



International Environmental
Law Research Centre

GROUNDWATER

TOWARDS A NEW LEGAL AND INSTITUTIONAL FRAMEWORK

Philippe Cullet

Published in: P. Cullet et al., *Water Conflicts in India - Towards a New
Legal and Institutional Framework* (Pune: Forum for Policy
Dialogue on Water Conflicts in India, 2012), p. 58-71.

*This paper can be downloaded in PDF format from IELRC's website at
<http://www.ielrc.org/content/w1201.pdf>*

Water Conflicts In India:

Towards a New Legal and Institutional Framework

Philippe Cullet, Suhas Paranjape, Himanshu Thakkar, M. S. Vani,
K. J. Joy, M. K. Ramesh



Forum for Policy Dialogue on Water Conflicts in India

March 2012

4

Chapter 4 Groundwater

Philippe Cullet

Introduction

Groundwater use in India has drastically increased over the last few decades. It is now the backbone of agriculture and drinking water security in India. Since 1970, an overwhelming majority (80 percent) of the total addition to the net irrigated area has come from groundwater, ensuring that it accounts for around 60 percent of irrigation water use.¹ As for drinking water, about 80 percent of drinking water needs come from groundwater.² Further, groundwater remains the only source of drinking water for most rural households and forms an important complement to the municipal water supply in most towns and cities.

Today, many industries also depend upon groundwater. Its over-exploitation by industries can cause drinking water shortages and shortages of water for other purposes, including irrigation. This has already triggered conflicts on access to and use of groundwater. This is illustrated by the high profile dispute currently on appeal with the Supreme Court involving the Perumatty Grama Panchayat and the Coca Cola Company in Plachimada Kerala,³ as well as similar disputes that have not reached the highest court, as in the case of another Coca Cola bottling plant in Mehdiganj.⁴

The rapidly increasing number of groundwater extraction structures (estimated at 30 million) coupled with their increasing extraction power is creating a situation where groundwater overuse is growing fast in alluvial as well as crystalline, volcanic and mountainous regions.⁵ Already in 2004, 28 percent of the country's blocks were showing alarmingly high levels of groundwater use.⁶

In addition to quantitative depletion, many parts of India report severe water quality problems, causing drinking water vulnerability. Critical issues include arsenic contamination in the Ganga basin, higher levels of fluoride in many states - in particular in Punjab, Tamil Nadu, Rajasthan and Haryana, and salinity in coastal states such as Gujarat, Kerala and Odisha. In addition, groundwater is affected where rivers are used as municipal or industrial conduit for raw wastewater and where contaminated water is pumped into the ground.

Overall, nearly 60 percent of all districts in India have problems related either to the quantitative availability or to the quality of groundwater or both.⁷ At the same time, some areas reel under the impacts of rising water tables and waterlogging. This confirms that many areas of the country (or a given State) face significant groundwater-related problems while these groundwater problems may be completely different.

¹ P.S. Vijay Shankar, Himanshu Kulkarni & Sunderrajan Krishnan, *'India's Groundwater Challenge and the Way Forward'*, 46/2 EPW37 (2011).

² Planning Commission, *An Approach to the Twelfth Five Year Plan (2012-2017)*.

³ Perumatty Grama Panchayat v State of Kerala 2004(1) KLT 731 (High Court of Kerala, 2003) and Hindustan Coca-Cola Beverages v Perumatty Grama Panchayat 2005(2) KLT 554 (High Court of Kerala, 2005).

⁴ eg Georgina Drew, *'From the Groundwater Up: Asserting Water Rights in India'*, 51 Development 37 (2008).

⁵ Planning Commission, *An Approach to the Twelfth Five Year Plan (2012-2017)*.

⁶ Planning Commission, *Ground Water Management and Ownership - Report of the Expert Group* (2007).

⁷ Planning Commission, *Mid-Term Appraisal - Eleventh Five Year Plan 2007-2012* (New Delhi: Oxford University Press, 2011).

The increasing use of groundwater has significant social consequences. Since the poor rely on less powerful extraction mechanisms, they suffer from lowering water tables much before other users of groundwater who have the financial means to deepen wells or acquire alternative water sources for irrigation. Similarly decreasing groundwater quality affects the poor disproportionately.

In short, groundwater is of central importance for the overwhelming majority of the population and the number of groundwater-related issues is rapidly rising. This raises questions concerning the effectiveness of existing groundwater regulations in ensuring environmentally sustainable and socially equitable outcomes. The limitations of the existing regulatory framework have been recognised for several decades but on the whole little substantive action has been taken to address perceived problems.

The existing legal framework is still based on an iniquitous and unsustainable principle that essentially links control over groundwater to land ownership. The reform attempts proposed by the Central Government since 1970 have, firstly, not been followed vigorously by the States and secondly, fail to provide a comprehensive framework for reforming groundwater law.

This chapter examines the old rules linking land ownership and control over groundwater. It then analyses in more detail the proposed reform model of the Central Government put forward since 1970 and its partial implementation in some States. Thirdly, it analyses the new principles that should provide the basis for a reformed groundwater legal regime stemming from legal instruments adopted by Parliament or new principles put forward by the higher courts. Finally, on the basis of the analysis carried out, it outlines some of the main issues that need to be addressed in any forthcoming legal reform, like the one being currently mooted by the Planning Commission.

