International Environmental
Law Research Centre

WATER LAW IN INDIA

OVERVIEW OF EXISTING FRAMEWORK AND PROPOSED REFORMS

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IELRC WORKING PAPER
2007 - 01

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INTRODUCTION

In the words of the United Nations Development Programme (UNDP), water is 'the stuff of life and a basic human right'.[1] Thus, water is an essential element for life – including human life – on earth and as a result is a core concern in law. From a legal perspective, the UNDP rightly emphasises the importance of the human right dimension of water. Yet, in practice, water law is made up of a number of elements comprising a human right dimension, as well as economic, environmental or agricultural aspects. In particular, historically, one of the central concerns of water law has been the development of principles concerning access to and control over water.

Drinking water is directly essential for human life. Water is also indirectly essential, for instance, as an indispensable input in agriculture. Yet, despite the central role that water has always played in sustaining life, human lives and human economies, the development of formal water law has been relatively slow and often patchy. At the domestic level, colonial legislation first focused on the regulation of water for economic reasons, for instance, through the development of legislation concerning irrigation and navigation. Over the past few decades, increasing water pollution and decreasing per capita availability have led to the development of other measures such as water quality regulation and an emphasis on water delivery, particularly in cities, as well as environment-related measures. Yet, water law remains largely sectoral to-date. At the international level, water regulation first focused mostly on navigation in international watercourses. It has progressively evolved to encompass issues concerning the sharing of international waters. International water law has, however, not yet reached the stage where it provides an overall regime for the regulation of water uses.

In India, water law is made of different components. It includes international treaties, federal and state acts. It also includes a number of less formal arrangements, including water and water-related policies as well as customary rules and regulations. This working paper maps out the relevant legal framework concerning water in India. The first section delineates water law as it evolved until recently. The second section then examines proposed and ongoing water law reforms that are in the process of completely redrawing India's water legal framework.

I. EXISTING WATER LAW FRAMEWORK

Existing water law is made up of a number of different instruments. This is the case at the international level where only certain aspects of water law have been developed and where no international water law treaty exists. This is also the case within India where it remains difficult to identify a coherent body of comprehensive law concerning water. This is related to the fact that distinct concerns have been addressed in different enactments. This is also due to the division of powers between the centre and the states and the fact that water regulation is mostly in the hands of the states.

This section first highlights some of the salient international instruments that are relevant in India. It then moves on to examine existing water regulation in India and the different principles that govern different types of water.

A. International Framework

International water law includes a number of instruments. They may not all apply directly in India but contribute in various ways to the development of water law at the international as well as national levels.

For many years, international water law included mostly treaties concerning navigation in international rivers, which constituted one of the early areas of collaboration among states. This has been expanded to many non-navigational aspects over time but the focus on international watercourses remains an important part of water law, as exemplified in the Farakka treaty.[2] Indeed, the only multilateral treaty in the field of water is a convention

1 United Nations Development Programme, *Human Development Report 2006 – Beyond Scarcity: Power, Poverty and the Global Water Crisis* 1 (New York: UNDP, 2006).

2 Treaty on Sharing of the Ganges Waters at Farakka, New Delhi, 12 December 1996, 36 *Int'l Leg. Mat.* 519 (1997).

concerning non-navigational uses of international watercourses.[3] This treaty adopted in 1997 provides a framework for cooperation among states on international watercourses concerning the use of their waters apart from navigational aspects.[4] The basic principle it proposes for using international watercourses water is equitable and reasonable utilisation.[5] The basis for watercourse use is therefore agreement among concerned states concerning their respective needs. While there was substantial debate concerning the place of environmental aspects and sustainability, the principle of sustainable utilisation has not been adopted as a principle that would override equitable and reasonable utilisation.[6]

The adoption of the convention was in itself a landmark development since it took UN member states many years to agree on this text.[7] Nevertheless, the difficulties encountered in negotiating this convention are reflected in the fact that its scope is relatively limited. Thus, it only applies to international watercourses and is therefore not a convention addressing freshwater in general. Further, its operative principles are relatively outdated as it fails to break clearly with the traditional principle of equitable and reasonable use in favour of a sustainability based approach. While the convention does not break much new ground at the conceptual level, only 14 states have ratified it so far. Further, only 21 countries (including those that have ratified) have signed the convention. India has not even signed yet. Freshwater remains an issue over which states are fearful of losing control. As a result, even relatively weak coordination measures appear threatening to many.

Besides the UN 1997 Convention, there exist a number of international treaties that are directly or indirectly concerned with water. The UNECE Convention on impact assessment applies, for instance, in the case of dams and other water-related infrastructure projects.[8] The Desertification Convention clearly links water and desertification. In fact, its objectives provision recognises that rehabilitation, conservation and sustainable management of water are key to combating desertification.[9] The Convention on wetlands of international importance (Ramsar Convention) is intrinsically concerned with water.[10] It is particularly noteworthy because it goes beyond the main water treaties insofar as it considers water, which is entirely under national sovereignty. Indeed, the scope of the Ramsar Convention is not limited to transboundary wetlands but includes wetlands that are entirely within the territory of a member state.

Besides treaties focusing on water or having a water dimension, there are a multitude of non-binding instruments concerning water. These include instruments focusing on water like the Dublin Statement that laid down principles for water sector reforms in the early 1990s.[11] These also includes instruments not directly concerned with water like the Declaration on the Rights of Indigenous Peoples that specifically recognises the prior informed consent of indigenous peoples is necessary for any project affecting their water resources.[12]

Overall, international water law is both an old and highly developed area of law as well as an area in need of significant development. International water law is well developed with regard to cooperation among states concerning issues and activities that are clearly transboundary in scope such as navigation on international

3 Convention on the Law of the Non-navigational Uses of International Watercourses, New York, 21 May 1997, *reprinted in* P. Cullet & A. Gowlland-Gualtieri eds, *Key Materials in International Environmental Law* 481 (Aldershot: Ashgate, 2004).

4 *Id.* Article 1.

