

ARE WATER POLICIES A CASE OF REVERSE ENGINEERING IN INDIA?

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Abstract

The emerging water crisis calls for a paradigm shift in policies and regulatory regimes the world over, including India. However, there are serious challenges and operational level constraints needing a thorough scrutiny and understanding as regards the historical and region-specific contexts and factors within which such policies and regulatory regimes are evolving. Arguably, water policies should have been evolved based on an understanding of the social contexts within which they are to be implemented. Besides, implementation of water policies also requires creating new or fine-tuning of the existing regulatory regimes and governance systems to have the desirable outcomes on the society.

Set in this broader perspective, the paper tries to understand the emerging policy as well as institutional reforms and regulatory regimes in water sector in India, with particular reference to Maharashtra and Gujarat states. First, the paper provides a brief review of the national water policies of 1987 and 2002, followed by a detailed discussion on the water policies/ water sector reforms in the states of Maharashtra and Gujarat. Then it makes a critical assessment of the policies of Maharashtra and Gujarat with respect to their responses and sensitiveness in addressing the water sector challenges as discussed above. As emerge from the analysis, it is obvious that only Maharashtra has set up policy framework of enabling provisions and authorities with somewhat clearly defined powers. The central question that remain unanswered is, what is water right and how is it defined. So far the polices only state priorities (for instance drinking water to be first and so on) but these are clearly not with respect to the state of the resource (except in scarcity years). We argue that in many of the natural resources there is a need to intercede the management of the resource and the users' interests with clearly defined legal framework. Except in Andhra Pradesh and in Maharashtra, half-hearted attempts in many other states to reverse engineer the process of providing legal support to isolated cases of water distribution (not management) have neither led to improvements in resource management nor in legitimizing users stake in the resources.

1. INTRODUCTION

That many regions in the world are underway of severe crisis in the waterfront is no longer a stunning realization given the pace at which water resources are getting depleted. The crisis emerge in part, from the paradox that there is a burgeoning demand for freshwater resources while the quality and quantity of the same are facing alarming rates of deterioration day by day. For the most part, the crisis in the global water sector emerge from the virtual absence of effective and sustainable policies and regulatory regimes governing development and management of water resources from a long-term and holistic perspective. Apparently, while a large number of developed countries have been successful in evolving more or less effective and suitable kind of policies and regulatory regimes in the water sector, an overwhelming majority of the developing countries are hard-pressed by either the lack or poor implementation of such policy instruments or regulatory systems.

India's water sector is depicted as one of 'turbulence muddled with the crisis of governance failure' on the one hand (Kumar, 2005) and virtual absence of a holistic vision and planning for sustainable resource development and management regimes for the future on the other. Groundwater resources are in a critical state in most parts of the country as its exploitation forms the largest source of irrigation water supplies (65-70%) and 80% of the domestic water supplies (World Bank, 2005). It looms large that the country's water sector is

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fraught with a plethora of challenges, viz., a) the perceptible gap in the provision of safe drinking water across the rural and urban areas; b) state failure in appreciating water as a fundamental right; c) emergence and growth of water markets even in the rural fringes; d) non-responsiveness of the public institutional and governance systems towards the globalisation induced dynamic agrarian changes taking place in the canal commands; e) limited success of the reform measures aimed at participatory management (PIM)/ irrigation management transfer (IMT) to the user communities; f) growing inefficiency in the functioning and performance of the irrigation systems; and g) the growing environmental and human health related concerns along with socio-economic impacts of ill-conceived and poorly implemented rehabilitation/resettlement programmes, etc. to mention a few.

While the emerging water crisis calls for a paradigm shift in policies and regulatory regimes the world over, there are serious challenges and operational level constraints needing a thorough scrutiny and understanding as regards the historical and region specific contexts and factors. A major challenge confronting the water sector reforms (changes in policies and regulatory regimes) is to have a judicious balance between the policy prescriptions and their implementation. Arguably, water policies should have been evolved based on an understanding of the social contexts within which they are to be implemented. Besides, implementation of water policies also requires creating new or fine-tuning of the existing regulatory regimes and governance systems to have the desirable outcomes on the society. Given that the contexts within which water policies implemented are heterogeneous in terms of presence of powerful as well as weaker stakeholders with competing claims, it is rather difficult to have the desirable outcomes unless and until there takes place effective social mediation of the policies involving the heterogeneous actors/stakeholders. Since the water sector reforms as proposed or being implemented by a vast majority of countries, including India have been virtually failing in terms of evolving such social mediation processes, it may be argued that the water policies and regulatory regimes would continue to remain as mere prescriptions that are disjointed from the ground level realities.

Set in this perspective, this paper tries to understand the emerging policy as well as institutional reforms and regulatory regimes in water sector in India, with particular reference to Maharashtra and Gujarat states. Selection of Maharashtra and Gujarat for the present analysis is only logical as these 2 states depict extreme conditions of drought and alarming rates of groundwater exploitation. Moreover, these 2 states have also been in the forefront in terms of various state-sponsored as well as NGO initiatives and interventions at the grassroots level aimed at sustainable development, conservation and management of water resources. Maharashtra in particular has done pioneering efforts with respect to launching of various water sector reforms, which include revision in water tariffs covering 100% of O&M costs, drinking water reforms and launching of massive programme on watershed development and management.

The paper is structured into three sections. Accordingly, Section two provides a brief review of the national water policies of 1987 and 2002, followed by a detailed discussion on the water policies/water sector reforms in the states of Maharashtra and Gujarat. Section two makes a critical assessment of the policies of Maharashtra and Gujarat with respect to their responses and sensitiveness in addressing the water sector challenges as discussed above. Section three sums up the paper by posing some important concerns needing further discussion and empirical investigation for a better understanding of the dynamic space within which these policy instruments and regulatory regimes interface with the socio-economic, political, environmental and hydro-geological aspects of life in the countryside.