Traditional regulation of groundwater and its shortcomings

The existing legal framework governing groundwater is largely based on principles developed during the second part of the nineteenth century and applied more or less consistently during the twentieth century. Groundwater regulation is characterised by the absence of a clear statutory basis and by the fact that courts have played a leading role in shaping the rules that apply today. This section consequently examines groundwater rules through the case law and its evolution over the past hundred and fifty years.

Basic rules governing access to and use of groundwater

Basic rules governing access to and use of groundwater in India were laid down in English decisions in the second half of the nineteenth century. Since this area of law was developed mostly by judges, this should have given it ample scope for changing over time in line with changing circumstances and understanding of the science underlying the rules in place. Yet, with few exceptions, the case law to date has not moved beyond the basic principles laid down in another country, for different climatic conditions and at a point in time where the connections between surface and groundwater were not well understood.

The first basic principle applying to groundwater is that it should be treated differently

from surface water. This was confirmed in Chasemore versus Richards case where the court determined that groundwater that percolates through underground strata, which has no certain course, no defined limits, but which oozes through the soil in every direction in which the rain penetrates is not subject to the same rules as flowing water in streams or rivers.⁸

Once the distinction between the different bodies of water was made, it became possible for courts to define a different set of rights applicable to groundwater. These were not derived from the existing rules for surface water that imposed significant restrictions on the powers of landowners to appropriate water flowing past their land. The case law quickly moved towards giving landowners virtually limitless control over groundwater. In Acton versus Blundell, the court found that *'the person who owns the surface may dig therein, and apply all that is there found to his own purposes at his free will and pleasure; and that if, in the exercise of such right, he intercepts or drains off the water collected from underground springs in his neighbour's well, this inconvenience to his neighbour falls within the description of damnum absque injuria (damage without injury), which cannot become the ground of an action'*.⁹ This was confirmed in Chasemore versus Richards case, which found that the right of the owner of a mill using spring water had no action against other landowners abstracting groundwater to the extent of affecting his own use of the water. This was because the judges determined that such a right would *'interfere with, if not prevent, the draining of land by the owner'*.¹⁰ One of the few limitations to have been placed on the rights of landowners concerns the case where groundwater cannot be accessed without touching surface water in a defined surface channel. In this case, the landowner is then barred from accessing it.¹¹

⁸ George Chasemore v Henry Richards (1859) VII House of Lords Cases 349 (House of Lords, 27 July 1859).

⁹ Acton v Blundell (1843) 12 Meeson and Welsby 324 (Court of Exchequer Chamber, 1 January 1843).

¹⁰ Chasemore v Richards n 8 above.

¹¹ Grand Junction Canal Company v Shugar (1870-71) L.R. 6 Ch. App. 483 (Court of Appeal in Chancery, 17 January 1871).

¹² B.B. Katiyar, Law of Easements and Licences (New Delhi: Universal Law Publishing, 13th ed 2010).

¹³ Dharnidhar Sahu v Bhagirathi Sahu AIR 1956 Ori 89 (High Court of Orissa, 7 October 1955).

The general rules mentioned above did not apply in all situations. Indeed, the case law of the nineteenth century made a distinction between percolating groundwater and groundwater flowing in defined channels. Where groundwater was found to flow in defined channels, the rules applicable to surface water would also apply. This meant that the right of the landowner was then limited to use and consumption for household and drinking purpose, for watering their cattle and for irrigating their land or for purposes of manufacture, provided that the use was reasonable, that it was required for their purposes as owners of the land and that it did not destroy or render useless or materially diminish or affect the application of the water by riparian owners below the stream in the exercise either of their natural right or right of easement, if any.¹²

A distinction was also made between a natural and artificial channel. Landowners are entitled, in principle, to the unimpeded flow of the water in its natural course and to its reasonable enjoyment as it passes through their land as a natural incident to ownership. In the case of an artificial channel, the right is not 'natural' but only exists where it has been granted through a proved or presumed arrangement.¹³

The application of the concept of defined channel to groundwater proved to be difficult because until the past few decades it was not easy to ascertain the existence of underground defined channels. The necessary characteristics of a natural stream were thus summarised by Justice Seshagiri Aiyar as, *'It must have a fairly defined course. It must move. Its water must be capable of identification. It need not always be confined within banks. It need not have a continuous flow. Its width need not be of*

particular dimensions'.¹⁴ This means, for instance, that '*a flow of excess rain water, though in a body and in one direction, spread over a very large area in width without any bed or having any banks within which the flow is confined*' is not a stream.¹⁵

The concept of defined channel has been applied in several cases related to groundwater. Firstly, in the context of a river running a few inches below its natural bed in the dry season, judges already determined in 1930 that 'it was safe to say' that the water flowing down the river bed had a defined course.¹⁶ Secondly, in a case where a landowner had built an underground trench taking off from a point 14 ft away from the outlet of a spring, it was held that while this was not the actual water of the spring, '*there can be little doubt that there must be a direct channel between the top of the drain and the outlet*' and there was thus no need for the channel to be 'known' through excavation to apply the rules concerning defined channels.¹⁷