5 *Id.* Article 5.

6 *See, e.g.*, Patricia Wouters, The Legal Response to International Water Scarcity and Water Conflicts: The UN Watercourses Convention and Beyond 20 (Dundee, 2003), available at http://www.dundee.ac.uk/iwlri/Documents/Research/IWLRI%20Team/Wouters/GYIL.pdf.

7 The mandate for the development and codification of the law of non-navigational use of international watercourses was first given to the International Law Commission in 1970. *See* General Assembly Resolution 2669 (XXV), Progressive Development and Codification of the Rules of International Law Relating to International Watercourses, 8 December 1970.

8 Convention on Environmental Impact Assessment in a Transboundary Context, Espoo, 25 February 1991, *reprinted in* Cullet & Gowlland-Gualtieri, note 3 above at 29. This convention is open for global membership though India has not joined yet.

9 Article 2, United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa, *reprinted in* Cullet & Gowlland-Gualtieri, note 3 above at 267.

10 Convention on Wetlands of International Importance Especially as Waterfowl Habitat, Ramsar, 2 February 1971, *reprinted in* Cullet & Gowlland-Gualtieri, note 3 above at 248.

11 Dublin Statement on Water and Sustainable Development, International Conference on Water and the Environment, Dublin, 31 January 1992.

12 Article 32(2), United Nations Declaration on the Rights of Indigenous Peoples, *in* Report to the General Assembly on the First Session of the Human Rights Council, UN Doc. A/HRC/1/L.10 (2006).

watercourses. In recent decades, the importance of collaboration on non-navigational aspects of international watercourses has rapidly grown and is now recognised as a core objective of international water law. However, international water law is yet to be effectively developed with regard to cooperation on issues related to water found within national boundaries. While this still seems to be beyond what most states can agree on at present, water is no different from biodiversity, which is also nearly entirely found under national jurisdiction. Yet, it is now already fifteen years since UN member states recognised that biodiversity is a 'common concern' of humankind, which is under state sovereignty but requires a degree of cooperation in conserving and sustainably using it.[13] Further, while international water law has at least started integrating an environmental perspective, the social and human rights dimension of water remain largely absent. The absence of a human right perspective in water law has been addressed from the perspective of human rights law through the adoption of General Comment 15 of the first Covenant.[14]

B. Legal Framework in India

National water law is more developed than international water law. Nevertheless, India lacks an umbrella framework to regulate freshwater in all its dimensions. The existing water law framework in India is characterised by the co-existence of a number of different principles, rules and acts adopted over many decades. These include common law principles and irrigation acts from the colonial period as well as more recent regulation of water quality and the judicial recognition of a human right to water. The lack of an umbrella legislation at the national level has ensured that the different state and central legal interventions and other principles do not necessarily coincide and may in fact be in opposition in certain cases. Thus, the claims that landowners have over groundwater under common law principles may not be compatible with a legal framework based on the human right to water and the need to allocate water preferentially to domestic use and to provide water to all, whether landowners or not on a equal basis.

In terms of statutory development, irrigation laws constitute historically the most developed part of water law. This is in large part due to the fact the colonial government saw the promotion of large irrigation works as central to its mission. This also included the need to introduce a regulatory framework in this area. As a result, some of the basic principles of water law applicable today in India derive from irrigation acts. The early Northern India Canal and Drainage Act, 1873 sought, for instance, to regulate irrigation, navigation and drainage in Northern India. One of the long-term implications of this act was the introduction of the right of the Government to 'use and control for public purposes the water of all rivers and streams flowing in natural channels, and of all lakes'.[15] The 1873 act refrained from asserting state ownership over surface waters. Nevertheless, this act is a milestone since it asserted the right of the Government to control water use for the benefit of the broader public. This was progressively strengthened. Thus, the Madhya Pradesh Irrigation Act, 1931 went much further and asserted direct state control over water: 'All rights in the water of any river, natural stream or natural drainage channel, natural lake or other natural collection of water shall vest in the Government'.[16]

Colonial law in this area remains relevant to-date because acts like the 1931 MP act are still in force. Further, in MP again, the Regulation of Waters Act, 1949 reasserted that 'all rights in the water of any natural source of supply shall vest in the Government'.[17] The much more recent Bihar Irrigation Act, 1997 still provides that all rights in surface water vest in the Government.[18]

Statutory water law also includes a number of pre- and post-independence enactments in various areas. These include laws on embankments, drinking water supply, irrigation, floods, water conservation, river water pollution, rehabilitation of evacuees and displaced persons, fisheries and ferries.

13 Convention on Biological Diversity, Rio de Janeiro, 5 June 1992, *reprinted in* Cullet & Gowlland-Gualtieri, note 3 above at 169.
14 Committee on Economic, Social and Cultural Rights, General Comment 15: The Right to Water (Articles 11 and 12 of the International Covenant on Economic, Social and Cultural Rights), UN Doc. E/C.12/2002/11 (2002) [hereafter General Comment 15].
15 Preamble, Canal and Drainage Act, 1873 (Act VIII of 1873).
16 Article 26, Madhya Pradesh Irrigation Act, 1931.
17 Section 3, Madhya Pradesh Regulation of Waters Act, 1949.
18 Section 3(a), Bihar Irrigation Act, 1997, available at http://www.ielrc.org/content/e9703.pdf.

