, imperative if this model is to be scaled up on a nationwide level.

Independent Regulatory Agencies: A brief background

Independent regulatory agencies (IRA) were first introduced in India at the insistence of the World Bank and other International Financial Institutions (IFI), to insulate India's water sector from unnecessary government interventions and ensure its autonomy.¹ Water, being a vital resource, is widely recognized as a public good. As such, the governance and distribution of water resources has traditionally been aligned with political interests. Additionally, being a public good, water tariffs have not conventionally taken into account the operation and maintenance costs of infrastructure. This has often resulted in arbitrary and ad-hoc pricing mechanisms in the water sector, which disincentivizes potential investors. Similarly, the huge amount of investment on infrastructure by the State has not led to increasing efficiency in the maintenance and distribution of water resources.

Consequently, the IFIs proposed that the governance of water in India required a reformulation of the water policy. The new approach to water governance was suggested on the basis of following principles.²

- The treatment of water should gradually shift from a public good to an economic commodity, to ensure that it reaches the highest value user.
- The water tariffs should account for full recovery of the operation and maintenance costs.

¹ Cubbin John & Jon Stern, *Regulatory Effectiveness and the Empirical Impact of Variations in Regulatory Governance: Electricity Industry Capacity and Efficiency in Developing Countries*, The World Bank, 2005.

² Independent Water Regulatory Authorities in India: *Analysis and Interventions*, PRAYAS, Pune.

- The role of the State should be restructured and its regulatory functions would be effectively reduced. Additionally, the role of consumers should increase in the management of water resources. The monopoly of State in the ownership and provision of services should also be reduced by allowing private investment.
- The participation of the private sector should be increased to ensure adequate funds for the rapid development of the sector.
- Water governance should be decentralized to assess the priorities and needs of the local people.

Therefore, the main idea behind the IRAs is to create an apolitical space for decision-making, thereby, creating credibility for investors and protecting consumers. The principle challenge for an IRA in the water sector is to balance social objectives with economic imperatives, while maintaining efficiency through regulation. This is important, especially, because access to water is recognized as a fundamental right in India. Another challenge for the IRAs is to maintain their relative independence from the government in its decision making process. The composition and powers of the IRA must ensure that it is insulated from political interference.

National & State Water Policies

Water is listed in both the State and Union lists, under the Constitution of India. The states play a central role in governance of water resources and the formulation of water policy, while the center oversees the inter-state distribution of water. The First National Water Policy, formulated in 1987, laid down a comprehensive framework for regulation of water resources in India. This policy designated water as a 'basic human need and a precious national asset'. The policy recommended the implementation of a new approach to the governance of water resources, which would include³:

- River-basin or sub-river basin as a unit of planning
- Integrated and interdisciplinary approach to project planning
- Consideration of the human, environmental, and ecological cost in project planning
- Regulation of groundwater extraction
- Conjunctive use of surface and groundwater
- First priority to drinking uses
- Water tariff covering the operation, maintenance cost and partial capital cost
- Farmers' participation in irrigation management

The ideas suggested in the First National Water Policy was followed up on by the Eighth and Ninth Five Year Plans which suggested major reforms and restructuring of the water sector. The following were the key points of the recommendations:

- Decentralization of water service delivery to the local bodies and private sector
- Demand driven approach
- Participation of private sector in water schemes
- Freedom to the local bodies to decide the water tariff
- Appropriate mechanism for water tariff