The rules highlighted are at the very least outdated. Yet, the surprising element is the very limited evolution that has taken place over the past fifteen decades or so. Indeed, while it was probably reasonable to expect that by the beginning of the twentieth century, a commentary on easements would be based on the cases cited here,¹⁸ it is much more surprising to find that a leading commentary on easements published in 2010 still cites the same cases as being the most authoritative statements of the law today.¹⁹

The latter consideration gives rise to a related comment. Indeed, while groundwater rights are not defined by the Indian Easements Act, 1882, it is indeed commentaries on easements that have often discussed groundwater rights. This is partly due to the fact that in the absence of a statutory framework concerning groundwater rights, the Indian Easements Act, 1882 happened to include one of the few direct references to groundwater and was thus a convenient starting point for lawyers and law researchers. Yet, while the Indian Easements Act, 1882 is relevant with regard to relations between landowners, it does not define the rights of landowners over groundwater found under their parcels of land. This would in fact be impossible since an easement right involves by definition a (dominant) owner claiming the easementary right and a (servient) owner on whose land the easementary right is exercised. Consequently, '*[o]wnership and easement are inconsistent and cannot coexist in the same person*'.²⁰

Shortcomings of the common law rules

The basic groundwater right framework outlined above is not an appropriate framework for the regulation of groundwater in India in the twenty-first century. This is due to several reasons:

1. The existing rules are based on a scientific understanding of groundwater that is now outdated. It fails, for instance, to take into account patterns of aquifer recharge and the interconnectivity between surface and groundwater.²¹
2. The existing legal framework is not adapted to conditions prevailing in large parts of India. This was already noted in 1930 in a groundwater case where Justice Wallace determined that '*my considered view is that conditions in England are so different to those in the district of Bellary that I deprecate calling in aid English law on this subject and confess that I do not myself find it of any assistance here*'.²² This is not a

¹⁴ Unde Rajah Raja Sri Raja Velugoti Sri Rajagopala Krishna Yachendrala Varu Bahadur, K.C.I.E. Maharajah of Venkatagiri v Secretary of State for India in Council (1915) 28 MLJ 98 (High Court of Madras, 19 October 1914).

¹⁵ Watsalbai wife of Kothiram Parate v Shripat Parasram Gaikwad 1987(1) Bom CR 105 (High Court of Bombay (Nagpur Bench), 7 October 1985). See also Narsoo v Madan Lal AIR 1975 MP 185 (High Court of Madhya Pradesh, 25 July 1974).

¹⁶ Malyam Patel Basavana Gowd (dead) v Lakka Narayana Reddi AIR 1931 Mad 284 (High Court of Madras, 23 October 1930).

¹⁷ Babaji Ramling Gurav v Appa Vithavja Sutar AIR 1924 Bom 154 (High Court of Bombay, 23 February 1923).

¹⁸ Frederick Peacock, The Law Relating to Easements in British India (Calcutta: Thacker, 1904).

¹⁹ Katiyar, n 12 above.

²⁰ MS Vani, 'Groundwater Law in India: A New Approach', in Ramaswamy Iyer ed., Water and the Laws in India 435, 444 (New Delhi: Sage, 2009).

²¹ This is an analysis shared eg by N.S. Soman, 'Legal Regime of Underground Water Resources', Cochin University Law Review 147, 150 (2008).

²² Gowd (dead) v Reddi n 16 above.

surprising result since even in the United States, while courts have generally applied the same rules as in India and continue to do so,²³ more than a century ago, an alternative was developed, the doctrine of reasonable use that sought to '*limit the right of others to such amount of water as may be necessary for some useful purpose in connection with the land from which it is taken*'.²⁴ This confirms the need for a different paradigm in climate conditions that differ widely from those in England, as was the case in the Californian decision quoted here.

3. The present legal framework gives landowners overbearing power over groundwater. The absurdity of reliance on such rules is highlighted by a Texan decision that concerned a spring emerging on private land. Given the statutory presumption that groundwater is percolating water, the Court of Appeals found itself unable to restrain a landowner having dug a well 13 ft from the rock wall where a spring emerged, despite the fact that the well ended in a cavity, because the appellants '*failed to demonstrate that the water (...) flowed through a subterranean water course possessing all of the characteristics of a surface water course, such as a bed, banks forming a channel, and a current of water*'.²⁵ More broadly, the existing framework is socially inequitable since it excludes all landless groundwater users from the purview of the rules, even where it is also their main source of drinking and livelihood water.

4. The existing legal regime limits itself to administering the respective claims of different landowners, with no regard for the need to regulate groundwater at an aquifer level. The limitations of the existing rules come up in even much more specific contexts like the division of a single plot of land. In a case involving the division of a piece of land where a single well was found in the part remaining with the original owner, the court found that in the absence of a clear stipulation providing for access to the well, the new owners had not acquired such a right.²⁶ The case focused entirely on the issue of the source of groundwater and landowners' claims to the same, rather than on the resource itself and the uses to which the groundwater might be put.

Legal and institutional reform initiatives to-date

The need for reforms of groundwater law has been felt for decades and at the very least since the widespread introduction of mechanised pumping devices led to rapidly increasing groundwater use and lowering water tables. This led the Government of India to acknowledge the need for a statutory framework governing groundwater. As a result, starting in 1970, the Government of India put forward a Model Bill to Regulate and Control the Development and Management of Ground Water for adoption by the States. This Model Bill has been revised several times (1992, 1996 and 2005) but the basic scheme adopted in 1970 has been retained.