In general, water law is largely state based. This is due to the constitutional scheme, which since the Government of India Act, 1935 has in principle given power to the states to legislate in this area. Thus, states have the exclusive power to regulate water supplies, irrigation and canals, drainage and embankments, water storage, hydropower and fisheries.[19] There are nevertheless restrictions with regard to the use of inter-state rivers.[20] Further, the Union is entitled to legislate on certain issues. These include shipping and navigation on national waterways as well as powers to regulate the use of tidal and territorial waters.[21] The Constitution also provides that the Union can legislate with regard to the adjudication of inter-state water disputes.[22] While no substantive clauses could be adopted at the time of the adoption of the Constitution, a specific act, the Inter-State Water Disputes Act was adopted in 1956.[23] This introduces a procedure for addressing disputes among states concerning inter-state rivers that have not been solved through negotiations. It provides for the establishment of specific tribunals to adjudicate such conflicts and has been used in several cases.[24] Parliament also enacted the River Boards Act, which provides a framework for the setting up of river boards by the Central Government to advise state government concerning the regulation or development of an inter-state river or river valley.[25] River boards can advise state governments on a number of issues including, conservation, control and optimum utilisation of water resources, the promotion and operation of schemes for irrigation, water supply or drainage or the promotion and operation of schemes for flood control.[26] This act has, however, never been used in practice.

While the intervention of the central government in water regulation is limited by the constitutional scheme, the importance of national regulation in water has already been recognised in certain areas. Thus, with regard to water pollution, Parliament did adopt an act in 1974, the Water Act.[27] This act seeks to prevent and control water pollution and maintain and restore the wholesomeness of water. It gives powers to water boards to set standards and regulations for prevention and control of pollution.

Besides statutory frameworks, a number of common law principles linking access to water and rights over land are still prevailing in India. These include separate rules for surface and groundwater. With regard to surface water, existing rules still derive from the early common rule of riparian rights. Thus, the basic rule was that riparian owners had a right to use the water of a stream flowing past their land equally with other riparian owners, to have the water come to them undiminished in flow, quantity or quality.[28] In recent times, the riparian right theory has increasingly been rejected as the appropriate basis for adjudicating water claims.[29] Further, common law rights must today be read in the context of the recognition that water is a public trust.[30] If the latter principle is effectively applied in the future, it would have important impacts on the type of rights and privileges that can be claimed over surface water.

Common law standards concerning groundwater have subsisted longer. The basic principle was that access to and use of groundwater is a right of the landowner. In other words, it is one of the rights that landowners enjoy over their possessions. The inappropriateness of this legal principle has been rapidly challenged during the second half of the 20th century with new technological options permitting individual owners to appropriate not only water under their land but also the groundwater found under neighbours' lands. Further, the rapid lowering of water table in most regions of the country has called in question legal principles giving unrestricted rights to landowners over groundwater. Similarly, the growth of concerns over the availability of drinking water in more regions has led to the introduction of social concerns in groundwater regulation. As a result of the rapid expansion of groundwater use, the central government has tried since the 1970s to persuade states to adopt groundwater legislation.[31] It is

19 Schedule 7, List 2, Entries 17 and 21, Constitution of India.
20 Schedule 7, List 1, Entry 56, Constitution of India.
21 Schedule 7, List 1, Entries 24, 25 and 57, Constitution of India.
22 Article 262, Constitution of India.
23 Inter-State Water Disputes Act, 1956, available at http://www.ielrc.org/content/e5601.pdf.
24 *See, e.g.*, Narmada Water Disputes Tribunal, Final Order and Decision of the Tribunal, 12 December 1979, available at http://www.ielrc.org/content/c7901.pdf.
25 River Boards Act, 1956, available at http://www.ielrc.org/content/e5602.pdf.
26 *Id.* Section 13.
27 Water (Prevention and Control of Pollution) Act, 1974, available at http://www.ielrc.org/content/e7402.pdf.
28 *Hanuman Prasad v. Mendwa*, AIR 1935 All 876.
29 *See, e.g.*, Chapters 8 and 9, Report of the Narmada Water Disputes Tribunal with its Decision in the Matter of Water Disputes Regarding the Inter-State River Narmada and the River Valley Thereof Between the States of Gujarat, Madhya Pradesh, Maharashtra and Rajasthan (New Delhi: Government of India, vol. 1, 1979).
30 *M.C. Mehta v Kamal Nath*, 1997 1 SCC 388.
31 *See, e.g.*, Model Bill to Regulate and Control the Development and Management of Ground Water, 2005, available at http://www.ielrc.org/content/e0506.pdf.

only over the past decade that some states have eventually adopted groundwater acts.[32] The legal framework concerning groundwater is still in rapid evolution. It is likely that common law principles will be increasingly challenged despite the fact that the Plachimada high court decision seems to uphold landowners rights to a large extent like.[33] Further, groundwater is increasingly likely to be linked to surface water in the context of the setting up of water regulatory authorities that are called upon to manage surface and groundwater.[34]

The existing legal framework concerning water is complemented by a human rights dimension. While the Constitution does not specifically recognise a fundamental right to water, court decisions deem such a right to be implied in Article 21 (right to life).[35] The right to water can be read as being implied in the recognition of the right to a clean environment. In *Subhash Kumar v. State of Bihar,* the Supreme Court recognised that the right to life 'includes the right of enjoyment of pollution free water and air for full enjoyment of life'.[36] In the Sardar Sarovar case, the Supreme Court went further and directly derived the right to water from Article 21. It stated that '[w]ater is the basic need for the survival of the human beings and is part of right of life and human rights as enshrined in Article 21 of the Constitution of India'.[37] While the recognition of a fundamental right to water by the courts is unequivocal, its implementation through policies and acts is not as advanced.

Water law includes a number of other laws and regulations that are directly or indirectly concerned with water. One example concerns dams. Two major aspects of dam building are regulated by laws and regulations, which are only partly concerned with water. With regard to environmental impact assessment, the Environmental Impact Assessment Notification provides a framework for assessing the environmental impacts of planned big hydropower and irrigation projects.[38] Further, there are Guidelines for Environmental Impact Assessment of River Valley Projects, which provide a general framework since 1985 for assessing the impacts of planned big dam projects.[39] With regard to displacement, the main act that applies is still the Land Acquisition Act, 1894. This colonial act, which was enacted with the interests of the colonial government rather than the interests of displaced people in mind, gives the government significant control over the process of eviction and oustees very few rights.

