

**TO REVIEW AND EXAMINE EXISTING
STATE LEVEL REGULATORY AND
INSTITUTIONAL FRAMEWORK TO
OPERATIONALISE THE NATIONAL
WATER POLICY- 2012
STATE REPORT
MAHARASHTRA**

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Contents

Executive Summary:	3
Background.....	4
Overview of Water Resources in Maharashtra	4
Policy and Regulatory Framework on Water in Maharashtra.....	6
Assessment of Institutional and Regulatory Framework qua National Water Policy, 2012	6
Whether the present institutional and regulatory framework is adequate to implement the National Water Policy-2012?	29

Executive Summary:

The water policy and regulatory framework in Maharashtra was examined based on the 16 broad themes that form the basis of the National Water Policy, 2012. The analysis has revealed that though Maharashtra is considered to have progressive water law framework, there is tremendous scope for its improvement. Importantly, the Maharashtra Water Resources Regulatory Authority (MWRRA), a dedicated institutional mechanism established to pave the way for water sector reforms in the state lacks requisite legal teeth to deliver on the vision contained in the NWP. Thus for instance, the statutory provisions under the MWRRA provide that the Authority shall only 'support' the measures undertaken by other relevant authorities for the preservation of water quality. There are no specific measures or initiatives that are prescribed to be undertaken by the Authority itself. Neither does the Authority prescribe any minimum standards for water quality. More importantly, the MWRRA lacks legal teeth to implement its own orders and therefore is a quasi-judicial body.

The Maharashtra Water Policy, 2003 reflects state's vision to manage water resources based on a five pronged strategy, primarily aiming at restructuring the role and relationship between the state and water users by way of creating incentives for efficient and productive water use and by empowering local farmer's institutions known as Water User Associations created under a legislative enactment Maharashtra Management of Irrigation Systems by Farmers Act, 2005 (MISF), with stable and predictable water entitlements so as to enable them to take decisions without bureaucratic interference. The principles prescribed under the MWP are more on management of water resources wherein the bent is not towards and equitable and social justice aspects. Consequently, the MWP is silent on the important principle of water to be a common pool resource to be held by the state under the Public Trust Doctrine. Principle of Equity and Social justice to inform use and allocation of water does not emerge very clearly under the MWP. The MWP too does not acknowledge right to a minimum quality and quantity of drinking water and water for other basic needs but makes a broad statement that providing potable water for drinking and sanitation to the people in the state is the first priority under the MWP. There is no strong emphasis on the role and duty of citizens to take part in the conservation and protection of water resources in their immediate vicinity under the MWP. Therefore, the MWP does not reflect the basic principles of water governance that are deemed fundamental to water governance as per the NWP.

The MWP is also instructive in providing some very progressive provisions that must be looked at for improving water governance from the local, state and national perspective. Thus for example, the Policy provides that water awareness and sensitization needs to be created right at the school level. The MWP has a very clear vision for creating a dedicated legal and institutional regime on water in the state at the basin level, pursuant to which it has brought the legislation to create the MWRRA. A significant addition to NWP-2012 is recognition of impact of climate change on available water resources and consequent impacts upon human health and livelihoods. There is a need to adopt measures at a micro level to mitigate its effect through enhancement of community's capabilities through technological options. Maharashtra has not formulated its State Climate Action Plan till date which is essential for strengthening legal and institutional framework in the state from the perspective of water security in the state and its linkages with the water policy in the state needs to be clearly established in the state like Maharashtra which has the reputation being one of the most progressive states to have carried out water sector reforms.

Background

During the formulation of the 12th Five Year Plan (2012-2017) a fundamental change in the principles, approaches and strategies in water management in India was sought at the national level. This 'paradigm shift' in water governance in the country is conceived in the wake of growing water crisis that threatens the basic right to drinking water and livelihood of millions of citizens and in recognition of the fact that the demands of a rapidly industrializing economy and urbanizing society are increasing at an exponential rate and come at a time when the potential for augmenting water supply to industries and urban areas is limited. Broadly, the new approaches and strategies involved: bringing in large irrigation reforms, focus on the groundwater management particularly through participatory aquifer management, enhancing the understanding of ground-water energy nexus, watershed restoration and groundwater recharge, adopting new strategies to rural drinking water and sanitation, conjoint water and urban wastewater management, industrial water management, focus on non-structural mechanisms for flood management, need for comprehensive water database management and the need for legal and institutional reform. The outcome of this 'paradigm shift' is reflected in the National Water Policy, 2012 (NWP). The NWP as an embodiment of principles and approaches that are considered critical from the perspective of national water security, among other things, envisages the need for a 'National Water Framework Law' which shall contain certain basic principles for water governance to be respected and adhered to by the states and implementing agencies. Subsequently, two drafts of a 'water framework law' were floated, one by the sub-group constituted by the Planning Commission and the other by the Ministry of Water Resources and Ganga Rejuvenation. In addition to this the NWP 2012 requires that the state level policy and legal framework on water governance confirms to the principle and approaches adopted in the NWP therein. It is in this background that a comprehensive assessment of state level policy and regulatory framework on water resources in Maharashtra is being carried out to understand its preparedness and response to the growing challenges to water resources acknowledged in the National Water Policy from the national and state perspective.

The primary objective of the present analysis is to assess the preparedness of the state in terms of regulatory and institutional framework to respond to the directives of the national water policy- 2012 (NWP). This study is part of a larger examination of available legal mechanisms in three states of Meghalaya, Maharashtra and Karnataka to deliver on the objectives of NWP.

Overview of Water Resources in Maharashtra¹

The Water Resources of the State are defined as all waters, surface or sub surface, existing within the state or passing through the state in any and all drainages and aquifers within the state. The geographical area of Maharashtra state is 308 lakh ha and its cultivable area is 225 lakh ha. Out of this, 40% of the area is drought prone. About 7% of the area is flood prone. The highly variable rainfall in Maharashtra ranges from 400 to 6000mm and occurs in

¹ <http://www.mwrra.org/introduction.php?link=wr> (as accessed on 15.01.2015)

a four month period between June - Sept with the number of rainy days varying between 40 and 100. The estimated average-annual availability of water resources consist of 164 km³ of surface water and 20.5 km³ of subsurface water.