³ National Water Policy, 1987

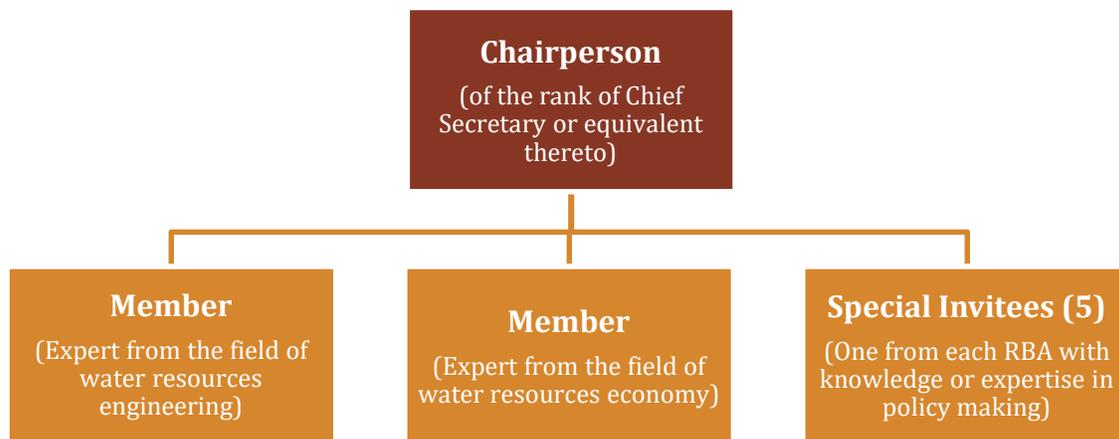
The National Water Policy of 2002 re-emphasized the principles laid down in the First National Water Policy. It highlighted the socio-economic aspects of the planning and implementation of water resource projects such as environmental sustainability, appropriate settlement & rehabilitation of project affected people and livestock, and public concerns of water impoundment. It also recommended the need for generating water related data and information which would further be used for planning in the future.

MWRRA: An Overview

The MWRRA was set up under the Maharashtra Water Resources Regulatory Authority Act, 2005. The MWRRA Act provides for the composition of the MWRRA and details its functions and authority. The core obligations of the MWRRA are to ensure independence from executive and political systems and processes; fixation of entitlements including individual and bulk water entitlements as well as inter-sectoral allocations and the rationalization of water tariff.

Independence

The MWRRA is composed of a Chairperson, two expert members and five special invitees from each river basin agencies (RBA).⁴



The members of the MWRRA are to be appointed by the Governor of Maharashtra, on recommendation of a Selection Committee. The Selection Committee comprises of the Chief Secretary of Maharashtra, as well as the Secretaries of the Planning Dept., Water Resources Dept., Water Conservation Dept., Water Supply Dept., Urban Development Dept., and the Energy and Environment Dept.⁵ The purely bureaucratic composition of the Selection Committee, impedes the creation of a truly apolitical authority. In practice, there exists a close link between the government and the authority, contrary to the purport of the MWRRA.

⁴ Section 4, MWRRA Act, 2005.

⁵ Section 5, MWRRA Act, 2005.

Additionally, there have been prolonged delays in filling up vacancies under the MWRRA at both the committee level and generally. As per the MWRRA's Annual Report, 2013-14, out of the 18 sanctioned regular posts only 3 had been filled.⁶

Entitlements

Under the MWRRA Act, the term 'entitlement' refers to an authorization by the River Basin Agency (RBA) to use water. Entitlements are predominantly issued in bulks, although in certain cases they may be individual in nature.

Bulk Water Entitlement

- Volumetric entitlement to a share of the surface water resources produced by a project, river system or storage facility.
- **Purpose:** For irrigation water supply, rural water supply, municipal water supply or industrial water supply.

Individual Water Entitlement

- Authorization by the Authority to use the water other than Bulk Water Entitlement or an Aggregate Bulk Water Entitlement.
- **Purpose:** For the construction & operation of individual lift irrigation schemes from surface water sources, bore-wells, tube wells or other facilities for extraction of sub-surface water.

A bulk user is an entity which lifts water directly from the reservoir or canal for its own use or for onward distribution to its individual members.

Types of Bulk Users

Irrigation

- Water User Agreements (WUAs)

Domestic/Drinking

- Municipal Corporations
- Municipal Councils
- Gram Panchayats
- Maharashtra Jeevan Pradhikaran etc.

Industrial

- MIDC
- Sugar Co-ops
- MADC Nagpur

The guiding principle for fixing of entitlement within each category of use is to ensure equity among all beneficiaries.

Rationalization of Water Tariff

The MWRRA is required to establish a water tariff system, and to fix the criteria for water charges at sub-basin, river basin and State level after ascertaining the views of the beneficiaries. The water charges must reflect the full recovery of the cost of the irrigation management, administration, operation and maintenance of water resources project. This is one of the key features of the IRA model and it ensures that the users bear the cost of the infrastructure thereby reinforcing their position as stakeholders in the governance of water resources. The tariff also reflects the true cost of procurement of water, leading to efficiency in its usage.