In addition to all the laws, rules and regulation that make up water law, there is a substantial body of additional rules and regulations at the local level. These include the multiplicity of written or unwritten arrangements that regulate access to and use of water for domestic purposes or irrigation. An array of different rules govern, for instance, access to existing sources of drinking water. They run in many cases along caste lines even though other rules of access also exist. With regard to irrigation water, all human structures such as tanks and check dams include a system of allocation.[40] Rules of access and control have often evolved over long periods of time but are often unwritten or not formally recognised in the legal system. As a result, they often run in parallel to 'formal' water rules and regulations. Another consequence of the lack of visibility of local level arrangements is that they can easily be displaced or extinguished by new laws that may fail to even acknowledge their existence.

The general picture, which emerges is that of a multiplicity of principles and rules, a multiplicity of instruments and the lack of an overall framework. While certain principles have remained relatively constant until recently like the assertion of the state's right to use surface waters in the public interest, there have been a number of changes

32 *See, e.g.*, Kerala Ground Water (Control and Regulation) Act, 2002, available at http://www.ielrc.org/content/e0208.pdf; Andhra Pradesh, An Act to Promote Water Conservation, and Tree Cover and Regulate the Exploitation and Use of Ground and Surface Water for Protection and Conservation of Water Sources, Land and Environment and Matters, Connected Therewith or Incidental Thereto, 2002, available at http://www.ielrc.org/content/e0202.pdf; and Goa Ground Water Regulation Act, 2002, available at http://www.ielrc.org/content/e0201.pdf.

33 *Hindustan Coca-Cola Beverages (P) Ltd. v. Perumatty Grama Panchayat*, M. Ramachandran & K.P. Balachandran (JJ), 7 April 2005.

34 *See, e.g.*, Maharashtra Water Resources Regulatory Authority Act, 2005, available at http://www.lead-journal.org/content/05080.pdf.

35 *See generally* S. Muralidhar, 'The Right to Water: An Overview of the Indian Legal Regime', *in* Eibe Riedel & Peter Rothen eds., *The Human Right to Water* 65 (Berlin: Berliner Wissenschafts-Verlag, 2006).

36 Paragraph 7, *Subhash Kumar v. State of Bihar,* AIR 1991 SC 420.

37 Paragraph 274, *Narmada Bachao Andolan v. Union of India*, Writ Petition (Civil) No. 319 of 1994, Supreme Court of India, Judgment of 18 October 2000, AIR 2000 SC 3751, *reproduced in* Philippe Cullet ed., *Sardar Sarovar Dam Project: Selected Documents* (Aldershot: Ashgate, forthcoming 2007).

38 Notification on Environmental Impact Assessment of Development Projects, 2006.

39 Guidelines for Environmental Impact Assessment of River Valley Projects, 1985, available at http://www.ielrc.org/content/e8503.pdf.

40 For Tamil Nadu, *see, e.g.*, A.Gurunathan & C.R.Shanmugham, Customary Rights and their Relevance in Modern Tank Management: Select Cases in Tamil Nadu (Paper prepared for the workshop 'Water, Law and the Commons', Delhi, 8-10 December 2006, International Environmental Law Research Centre).

over time in the basic structure of water law, from the recognition of a human right to water to the introduction of the public trust doctrine. One general trend, which can be highlighted, is the gradual formalisation of water law. In most cases, this has had the effect of displacing or extinguishing existing local rules and arrangements. In other words, the introduction of water laws is often not done in a vacuum, as might be the case in certain other fields. This is due to the fact that water has always been of central importance in most communities and formal or informal rules, based on social, religious or castes have existed in most places for centuries.

II. TOWARDS WATER LAW REFORMS

Water law has been continuously evolving. Yet, the evolution witnessed over the first four decades after independence must be distinguished from recent and ongoing trends. While until the 1970s, water law can be seen as a field growing organically around issues and principles that were largely well settled, the past couple of decades have witnessed the beginning of a fundamental shake-up of water law. This is taking the form of reforms, which are changing and will change existing water law as well as expand the scope of regulation.

The reasons for water law reforms include physical as well as institutional reasons. Over the past decades, the water situation has become increasingly dire in many parts of the country. This is due to increased use of water by all categories of water users, to increased demand due to economic and population growth. This is also due to increased pollution of existing finite water resources, which not only restrict potential uses of available water but also threaten future use. One of the specific problems that have arisen is the dramatic increase in groundwater use, which has led to depletion in many areas.

Increasing use of water has led to a number of suggestions to remedy the situation. This includes new strategies to cope with all the various water-related issues. Water pollution has been addressed through the introduction of environmental measures to control and reduce it. Access to domestic water has been the object of various governmental and other programmes. The provision of irrigation water and water to cities has, for instance, been taken up in the context of the construction of large dams.

There have also been progressive calls for changes of the law and policy framework concerning water. This is due to two broad factors. Firstly, the water law and policy framework was for a long time the object of relatively little attention. While many water-related laws were adopted over several decades, comparatively little was done to provide a broader integrated framework for water. Secondly, the recognition that there is a water crisis in most countries of the world and that availability of and access to freshwater will be a challenge for nearly all countries in coming decades has led to a number of international initiatives to reform water governance, law and policy in most developing countries. In other words, domestic and international factors have contributed to ongoing water law and policy reforms.

Water sector reforms have been proposed as a way to address diminishing per capita availability, increasing problems in water quality and increasing competition for control, access and use of available freshwater. They seek to comprehensively reform governance in the water sector. Current reforms seek in particular to reduce the role played by the public sector and to emphasise the direct contributions of individuals to their water needs and the participation of the private sector.

These governance changes are underpinned by a number of principles, which guide the reform process. This section highlights some of the main principles guiding the reforms and the kinds of measures and instruments adopted to implement them.