The methodology used in the paper is to review and document the important policy and regulatory interventions and legislative processes as prevalent or being proposed in Maharashtra and Gujarat states in recent times in particular. The paper largely draws on the available empirical literature pertaining to water sector reforms and case studies as undertaken in India by various agencies and individual researchers as the case may be. The choice of such a methodology is deliberate as the paper envisages evolving a well-founded analytical perspective for understanding the entire dynamics at work in the making of water sector policies and working of regulatory regimes in varied contexts in India.

2. WATER POLICIES AND REGULATORY REGIMES: A REVIEW

Arguably, the Indian Constitution has provided a solid foundation for evolving legal and policy frames required for the water resources sector in the country. Under the Constitution water is a state subject and 'irrigation' being entry 17 of the state list. Further, 'water rights' irrespective of the limitations due to definition and implementation are derived from the fundamental rights of the Constitution under Article 21. State governments are obviously empowered to legislate on water related matters and ensure good governance.

Water sector development, which assumed centre-stage of the planned development programmes in the country, has been perceived and implemented in a highly 'centralized and top down' framework even by the states. Water sector policies were either non-existent or rudimentary in form and content and institutional as well as governance systems have been driven by the centralist decision-making process. However, the scenario has been underway of some changes since the 73rd and 74th amendments in the constitution passed in 1992, which have empowered the Panchayati Raj Institutions (PRIs) to takeover the reigns of water sector development. Following this, there have been a series of enactments, legislations and policy interventions within the water sector (surface water, groundwater and drinking water) with a paradigm shift in the perspectives and approaches mostly oriented towards the micro level contexts of the Indian states. In majority of cases, these legislations, enactments and policy formulations have been mere refinements or modifications or additions to the pre-existing legal and regulatory regimes of the colonial vintage¹.

These legal/ policy level and regulatory reforms especially at the state levels possibly gained impetus from the national policies, viz., the Water Policies of 1987 and 2002. Following these a series of legislation and policies have been introduced by the states like the: a) Andhra Pradesh Water Resources Development Corporation Act, 1997; Andhra Pradesh Farmers' Management of Irrigation Systems Act, 1997; Andhra Pradesh Water, Land and Trees Act, 2002; The Karnataka Groundwater (Regulation for Protection of Sources of Drinking Water) Act, 1999; The Karnataka Irrigation and Certain Other Law (Amendment) Act 2000; The Kerala Groundwater (Control and Regulation) Act, 2002; The Kerala Irrigation and Water Conservation Act, 2003; Madhya Pradesh Sinchai Prabandhan Me Krishakon Ki Bhagidari Adhiniyam, 1999; The Maharashtra Groundwater (Regulation and Drinking Water Purposes) Act, 1993; The Orissa Pani Panchayat Act, 2002; Delhi Water and Waste Reforms Bill 2003; Maharashtra Management of Irrigation Systems by the Farmers Act, 2005; The Himachal Pradesh Groundwater (Regulation and Control of Development and Management) Act, 2005; the Maharashtra Water Resources Regulatory Authority Act, 2005; The Arunachal Pradesh Water Resources Management Authority Bill 2006; The Gujarat Water Users' Participatory Irrigation Management Bill, 2007.

Besides the above legislative reforms, the states have also come up with respective state water policies. Prominent among them include: Uttar Pradesh State Water Policy 1999; Karnataka State Water Policy in 2002; Maharashtra and Madhya Pradesh State Water Policy in 2003; Madhya Pradesh State Water Policy 2003; Rajasthan State Water Policy 2005 (Draft); Kerala Water Policy, 2007; Orissa State Water Policy in 2007; State Water Policy of Assam 2007 (Draft); etc.

Nevertheless, there is a clear vacuum of understanding as regards the very influence or correspondence between the national as well as state level policy reforms in the water sector. Even a cursory look at the various legislations and the policies circumscribing the water sector at the national as well as the state levels would give rise to a series of questions about the underlying causative factors triggering such a massive enthusiasm in the country towards reforming the water sector through various policies and legislations. Arguably, an overwhelming majority of these legislative as well as the proposed policy reforms in the water sector may be considered as offshoots of political as well as bureaucratic benevolence from time to time rather than genuine considerations originating from the concerns or revealed preferences cast by the society at large and other potential stakeholders. The reasoning behind such a standpoint is only logical as there is a variety of questionable concerns surrounding the emergent water sector reforms at the national as well as state levels. Given this, in what follows, we try to make a brief discussion on the various policy level as well as institutional or regulatory reforms in water sector in India with particular reference to the two national water policies, followed by the water sector reforms in Maharashtra and Gujarat states.

2.1 Water Policy 1987

The first National Water Policy adopted in September 1987 underlined that ‘water is a prime natural resource, a basic human need and a precious national asset’. It was evident that this policy wanted to promote a standardized national information system, data collection, establishment of basin-wise organisations with multi-disciplinary approach to planning, formulation, clearance and implementation of projects, rehabilitation, groundwater development, water zoning, flood and drought management, R & D and training (Kumar and Seth, 2000). In the planning and operation of water resources systems, the priorities of water allocation have been broadly underlined as: a) Drinking water; b) Irrigation; c) Hydro-power; d) Navigation; and e) Industrial and other uses. The policy also addressed several areas of intervention, viz., assessment of water resources, groundwater hydrology and recharge, prevention of salinity ingress; and so on.

2.2 Water Policy 2002

Though the 1987 water policy covered wide ranging aspects of water sector, a number of challenges emerged in due course of its implementation. It has been reported that the Ministry of Water Resources (MWR) has not been well-equipped in implementing the policy². In view of such discrepancies and operational problems in implementing the provisions of the 1987 policy, the National Water Policy 2002 has been announced as a modified version of the 1987 policy. The 2002 water policy was broadly set in the backdrop of the emerging water crisis and the severe droughts in the country. Given this, provision of drinking water assumed the topmost priority in the 2002 policy as well. With the inclusion of water provision for ecological services, the 2002 policy set the priorities as: a) Drinking water; b) Irrigation; c) Hydro-power; d) Ecology; e) Agro-industries and non-agricultural industries; f) Navigation and other uses. In rest of the areas and provisions, the 2002 policy appears to be a replica of the 1987 policy.