⁶ Annual Report 2013-14. Maharashtra Water Resources Regulatory Authority.

Performance Assessment of the MWRRA

The Comptroller and Auditor General (CAG), as part of its Report on the Performance Audit on Management of Irrigation Projects in Maharashtra, extensively examined the functioning of the MWRRA.⁷ The report revealed major challenges in the implementation of the MWRRA. Some of the key findings of the report have been summarised below.

1. Development and Planning

Under the MWRRA Act, 2005 and the State Water Policy, 2003, the River Basin Agency (RBA) for each river basin is responsible for preparation of an integrated river basin plan.



The Irrigation Development Corporations (IDCs), which were designated as RBAs, failed to prepare the river basin plans. This led to the non-preparation of the State Water Resource Plan (SWRP) for planning and development of water resources in the State. In the absence of a comprehensive SWRP, the clearance to the irrigation projects granted by MWRRA failed to address the fragmented and isolated approach to surface and ground water development.

Moreover, the sectoral allotment of water was not determined by the MWRRA, as mandated under the MWRRA Act, 2005, for a period of six years from its establishment. The priority of equitable distribution of water during periods of scarcity, was also not determined by the MWRRA.

2. Implementation and Finances

Due to the limited finances, the need for prioritizing the irrigation projects was emphasized from time to time through Governor's Directives, and recommendations of the High Power Committee and Planning Commission. However, these recommendations were not taken into account which led to thin spreading of financial resources among many projects and led to time and cost overruns and delay in creation of the expected irrigation potential. The inefficiency in financial management is evidenced by the fact that the Water Resources Department of Maharashtra was saddled with 601 ongoing projects as on June, 2013 and their estimated balance cost (Rs. 82,609.64 crore) was nine times the capital grant of WRD for the year 2012-13.

3. Environmental Clearances and Social Costs

The social and environmental costs were not taken into account by the MWRRA, while clearing projects. This led to projects being taken up without proper surveys, environment and forest clearances, and

⁷ Report No. 3 of 2014, Performance Audit on Management of Irrigation Projects of Government of Maharashtra, CAG.

acquisition of requisite land and non-rehabilitation of project affected persons. As a result, there was an enormous increase in the cost of the projects and delays in their completion as well. There were several instances where the manual provisions and contract terms and conditions were violated which resulted in granting in undue benefits to the contractors and incurring of avoidable extra expenditure.

4. Operation and Maintenance

Inadequate maintenance of dams and canals has led to the poor utilisation of Irrigation Potential (IP). As against 48.26 lakh hectares of IP created, the IP utilized was only 32.51 lakh hectares i.e. 67.36 per cent. Other factors which contributed to the underutilization of IP were siltation, inefficiency in canal conveyance, incomplete command area development works, supply of water to perennial crops requiring more water etc. Moreover, changes in the cropping pattern from that decided at the stage of project planning adversely affected the efficiency of water use.

Further, no criterion was followed for selection of dams for test inspections by the Dam Safety Organization (“DSO”). At the end of March, 2013, 348 large dams (out of a total of 1,171) remained uninspected for more than 10 years. There was poor compliance to the deficiencies pointed out by DSO. There were instances where dam works were continued by the Construction Divisions despite issuance of Red Inspection Slips by the Quality Control Divisions, signifying immediate stoppage of works.

5. Project Monitoring and Review

The monitoring and internal controls under the MWRRA were not adequate. There was an absence of well-defined system of granting Administrative Approvals and Revised Administrative Approvals to the irrigation projects by the IDCs. As a result, a large number of projects were approved and implemented in the non-backlog districts in violation of the Governor’s directives. Additionally, the Governing Councils of the IDCs did not hold the requisite number of monthly meetings during 1996-2013, in violation of the IDC Acts. The Management Information System was also inaccurate due to discrepancies in various reports prepared by the Water Resources Department.