In Maharashtra, of the 5 river basin systems, only 55% of the dependable yield is available in the four river basins (Krishna, Godavari, Tapi and Narmada) east of the Western Ghats. These four river basins comprise 92% of the cultivable land and more than 60% of the population in rural areas. An approximate 49% of the area of these four river basins consisting 43% of the population is already considered as deficit or highly deficit in regard to water availability. The size of these deficit areas is likely to increase steadily with increasing population and economic growth in the years to come.

Maharashtra's share of the inter-state rivers has been decided by various tribunals appointed by the Government of India.

River Basins in Maharashtra

S.No	Name of Basin	Geographic area (Mha) / Percent of Area w.r. to Maharashtra	Culturable area (Mha)	Annual Average Availability (Mm3)	75% Dependable yield (Mm3) / Percentage with respect to state	Permissible use as per Tribunal award / committee report (Mm3)
1	2	3	4	5	6	7
1	Godavari	15.43 / 49.5%	11.25	50880	37300 / (28.35%)	34185
2	Tapi	5.12 / 16.7%	3.73	9118	6977 / (5.30%)	5415
3	Narmada	0.16 / 0.5 %	0.06	580	315 / (0.24%)	308
4	Krishna	7.01 / 22.6%	5.63	34032	28371 / (21.56%)	16818
5	West Flowing	3.16 / 10.7%	1.86	69210	58599 / (44.54%)	* 69210
6	Maharashtra	30.80 / 100.0%	22.53	163820	131562 / (100%)	125936

* 45% of state's water resources are from West Flowing Rivers which are mainly monsoon specific rivers emanating from the Ghats and draining into the Arabian Sea. This water cannot be fully utilized as the average altitude west of the Ghats (Konkan) is 60 metres above sea level; the average height of the Ghats is more than 600 metres above sea level. Affordable engineering solutions for lifting and transporting water from west to east are not yet available.

Policy and Regulatory Framework on Water in Maharashtra

Maharashtra has a progressive water law framework. Pursuant to its water sector reforms, the state has enacted a series of water related laws that provide for the water governance framework in the state. The following policy and legal instruments exist-

Maharashtra Irrigation Act, 1976

Maharashtra Groundwater (Regulation for Drinking Water Purposes) Act, 1993

Maharashtra Water Resources Regulatory Authority Act, 2005

Maharashtra Water Resources Regulatory Authority Rules, 2006

Maharashtra Management of Irrigation Systems by Farmers Act, 2005

Dam Safety Bill, 2010

Maharashtra Groundwater (Development and Management) Act, 2009

Maharashtra Water Resources Regulatory Authority Act - Procedure for Regulation & Enforcement of Entitlements, 2007

Model Agreement for Non-Irrigation Water use (NIWURA)

Assessment of Institutional and Regulatory Framework qua National Water Policy, 2012

The institutional and regulatory preparedness of the state as per thematic areas presented in National Water Policy-2012 (NWP) is collated herein below

	Thematic Areas as per NWP-2012	What is to be explored	Status of implementation
1.	Public Policy on water resources to be informed of basic common principles	a. Whether state has a water policy	Yes. Maharashtra Water policy, 2003 (hereinafter referred as the MWP)
		b. Whether the state water policy is updated in view of NWP-2012?	No, the MWP has not been updated in view of NWP-2012. Though the state government has initiated the efforts to revise MWP on the lines of NWP ² .

² <http://www.thehindu.com/news/national/other-states/maharashtra-to-have-new-water-policy/article4820066.ece>

		<p>c. Whether the sentiment articulated in NWP is echoed in state policies?</p>	<p>The objective of the MWP is to “ensure the sustainable development and optimal use and management of the State’s water resources to provide the greatest economic and social benefit to the people of the State of Maharashtra in a manner that maintains important ecological values within rivers and adjoining lands”</p> <p>By and large MWP aims to address key issues concerning water resources management in the state in a broad based manner. Thus for example, the MWP does not contain ‘Basic Principles’ to inform water governance in the state. There are however principles of water resource planning and augmentation provided in the MWP which have a different approach altogether in that these principles are about optimizing the resource use without referring to the principles of equity or social justice³. Similarly, the concept of public trusteeship over water resources of the state is not mentioned therein. Impact of Climate Change on state’s water resources has also not been accounted for under the MWP. Instead the focus of the MWP is more on the water management strategies with the involvement of ‘users’ so as to do away with the bureaucratic interference in water management in the long run. Therefore, in view of a comprehensive framework desired by the NWP, the MWP has much scope for improvement. This is more so as the MWRRA is required to work within the framework of MWP⁴.</p>
		<p>d. Any concrete action is taken?</p>	<p>The state government aims to revise the MWP in line with the requirement of the NWP⁵.</p>

³ Section 3.0, MWP, 2003

⁴ Section 12 (1), MWRRA Act, 2005

⁵ Ibid

2.	Raising Awareness about criticality of water as a natural resource	a. Does water policy of the state say anything about water being a scarce, natural resource?	<p>Yes. The MWP begins by recognizing that water is a prime resource and acknowledges that it is becoming increasingly scarce due to various competing demands⁶. This acknowledgement runs explicitly and impliedly through various provisions under the MWP. The MWP has a dedicated and comprehensive provision on addressing water scarcity. Section 2.7 of the MPW states thus:</p> <p>Conservation of Water The efficiency of utilization in all diverse uses of water shall be improved an awareness of waters a scarce resource shall be fostered. Conservation consciousness shall be promoted through education, regulation, incentives and disincentives.</p> <p>Water harvesting shall be given consideration in planning water resources. Viable project especially in scarce groundwater areas shall be investigated and implemented to increase the surface water availability, which would also help in recharging the groundwater.</p> <p>Recycling and reuse of water have to attempt for augmentation of water resources. This will include reclaiming usable water from sewage after necessary effluent treatment. This should be made mandatory for industries use.</p> <p>Measures to control the evaporation from the water bodies is taken up and affords made to make the process more cost-effective. Program of water literacy should be launched right from primary school level so as to create awareness about the importance of economizing the use of water among the diverse users.</p> <p>The water conservation works shall be taken on top priority where groundwater table has considerably gone down and the Central Government has declared the area as dark zone.</p> <p>he water conservation works (village tanks, percolation tanks and K.T. weirs) in the command area of the completed major and medium project shall be taken up as per the requirement where water supply is inadequate and irregular for irrigation purpose.</p>
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⁶ Para 1.1 Need for the Maharashtra Water Policy