A significant change in the 2002 policy from that of 1987 has been its focus on privatization³. Thus, the policy puts forth supply side solutions in terms of institutional mechanisms, technological options, innovations and corporate management strategies for enhancing the financial resources. It is apprehended that this framework, if implemented, would turn out to be highly skewed in terms of its distributive equality, as a major chunk of the population might be deprived of benefits even as they fail to adjust to market driven system. However, it should be noted that except for canal based water supplies, water extraction and distribution is in private domain – largely unorganized though. In any case, as earlier, the two water policies at the national level seem to be mere statement of intentions or pontifications as they have not been complemented by supportive legislations or action plans.

Notably, some states like Maharashtra and Andhra Pradesh in particular, have taken commendable initiatives for enacting legislations and put in place policy and regulatory frameworks for the water sector. Gujarat on the other hand, has for long been following a route of ‘Government orders led policies’ that have shown some impacts. In what follows, we analyze select state level policy reforms and institutional intervention strategies in the water sector.

2.3 Water Policies and Regulatory Regime in Maharashtra

Maharashtra is the 3rd largest state in the country with a geographical area of 30.8 million ha covering a population of over 100 million (Census, 2001). The growing population together with booming industrial sector exerts great pressure on the water resources. Besides domestic and industrial water demand, the agriculture sector employing 70% of the state’s labour force, demands the state’s freshwater resources, particularly groundwater. The state remains as socially and politically dynamic with the presence of a powerful farmers lobby and a plethora of factors leading to several reforms in the water sector. A case in point is the 300 years old system of water management - the Phad system – a community managed irrigation system prevalent in the Northwestern Maharashtra. The state has also set up a Groundwater Survey Development Agency (GSDA). Notably, there have been four major policy and regulatory reforms in the water sector in Maharashtra in the last two decades. They are: the Maharashtra Groundwater (Regulation for Drinking Water Purpose) Act 1993; The

Maharashtra Water Policy, 2003; The Maharashtra Water Resources Regulatory Authority Act, 2003 (Mah. Act No. XVIII of 2005) and, the Maharashtra Management of Irrigation Systems by Farmers Act of 2005.

2.3.1. Maharashtra groundwater regulation act, 1993

The Maharashtra Groundwater (Regulation for Drinking Water Purpose) Act 1993 was an important outcome of the State's efforts to regulate the over-exploitation of groundwater aquifers stimulated by the tube well technology. The state had experienced extreme droughts in the early 1990s which affected as many as 30,000 drought-prone villages. Following this, the state has taken initiatives to regulate the groundwater exploitation through Groundwater Regulation Act in 1993, which emulated the Model Groundwater Bill of 1970 (Phansalkar and Kher, 2006). The Act contained important provisions of keeping a minimum distance of 500 meters between a public drinking water source and the new well constructed. This was relaxed for the construction of new wells for the provision of drinking water. The Act prohibits groundwater extraction for non-drinking purposes in locations declared as scarcity affected. Further, the state was empowered to close down a well, remove pumps, disconnect power supply in areas that contravene the provisions of the Act.

Though unique in many respects, the absence of penal conditions led to numerous instances of violations even by government sources where no effective legal actions could be taken (Phansalkar and Kher, 2006). A serious flaw in the Act seems to be the efforts of the state to over-control the customary rights provided for by the vintage easement Act for individuals to appropriate groundwater. In the case of farmers this seemed to be the only source in the absence of other water sources at least in most of the water-scarce regions.

It is also important to note that despite the enactment, the problems in the groundwater development still continue in view of the poor implementation of the provisions of the Act. Notably, there has been substantial increase in groundwater abstraction caused by rise in number of wells and motorised pumps (lifting devices), leading to significant drop in groundwater tables (Pathak et al., 1999). There is also stiff competition between Irrigation and drinking water segments for the use of water often leading to competitive deepening and over-abstraction of groundwater sources causing depletion of the water table (Table 1).

Table 1. Fall in Groundwater Table in Districts of Maharashtra, 1999-2001

Period	Water Fall Level in the districts	
	2-4 metres	Above 4 metres
1. May 1999 – May 2000	Aurangabad, Jalna, Buldhana, Beed, Kolhapur, Sangli, Osmanabad, Pune, Sholapur	Aurangabad, Beed, Latur, Jalgaon, Parbhani, Sholapur
2. May 2000 – May 2001	Aurangabad, Beed, Buldhana, Jalgaon, Nagpur, Akola, Sangli, Satara, Thane, Nanded, Chandrapur	Aurangabad, Jalgaon, Sangli

Source: Lok Sabha Unstarred Question No. 3052, dt. 09.12.2002, accessed from www.indiastat.com

2.3.2 Maharashtra state water policy, 2003

The Government of Maharashtra (GoM) has announced its State Water Policy 2003 as per the recommendations of the National Water Policy 2002 and the Maharashtra Water and Irrigation Commission's Report. The basic objectives of the State Water Policy (MSWP) are to ensure the sustainable development and optimal use and management of the state's water resources, to provide the greatest economic and social benefit for the people of the state and to maintain important ecological values within rivers and adjoining lands. The important objectives and the strategies for achieving the objective criteria as proposed in the MSWP are shown in Box 1.