The basic scheme of the Model Bill, 1970/2005 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 and control the development and management of groundwater. The respective State Government takes the final decision.²⁷ 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 handpump or a well from which water

²³ AH Denis, III v Kickapoo Land Company 771 S.W.2d 235 (Court of Appeals of Texas, Austin, 24 May 1989).

²⁴ Leah J Katz v Margaret D Walkinshaw 64 L.R.A. 236, 141 Cal. 116, 134 (Supreme Court of California, 28 November 1903).

²⁵ Denis v Kickapoo n 23 above. Note that India a different result was given in a similar case as early as 1923. See Gurav v Sutar n 17 above.

²⁶ Gurubilli Sreeramulu v Joga Verrodu 2001(3) ALD 367 (High Court of Andhra Pradesh at Hyderabad, 24 January 2001).

²⁷ Model Bill to Regulate and Control the Development and Management of Ground Water 2005, s 5.

²⁸ *ibid* s 6.

²⁹ *ibid* s 8.

is drawn manually.²⁸ Wells need to be registered even in non-notified areas.²⁹ Decisions of the authority in granting or denying permits are based on a number of factors, including 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 does not prioritise domestic use of water over other uses.³⁰ Basic drinking water needs are indirectly considered since, even in notified areas, hand-operated devices do not require a permit.³¹

The Model Bill, 1970/2005 introduces a limited regulatory framework to address groundwater depletion that extends the State's control over the use of groundwater through the registration of sources of groundwater and the introduction of permits for groundwater extraction in regions where it is overexploited. In effect, it provides for the grandfathering of existing uses by only requiring the registration of such uses.³² This implies that in situations where there is already existing water scarcity, it does 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.

More broadly, the Model Bill, 1970/2005 fails to tackle the more difficult underlying questions that need to be addressed to provide a comprehensive and effective regulation of groundwater.

1. It fails to address the problems created by the different legal status ascribed to groundwater. This implies, for instance, that it condones the continuing sectoral treatment of surface and groundwater rather than promoting regulation based on the unitary nature of water.
2. It fails to address the problems caused by the link between control over groundwater and land ownership, which create a situation where landless people do not have a stake in the regulation of groundwater.
3. It fails to take into account the need to prioritise groundwater uses in consonance with the recognition of the fundamental right to water and fails to specifically address, in full, the most important issue of domestic use of groundwater.
4. It fails to take into account legal developments having taken place since 1970. For instance, in institutional terms, it ignores the adoption of the 73rd and 74th Amendments to the Constitution of India that mandate institutional decentralisation whereas the Model Bill 1970/2005 relies heavily on a State level structure.

The last point illustrates the twin problem from which the Model Bill 1970/2005 suffers.

1. It generally reflects an understanding of the groundwater challenges of an earlier era, both in terms of a dated scientific understanding of groundwater and a lack of appreciation of the fast increasing importance of groundwater in the water sector as a whole.
2. The problems associated with a framework developed in 1970 and simply restated in 2005 are well illustrated in the context of the institutional provisions. The focus on a top-down State level institutional machinery in 1970 can be explained (though not justified) by

³⁰ *ibid* s 6(5)(a) 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.

³¹ *ibid* s 6(1).

³² *ibid* s 7.

the fact that there was then comparatively little discussion on the need for control by Panchayats over natural resources or water. Whereas the Model Bill 1970/2005 reflects mainstream thinking in 1970, it completely fails to reflect mainstream thinking in 2005 by which time dramatic changes had taken place with the adoption of the 73rd and 74th Constitutional Amendments.

³³Madhya Pradesh peyajal parirakshan adhiniyam, 1986. Other states that adopted drinking water-specific groundwater legislation are: Andhra Pradesh Ground Water (Regulation for Drinking Water Purposes) Act, 1996 (repealed); Karnataka Ground Water (Regulation for Protection of Sources of Drinking Water) Act, 1999 and Maharashtra Ground Water Regulation (Drinking Water Purposes) Act, 1993.

³⁴ The following Union Territories have also adopted groundwater legislation: Chandigarh, Dadra and Nagar Haveli, Lakshadweep and Puducherry.

³⁵ S. Koonan, *Groundwater - Legal Aspects of the Plachimada Dispute*, in P. Cullet, A. Gowlland-Gualtieri, R. Madhav & U. Ramanathan eds, *Water Governance in Motion - Towards Socially and Environmentally Sustainable Water Laws* (New Delhi: Cambridge University Press, 2010) 159.

³⁶ See above n 33.

³⁷ Andhra Pradesh, 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.

³⁸ Goa Ground Water Regulation Act, 2002, s3(2).

Adoption and implementation of the Model Bill 1970/2005

States have been slow in heeding the call for adopting groundwater legislation. A few States, as in the case of Madhya Pradesh,³³ took a lead in adopting groundwater legislation specifically focused on drinking water, as early as in 1986. The majority of States that have responded to the call for broader groundwater legislation have done so over the past decade. These include Andhra Pradesh, Bihar, Goa, Himachal Pradesh, Karnataka, Kerala, Tamil Nadu and West Bengal.³⁴ In addition, Maharashtra and Uttar Pradesh have groundwater bills that are awaiting adoption by the legislative assembly.