		b. Does the state have a campaign running or any engagement with its citizens to create and foster this sentiment?	The State has a number of sensitization campaigns on safe drinking water storage and sanitation. The case studies from various villages demonstrate that sensitization campaigns on safe water storage and sanitation are being carried out and these case studies are well documented ⁷ . Maharashtra has launched a Water Reform Initiative (Sodal's Reform Initiative) ⁸ that aims to promote water conservation and efficiency measures in the wake of growing scarcity. The dedicated Water Regulatory Authority in the state has the obligation to also promote water efficiency as stipulated in section 11 (q) of the Act, which says: "the authority shall act to promote efficient use of water and to minimize the wastage of water and to fix reasonable use criteria for each Category of Use." The research so far does not reveal any state level robust campaign on sensitizing people on water scarcity and adoption of conservation and efficient use techniques.
3.	Water quality and quantity	a. Does the state water policy include a provision on right to access to minimum quantity of potable water for health and hygiene?	No. The MWP does not specify minimum quantity of water that the citizens are entitled to for basic needs but makes a broad statement that adequate water facilities shall be provided to the entire population in urban and rural areas to meet its domestic needs ⁹ . The minimum quantity of water supplied for basic needs is dependent on the population of a town and varies from 70 lpcd to 135 lpcd for (class A) towns having population of more than 50,000 ¹⁰ .
		b. Is there any law to guarantee this?	No. The MWRRRA Act, 2005 too does not specify the minimum quantum of water for health and hygiene to be provided to the citizens. The Act provides for the equitable distribution of water entitlements within each category and for the determination of priority of use in the event of scarcity ¹¹ .

⁷ http://indiasanitationportal.org/sites/default/files/BEST_PRACTICES_UNDER_SANITATION.pdf

⁸ <http://www.mwrra.org/Document%2014.pdf>

⁹ Section 2.2.3 of the MWP, 2003

¹⁰ India Improving Urban Water Supply and Sanitation, Lessons from Business Plans for Maharashtra.. Ministry of Urban Development – the World Bank, July 2012

¹¹ Section 11 (a), (c); MWRRRA Act, 2005

		<p>c. Does the State Water Policy contain an article or a position which places responsibility on citizens about protection and conservation of water sources in their immediate vicinity?</p>	<p>Yes. One of the strategies under the MWP is to restructure the fundamental roles and relationship of the state and water users so as to enable them to manage water resources and decide best use in their own interest¹².</p> <p>Secondly, one of the objectives of the MWP is to decentralize the water management in the state to the lowest practicable level on the basis of hydrologic or watershed units. The river basin and sub-basin agencies envisaged under the MWP are required to prepare a integrated river basin plan that will include an efficiency improvement and conservation plan and a waste minimization and water quality management plan¹³.</p> <p>The MWP has a comprehensive provision on conservation of water resources and includes a section on restoration of tanks and other local water bodies, recharging of groundwater in the vicinity¹⁴. This sentiment however is not echoed as the responsibility of the citizens alone. It is rather a statement with a joint obligation of the state as a facilitator while the implementation may be taken up by the participatory institutions envisaged under the MWP.</p>
		<p>d. Is the institutional mechanism geared up to deliver this?</p>	<p>The MWP envisaged the creation of dedicated institutional mechanisms at the state, basin and sub-basin level with the objective to achieve decentralized water governance at the lowest practicable level. Following this a dedicated Authority has been created by the name of MWRRA. The MWRRA has a statutory support to achieve the objectives under the Act under which it has been established. The local level institutions such as watershed committees need capacity enhancement for the protection and conservation of water resources in their vicinity</p>
		<p>e. Does the state provide the rights or powers to the Panchayat Raj</p>	<p>The Maharashtra Zilla Parishads and Panchayat Samitis Act, 1961 provides for the appointment of Standing subject committees. One of the committees to be appointed is the</p>

¹² Section 1.3 of the MWP, 2003

¹³ Section 1.2.1 of the MWP, 2003

¹⁴ Section 2, MWP, 2003

		Institutions, or citizens to independently initiate actions for protection and conservation of water sources in their immediate vicinity (article 48(a)(g) and 58 (a) of the Indian constitution specifically referred to these responsibilities related to water, and other natural resources)?	water conservation and drinking water supply social forestry committee ¹⁵ . The Act provides for the powers and duties of the Panchayat Samitis and committees as the 'District List' which is a schedule of subject matters over which the zilla parishad of any of the committees constituted for the specific purpose empowered to make provisions. These include provision to initiate action concerning water resources by the said water conservation committee.
4.	Maintaining and sustaining Ecological needs and flows in a river	<p>a. Is there any law or policy in the state which makes it mandatory to undertake a scientific study to determine the ecological requirement of water for a river?</p> <p>b. If yes what is the implementation and monitoring of the same?</p>	<p>MWP recognizes the need to sustain environmental values. The objective of the MWP is to "ensure the sustainable development and optimal use and management of the State's water resources to provide the greatest economic and social benefit to the people of the State of Maharashtra in a manner that maintains important ecological values within rivers and adjoining lands</p> <p>The MWRRA Act has a provision whereby environmental viability of a water resources project is to be ascertained before the final approval. The provision states that ... to review and clear water resources projects proposed at the sub-basin and river basin level to ensure that a proposal is in conformity with Integrated State Water Plan and also with regard to the economic, hydrologic and environmental viability and where relevant, on the State's obligations under Tribunals, Agreements, or Decrees involving interstate entitlements¹⁶.</p> <p>The desk based research did not reveal any substantive literature on this aspect. This requires a more interactive research.</p>