Box 1: Maharashtra Water Policy: Objectives and Important Strategies

Objectives	Strategies
<ol style="list-style-type: none"> 1. The state to create an enabling environment for equitable and productive water management in an environmentally sustainable manner to promote growth, reduce poverty and minimize regional imbalances. 2. The state to create incentives efficient use of water and empower WUA to participate in management; to grant the WUAs entitlements to water so enable them to decide on best use without bureaucratic interference. 3. The state to create new institutional arrangements at river basins to guide and regulate water management; to decentralize the responsibility at river basin and sub-basin levels 4. To place a high priority on promoting the development, adaptation and dissemination of new technology to improve efficiency and productivity 5. To enact appropriate legislation and enabling rules to effect the above strategies: For this, the State will adopt three critical items of legislation including: a) an act to authorize farmers' management of irrigation systems; b) an act to create a state water authority; c) and river basin authorities. 	<ol style="list-style-type: none"> 1. River Basin Agencies: Delineate the five river basins into 25 sub basins for integrated planning, development and management of the water resources and watersheds in respective river basins. 2. Participatory water management: To comply this, farmer management of irrigation systems has been made mandatory along with formation of WUAs. Water will be supplied on volumetric basis to WUAs only. 3. WUAs and bulk water entitlements: A new concept of 'bulk entitlements' has been introduced signifying that water allocations are to be made only through the WUAs. WUAs hold bulk entitlement to water use on behalf of their members. WUAs will be federated at the distributory and project levels and these federations will be responsible for operation and maintenance of their respective canals and appurtenant structures and facilities. 4. Water for domestic and industrial use: To launch a perspective plan to integrate the provision of drinking water both to the rural and urban sectors with the multi-purpose projects. Suggests a pricing policy to cover least the O&M costs of the water supply. 5. Private sector participation: Encourages participation of corporate, commercial enterprises and water service providers in preparing the river basin plans. Similarly, partnerships encouraged between the state and the private sector in financing for and introduction of new technologies. 6. Priorities in water allocation: Water allocation priorities include: a) domestic use for drinking, cooling, hygiene and sanitation needs including livestock; b) industrial, commercial use and agro-based industrial use; c) agriculture and hydropower; d) environment and recreation uses; and e) all other uses. 7. Transfer of water use entitlements: "Transfer of all or a portion of water entitlement between entitlement holders in any category of water use and priority shall be permitted on both annual and seasonal basis based on fair compensation of the entitlement.

2.3.3 *The Maharashtra water resources regulatory authority act, 2003 (MAH.ACT No. XVIII of 2005)*

Two of the important regulatory instruments as suggested in the state water policy are: a) establishment of a state water resources regulatory authority and river basin authorities; and b) an act to authorize farmers' management of irrigation systems. Accordingly, the state passed the Maharashtra Water Resources Regulatory

Authority (MWRRA) Act, 2003 (Mah. Act No. XVIII of 2005) and adopted in 2005. It is considered that the MWRRA will regulate water resources within the state, facilitate and ensure judicious, equitable and sustainable management, allocation and utilisation of water resources, fix the rates for use of water for agriculture, industrial, drinking and other purposes, and matters connected therewith or incidental thereto. The MWRRA Act suggests the need for setting up of the River Basin Agencies (RBAs) or River Basin Development Corporations. Accordingly, Irrigation Development Corporations (IDC) have been established for the five regions. The important functions of these river basin development corporations are given in Box. 2

Box 2: Functions of Water Resource Regulation Authority

Irrigation Development Corporations	Functions
<ol style="list-style-type: none"> 1. The Maharashtra Krishna Valley Development Corporation was established under the Maharashtra Krishna Valley Development Corporation Act, 1996; Mah. XXVI of 1997 2. The Vidarbha Irrigation Development Corporation established under the Vidarbha Irrigation Development Corporation Act, 1997 Mah. III of 1998 3. The Konkan Irrigation Development Corporation established under the Konkan Irrigation Development Corporation Act, 1997 Mah. IV of 1998 4. The Tapi Irrigation Development Corporation, established under the Maharashtra Tapi Irrigation Development Corporation Act, 1997 Mah. XXIII of 1998 5. The Godavari Marathwada Irrigation Development Corporation established under the Maharashtra Godavari Marathwada Development Corporation Act, 1998 	<ol style="list-style-type: none"> 1. Determine and distribute water entitlements for various categories of use 2. Establish a water tariff system at sub-basin, river basin and State level based on consultations with stakeholders. Water charges so fixed should reflect full recovery of the cost of the irrigation management, administration, operation and maintenance of the project 3. Administer and manage interstate water resources if the state 4. Review and clear water projects at the sub-basin/ river basin levels and ensure the proposal is in conformity with Integrated State Water Plan 5. Review entitlements after three years. In the event of water scarcity, the authority shall adjust the quantities of water across all Entitlements and permit temporary transfer of water entitlements between users and categories of users 6. Establishing a system of enforcement, monitoring and measurement of entitlements 7. Determine and ensure that the cross-subsidies between categories of use are totally offset 8. Develop the state water entitlement database

As mentioned in Box 2, the MWRRA is designated to issue the Bulk Water Entitlements (BWE) to Water User Associations or other entities. The allocation would be the portion of entitlement declared annually or seasonally by the MWRRA. The MWRR Act lays down a very detailed narrative on the criteria of allocation and provision of the water entitlements to the user communities and other entities. The entitlements issued by RBA would be based on the category of use and subject to the priority assigned. Further, BWEs will be issued by RBA for irrigation drinking, municipal and industries to relevant user entities. Individual water entitlements will be issued by RBA only for the construction and operation of individual lift irrigation schemes using surface water sources through bore-wells, tube wells or other facilities for extraction of sub-surface water. In all cases the BWE will be measured volumetrically and with respect to time of delivery and flow rate of delivery.

The Act also suggests criteria in matters of transfer or trading of water entitlements to be administered by the MWRRA. The Act lays down many procedures for a change in the use or volume of any entitlement, for

example the entity must demonstrate in a public hearing before the authority that it has exhausted all attempts to conserve, increase efficiency and manage its demand of water within its entitlement. However, BWE are transferable within the respective category of use as long as such transfers are compatible with the operation of the specific water resource facilities involved. Evidently, these provisions of a regulatory mechanism would catalyze private participation.