A. Water as a Natural Resource and Economic Good

The first central principle that is guiding the reform process is that all uses of water should be seen from the perspective of its economic value because the absence of an economic perspective in the past explains existing unsustainable uses of water.[41] As a result, the emphasis is on water as a natural resource, which must be harnessed

41 *See, e.g.*, Dublin Statement on Water and Sustainable Development, International Conference on Water and the Environment, Dublin, 31 January 1992.

to foster the productive capacity of the economy, from irrigation water for agricultural production to water for hydropower. Thus, the National Water Policy laments the fact that an insufficient percentage of water is currently harnessed for economic development and even calls for 'non-conventional' methods of water utilisation such as inter-basin water transfers and seawater desalination as large-scale, high technology solutions to improve overall water availability.[42] This message is also found in the recent draft World Bank report stressing out that India has not developed enough big water infrastructure.[43]

Beyond the relatively old characterisation of water as a natural resource, the underlying proposition for water sector reforms is that water is to be seen as an economic good. This implies an important shift in terms of the rights of control over and access to water. In fact, this leads to a complete policy reversal from the perspective that water is a public trust to the introduction of water rights and the possibility to trade water entitlements. As such, water-related rights are not new and there is already a vast corpus of law related to control over water. This includes, for instance, the absolute rights that the state may claim over water.[44] This also includes the rights and privileges that common law principles bestow over landowners. The novelty introduced by the reforms is that water rights are now created in favour of water users.[45] These rights are the necessary premise for participation in the management of water resources, for the setting up of water user associations and for the introduction of trading in entitlements.[46]

Another important change brought about by the notion that water is an economic good is that all water services must be based on the principle of (full) cost-recovery.[47] In a situation where the provision of drinking and domestic water as well as irrigation water is substantially subsidised, this implies a significant policy reversal. At the national level, the policy is now to make water users pay at least for the operation and maintenance charges linked to the provision of water.[48] This strategy is already being implemented in the context of irrigation water where farmers are made to pay for operation and maintenance costs.[49] This has also been introduced under the Swajaldhara guidelines, which suggest that water users have to take up partial responsibility for the capital cost of new drinking water infrastructure and full responsibility for operation and maintenance.[50]

The notion of cost recovery is directly linked to the environmental component of water sector reforms. Indeed, they are conceived as part of a single strategy.[51] Further, cost recovery is, for instance, seen by the Asian Development Bank as the first instrument for conserving water.[52]

B. Decentralisation and Participation

Water sector reforms are also based on the need to foster decentralisation and participation that involves water users.[53] This is meant to provide a framework for decentralising decision-making to the lowest level and to allow 'beneficiaries and other stakeholders' to be involved from the project planning stage.[54] The rationale for decentralisation is the perceived inability of the state to deliver appropriate benefits. The state is thus called upon to change its role from that of a service provider to that of a regulator.[55] In the case of irrigation, for instance, this

42 Section 3(1-2), National Water Policy, 2002.
43 John Briscoe & R.P.S. Malik, *India's Water Economy: Bracing for a Turbulent Future* (New Delhi: The World Bank and Oxford University Press, 2006).
44 *See, e.g.*, Section 26, Madhya Pradesh Irrigation Act, 1931 and Section 3, Madhya Pradesh Regulation of Waters Act, 1949.
45 *See, e.g.*, Section 17(1)d, Uttar Pradesh Water Policy, 1999.
46 Section 4(2), Maharashtra State Water Policy, 2003.
47 *See, e.g.*, World Bank, India – Water Resources Management Sector Review – Report on the Irrigation Sector (Report No. 18416 IN, 1998).
48 *See, e.g.*, Section 11, National Water Policy, 2002.
49 *See, e.g.*, World Bank, India – Water Resources Management Sector Review – Report on the Irrigation Sector (Report No. 18416 IN, 1998).
50 Section 3(1), Ministry of Rural Development, Guidelines on Swajaldhara, 2003.
51 Section 2(b), World Bank, Water Resources Management (OP 4.07, February 2000).
52 *See* Section E, Asian Development Bank, Water for All – The Water Policy of the Asian Development Bank (2003) whose first sub-section – number 43 – is entitled cost recovery.
53 Dublin Statement on Water and Sustainable Development, International Conference on Water and the Environment, Dublin, 31 January 1992.
54 *See, e.g.*, Section 6(8), National Water Policy, 2002.
55 Section 37, Asian Development Bank, Water for All – The Water Policy of the Asian Development Bank (2003).

implies transferring part or full control of irrigation systems to users by both allowing them and forcing them to take responsibility for the upkeep of irrigation systems as well as for the financial costs involved and for sharing the water allocated among themselves.[56]

In principle, participation is conceived as an umbrella term that covers participation from policy planning and project design to the management of water infrastructure. In practice, the focus is on participation at the tail end of the process. In fact, the word participation is some sort of a misnomer. On the one hand, what is envisaged is not so much the possibility for farmers and users to participate in taking decisions affecting them but the blanket imposition of a new system of local water use and control scheme based on commercial principles even where there may be successful systems of water governance already in place. On the other hand, the participation, which is envisaged at the local level, is not the participation of everyone using water. With regard to irrigation, the focus has been on land ownership and occupation as a basis for governing the use and control of water. With regard to drinking water, new measures put the ability to pay as the governing principle. Both measures are likely to reinforce existing inequalities in access to water.

Two different types of measures have been introduced to foster participation with regard to irrigation water and drinking water. The rest of this section examines water user associations set up to foster participation in irrigation and Swajaldhara, a scheme devised to foster participation of users in drinking water provision.

Water user associations schemes (WUAs) have been introduced in different forms in different parts of the country and different areas of the world. However, a number of common characteristics can be identified in many schemes. This includes the fact that WUAs are meant to be governed and controlled by people that both pay for the services the association offers and receive benefits. WUAs are not commercial entities but they have to be financially independent and therefore need to receive an income that is sufficient to allow them not to go bankrupt. Further, WUAs are in most cases subject to regulatory control by the state because they are deemed to provide a service of benefit to the public.[57]

The setting up of water user associations (WUAs) has been taken up with increasing intensity over the past decade and a number of states have introduced WUA legislation. These range from Andhra Pradesh and Madhya Pradesh to Orissa and Rajasthan.[58] These acts have been adopted at different points in time and the schemes proposed have evolved over time even though the basic principles are fairly similar in each situation. This section does not seek to provide a comparative analysis of these different acts and focuses on the latest act adopted in Maharashtra because it is unlikely that other states that are yet to adopt legislation in this field will go back to older schemes.