¹⁵ Section 1 (h), the Maharashtra Zilla Parishads and Panchayat Samiti Act, 1961

¹⁶ Section 11 (q), MWRRA Act, 2005

5.	Adaptation to climate change	a. Has the state formulated state action plan for climate change and has the concerns regarding effect of climate change on water resources been integrated in to these plans. Are there district level climate change action plans being formulated within the regulatory framework	Not yet.
		b. Has the state begun to integrate the concerns of climate variability in to water resource management and planning by doing the following (this is only an illustrative list based on NWP-2012?	The State Action Plan on climate change is not yet prepared. Certain pilot studies on climate risks and vulnerabilities are however being carried out ¹⁷ .
		c. Is there any special impetus to increasing water storage capacity?	The MWP does have provisions pertaining to water resource infrastructure and multipurpose projects. However, in the absence of climate action plans their correlation with climate impacts and need to increase the storage capacity cannot be established

¹⁷ <http://www.ccmaharashtra.org/>

		<p>d. increase water use efficiency across all water using groups, agriculture, domestic, commercial and industrial?</p>	<p>MWP proposes efficiency in use in all sectors and in the overall water resource management in the state. The MWRRRA has a dedicated provision on water use efficiency and states that "the authority shall act to promote efficient use of water and to minimize the wastage of water and to fix reasonable use criteria for each Category of Use."¹⁸</p>
		<p>e. Are sustainable agricultural practices being adopted reshaped as per the water availability in a particular state or a region of a state?</p>	<p>Maharashtra is perhaps the pioneering state to have provided for farmer's management of irrigation systems under its state water policy. The MWP states: the farmer's participation in the irrigation system to be made mandatory. And water shall be supplied to Water User Associations (to be formed as legal entities) on a volumetric basis only. Pursuant to this the state government has adopted a dedicated Act to achieve the objective of the MWP – The Maharashtra Management of Irrigation Systems by Farmers Act, 2005.</p>
		<p>f. Is climate change variability included as criteria for water development projects?</p>	<p>This could be explored through interactive research. The literature review did not reveal this to be a consideration during project planning or approval.</p>
		<p>g. Are stakeholders being involved in inland-soil-water management planning for evolving different agricultural strategies, reducing soil erosion and improving soil fertility</p>	<p>Yes. The MMISF Act makes the participation of farmers mandatory and provides for the involvement of stakeholders through their Water Users Associations. The objects of a Water Users' Association shall be to¹⁹ :- (i) promote and secure equitable distribution of water amongst its members; (ii) maintain adequately the irrigation systems; and ensure efficient, economical and equitable distribution and utilisation of water to optimise agricultural production; (iii) protect the environment; (iv) ensure ecological balance (v) Actively involve the members inculcating amongst them a sense of ownership of the irrigation system; and (vi) Safeguard and promote the common interests of its members pertaining to</p>

¹⁸ Section 11 (q), MWRRRA Act, 2005

¹⁹ Section 4 (1), (2)

			<p>irrigation and agriculture in the area of operation.</p> <p>(2) The Association may also engage into any activity of common interest of the members in the Command Area related to irrigation and agriculture, such as introduction of Drip and Sprinkler system for optimising the use of water; developing farm ponds and community projects for exploiting groundwater; procurement and distribution of seeds, fertilisers and pesticides; procurement and renting of agricultural implements; marketing</p>
6.	Augmenting water Supply and sanitation	<p>a. Are the states doing any of the following to augmenting water supply and provide access to sanitation</p> <p>Made recycling and reuse mandatory</p>	<p>Maharashtra Water Sector Reforms include augmenting water supply and sanitation. MWP provides a direction to undertake measures for providing water supply infrastructure to achieve sanitation. MWP has clear directions on water conservation that includes all possible measures to be undertaken to augment water supply. Improvement in water efficiency by way of recycling and re-use is also provided by the MWRRA Act. It is mandatory for the Authority to act to promote water efficiency under the Act. MWP provides for water recycling and re-reuse and proposes it to be achieved through incentives and disincentives.</p>
		<p>b. its Rain water harvesting potential</p>	<p>MWP provides for water conservation measures. Rainwater harvesting is being implemented in the state²⁰.</p>
		<p>c. Desalination techniques</p>	

²⁰ India Improving Urban Water Supply and Sanitation, Lessons from Business Plans for Maharashtra.. Ministry of Urban Development – the World Bank, July 2012

		<p>d. Made water use efficiency mandatory</p>	<p>The MWRRA has the mandate to promote Water Use Efficiency. The following Water efficiency measures are implemented in the state²¹</p> <ul style="list-style-type: none"> - Reducing NRW to 15% by 2017, bulk metering - Detailed information on water supply network using SCADA system, hydraulic modeling and GIS - Energy & water audits implemented - Collection ratio increases to 100% by 2017 <p>100% collection & transportation of solid waste implemented</p>
		<p>e. Are there subsidies and incentives for recovery of industrial pollutants and recycling / reuse</p>	<p>MWP envisages the conservation of water and its efficient utilization by way of incentives and disincentives.</p>
		<p>f. Are sewerage charges being put/removed in urban areas</p>	<p>Key features of the policy in WSS sector are (i) enabling equitable and productive management of water supply, (ii) moving to full cost recovery of O&M costs, (ii) promoting decentralized planning, development, management, and O&M of WSS facilities, (iv) encouraging recycling and re-use, and (v) encouraging PPPs for providing WSS services.</p> <p>Owing to this Policy it is desired that</p> <p>Water tariffs indexed to recover 100% O&M costs through user charges 100% Metering is done Tariff for sewerage and sanitation services finalized, billed and recovered</p>
		<p>g. What steps are undertaken to augment rural water supply?</p>	<p>("Jalswarajya"): Government of Maharashtra launched (in September 2003) community demand driven Maharashtra Rural Water Supply and Sanitation Project. The project was implemented by Government of Maharashtra in 3391 Gram Panchayats in 26 Zilla Parishads to provide 40 litres per capita per day potable water to projected village population. For successful implementation and community participation, process of capacity building, women empowerment etc. were also envisaged in the scheme. The implementation review of this project revealed that the project has not</p>