On water distribution for irrigation, the MWRRA fixed quota at the basin level, sub-basin level or project level should enable every land holder in the command area to have a quota. The quota in turn will be fixed on the basis of the land in the command area, provided that, during water scarcities each landholder shall, as far as possible, be given quota adequate to irrigate at least one acre of land. Interestingly, the authority has taken upon itself to ensure that the principle of “tail to head” irrigation is implemented. The typical case of mixing up many objectives is the proviso that a person having more than two children shall be required to pay one and half times of the normal rates of water charges.

2.3.4 The Maharashtra Management of Irrigation Systems by Farmers Act 2005

The second and the most important legal instrument as prescribed by the 2003 Water Policy in Maharashtra has been the Act to authorize farmers’ management of irrigation systems in the state. The State Water Policy (2003) has urged the need for involving farmers, the dominant segment of the water users, in the process of management of water sector development. The perceptible gap between creation and utilisation of irrigation potential has been and continues to be one of the serious dilemmas of water sector development in India. An important policy and institutional measure tried by countries including India for bridging this gap has been formation of WUAs adhering to the principles of irrigation management transfer (IMT) as well as participatory irrigation management (PIM) in irrigation systems.

While there are serious apprehensions about the effectiveness of such participatory interventions even in India, the government of Maharashtra has taken a bold step of making legislation for farmer management in irrigation systems through the Maharashtra Management of Irrigation Systems by Farmers Act 2005 (MMISF). The important objectives of the MMISF Act and the institutional arrangements for implementing the objectives are shown in Box 3.

Box 3: Objectives of MMISF Act and Institutional Structure

Objectives	Activities
<ol style="list-style-type: none"> 1. Promote and secure equitable distribution of water amongst its members 2. Maintain the irrigation systems, and ensure efficient, economical and equitable distribution 3. Protect the environment and ensure ecological balance 4. Actively inculcate amongst members a sense of ownership of the system 5. Safeguard and promote the common interests of its members pertaining to irrigation and agriculture in the area of operation 	<ul style="list-style-type: none"> • A canal officer may delineate lands and declare it to be an area of operation of Project Level Association (PLA) The area may include both surface and lift irrigations • On delineation of the command area of WUAs water will not be supplied by MWRRA to individual holder and the system of supply of water through WUAs shall be binding on all holders and occupiers • Management transfer to WUAs would be done after a joint inspection of the system within three months from the date of signing the agreement • The WUAs can introduce drip and sprinkler system, develop farm ponds and community projects for exploiting groundwater, and engage in supplementary business like dairy and fisheries

MMISF Act also deals with Lift Irrigation Water Users' Association (LIWUA). The canal officer would regulate water supply to all LIWUAs. An important provision that has been a sore point in the extant canal systems is ensuring no permission to lift water directly from the main, branch and distributary canals. A comparison of the powers and functions of the WUAs in Maharashtra and Gujarat would be appropriate in this regard and the same is provided in Box 4.

Box 4: Powers and Functions of Water Users' Associations in Maharashtra & Gujarat

Maharashtra	Gujarat
<ul style="list-style-type: none"> • WUAs controls: a) Applicable Water Use Entitlement (AWE) of its members; b) plans the number of rotations; c) fixes irrigation intervals; d) maintains its record and pass it on to its members from the Upper Level Association or the concerned canal officer • Prepare water distribution programme or Rotational Water Supply (RWS) before every rotation and ensure volumetric supply as per entitlement • To meet before each season to guide and help the members regarding: a) Canal operation schedule and water distribution; b) maintenance of canal system before the season • Enable the government to publish the Annual Irrigation Status Report, furnish to the canal officer, the requisite information as prescribed in time 	<ul style="list-style-type: none"> • WUAs enters into an agreement with the state government • Ascertain the demand for water of each holder of land in the service area • Ensure distribution of the water and the water supply system is left to individual WUAs • To prevent unauthorized use of water or waste of water or damage to the canal • To carry out normal maintenance and repairs of minor canal • To collect and remit water charges at the rate of 50 per cent of the prescribed charges to the government. And the WUA is free to determine water charges for its members

2.3.5 Annual Tripartite Agreement

An Annual Tripartite Agreement is prescribed under the Act between the WUAs, canal officer and the private bodies. The private agriculture water users will be given water quota by consent of all the members.

2.3.6 Mobilisation of financial resources by WUAs

MISF Act describes various sources of generating funds. The funds of WUAs shall be raised through sources such as: a) water charges; b) deposits from members; c) interest on deposits; d) borrowings; e) donations; f) contributions by members; g) grants; h) penalty and penal fees from members; and i) fees for the services rendered.

2.3.7 Water Budgeting at Project Level

The Project Level Association is responsible for water budgeting and in its absence the concerned canal officer will be responsible.

2.4 Water Policies and Regulatory Regime in Gujarat

The state occupies about 6% of the country's land resources, roughly 3% of the country's freshwater resources, and 4% of the country's population. The state is less advantaged in terms of per capita rainwater availability as compared to several other states in the country. Most parts of the state remain "water starved", as nearly 70% of the freshwater resources in the state are concentrated in south and central Gujarat. Water problems are manifold in the state and are manifest in the form of depletion and pollution of groundwater aquifers, pollution of water bodies, water-logging and salinity in canal commands, salinity ingress in coastal areas, growing

competition between conventional and non-conventional water consumptive sectors for use of the scarce water resources.

Water use for irrigation accounts for as high as 89%, followed by domestic uses (7%) and other uses (4%). The paradox of water sector development in the state is that despite heavy public investments being made for development of surface irrigation systems, groundwater contributes the single largest source of water contributing as high as 78% of the total water used for irrigation and domestic purposes.