In all the States / Union Territories (UTs) that have adopted groundwater legislation, the basic framework is directly derived from the Model Bill, 1970/2005. While the broad structure is similar, some differences can be noted in the different State Acts:

1. The Acts differ in their coverage since some apply only to notified areas while others apply to all groundwater.³⁵ In addition, some of the earlier legislation focused specifically on the use of groundwater for drinking water.³⁶ Andhra Pradesh has gone further than other States in putting its groundwater legislation in a broader framework that directly links surface and groundwater in a general context of environmental conservation.³⁷ Yet, apart from a conceptually broader framework for groundwater regulation and specific consideration of drinking water issues, the Andhra legislation otherwise addresses groundwater in a similar manner to other groundwater acts.

2. In keeping with the Model Bill, 1970/2005, groundwater Acts focus on the setting up of a new institutional structure. This takes the form of a new authority or cell made of government civil servants and members nominated by the government because of their expertise. There are some differences in the composition of these institutions with, for instance, a varying balance between civil servants and other members. In Goa, the Act simply authorises the government to nominate members without specifying their origin.³⁸ In West Bengal, the majority are civil servants. In Kerala, only four of the thirteen members of the Authority are civil servants while the rest is made up of a combination of people with different expertise.³⁹

The Authority set up under the Act is then tasked with different functions, such as notifying areas of special concern and granting permits to use groundwater in notified areas.⁴⁰ Among the Acts that specifically focus on groundwater, the West Bengal legislation is the only one that gives the Authority a broader mandate that includes the development of a policy to conserve groundwater and organising people's participation and involvement in the planning and use of groundwater.⁴¹

■ Following the Model Bill, 1970/2005, most Acts fail to clearly give priority of use to drinking water, even though most Acts devote specific attention to the issue of

drinking water.⁴² The Himachal Pradesh legislation stands out insofar as it imposes on the Authority to give first priority to drinking water.⁴³ Additionally, some instruments specifically indicate that the use of groundwater as public drinking water source is not affected by any control measures.⁴⁴

Some other measures have been adopted or proposed at different times by individual States/UTs. Puducherry, in 1988, banned the setting up of water based industries within 6 kilometres from the coastline, with an exception being made for small-scale industries withdrawing no more than 10,000 litres per day.⁴⁵ Another pollution-related measure has been proposed in the bill currently before the Maharashtra Legislative Assembly. In the section concerning water quality, in application of the 'polluter pays' principle, it has been proposed that the State Authority should have the power to restore quality of water with the actual polluter being made to pay for the same.⁴⁶

The differences highlighted in the previous paragraphs cannot hide the fact that on the whole, the Acts adopted by the various States are not tailored to their actual needs and particular challenges they face. This explains, in part, the fact that existing Acts are largely noteworthy for their lack of implementation. While comprehensive research concerning the extent to which the Acts are implemented has not been carried out as yet, anecdotal evidence from the field level up to State officials and Central government officials confirms a general apathy with regard to the implementation of existing Acts.

The reasons for this lack of implementation are varied and can only be surmise in the absence of data. The fact that the different Acts do not reflect the priorities and needs of individual States can be ascribed in part to the fact that these Acts were often introduced more at the behest of union policy makers than in reaction to a policy build-up at the State level. The lack of initiative at the State level can itself be ascribed to a variety of factors, among which the increasingly politically sensitive nature of groundwater stands out. The ever greater reliance on groundwater for all uses of water has led to a situation where no government is particularly keen to upset the existing balance, however, skewed it may be. Until recently, State governments often preferred opening up their coffers to ensure that sufficient groundwater could be pumped up in a context of falling water tables rather than tackling the issue upfront by starting to allocate, restrict and take a broader view of groundwater governance. This period of purposeful policy inaction is progressively coming to an end because the existing 'model' is not sustainable either in environmental or economic terms. Yet, there are still States like Punjab who refuse to contemplate groundwater legislation because of the impacts it would have on farmers.⁴⁷ Instead, Punjab is proposing to give incentives for crop diversification, to invest in artificial groundwater recharge, to meter electricity supply in critical areas, and to promote micro-irrigation.

Union-level legal and institutional initiatives

As indicated above, most of the regulatory measures for groundwater have been taken at the State level. Yet, in a few cases, Union level legal instruments are also relevant. These include, for instance, Coastal Regulation Zone Notification, 2011 that prohibits the withdrawal of groundwater within 200 metres of the high tide level.⁴⁸

³⁹ Kerala Ground Water (Control and Regulation) Act, 2002, s 3(3).

⁴⁰ eg Himachal Pradesh Ground Water (Regulation and Control of Development and Management) Act, 2005, s 5, 7.

⁴¹ West Bengal Ground Water Resources (Management, Control And Regulation) Act, 2005, s 6(2).

⁴² eg Goa Ground Water Regulation Act, 2002, s 23.

⁴³ Himachal Pradesh Ground Water (Regulation and Control of Development and Management) Act, 2005, s 7(3).