²¹ MoUD –World Bank Report, Business Plan for Maharashtra 2012

			been able to meet its objectives in the manner it was planned ²²
7.	Ground water use and management	a. Have the states done Aquifer mapping to know the quality and quantity of ground water	Maharashtra has initiated 'user centred aquifer level groundwater management. The Groundwater Act, 2009 provides for the formulation of 'watershed or aquifer based groundwater use plan ²³ '.
		b. Does the state have a ground water law	Yes. The Maharashtra Groundwater (Regulation for Drinking Water Purposes) Act, 1993 Maharashtra Groundwater (Development and Management) Act, 2009
		c. Is there a authority mandated to manage and conserve groundwater	Yes, the State Ground Water Authority constituted under the Groundwater Act of 2009 ²⁴ . The MWRRA also has the mandate to conserve groundwater
		d. Does the law protect over exploited aquifers, how?	The State Groundwater Authority created under the 2009 Act can undertake a number of measures to protect the aquifers. The Act empowers the State Groundwater Authority to notify areas for the purpose of regulating the groundwater extraction and use or both ²⁵ . Once an area has been notified under the Act, the State Authority can constitute watershed water resource committee for the monitoring of groundwater use and

²² http://www.saiindia.gov.in/english/home/Our_Products/Audit_Report/Government_Wise/local_bodies/Tabled_Legislature/Maharastra/2009_10/Chap_2.pdf

²³ Section 2(xxxv), Groundwater (regulation and management) Act, 2009

²⁴ Section 3, Maharashtra Groundwater (regulation and management) Act, 2009

²⁵ Section 4 (1), the Maharashtra Groundwater (Regulation and Management) Act, 2009

			<p>extraction from the notified area. No user of groundwater is allowed to contaminate groundwater either temporarily or permanently²⁶. The State Authority is empowered to undertake all such measures that it deems necessary to protect groundwater quality, including the drinking water sources and recharge worthy areas²⁷.</p>
		e. Is extraction of ground water linked with recharge of the same?	Yes.
8.	Integrated Watershed development	a. Specific steps states are taking to ensure integrated watershed development.	The MWP provides for the preparation of State Water Plan to promote balanced development among diverse users, the Plan shall include integrated watershed management measures.
		b. Have statutory / administrative / departmental steps been taken in order to integrate / align the objective functions which may differ	<p>The MWP envisages decentralization of water management to the lowest practicable hydrologic unit, watershed or a sub-basin.</p> <p>The River Basin Agencies recognized under the MWRRA and the WUAs constituted under the MMISF Act, 2005 and also recognized under the MWWRA as legal entities for the bulk water supply on a volumetric basis are also entrusted with the task of looking at water resources at a watershed level comprehensively.</p>
		c. Are water sources and their catchment areas being looked at in totality?	Yes, they are being looked at as hydrological units.

²⁶ Section 6 (1), ibid

²⁷ Section 6(2), ibid

		d. Have steps been taken to avoid duplication of overhead costs in order to create synergies	The Policy and Regulatory framework on water resources in MH provides for an integrated vision and attempts to create synergies between systems and institutions. For example the WUAs constituted as legal entities under the MMISF Act are recognized as agencies for the bulk water entitlement under the MWRRA Act, 2005.
		e. Are developmental laws harmonised with the need of integrated watershed development.	Maharashtra Industrial laws are not informed of the integrated watershed development concepts, however more in-depth research is required to finally conclude the argument.
		f. Have other development related laws been amended or harmonized in order to avoid contradictions (e.g. The Indian Easement Act 1882 and the confusion regarding ownership of groundwater, and / or surface water)	No information available
9.	Demand Management and Water use efficiency	a. Is there any specific law mandating quantum of water for a particular use i.e. benchmarking of water usage for different uses in industrial water usage	MWRRA Act 2005 empowers the Authority to decide priority of use among various uses. Quantum of water or benchmarking is not provided.
		b. Any penalty for wastage of water and incentive for water use efficiency	MWP envisages a scheme of incentives and disincentives to manage water resources in the state. MWRRA Act provides for the penalties ²⁸ for the contravention of any of its orders or directions including the direction to promote water use efficiency and minimize wastage as per section 11(q).

²⁸Section 26: punishable with imprisonment for a term which may extend to six months or with fine, which may extend to ten times of the annual water charges or, with both in respect of each offence

		c. Any efficiency benchmark at which irrigation projects have to perform and function	Water Efficiency in the agriculture sector is being achieved through systematic programs and also towards the objectives of the MMISF Act. Benchmarks are not known
		d. What are the existing schemes providing incentives for engaging in cropping pattern using micro irrigation (drip, sprinkler, etc.), automated irrigation operation, evaporation-transpiration reduction, etc.	MPW, MWRRA Act and MMISF Act together contain provisions on promoting water efficient techniques such as drip or sprinklers
		f. Any scheme being used in the state which encourages people to use water use efficient gadgets	Same as above
		g. Is there a mechanism to conduct water audits –voluntary or mandatory	The MWP, the MWRRA provides for conducting water audits.
10.	Water pricing	a. Is there a mechanism for water pricing?	A system of Bulk Water Tariff to be charged from WUAs is being followed in the state as per the MWRRA. Urban water pricing is being controlled by the WSSD and O/M cost is being recovered by the Urban Local Bodies
		b. Has Water Regulatory Authority been established	Yes.

		c. What is the water pricing methods being followed?	Flexibility given to the ULBs (service fee included in Property tax, Flat fee, Volumetric tariff) Average O&M cost (Rs./m3) 9.8
		d. Has water pricing been rationalised? If yes how? If no why?	Urban: Flexibility given to the ULBs (service fee included in Property tax, Flat fee, Volumetric tariff) Average O&M cost (Rs./m3) 9.8 Rural: bulk water tariff mechanism
		e. Are water charges being recovered from the consumers?	Yes as per above.
		f. Are Water Users Associations (WUAs) are involved in the process of fixing rates of water	Yes. Water User Associations have the power under the MMISF Act to levy and recover water charges ²⁹ .
		g. Are Water Users Associations (WUAs) given statutory powers to collect and retain a portion of water charges, manage the volumetric quantum of water allotted to them and to maintain the distribution system in their jurisdiction?	Yes. The MMISF Act provides for the following ³⁰ : (1) The Water Users' Association shall have powers and responsibility to charge to its members, water rates as may be approved by the General Body of the Water Users' Association. (2) Water Users' Association shall have the power to levy the minimum charges for the land for which water is not demanded or used for irrigation by members
11.	Scientific assessment of water resources and Database, information system	a. Institutions involved in the scientific assessment of the water resources	The MWP provides that a modern integrated network of hydro-meteorological and related water sources and water use data and shared data and information management system shall be established and sustained to support planning, project formulation, implementation and decision making. The State Water Resources Department in coordination with