The water future of the state is slated to be bleak in view of the emerging conflicts between and across the various sectors. Water pollution caused by industrial effluents is yet another serious problem. In fact, there has been a surge in empirical research at the levels of institutional agencies, including government and International agencies, such as the IWMI as well as individual researchers highlighting the magnitude of the impending water crisis in the state over time. While a review of the various studies⁴ is beyond the scope of the paper, all that need to be noted in this regard is that there has been a consensus on the clear vacuum of overarching policies and legislative processes governing the water sector in the state in particular.

Of particular reference in this regard has been the White Paper on Water in Gujarat prepared by IRMA/ UNICEF in 2001, which had made a pioneering attempt to bring out the status of water resources in Gujarat. The white paper made earnest efforts to identify the pertinent issues and the emerging challenges in Gujarat water sector and outlined practicable strategies for resolving the issues including identification of options for future action for drought-proofing of the state (IRMA/ UNICEF, 2001).

The white paper underlined that the state needs to expedite the announcement of a Water Policy, which is to be backed by a facilitating law, and buttressed by an appropriate organisational structure and governance system. It had also been suggested in the White Paper that the main goal of the State Water Policy should be to attain water security for all and forever through restoring, developing, conserving, utilising, and managing the surface water and groundwater resources of the state in the socially optimum and ecologically sound and sustainable way. Further, it was suggested that an autonomous Water Development and Management Board may be set up at the state level, to plan, coordinate and direct water management projects (IRMA/ UNICEF, 2001).

There was a clear case as put forth by the White Paper on Water in the state for formulating a State Water Policy, so far there has not been any such drive towards developing a comprehensive policy or legislative framework to address the woes of the water sector. There is virtually no legal control for the state over surface water resources and regulation of groundwater use is done through restrictions.

However, of late, there are some changes taking place in the state in terms of efforts at initiating legislations and policy instruments in the water sector in the state. Accordingly, the state is introducing two specific policy cum regulatory interventions within the state's water sector. These two pieces of policy or legislative instruments are known as: a) Gujarat Water Regulatory Commission (GWRC); and b) the Gujarat Water Users' Participatory Irrigation Management (GWUPIM) Bill, 2007, respectively. In what follows, we attempt at a brief discussion on each of these instruments.

2.4. 1 Gujarat Water Regulatory Commission

The state is in the process of setting up of the Gujarat Water Regulatory Authority following the Maharashtra Water Regulatory Act (MWRRA Act 2005). The Government of Gujarat (GoG) with the help of the Tata Energy and Resources Institute (TERI) has prepared draft legislation for independent regulation of the water and sanitation sectors. The Gujarat Infrastructure Development Board (GIDB) is currently overseeing the same. The Gujarat Water Regulatory Commission Bill 2006 aims to bring different departments under one umbrella for purpose of water distribution, rationalise water supply and fix tariffs. It is claimed by the officials that the proposed regulatory framework will bring clarity to the roles of various government bodies involved in water distribution, boost private sector investment, improve productivity and efficiency in the sector and also address the cost aspects. Aiming at an economic costing of water, the Bill includes municipal bodies and industrial users in its ambit. Apart from the Gujarat Water Regulatory Commission (GWRC), the Bill also provides for the setting up of State Water Regulatory Council (SWRC) (chaired by the Chief Minister, with 10 other ministers as members) and a State Water Regulatory Committee (chaired by the Chief Secretary, with 13 other secretaries).

While the State Water Regulatory Council will lay down the broad water management policy, the State Water Regulatory Committee will assist the council in the discharge of its functions, including formulating an Integrated State Water Master Plan. The draft Bill also has provision for fifteen-member consultative committee drawn from local bodies, academia, industry, the agriculture and labour sectors, civil society organisations (CSOs) and research bodies to advise the GWRC on policy and tariffs, and to protect the interests of consumers. While no timeline has been set for the formation of the commission, it is anticipated that the Bill may be introduced soon.

However, it may be observed that the Water Regulatory Authority if established would not be effective in addressing the challenges facing the water sector in Gujarat, as the Bill is very confined in its style and content so as to implement a definite agenda of privatisation of drinking water supplies especially in the urban areas. If the Bill is implemented, it is likely that the proposed water regulatory authority would assume the status of 'monopoly provider', thus questioning the legitimate right of the PRIs (as provided under the 73rd and 74th constitutional amendments) to have access and control over the local water resources. By and large, the Bill calls for a radical transformation in the existing legal, regulatory, financial and administrative frameworks to facilitate private sector participation in the provision of drinking water, especially in the urban areas. The proposed Bill then commits to provide adequate returns through creating an attractive tariff regime that would facilitate the massive entry of private sector players in the water sector in the state.

2.4.2 The Gujarat Water Users' Participatory Irrigation Management Bill, 2007 (Gujarat Bill No. 24 of 2007)

The second instrument of policy reform in the water sector is the Act called the Gujarat Water Users' Participatory Irrigation Management Act 2007. While the Act has been framed, rules and regulations are yet to be announced.

As per the Act, WUAs shall be formed by the competent authority for each service area, consisting of holders of land in command area. Interestingly, membership in the WUA is not binding: if the association represents 51% of the holders of land in the service area and the aggregate area of land held by such holders of land is not less than 51% of the service area, a WUA can be formed. A joint committee of officials and office-bearers of WUA would inspect and estimate the repairs needed in the canal. And repairs would be carried out before being handed over to the association. The cost of repairs to the minor canal and watercourse shall be borne both by the state government and the association would contribute a nominal percentage of the total cost.

3. WATER SECTOR POLICIES: RESPONSES AND OUTCOMES

In this brief section, we try to bring in some pertinent issues that may have serious implications on the functioning and performance efficiency of the existing and proposed policies and regulatory regimes in the water sector in the country. Moreover, there is an urgent need for further empirical investigations so as to understand and reflect upon the grassroots level implications of the emerging policies and governance systems in the water sector.