Additional Critique of the MWRRA Model

Apart from the challenges in its implementation, the MWRRA model is criticized for using Cultivable Command Area (CCA) as a basis for determination of entitlements and for enabling the trading of entitlements. The MWRRA aims to create equitable distribution of water resources. Effectively, this means that water is distributed in proportion to the CCA held by each farmer. Thus, the equity in distribution of water resources is limited only to landowning farmers own cultivable area. This creates a problematic relationship between existing patterns of land ownership and distribution of water. Moreover, it also excludes landless farmers and others dependents from the distribution of irrigation water.

The MWRRA Act also mandates the development of a framework for the trading of entitlements so that it may be transferred, bartered, bought or sold on annual or seasonal basis within a market system. The economic justification for trading of entitlements rests on the assumption that this will ensure that water is distributed to its highest value user, resulting in efficiency of use. This approach stems from IFIs, especially the World Bank, which emphasizes that trading of entitlements will ensure that those requiring additional resources (such as cities) will

be able to meet their needs by acquiring the rights of those who are using water for low-value purposes. It also reiterates that there are strong incentives for those using water for low-value purposes to voluntarily give up their rights, making reallocation politically attractive and practical. However, the practical implications of such policy could be vastly different from that intended, and could lead to undesirable consequences. For instance, farmers could trade off their share of entitlements to other non-agricultural users for a higher value. A possible remedy to avoid this could be to limit the trading of water to a particular water use. Without the proper mechanism to guide the trading of entitlements, it could lead to detrimental results.

National Framework on State Water Regulatory Authorities

The MWRRA model for governance of water resources has been emulated by various states such as Andhra Pradesh, Arunachal Pradesh, Uttar Pradesh, Kerala, Jammu & Kashmir and Gujarat, among others, within a short span of time. This can be attributed, in part, to the insistence by the IFIs including the World Bank, as a precursor for availing any loans for developing water resources project. Consequently, a number of the state regulatory bodies are non-functional and exist only on paper. For example, the Andhra Pradesh Water Resources Regulatory Commission Act is a direct replication of its Maharashtra counterpart, but only has an advisory role. Similarly, the Gujarat Water Regulatory Authority was created by means of an executive notification, and does not have a comprehensive regulatory framework to support it.

The state regulatory agencies are similar in their composition with minor differences in their structure. All the regulatory agencies provide for the incorporation of operation and maintenance costs, while calculating water tariff. The Uttar Pradesh Water Management and Regulatory Commission also includes the cost of depreciation and subsidies while calculating the water tariff. In addition, most of the authorities are mandated to take steps to initiate water conservation and mandate practices. The Uttar Pradesh authority is also mandated to take steps for the conservation of environment, while the Kerala authority has no such mandate.

State wise comparison of Water Resources Regulatory Authorities

State	Legislation	Cost Recovery Principle	Environmental Concerns
Maharashtra	Maharashtra Water Resources Regulatory Act, 2005	Operation & Maintenance Costs	Requirement to promote and implement sound water conservation and management practices
Andhra Pradesh	Andhra Pradesh Water Resources Regulatory Commission Act, 2009 (merely advisory in nature)	Operation & Maintenance Costs	Requirement to promote and implement sound water conservation and management practices

Arunachal Pradesh	Arunachal Pradesh Water Resources Regulatory Authority Act, 2006	Operation & Maintenance Costs	Requirement to promote and implement sound water conservation and management practices
Uttar Pradesh	Uttar Pradesh Water Management and Regulatory Commission Act, 2008	Operation and Maintenance Costs + Cost of depreciation and subsidies	Requirement to monitor conservation of environment + promote water conservation and management practices
Jammu and Kashmir	Jammu and Kashmir Water Resources (Regulation and Management) Act, 2010	Operation & Maintenance Costs	Requirement to promote and implement sound water conservation and management practices
Kerala	Kerala State Water Resources Regulatory Authority Ordinance, 2012.	Operation & Maintenance Costs	No such mandate
Gujarat	Gujarat Water Regulatory Authority Notification, 14 February, 2012	N/A	N/A

The Planning Commission of India, examined the existing water resources regulatory mechanism and suggested a Model State Water Regulatory System Act, 2011 which could be implemented by all states, and would lead to uniformity in the governance of water resources. The model Act contains salient features as enumerated below.