⁴⁴ Goa Ground Water Regulation Act, 2002, s 9. Also Karnataka Groundwater (Regulation and Control of Development and Management) Act, 2011, s 1(4).

⁴⁵ Government of Pondicherry, Notification of 24 November 1988, G.O. Ms. No. 134/88/F6.

⁴⁶ Maharashtra Groundwater (Development and Management) Bill, 2009, s 6(5).

⁴⁷ Planning Commission, n 6 above at 29.

⁴⁸ Coastal Regulation Zone Notification, 2011, Gazette of India, Extraordinary, Part-II, Section 3, Sub-section (ii), 6 January 2011.

Similarly, in institutional terms, while the States have in principle taken a lead, initiatives have also been taken at the Union level to fill some of the existing gaps. Thus, in 1972, the Ministry of Agriculture created the Central Groundwater Board.⁴⁹ This was followed by the setting up of the Central Groundwater Authority by the Ministry of Environment and Forests to regulate and control the use of groundwater.⁵⁰ Its mandate includes the notification of 'overexploited' and 'critical' areas and the regulation of groundwater withdrawal in such areas. But, it does not have a broad mandate to regulate groundwater in general. For a variety of reasons including the fact that it was not given sufficient resources and prominence, the Authority is not credited with having had much impact.⁵¹

⁴⁹ Vani, n 20 above at 464.

⁵⁰ Ministry of Environment and Forests, Gazette Notifications SO38 and SO1024 of 14 January 1997 and 6 November 2000.

⁵¹ eg T. Shah, 'Groundwater Management and Ownership: Rejoinder', 48/17 EPW 116 (2008).

⁵² Himachal Pradesh Ground Water (Regulation and Control of Development and Management) Act, 2005, s 12(1).

⁵³ *ibid* s 12(2).

⁵⁴ *State of West Bengal v Kesoram Industries* (2004) 10 SCC 201 (Supreme Court, 2004). This is in consonance with developments in the United States, where states such as Connecticut, Hawaii and New Hampshire have already taken similar steps. See Jack Tuholske, 'Trusting the Public Trust: Application of the Public Trust Doctrine to Groundwater Resources', 9 Vermont Journal of Environmental Law 189 (2008).

Limitations of the existing framework

The Model Bill 1970/2005 and the Acts derived from it share in common that they fail to address the most critical challenges for groundwater conservation and use:

- The question of the legal status of groundwater is avoided altogether and landowners keep their case law-sanctioned entitlements. It fails to propose new bases for the regulation of groundwater, giving all groundwater users (not just landowning users) a say in its regulation.
- It contributes to a new centralisation of power concerning groundwater to the extent that it effects change. Indeed, the Model Bill, 1970/2005 assumes (though does not mention specifically) that the government can intervene in the regulation of groundwater. The Himachal Pradesh legislation goes further and specifies that users of groundwater in notified areas must pay a royalty to the government for its extraction.⁵² The government is not bound to use this royalty for groundwater-related activities, thus reflecting an understanding that groundwater is a resource controlled by the government.⁵³ This assertion of power by the State is possibly not unexpected but yet legally inappropriate at this juncture. Firstly, while there is only one Supreme Court decision confirming that groundwater is a public trust,⁵⁴ the trend over the past few decades in the water sector has been away from condoning State control over water resources. In any case, in a context where the distinction between surface and groundwater is acknowledged as being inappropriate, the first assumption should be that the assertion of the principle of public trust also applies to groundwater. Secondly, this centralising scheme runs exactly contrary to the decentralisation scheme adopted through the 73rd and 74th Amendments to the Constitution further confirmed by legislative amendments in most states.
- The Model Bill, 1970/2005 fails to tackle existing overuse of groundwater with its approach that largely grandfathered existing uses. As a result, the Model Bill, 1970/2005 fails to move beyond the existing atomised regulatory model that only addresses groundwater in terms of the claims of landowners over water found under their land and their claims against other neighbouring landowners. This pre-empts any attempt to regulate groundwater at the aquifer level and the introduction of an environmental dimension to groundwater regulation.
- The institutional framework for groundwater proposed by the Model Bill, 1970/2005 fails either to provide a single institution with a general mandate to look after

groundwater in all its dimensions or to ensure co-ordination between the different institutions that have a mandate or the capacity to address groundwater use and conservation, such as pollution control boards and groundwater authorities. The framework is also intrinsically top-down in its approach and focuses on the establishment of a State level institution. The Model Bill 1970/2005 does not preclude the adoption of legislation that sets up an institutional layer below the State level. This is, for instance, the case in West Bengal that proposes the setting up of District level authorities.⁵⁵ Yet, this does not go beyond Districts and fails to implement decentralisation based on the principle of subsidiarity.

Towards a new legal framework for groundwater use

The analysis so far has highlighted that the existing regime regulating access to and control over groundwater is outdated, socially inequitable and environmentally unsustainable. It needs to be thought afresh to ensure that it complies with constitutional principles and judicial decisions, and fosters socially equitable and environmentally sustainable outcomes.

The need for reform stems, in part from the ever-increasing importance of groundwater in the water sector, and in part from the inability of the existing legal framework to do more than look at groundwater in an atomised manner linked to land rights. The current system is even incapable of giving individual landowners incentives to sustainably use groundwater. Besides, it provides no basis for regulating groundwater as a common resource either in social or environmental terms.