A serious missing in the water policies at the national as well as the evolving policy frames at the state levels (particularly, Maharashtra and Gujarat) is that these policies do not make much headway in changing the perspective on water as a national resource and an asset owned by any state, whether riparian or others. The policies and regulatory regimes as they emerge show a clear trend towards appropriating the water resources and taking it out of the reachable limits of the poor and water starved communities. To that extent, the communities are deprived of their rights over water (facilitating multiple services) around which they build up their livelihoods.

As emerging from the review of the water sector policies both at the national as well as state levels, there has been taking place, a significant switchover in prioritization of water allocations. While the policies demonstrate a clear shift from 'water for irrigation' to 'water for drinking, ecological services, industry', etc., it remains unclear as to what type of institutional mechanisms or regulatory processes have to be put in place to achieve the broad goals of new prioritization strategies. For one, it becomes clear from the very functioning of the drinking water supply programme as envisaged under the Narmada Pipeline (NP) project that the policy

miserably fails in terms of suggesting strategies for conserving the local water resources. In this regard, the most recent study by Hirway and Goswami (2008) shows that with the availability of Narmada water supplies, there has been an outright neglect of local water resources even in villages which suffer from serious water shortages. The study also hints at the serious flaws in the NP project as it is not clear as regards the institutional mechanisms and technical designs required for the implementation of the programme. This scenario of laxity in policy and institutional vacuum is also applicable in the case of most of the irrigation projects in the two states which are launching for successful implementation of the drinking water provisions as per the new policy framework.

As discussed above, significant attempts have been made in the Gujarat, Maharashtra and Andhra Pradesh as regards the implementation of PIM principles, which are directed toward introducing better methods of water control. The importance of institutions in all these aspects is obvious; yet there are relatively fewer attempts to relate the structure of these new institutions and their working to the larger context of decentralisation initiatives.

In Gujarat and Andhra Pradesh, the government have taken the initiative in sponsoring irrigation management transfer (IMT) but the approach and process have been different (for details see, Parthasarathy 2005). There have been efforts to make the WUAs financially viable. Though charging economic rates for water had been a very difficult task in all the states, the WUAs in Gujarat at least had begun fixing and collecting water charges from member farmers. There are also attempts to strengthen the finances of the WUAs by the government. In Gujarat for instance, there are two types of grants for the WUA. The first is related to the performance, where the WUA retains 30% of the water charges collected toward O&M expenditure and another 20% of the total water charges collected for administrative expenditure. The second grant consists of a contribution of Rs. 250/ha from the state government, Rs. 200 from the central government and Rs. 50 from the members of the WUA. In so far as the first type of grant is based on a proportion of the total water charges collected, there is an incentive for the WUAs to raise the water charges (see for details, Parthasarathy, 2000). In Andhra Pradesh too, funds for repairs have been disbursed to all the WUAs and federating bodies albeit through the Irrigation Department. In 1997-98, the actual amount to be spent on maintenance works was fixed at Rs. 100/acre and a total of Rs 10.6 million was allocated for repairs and rehabilitation. The lump sum grant was shared in the following way: 50% to the WUA, 20% to DC, and 20% for the PC. Importantly, the remaining 10% was earmarked for the village panchayat to undertake development programmes.

Thus, there has been some attempt in Andhra Pradesh to bring about a link between the new water management institution, WUA, and the panchayat⁵. The fact that Andhra Pradesh Act is touted as the model of irrigation sector reform, it is possible that other states, which use the Andhra Act as basis, would also try and forge similar links with the panchayats. It is recognized that taking part in the panchayat activities is not the same as involvement in party politics, yet, there is a fair play of party politics at the panchayat level that should be kept in view. This sort of linkages if sustained proves that decentralisation is not an exclusive or static process or that the newer institutions "encroachment" into panchayats' "space" is necessarily a competitive phenomenon. Few institutions in a developing democracy can be viewed as sacrosanct to the extent that parallel or competing institutions should be forbidden. It is plausible that panchayats, may view the newer institutions in its area as beneficial additions since they not only bring in additional resources but take away the management responsibilities in to small 'homogenous' groups. The challenge, therefore, is to find a proper balance of institutional arrangements at the local level that promote development effectively. This balance is not easily determined as they shift in tandem with the performance and changes in the new institutions (Parthasarathy, 2004).

The structures of PIM in Gujarat and in Maharashtra are different from that in Andhra Pradesh. In Gujarat, each WUA is a single unitary organisation. The Irrigation Department enters into agreements with a single WUA (Co-operatives) for the purpose of management and distribution of water and collection of water cess. But in the Andhra Pradesh model, WUAs are nested in distributary level farmers organisations, which in turn are nested in the project level farmers organisations. The latter could not be constituted for more than a decade now. The nested organisations have an advantage over the unitary organisation in terms of collective bargaining and achieving water use efficiency at the system level. This, however, also requires that the higher-level organisations provide necessary support for increasing efficiency and are capable of holding the department

accountable for any mismanagement. In this context, the policies and Acts that Maharashtra has proposed seem to be comprehensive and ensure legal protection to users and managers (See Parthasarathy and Pathak, 2006 for a related discussion).

A greater challenge confronting the emerging water policy and regulatory regimes in the country in general and Maharashtra and Gujarat in particular is their complete lack of appreciation of the multifarious water sector interventions by the grass roots level agencies, especially, the NGOs and other civil society organisations. It would also be interesting to ponder over the issue that given their vast development experience, whether the grassroots level development agencies and the NGOs be considered as important stakeholders in the process of devising the water policies of the country and the states in question.