WUAs under the Maharashtra Management of Irrigation Systems by Farmers Act, 2005 are set up to foster secure equitable distribution of water amongst its members, to maintain irrigation systems, to ensure efficient, economical and equitable distribution and utilisation of water to optimise agricultural production as well as to protect the environment.[59] While the act provides a decentralisation scheme towards farmer involvement in irrigation at the local level, it also gives significant powers to the Maharashtra Water Resources Regulatory Authority or other designated authorities. In particular, they have the power to determine the command area of an irrigation project for which a WUA must be constituted. Further, the same authority can also amalgamate or divide existing WUAs on a hydraulic basis and 'having regard to the administrative convenience'.[60] In other words, the power granted at the local level is limited by the fact that authorities have the largely discretionary power to make and break WUAs.

The system set up under the act is constraining insofar as once a WUA has been set up, no water will be supplied to anyone individually outside the WUA framework and the scheme is binding on all landholders and occupiers. In this sense, WUAs are forced to take on the burden of administering the irrigation system and are largely left to sort out ways in which they want to achieve this. Further, the act provides a uniform model of WUAs regardless of existing arrangements at the local level and regardless of their success at equitably and sustainably using water.

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56 *See, e.g.*, Section 17(1), Uttar Pradesh Water Policy, 1999.

57 *See* Stephen Hodgson, Legislation on Water Users, Organizations – A Comparative Analysis (Rome: FAO, FAO Legislative Study 79, 2003).

58 Andhra Pradesh Farmers Management of Irrigation Systems Act, 1997; Madhya Pradesh Sinchai Prabandhan Me Krishakon Ki Bhagidari Adhiniyam, 1999; Orissa Pani Panchayat Act, 2002 and Rajasthan Farmers' Participation in Management of Irrigation Systems Act, 2000.

59 Section 4, Maharashtra Management of Irrigation Systems by Farmers Act, 2005, available at http://www.ielrc.org/content/e0505.pdf.

60 *Id.* Section 5(5).

The framework provided under the act seeks to balance benefits and burdens. On the one hand, WUAs are meant to benefit from a more assured water supply and more control over water allocated to them. Further, it is the authority's duty to supply the amount of water they are entitled to receive. They also have the right to use groundwater in their command area on top of the entitlement they receive from canals. On the other hand, the act gives WUAs a number of powers, which are in fact responsibilities. This includes a number of functions which include the regulation and monitoring of water distribution among WUA members to the assessment of members' water shares, the responsibility to supply water equitably to members, the collection of service charges and water charges, the carrying out of maintenance and repairs to the canal system and the resolution of dispute among members.[61] These are extensive and possibly burdensome powers. WUAs are not only given the task to manage the infrastructure but also to provide an institutional structure that equitably provides all the services that a public authority would provide. While such arrangements would be an appropriate choice if WUAs were linked to panchayati raj institutions (PRIs), it is difficult to see how an association of landholders that has no democratic legitimacy can perform all these tasks in an equitable and sustainable manner for its members and for the broader society around it. To take one example, while there are now a number of rules attempting to ensure the participation of women and lower castes in PRIs, it is likely that WUAs will generally be dominated by male upper caste members. In other words, the existing legislation is both onerous on WUAs who seem to be saddled with more responsibilities than rights and is at the same time unlikely to provide a framework leading to a more socially equitable access to and sharing of water.

The section concerning the powers and responsibilities of WUAs is complemented by a section concerning financial arrangements. As specified under Section 54, the main sources of funding for WUAs will not come from the government. WUAs are meant to meet their expenses from the proceeds of water charges, borrowings and donations. In other words, the act seeks to ensure that WUAs are financially independent and financially viable, a fact which is confirmed by the encouragement given to WUAs to engage in additional remunerative activities, including the distribution of seeds, fertilisers and pesticides or marketing of agricultural produce which are only indirectly related to irrigation.[62]

In addition to the setting up of WUAs, the union government has proposed a scheme known as Swajaldhara, which proposes to foster new types of intervention to ensure better drinking water availability in villages. The guidelines on Swajaldhara are the direct outcome of a World Bank-sponsored pilot project called Swajal and adopt the same philosophy.[63] Apart from the direct link between the World Bank project and the existing Swajaldhara scheme, it is also noteworthy that this potentially significant scheme, which now covers the whole country, is not part of any legislation submitted to parliament.

The guidelines are meant to foster a change in the role of the government from direct service delivery to that of facilitating activities largely undertaken by people themselves. In other words, the guidelines propose the progressive withdrawal of the state from the provision of the fundamental right to drinking water. The argument put forward by the government is that people perceive water as a fundamental right in part because it has been provided free by the government. The government estimates that the public has therefore not understood that water is scarce and is a socio-economic 'good'. It is therefore proposed to shift from what is seen as a supply driven approach to one, which focuses on the need of end users who will then get the service they want. The fundamental change of approach required by this demand-focused strategy is that people will get the service they 'are willing to pay for'.[64] In fact, the basic economic rationale of Swajaldhara is that people should be made to pay for part of the capital costs of drinking water projects and for the whole cost of operation and maintenance.

Swajaldhara is premised on a number of principles. Firstly, it proposes the introduction of a demand-focused approach, which involves some level of community participation. Secondly, it seeks to devolve ownership of drinking water assets to the appropriate panchayat, which are given the power to undertake all activities, related to water supply and sanitation from planning to maintenance. Thirdly, Swajaldhara imposes on communities a contribution of at least 10 per cent of the capital costs for a service level of 40 litres for person per day and imposes that they take 100 per cent responsibility for operation and maintenance. It also imposes that the contribution of the community to capital costs should be at least 50 per cent in cash. Further, under Swajaldhara, only individuals

61 *Id.* Section 52.
62 *Id.* Section 4(2).
63 On the Swajal project, *see, e.g.*, World Bank, Staff Appraisal Report – Uttar Pradesh Rural Water Supply and Environmental Sanitation Project (Report No. 15516-IN, 1996).
64 Section 1(2), Ministry of Rural Development, Guidelines on Swajaldhara, 2003.

or households that make the first 10 per cent contribution will benefit from the schemes being implemented. Other people are simply not part of the scheme.