1. Fundamental Right to Access Water

Unlike other legislations, the Model State Water Regulatory System Act clearly mentions in its guiding principles that the regulatory authority shall be responsible for ensuring equitable, sustainable and efficient use of water, especially, ensuring safe and sustainable access to water for life and water for subsistence livelihood for the vulnerable and the marginalized. The Act also mentions that the authority shall ensure equity and justice in extraction, use, sharing, access, distribution and allocation of water, both ground and surface water, in view of the fundamental right to water for drinking and sanitation and the right to water for livelihood. The clear enumeration of this objective would ensure that the public interest remains paramount and would safeguard against any incursions to the same at the cost of private interest. This is in contrast to most state legislations, including the MWRRA, which are ambiguous as to the prioritization of water usage.

2. Social Costs of the Irrigation Projects

The MWRRA does not take into account, other dependents on the land, at the time of deciding the distribution of entitlements. The Model State Water Regulatory System Act seeks to remedy this by obligating the Water Regulatory Authority to ensure that there is minimum social, cultural and livelihood related adverse impact on the lives of the people affected by the water resources project. It also mandates the regulatory authority to ensure equity and justice in rehabilitation and resettlement of people affected in any manner by the water sector projects. This is a remarkable improvement to make the exiting mechanism inclusive to all parties.

3. Environmental Concerns

The Model Act lays special emphasis on the environmental concerns related to the water resources projects. It lists detailed mandate of the water resources authority which includes ensuring conservation of river and aquifer systems, restoration of any past damage done to the ecosystem, ensuring that water projects do not cross the level of environmental sustainability, ensuring strict and effective control on the quality of water, ensuring optimum use of surface and ground water, ensuring effective actions to prevent and deal with water related epidemics ensuring effective control on soil and sand mining on river beds, and preventing encroachments of flood plains of rivers and river beds. The Model Act also mentions that the precautionary principle would be adhered to while ensuring environmental and social sustainability. The Precautionary Principle states that the parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost.⁸

Recommendations

Despite the uniqueness of the MWRRA, the implementation of the same has not been at par. One of the primary reasons for the same is that the MWRRA model was adopted on the insistence of IFIs with inadequate understanding of the socio-political scenario in India. At the same time, the merits of the MWRRA model in improving the state of investment in the water resources projects in India cannot be denied if it is balanced with its social imperatives.

1. Implementation

The MWRRA suffers from poor implementation which can be remedied in multiple ways. It should be ensured that all the specified vacancies are filled. Moreover, the MWRRA lacks adequate feedback and accountability mechanism, which should be streamlined. Moreover, the MWRRA was not followed by rules detailing its implementation which are necessary for the functioning of the authority. A proper and functioning dispute redressal mechanism would also improve the implementation of the MWRRA.

⁸ UN Framework Convention on Climate Change, 9 May 1992

2. Trading of Entitlements

The provision for the trading of entitlements should be reconsidered. In case the provision is implemented, there should be adequate guidelines to ensure that trading of entitlements is limited within a category of use.

3. Environmental Concerns

Although, the MWRRA Act mandates the authority to promote sustainable water conservation and management practices, it is not sufficient given the impending environmental concerns related to water resources projects. The Planning Commission's Model Act provides elaborate guidelines to mitigate any environmental concerns and ensure sustainable development

4. Equitable Distribution of Entitlements

The distribution of entitlements should be equitable not only among land owners but also landless farmers. The distribution of entitlements must not be based only on the existing land holding pattern and dependents on the land must also be taken into account. There should also be adequate provisions for the rehabilitation and resettlement of people affected by water resources projects, which is absent in the current form of MWRRA.

5. National Water Resources Regulatory Authority

A National Water Resources Regulatory Authority could be formed at the center to oversee the state water resources regulatory authorities. Although, water governance is most effective at the state level, the National Water Resources Regulatory Authority, could act as a body to monitor and bring parity to the state water regulatory authorities.

Conclusion

While the MWRRA and subsequent state authorities are a first step towards efficient regulation of water resources, increased focus is required to ensure that the principles of equitability and independence are upheld in the formation and constitution of such authorities. A national guiding legislation to provide a framework arrangement and statutory backing for such regulation may help. With increasing strain on water resources, better systemic mechanisms are necessary to ensure that this public good is optimally utilized.