There are plethora of other issues for which the existing or proposed policies do not provide adequate explanations. Some of them, inter alia, include:

- a) What are the specific legal/ ethical/ political/ socio-economic, agriculture and external trade policy environments within which water laws and state-specific water policies have been evolved and operating?
- b) How best the water laws/ policies are informed to and understood by the varied actors/ stakeholders and how these actors respond to varying scenarios of water governance and institutional regimes?
- c) How realistic and cohesive have been the national as well as the state-specific water policies in respect of context-specific choice of technological solutions, institutional forms and allocation and pricing instruments and regulatory mechanisms?
- d) Whether the water policies/ regulatory regimes take a well thought out and well informed implementation strategy as regards rehabilitation and resettlement of PAP within or outside the geographical confines of the water projects?; and how the genuine concerns of the PAP get resolved in terms of getting a fair deal in the R & R package without compromising on their (pre-R & R) livelihood pursuits and kinship relations in the post R & R scenario?
- e) Do the state-specific water policies adequately capture: (i) the gender roles/ gendered dimensions of water management, access to water and control over the decision making processes; and (ii) spatial vs. temporal vs. inter and intra-generational distributions and concerns of equity and sustainability?

4. SUMMING UP

Until about 1997 when Andhra Pradesh introduced APFMIS Act, there were WUAs formed largely by NGOs, on some occasions blessed with a Government Resolution giving specific concessions. Even when, states like Gujarat and Tamil Nadu formally announced policy supporting PIM, even the intentions were nebulous. The sporadic WUAs so formed were largely unrelated to each other and hence water management remained, and in many cases remain a distant dream. Irrespective of PIM there has been a felt need to improve irrigation efficiency as well as manage the water resources rather than just being engaged in distributing. Participatory irrigation management programme as a prelude to irrigation management transfer to users is being set up by many states now. Though it is recognized that the government should no longer be in the business of retailing water to individual consumer, the PIM policy in all the states lacks the sharpness to catalyse farmer management as a cutting edge to water sector reforms. There are evidences to suggest that the demands at the village level, stated but often muted for users' involvement in managing at least the local level distribution arrangements. In fact, local level participation does not preclude other forms of arrangement like private sector participation. In fact, tubewell 'companies' in north Gujarat show that even private management of resource would also need to involve communities that eventually determine allocation and profits. This would need recognizing water entitlements, creating and managing 'rights' to users. A necessary (though not sufficient) condition for rights to be recognised is provisioning of legal scaffolding by the state. From the foregoing discussions on the water policy and institutional reforms underway in India, it is obvious that only Maharashtra has set up policy framework

of enabling provisions and authorities with somewhat clearly defined powers. The central question that still left unanswered is, what is water right and how is it defined. For water rights to be defined two other concepts have to be defined on operational terms: one is access to water (for definition related to irrigation see, van Koppen et.al., 2002) and the other is allocation principles of the resource. So far the policies only state priorities (for instance drinking water to be first and so on) but these are clearly not with respect to the state of the resource (except in scarcity years).

With a lack of clarity on vital elements of managing water resource, the state setting up a plethora of institutions may apparently make the concept of peoples' participation a casualty. We argue that in many of the natural resources there is a need to intercede the management of the resource and the users' interests with clearly defined legal framework. Except in Andhra Pradesh (in the first phase of APFMIS Act, certainly not in the present form) and in Maharashtra, half-hearted attempts in many other states to reverse engineer the process of providing legal support to isolated cases of water distribution (not management) have neither led to improvements in resource management nor in legitimizing users stake in the resource. In the present circumstances therefore, seeking involvement of private sector in water resource development and management would only be seen as a means to minimize government expenditure and worse as pontification.

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Notes:

- ¹ For instance, the pre-existing enactments which have undergone amendments were the Bombay Irrigation Act (1879) for the western region, covering Gujarat and Maharashtra; the Northern India Drainage and Canal Act (1873) for the northern region governing states of Uttar Pradesh, Punjab, Haryana and Rajasthan; the Bengal Irrigation Act (1896) as applied to West Bengal and Bihar; Madras Irrigation Cess Act (1865), Irrigation Tanks (Improvement Act, 1949) and the Tamil Nadu Panchayats' Act, 1958 for Tamilnadu state (Cullet, 2007).
- ² This has also been revealed by Ramaswamy Iyer, who has been instrumental in drawing out the 1987 water policy. Iyer observes that "when we worked on the National Water Policy in 1985-86, we had a vague idea about shifting attention from big projects to a unified, focused water policy. Having converted the Department of Irrigation into the Ministry of Water Resources, we discovered that the National Water Resources Committee, set up in 1980, had not met even once. We had a meeting, and that's where the National Water Policy originated. ..While the National Water Resources Council approved the National Water Policy in September 1987, there was no accompanying blueprint for making it operational, as originally envisaged....We did try to address the question of institutionalization through periodic meetings at different levels, but over a period of time that initiative petered out, unfortunately" (Iyer, 2007:8).
- ³ The policy document observes that: "private sector participation should be encouraged in planning, development and management of water resources projects for diverse uses, wherever feasible. Private sector participation may help in introducing innovative ideas, generating financial resources and introducing corporate management and improving service efficiency and accountability to users. Depending upon the specific situations, various combinations of private sector participation, in building, owning, operating, leasing and transferring of water resources facilities, may be considered" (GoI, 2002).
- ⁴ The literature examining the critical issues affecting the water sector in Gujarat is very vast indeed. Prominent ones in this regard are the studies, viz., IRMA/UNICEF, 2001; Kumar and Singh, 2001; Dubash, 2002; Mehta, 2003; Ranade and Kumar, 2004; Kumar, et al., 2004; Prakash and Sama, 2006, etc.

⁵ In the subsequent year though the government had planned to maintain this level of grant for maintenance works, a new dimension of farmers sharing/contributing 15 per cent has been added. Like in Gujarat, in Andhra Pradesh too, no fixed commitment of grants for the PIM programme has been made (except the first two years in Andhra Pradesh).

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