C. Redefinition of the Role of the Government

Water sector reforms include several proposals that affect the role that the government plays in the water sector. This includes both measures restricting the role that the government is playing as well as measures seeking to increase governmental control.

On the one hand, the main thrust of water sector reforms is to transform the role of the government by transferring part of existing governmental prerogatives to users and private actors. This includes, for instance, the transfer of operation, maintenance, management and collection of water charges to user groups.[65] This is meant to foster a sense of ownership at the user level that the overbearing presence of the government in the water sector has not been able to foster. A second thrust of the reforms is to set up new bodies at the local and state level to take over part of the functions of the government. This includes the setting up of water user associations to locally manage irrigation schemes instead of local bureaucrats and also includes the much more broad-ranging setting up of new water regulatory bodies.

The reduction of the role of the state in the water sector is also linked to the promotion of the use of incentives to ensure that water is used more efficiently and productively.[66] The main consequence, which is derived from this, is the call for private sector involvement in all aspects of water control and use from planning to development and administration of water resources projects.[67] An area, which is singled out for private sector participation, is urban water supply.[68]

On the other hand, some of the existing reforms seek to foster increased state involvement in the water sector. In a number of areas, the state seeks to either maintain its de facto prerogatives or extend them. In the national policy, a clear statement is made to the effect that the government should be able to provide for the transfer of water from one river basin to another.[69] This is now being taken up in the context of the mammoth river inter-linking scheme.[70] At the state level, an increasing number of states are seeking to control and regulate groundwater to foster its conservation and sustainability in its use.

The redefinition of the role of the government in the water sector has, for instance, been taken up in the context of the setting up of water regulatory authorities meant to take over part of the functions of existing government departments. The first experiment undertaken in India in this regard took place in Andhra Pradesh where a Water Resources Development Corporation Act was adopted as early as 1997.[71] This Act largely sought to devolve existing governmental powers to a new institutional structure entrusted with the mandate of pushing water sector reforms forward.

Since 1997, there has been a lot of thinking in policy-making circles concerning water sector reforms and the type of measures that need to be taken to move the agenda forward. As a result, the most recent act setting up an independent water institution, the Maharashtra Water Resources Regulatory Authority Act, 2005 is quite different from the former and it is in fact expected that the latter act will be amended in view of the new scheme.

Firstly, under the Maharashtra Act, it has been attempted to completely exclude political leaders from the power structure. However, while the act takes a clear stand on paper to insulate the authority from political interference,

65 *See, e.g.*, Section 6(7), Karnataka State Water Policy, 2002.
66 Section 1(3), Maharashtra State Water Policy, 2003.
67 *See, e.g.*, Section 38, Asian Development Bank, note 54 above and Section 13, National Water Policy, 2002.
68 *See, e.g.*, Section 9, Rajasthan State Water Policy, 1999.
69 *See, e.g.*, Section 3(5), National Water Policy, 2002.
70 *See, e.g.*, Government of India – Ministry of Water Resources, Resolution No. 2/21/2002-BM, New Delhi, 13 December 2002.
71 *See* An Act to Create the Andhra Pradesh Water Resources Development Corporation for Promotion and Operation of Irrigation Projects, Command Area Development and Schemes for Drinking Water and Industrial Water Supply to Harness the Water of Rivers of the State of Andhra Pradesh and for Matters Connected Therewith or Incidental Thereto Including Flood Control, Act No. 12 of 1997, available at http://www.ielrc.org/content/e9702.pdf. [hereafter Andhra Water Corporation Act].

the bureaucracy still has an important (in)direct role. The actual independence of the authority will thus have to be judged in practice rather than on the basis of the act.

Secondly, the Maharashtra authority has broad prerogatives to establish a regulatory system for the water resources of the state, including surface and ground waters, to regulate their use and apportion entitlements to use water between different recognised categories of use.[72] Concurrently, the authority has to promote the efficient use of water, to minimise wastage and to fix reasonable use criteria. The authority also has the task of allocating specific amounts to specific users or groups of users according to the availability of water. It is further required to establish a water tariff system as well to fix the criteria for water charges. This is to be done based on the principle of full cost recovery of management, administration, operation and maintenance of irrigation projects. The authority is also called upon to lay down criteria for the issuance of water entitlements. Further, it has to set up criteria for trading in water entitlements or quotas.[73]

One of the important consequences of the setting up of a water regulatory authority concerns the strengthened control over water resources, which is proposed. The act provides as a general principle that any water from any source can only be used after obtaining an entitlement from the respective river basin agency.[74] This is qualified by a few exceptions such as wells (including bore and tube wells) used for domestic purposes or the grandfathering of existing uses of water for agriculture, at least in an initial phase. This illustrates the fact that while the role of the government is curtailed through the setting up of an independent authority, this does not necessarily translate into less regulatory intervention as far as water users are concerned. The overall impact is therefore as much to reduce the government's role as to transfer and possibly strengthen control over water resources.

D. Conservation

The increasing depletion of water resources, in particular groundwater, has led to the realisation that existing rules concerning the use of groundwater were unadapted to a situation of scarcity. As a result, the central government has put significant emphasis on the development of groundwater laws by the states. Regulatory intervention is premised on the need to control the use of groundwater to ensure that it is not unsustainably mined.

Legislative interventions concerning groundwater are significant for two main reasons. Firstly, from a legal perspective they constitute a major organised attempt at redrawing the rules concerning control and use of groundwater, which is still otherwise largely based on common law principles that make it part of the resources a landowner can use largely without outside control. Secondly, they constitute a response to the fact that over time groundwater has in various areas become the most important source of water and provides in particular 80 per cent of the domestic water supply in rural areas and supports around 70 per cent of agricultural production.[75] This strengthens the case for ensuring the sustainable use of groundwater.