There are various ways in which new groundwater governance may be brought about. In the absence of an effective legal framework, various States have already tried their hands at different instruments. In particular, economic instruments have been used in different ways to promote or dissuade groundwater use. On the one hand, States have used the possibility of subsidising access to groundwater infrastructure or subsidising the energy necessary to pump it as a way to avoid having to regulate existing uses,⁵⁶ whether sustainable or not. This explains, in part, the existing groundwater crisis of falling water tables in various parts of the country. On the other hand, where States have sought to start addressing issues of groundwater, they have used economic incentives to curtail groundwater consumption. This has, for instance, been the case of Gujarat's decision to separate electricity lines for irrigation and domestic consumption. Regardless of the potential of such measures, this does not replace the need for a broader regulation.

A broad regulation can be adopted through different routes. In keeping with the fact that mostly the courts developed groundwater rules over time, leaving future reforms to courts is an option. Relying on courts to bring about changes in the groundwater legal framework is however fraught with difficulty. Indeed, while courts could have taken up the need for reform decades ago since the inadequacy of existing groundwater was noted at least as early as the 1930s by some judges, courts have failed to bring any significant change to existing rules for more than a century. In addition, the only case that could provide an opportunity to address groundwater rules in the near future is unlikely to focus on this aspect. Indeed, in the Plachimada case, the main legal issues to be addressed by the Supreme Court concern the powers of

⁵⁵ West Bengal Ground Water Resources (Management, Control And Regulation) Act, 2005, s 4(1).

⁵⁶ eg Asian Development Bank, Water Operational Plan 2011-20 (2011).

the Panchayat and the question of the legal status of groundwater addressed by the High Court may not be revisited.

Bases for a new framework

The need for a different kind of legal reform in the groundwater sector is being widely acknowledged. Overall, the existing legal framework is inadequate to address the challenges of groundwater use and conservation faced by most of the States in the country.⁵⁷ This has been recently confirmed by the Planning Commission's approach paper for the twelfth Five Year Plan recognising that '[t]here is an urgent need to come out with a clear legal framework governing the use of ground water'.⁵⁸

New groundwater legislation should be built around a framework that takes into account the following issues:

1. The legal regime must recognise that groundwater is the primary source of drinking water for the overwhelming majority of the population. In the context of the fundamental right to water that has been a part of Indian law for the past two decades,⁵⁹ groundwater regulation must focus on ensuring the effective realisation of the fundamental right to water.

2. In a context where the links between surface and groundwater are well established, it is imperative that the same basic principles apply to all waters. Since the principle of public trust has already been applicable to surface water for the past 15 years, this must be specifically extended to groundwater. Ideally, the legal status of groundwater should be further reconceived as a common heritage since availability is not linked only to local conditions but also to global factors given that replenishment is linked in large part to rainfall, itself directly linked to the global water cycle. This calls for a principle based on the idea that water cannot be appropriated by anyone, cannot be alienated and cannot be used for commercial purposes until all life sustaining, livelihood and ecosystems uses have been fulfilled.

3. Following the recognition that groundwater is a public trust or a common heritage, there should be no private property entitlements related to groundwater. This bars both landowners' ownership-like claims to groundwater and non-land based claims, such as tradable entitlements. This is necessary in view of groundwater's central role in ensuring human survival and the need to change a system that gives large landowners a disproportionately larger access to groundwater while landless farmers' access to groundwater is negatively affected, as they are disqualified from acquiring institutional credit for the development of groundwater. The new regime needs to be based on the principle that it is the trustee at all levels, from Panchayats / Municipalities to blocks, Districts and State level institutions, that needs to have control over the resource. This should be based on the principle of subsidiarity.

4. Groundwater law needs to reflect developments in other areas of the legal framework. These include constitutional changes, such as decentralisation principles embodied in the 73rd and 74th Amendments to the Constitution; environmental law principles, such as the precautionary principle that have been integrated in the case law but not in water statutes; and principles from existing water statutes promoting

⁵⁷ cf. Planning Commission of India, Mid-term Appraisal - Eleventh Five Year Plan 2007-2012 (Government of India, 2011), para 21.52.

⁵⁸ Planning Commission, An Approach to the Twelfth Five Year Plan (2012-2017), para 5.18. Similarly, see Department of Drinking Water and Sanitation - Rural Drinking Water, Strategic Plan 2011-2022 - Ensuring Drinking Water Security in Rural India, 5(4)(2).

⁵⁹ eg *Subhash Kumar v State of Bihar* AIR 1991 SC 420 (Supreme Court, 1991).

⁶⁰ eg Andhra Pradesh Farmers' Management of Irrigation Systems Act, 1997; Gujarat Water Users' Participatory Irrigation Management Act, 2007; Maharashtra Management of Irrigation Systems by the Farmers Act, 2005 and Tamil Nadu Farmers Management of Irrigation Systems Act, 2000.

decentralisation, such as Water User Association legislation already in place in several States.⁶⁰

5. Groundwater law must be based on a measure of equity and equality among everyone in the country. Measures must be taken to address the inequalities arising from the fact that some people happen to be living in areas with poor quality of groundwater (for instance, arsenic,) or in areas where groundwater has been contaminated by anthropogenic activity. The legal regime must ensure that no one is disadvantaged because of the conditions arising in their place of residence. This may, for instance, involve regions that have abundant resources subsidising the cost of accessing groundwater in other areas.