²⁹ Section 52, MMISF Act, 2005

³⁰ Section 27, MMISF Act, 2005

			<p>other designated agencies such as the Central Ground Water Board.</p> <p>Hydrology Project was established with assistance of World Bank in Nov.1995 with Hydrological Information System (HIS) in place. The hydro-meteorological data viz. rainfall, river discharge, maximum and minimum temperature, relative humidity, sunshine hours, wind velocity and direction, evaporation, water quality of designated points is regularly observed, recorded with the help of quality instruments spread over the entire state</p>
		b. How is the state organising its hydrological database and using it for decision making.	<p>Under the Hydrology Project Maharashtra³¹ the recorded data is fed to the computer with the help of SWDES and validated with HYMOS softwares</p>
		c. Which institutions and regulatory bodies are involved in the collection of Data	<p>The State Water Resources Department Ministry of Water Resources, GoI, New Delhi Central Water & Power Research Station, Pune. India Meteorology Department, New Delhi Central Ground Water Board, New Delhi Central Pollution Control Board, New Delhi National Institute of Hydrology, Roorkee Bhakra Beas Management Board, New Delhi Central Water Commission New Delhi</p>
		d. What are the different types of Data being collected at the state level	<p>a) Rainfall b) Temperature: - i) Maximum ii) Minimum c) Evaporation; d) Humidity; e) Wind Velocity and direction; f) Sunshine duration (hourly); g) Water Level of rivers. Collected from River Gauge Site; h) Discharge of river</p>
12	Allocation and uses of water	a. Is there a mechanism for water allocation amongst different competing uses	<p>The MWP provides for the judicious allocation of water among various competing uses. The MWRRA Act also envisages the mechanism to ensure judicious allocation and utilization of water resources.</p>

³¹ http://www.mahahp.org/old_mahahp.org/resource/apl2hdu.pdf

		<p>b. If yes, the criteria and principles followed for allocation</p>	<p>The Entitlements shall be issued by River Basin Agency based on the Category of Use and subject to the priority assigned to such use under State Water Policy³²</p>
		<p>c. Are principles of equity and social justice being followed for water allocation</p>	<p>The MWP has the objective to provide greatest economic and social benefit to the people of Maharashtra by the sustainable development and optimal use of water resources.</p> <p>The MWRRA established under the statute has the objective to regulate water resources within the State of Maharashtra, facilitate and ensure judicious, equitable and sustainable management, allocation and utilisation of water resources</p>
		<p>d. The existing mechanism for dispute resolution in allocation of water</p>	<p>The Authority and the Dispute Resolution Officer shall for the purposes of making any inquiry or initiating any proceedings under this Act, have the powers as are vested in a civil court, under the Code of Civil Procedure, 1908 in respect of the following matters, namely: -</p> <p>(a) the summoning and enforcing the attendance of any witness and examining him on oath;</p> <p>(b) the discovery and production of any document or other material object producible as evidence;</p> <p>(c) the reception of evidence on affidavits;</p> <p>(d) the requisition of any public record;</p> <p>(e) the issue of commission for examination of witnesses;</p> <p>(f) review its decisions, directions and orders;</p> <p>(g) any other matter which may be prescribed³³.</p>
		<p>e. Have the water uses have been prioritized, and has the basic needs principle been adopted; e.g. Reservation of water for drinking (inclusive of cattle) drinking and domestic purposes</p>	<p>Yes. The MWP prioritises water use as per the following:</p> <p>a) Domestic use for drinking, cooling, hygiene and sanitation needs including livestock.</p> <p>b) Industrial, commercial use and agro based industrial use</p> <p>c) Agriculture and Hydropower</p> <p>d) Environment and recreational uses</p>

³² Section 11(i), MWRRA Act, 2005

³³ Section 13, MWRRA Act, 2005

			All other uses
		f. Has the state policy defined the procedure of allocation of scarce water between sectors? e.g. Drinking and domestic, agriculture, industry, Hydro-power etc, in order to achieve optimal use	No the procedure for allocation is not defined under the MWP. Priority as a matter of policy is however provided.
		g. Between the principle of satisfying basic needs and the principle of ability to pay (pricing), which one will be given preference and / or priority?	Drinking water assumes the highest priority under the MWP
13	Management Of Flood & Drought	a. What is the regulatory mechanism to prevent loss of land eroded by the river, which causes permanent loss, revetments, spurs, embankments, etc.,	Under the MMISF Act the Water use agency and the User's Association has the general obligation to undertake construction and maintenance measures of water resources structures, embankments etc.

		b. Is there an institutional setup for flood forecasting using real time data acquisition system and linked to forecasting models?	The Water Resources Department and the River Basin Development Corporations coordinate for the forecasting of floods and droughts. MWRRA also has a proactive role in collaborating with the state agencies.
14	Integrated Water Resources Management	a. Has the state incorporated river basin / sub-basin as a unit as the main principle for planning, development and management of Water resources.	Yes. The MWP and MWRRA Act have clear provisions on taking river- basin and sub-basins as the planning units. MWP provides that the decentralization of water governance be done to the lowest possible practicable hydrologic unit.
		b. Are there river basin ³⁴ management authorities established by the state government	Yes and these have also been recognized under the MWRRA Act and MMISF Act. (1) the Maharashtra Krishna Valley Development Corporation established under the Maharashtra Krishna Valley Development Corporation Act, 1996; (2) the Vidarbha Irrigation Development Corporation established under the Vidarbha Irrigation Development Corporation Act, 1997; (3) the Konkan Irrigation Development Corporation established under the Konkan Irrigation Development Corporation Act, 1997; (4) the Tapi Irrigation Development Corporation, established under the Maharashtra Tapi Irrigation Development Corporation Act, 1997; (5) the Godavari Marathwada Irrigation Development Corporation established under the Maharashtra Godavari Marathwada Development Corporation Act, 1998;