Groundwater has until recently largely been governed by old legal principles linked to a large extent to land ownership. Further, like in many other countries, from a legal perspective groundwater has until now been largely treated independently from surface water even though links have increasingly been acknowledged. As a result, until a few decades ago, there was little by way of statutory provisions concerning groundwater use and control and the central government's intervention in this area was even less prominent than with regard to surface water. The increasing use of groundwater has led a spurt of legislative activity, which seems to be accelerating.

At the national level, even though the central government would find it difficult to justify groundwater legislation under the constitutional scheme, several attempts have been made over the past few decades to provide a model law that individual states can adopt. The first attempt dating back to 1970 did not have much success since virtually all states ignored it. More recent versions of the model bill, including the latest version unveiled in early 2005,[76] are having more influence on legislative activity because groundwater regulation has become a priority in many

72 *Id.* Section 11.
73 *Id.* Section 11(i)i.
74 Section 14, Maharashtra Water Resources Regulatory Authority Act, 2005, available at http://www.lead-journal.org/content/05080.pdf.
75 United Nations World Water Development Report – Water for People, Water for Life (United Nations, Doc. E.03.II.A.2, 2003).
76 Model Bill, note 31 above.

states. In fact, several states have proposed groundwater related laws, which are related to the model law. This is, for instance, the case of the Kerala Ground Water (Control and Regulation) Act, 2002. As a result, the following paragraphs focus on the model bill since it provides the framework that a number of states are likely to adopt.

The basic scheme of the model bill is to provide for the establishment of a groundwater authority under the direct control of the government. The authority is given the right to notify areas where it is deemed necessary to regulate the use of groundwater. The final decision is taken by the respective state government.[77] There is no specific provision for public participation in this scheme. In any notified area, every user of groundwater must apply for a permit from the authority unless the user only proposes to use a hand pump or a well from which water is withdrawn manually.[78] Decisions of the authority in granting or denying permits are based on a number of factors, which include technical factors such as the availability of groundwater, the quantity and quality of water to be drawn and the spacing between groundwater structures. The authority is also mandated to take into account the purpose for which groundwater is to be drawn but the model bill, mirroring in this the acts analysed above, does not prioritise domestic use of water over other uses.[79] It is noteworthy that even in non-notified areas, any wells sunk need to be registered.[80]

The model bill provides for the grandfathering of existing uses by only requiring the registration of such uses.[81] This implies that in situations where there is already existing water scarcity, an act modelled after these provisions will not provide an effective basis for controlling existing overuse of groundwater and will at most provide a basis for ensuring that future use is more sustainable.

Overall, the model bill constitutes an instrument seeking to broaden the control that the state has over the use of groundwater by imposing the registration of all groundwater infrastructure and providing a basis for introducing permits for groundwater extraction in regions where groundwater is over-exploited. Besides providing a clear framework for asserting government control over the use of groundwater, the model bill also shows limited concerns for the sustainability of use. From this perspective, the model bill and the acts based on it are a welcome development that should provide scope for better control over the use of groundwater in general. However, further thinking needs to be put in making the model bill sensitive to social concerns. Some important provisions are currently missing from the model bill. These include the need to prioritise among uses and to put drinking and domestic water as the first priority. Further, the model bill does not differentiate between small and big users of groundwater, commercial and non-commercial uses and does not take into account the fact that non-land owners/occupiers are by and large excluded from the existing and proposed system, which focuses on the rights of use of landowners.

FINAL REMARKS

Water law is made of a number of formal and informal laws, rules and principles. It has evolved over time in a relatively uncoordinated and ad hoc manner. This started to change with the progressive realisation that existing laws were inappropriate to ensure access to water to all for domestic purposes and inappropriate because of the fast increasing use of a finite resource. Over the past couple of decades, a more coordinated effort at changing water law has been put in place. This is based on a relatively specific set of principles that are meant to guide the overall development of water law. This is meant to make water law suitable to face the challenges of the water sector in the 21st century.

While water law reforms are more than welcome given existing problems with water, it is unlikely that law reforms based on the principles put forward in the water sector reforms constitute an appropriate response. Ongoing water law reforms may contribute to enhancing water management but they are conceptually incapable of addressing the human right, social, environmental and health aspects of water. This is regrettable because any water law, which is not based on the constitutional right to water and the principle of public trust, is bound to fail as a legal tool and in its implementation as far as the overwhelming majority of people is concerned.

77 Section 5, Model Bill, note 31 above.
78 Section 6, Model Bill, note 31 above.
79 Section 6(5)a, Model Bill, note 31 above only provides that the purpose has to be taken into account while Section 6(5)h which is the only sub-section referring to drinking water only considers it as an indirect factor.
80 Section 8, Model Bill, note 31 above.
81 Section 7, Model Bill, note 31 above.

Yet, avenues do exist to broaden reforms of water law. At the international level, some treaties are leading the way towards conceiving water law more broadly. Thus, the UN Economic Commission of Europe has adopted a convention, which is broader than the 1997 UN Convention in scope insofar as it applies to transboundary waters in general. It is also based on a more progressive set of principles. This includes not only the fact that it strongly emphasise the need to prevent and reduce transboundary harm but also that it is based on the precautionary principle and inter-generational equity. The UNECE convention reflects much more than the UN convention developments in environmental law and related principles that have come to inform all treaties concerning environment and development issues. The convention is also opened to universal membership even though other states have not ratified it yet. Similarly, at the national level, countries such as Brazil and South Africa have adopted water laws that seek to provide a comprehensive regulatory answer to the problems identified. While the adoption of a comprehensive federal water legislation is not a precondition to ensure that water law achieves its social, human rights and environmental goals, this would constitute an appropriate starting point to realise the right to water and the principle of public trust throughout the country.