		<p>c. What are the functions and powers of the river basin management authorities</p>	<p>The functions of the Corporation³⁵ shall be—</p> <p>(a) to promote and operate,—</p> <p>(i) irrigation projects and command area development including flood control; and</p> <p>(ii) schemes for the generation of hydro-electrical energy ;</p> <p>(.b) to plan, investigate, design, construct and manage the irrigation projects and command area development '[and to help drip irrigation schemes through the Agriculture Department of Government] ;</p> <p>(c) to plan, investigate, design, construct and manage the schemes of the generation of hydro-electrical energy ;</p> <p>(d) to enter into contracts in respect of the works and any other matters transferred to the Corporation along with assets and liabilities under this Act ;</p> <p>(e) to invite tenders, bids, offers and enter into contracts for the purposes of all the activities of the Corporation ;</p> <p>(f) to promote participation of any person or body or association of individuals whether incorporated or not, in planning, investigation, designing, construction and management of irrigation projects, and command area development and Hydro-Electric Power Projects including flood control ;</p> <p>(g) to undertake schemes or works, either jointly with other corporate bodies, or institutions, or with Government or local authorities, or on agency basis in furtherance of the purposes for which the Corporation is established and all matters connected therewith ;</p> <p>(h) to promote irrigation related activities such as fisheries, pisciculture, floriculture, horticulture, sericulture, tissueculture, etc ;</p> <p>O) to promote tourism, water sports and other related activities on and around the Irrigation and Hydro-</p>
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³⁵ Section 18, Krishna Valley Development Corporation Act, 1996; the River Basin Development Authorities have almost similar functions and powers.

			<p>Electric Power Projects ;</p> <p>(j) to develop the land around or nearby lake and in other suitable locations with irrigation facilities and other infrastructure facilities and lease part or whole of such developed properties to the interested parties ;</p> <p>(k) to prepare annual plan and five year working development plan ;</p> <p>(l) to prepare annual budget ;</p> <p>(m) to undertake any other activities entrusted by the State Government in furtherance of the objectives for which the Corporation is established.</p> <p>19. (a) The Corporation shall have the power to accord administrative approval; revised administrative approval, technical sanction, acceptance of all tenders, sanctioning budget and making financial provisions, settling disputes arising out of contracts and any other thing which may be necessary or expedient for the purposes of carrying out its functions under this Act.....</p>
15	Planning and Implementation of water resource projects	<p>a. What is the level of participation of local governing bodies like Panchayats, Municipalities, Corporations, etc., and Water Users Associations, in planning of Water resource projects.</p>	<p>The MWP has a clear vision in terms of promoting participatory water resource governance and the regulatory and institutional framework in MH is geared up towards that.</p> <p>MWP talks about restructuring the relationship in such a way that the bureaucratic interference in water governance is minimal and the water resources are completely managed by the stakeholders/users.</p> <p>MMISF makes is mandatory for the farmers to participate in the management of irrigation systems. Water User Associations are empowered under the statute to manage water resources as per the law.</p>

		<p>b. Are the needs and aspirations of the Scheduled caste and Scheduled Tribes, women and other weaker sections of the society being taken into consideration in the planning process</p>	<p>No such provision exists. Provisions of MWP and other regulations are being enforced for the benefit of all.</p>
		<p>c. Is there an institutional mechanism in the form of a single window clearance for all clearances, including environmental and investment clearances, required for implementation of projects to avoid the economic losses</p>	<p>No, there is no single window clearance</p>
<p>16</p>	<p>Conservation of river corridors, water bodies and wetlands</p>	<p>a. What is the prevalent institutional structure for conservation and management of river corridors, water bodies, wetlands within the state?</p>	<p>There are instances of creation of dedicated river development and protection authorities such as the Mithi River Development and Protection Authority created by the Mumbai Metropolitan Region Development Authority. The Mithi River Authority has the following functions:</p> <ul style="list-style-type: none"> Functions of MRDPA - To approve the Mithi River Development Plan To approve various projects for implementation of the Mithi River Development Plan To rehabilitate the PAP's affected by implementation of the project To identify implementing agencies for implementation of tasks decided in the Mithi River Development Plan To co-ordinate between roles of Govt. / Semi Govt. /Other agencies for implementation of the Development Plan To review the implementation by the concerned agencies and direct the respective agencies for effective implementation of Mithi River Development Plan <p>Other similar examples exist, however there is no state level lake conservation authority</p>

		b. Is there community participation in the conservation of river corridors, water bodies, wetlands?	Depends upon case to case basis.
		c. What are the institutional and regulatory measures to deal with encroachments and diversion of water bodies, wetlands in rural and urban areas?	No specific provisions could be found.
		d. Besides participation, has the community or an individual being given the right (duty and responsibility) to protect and conserve water sources?	No information available

Whether the present institutional and regulatory framework is adequate to implement the National Water Policy-2012?

Revision of the State Policy: Maharashtra State Water Policy (MWP) was formulated in the year 2003. The MWP itself provides that the state policy shall be revised every five years or as per the 'actual requirement'. The Policy has not been revised yet, however, the efforts to revise MWP on the lines of NWP are underway³⁶.

Conformity to basic principles: As per the MWP, water is a prime and natural resource vital for survival of humans and other living beings which is becoming increasingly scarce. The MWP has adopted a five pronged strategy to manage state's water resources which appears to be a broad based approach to managing state's water resources³⁷. Accordingly, as a first strategy the state shall adopt an enabling policy framework for the equitable and productive water management in a sustainable manner. Second strategy is to restructure the roles and relationships of state and water users by creating incentives for productive and efficient use of water and by empowering Water User Organizations with stable and predictable water entitlements so as to enable them to take decisions without bureaucratic interference. Third strategy as per MWP is to create a new institutional regime at the state and river basin level and decentralize water planning and management by restructuring the institutional regime. Fourth is the technological advancement in the water resource sector for enhancing the overall productivity and capacity and finally the fifth strategy under the policy is to enact appropriate legislation in the identified areas of irrigation management, state water authority and basin authorities. MWP does not contain principles of water governance as have been recognized under the NWP. The principles prescribed under the MWP are more on management of water resources wherein the bent is not towards equitable and social justice aspects. Consequently, the MWP is silent on the important principle of water to be a common pool resource to be held by the state under the Public Trust Doctrine. Principle of Equity and Social Justice to inform use and allocation of water does not emerge very clearly under the MWP.

River basin approach and decentralized water governance: The MWP inter alia includes integrated, multi-sectoral and river basin approach to water planning and management taking river basin and sub-basin as a unit which is in conformity with the basic principles advanced under the NWP-012. In fact the MWP goes a step further and provides for the decentralization of water planning and management to the lowest practicable hydrological or watershed unit. The MWP stipulates the use of incentives and penalties to control water pollution and wastage which is in conformity with the NWP.

Regulatory and Institutional Framework: Pursuant to the MWP, 2003 and as per the fifth strategy mentioned therein the state of Maharashtra has enacted the Maharashtra Water Resources Regulatory Authority Act, 2005 and Maharashtra Management of Irrigation Systems by Farmers Act, 2005. Maharashtra was the first state to create an independent regulatory authority. The scope of this Authority presently is limited to bulk water allocation.

³⁶<http://www.thehindu.com/news/national/other-states/maharashtra-to-have-new-water-policy/article4820066.ece>

³⁷ **Key Strategies under the MWP are:** First, adoption of a Water Policy Framework for equitable and productive water resource management, promoting growth, reducing poverty and minimizing regional imbalance; Second, restructuring of the fundamental roles and relationship between states and the water users and creating incentives for water user organizations; Third, creation of new institutional structure at the state or river basin level; Fourth, improvement in efficiency and productivity of water use by supporting development, adaptation and dissemination of new technologies; Fifth, enactment of appropriate state legislation and Rules including a water resources authority and river basin authorities.

The Maharashtra Water Resources Regulatory Act, 2005 under section 12 provides for the general policies of the Authority. The MWRRA Act, 2005 provides that the Authority shall aid and support the enhancement and preservation of water quality within the state in close coordination with the relevant state agencies and in doing so “the Polluter Pays Principle” to apply³⁸. Thus the statutory provisions under the MWRRA provide that the Authority shall only support the measures undertaken by other relevant authorities for the preservation of water quality. There are no specific measures or initiatives that are prescribed to be undertaken the by the Authority itself. Neither does the Authority prescribe any minimum standards for water quality. In the absence of any statutory provision on water quality the Uniform Drinking Water Quality Standards set by BIS are applicable in the state.

MWP has a clear provision on advancing water literacy and dedicatedly emphasizes on raising awareness about criticality of water as a precious natural resource. The MPW states that Program of water literacy should be launched right from primary school level so as to create awareness about the importance of economizing the use of water among the diverse users. MWP further states that conservation of water shall be carried out by promoting conservation consciousness through education, regulation, incentives and disincentives³⁹. MWP makes the provision for providing safe drinking water and sanitation for all to be considered as the pre-emptive need (first priority) but does not however acknowledge fundamental right to safe drinking water as has been recognized by the Supreme Court of India⁴⁰. The MWP too does not acknowledge right to a minimum quality and quantity of drinking water and water for other basic needs but makes a broad statement that providing potable water for drinking and sanitation to the people in the state is the first priority under the MWP. The Policy states that adequate domestic water facilities should be provided to the entire population in the state both in urban and rural areas to meet its domestic needs. The Policy also makes a provision of including domestic water planning component in the multipurpose projects where there are no alternative and adequate sources of drinking water available.

On the issue of water quality, the MWP has quite a comprehensive provision and states that the quality of water resources of the state shall be protected to preserve their usability in a sustainable manner. The State Government shall establish a program of control of discharge of any pollutants to surface and sub-surface waters of the state including the ocean, bays and saltwater marshes of the state. The Policy provides for the establishment of an effective regulatory mechanism and standards for maintaining the quality of water in the state⁴¹. The Water (Prevention and Control of Pollution) Act, 1974 is also applicable in the state for prevention and abatement of pollution of water resources in the state.

As per Maharashtra Management of Irrigation Systems by Farmers Act, 2005 (MISF) it is the responsibility of the ‘Appropriate Authority’ to supply water as per the Applicable Water Use Entitlement, to the Water Users’ Associations on a bulk basis and it is the responsibility of the Water Users’ Association to supply water equitably in its area as per Applicable Water Entitlement of each member for irrigation. Though, there is no specific mention of supply of minimum quantity of potable water for health and hygiene. Water User Associations in Maharashtra are empowered under the law not only to manage irrigation infrastructure but also to levy fee and recover operation and maintenance charges from the water users.

The MWP has a general flavour on efficient and productive use as well as management of water resources with community participation. There is no strong emphasis on the role and duty of citizens to take part in the conservation and protection of water resources in their immediate vicinity. Community Management of Drinking Water Supply and Sanitation is mentioned in the policy that may be construed to include protection and conservation. Rather the state has a strong emphasis on water user organization and their empowerment through the policy and legislative measures. Under the MWRRA Act, the Authority has the obligation to promote water use efficiency in all sectors of water use.

³⁸ Section 12(5) of the Act

³⁹ Para 2.7.5 of the MWP

⁴⁰ Right to safe drinking water has been recognized as part of right to life under Article 21 of the Constitution of India in the case of Subhash Kumar Vs State of Bihar

⁴¹ Para 2.3 of the MWP

Water Resources Data and Information: The MWP has a provision on creating a sound data base and information base on water resources through a participatory method.

Conservation of rivers, river corridors, water bodies and/or associated wetlands, the flood plains, ecological buffer areas are to be managed in an integrated manner to balance the environmental and social issues as per NWP-2012. The objective of the MWP is to "ensure the sustainable development and optimal use and management of the State's water resources to provide the greatest economic and social benefit to the people of the State of Maharashtra in a manner that maintains important ecological values within rivers and adjoining lands. Thus the Policy does address river and rivers corridors in some ways. A more clear articulation of the same may be desired.

Pricing of Water: Maharashtra has well developed water pricing mechanism. Urban water supply pricing is done as part of property tax or built in in any other way where as for the irrigation sector bulk water tariff criteria has been evolved by the MWRRA. WUAs under the MMISF Act are also empowered as legal entities to recover the cost of water and to undertake measures to recover the cost of water supply.

A significant addition to NWP-2012 is recognition of impact of climate change on available water resources and consequent impacts upon human health and livelihoods. There is a need to adopt measures at a micro level to mitigate its effect through enhancement of community's capabilities through technological options. Maharashtra has not formulated its State Climate Action Plan till date.