Lineament of proposed new framework

A new legislative framework should be built around an understanding that it is the farmers and all persons living in rural areas that are the most directly affected by the existing legal regime. It should be based on the idea that while protection of groundwater is the key to the long-term sustainability of the resource, this must be considered in a framework in which livelihoods and basic drinking water needs are of central importance.

Its objectives should be to:

- Regulate and control iniquitous groundwater use and distribution, based on priority of allocation to ensure in particular that the drinking water / domestic needs of every person and irrigation needs of small and landless farmers can be met⁶¹
- Ensure safe and secure drinking / domestic water for all people, particularly in groundwater dependent regions
- Regulate the over-extraction of groundwater in order to ensure the sustainability of groundwater resources, equity of their use and distribution, and to ensure fulfilment of ecosystem needs
- Promote and protect community-based, participatory mechanisms of groundwater management that is adapted to specific locations considering resource, enhancement and socio-economic set up⁶²
- Prevent and mitigate contamination of groundwater resources
- Promote and protect good conservation, augmentation (recharge) and management practices
- Protect areas of land that are crucial for the sustainable management of groundwater resources and to ensure that high groundwater consuming industries are not located in areas unable to support them⁶³

a) Legal and institutional bases

The new framework should draw on the various developments that have taken place in the legal framework since the Government of India proposed the first Model Bill in 1970. In particular, it should reflect the following:

1. The principle that water and specifically groundwater, is a public trust as put forward by the Supreme Court.⁶⁴ This applies to groundwater as a resource and not to mechanisms for abstracting it.

⁶¹ cf. Ministry of Water Resources, Recommendations of the Symposium on Groundwater Governance: Ownership of Groundwater and its Pricing, 16 November 2006, Recommendation 8, already recognising the need to reflect equity and the protection of weaker sections.

⁶² As called for in Ministry of Water Resources, Recommendations of the Symposium on Groundwater Governance: Ownership of Groundwater and its Pricing, 16 November 2006, Recommendations 7 & 16.

⁶³ As called for in Ministry of Water Resources, Recommendations of the Symposium on Groundwater Governance: Ownership of Groundwater and its Pricing, 16 November 2006, Recommendation 3.

⁶⁴ West Bengal v Kesoram n 54 above.

2. The recognition of the fundamental right to water by the Supreme Court.⁶⁵
3. The principle of subsidiarity, as explicated in the 73rd and 74th Amendments to the Constitution (Articles 243G and 243W).
4. Protection principles, such as the prevention and precautionary principles, most recently statutorily recognised in the National Green Tribunal Act, 2010 (Section 20).

It should also build on existing laws and schemes and contextualise them to groundwater, such as:

1. The Right to Information Act, 2005.
2. The Environmental Impact Assessment Notification, 2006 under the Environment (Protection) Act, 1986.
3. Social audits called for under various schemes and policies of the Government.⁶⁶

b) Institutional framework

The institutional framework should be based on the principle of subsidiarity and framed around existing units of territorial governance. At the same time, in recognition of the fact that aquifer boundaries do not follow administrative boundaries, it should provide mechanisms that ensure that administrative boundaries do not come in the way of effective protection of groundwater aquifers.

It should also recognise that duplication of institutions and mechanisms should be avoided to the greatest possible extent. Thus, it should provide for an institutional framework devoted to groundwater to ensure appropriate management of groundwater from the local to the State level. At the same time, it should provide for collaboration or integration of groundwater to already existing institutions addressing water, such as the Central Groundwater Board. In addition, it should provide for existing institutions to support new local level institutions to ensure that they are not hampered in implementing the legislation by a lack of technical or other expertise.

c) A framework adapted to state-specific circumstances

The new framework should be based on an understanding that it should be adopted at the State level in a form that suits the specific conditions and needs of that particular State. In addition, the actual legislation should be adapted to suit the existing institutional and legal framework of the State to avoid duplication.

Implications of the proposed new legal framework

A new framework would provide that groundwater is a public trust with the State being the custodian of the resource at all levels (from the Panchayat to the State government). The legal status of public trust for groundwater as a resource would not affect in any way the sources used by individuals or communities to access groundwater.

⁶⁵ Subhash Kumar v State of Bihar AIR 1991 SC 420 (Supreme Court, 1991).

⁶⁶ eg Total Sanitation Campaign Guidelines, 2011, s 18.

The new legal framework should ensure effective regulation of large-scale groundwater use. This would have no impact on the overwhelming majority of small farmers' groundwater use whose rights of access will not be affected. Rather, it would contribute to ensuring that all farmers (and more broadly groundwater users) benefit from better groundwater availability in the long run by restricting overexploitation by large users that threatens access by the majority of small users.

The new framework should be built around the need to regulate unreasonable uses of sources of groundwater that threaten the aquifer to ensure that the resource itself is protected and can provide a sustainable basis for meeting the basic needs of every person for decades to come.

Conclusion

Groundwater regulation is outdated and insufficient. It is in need of specific attention in a context where it provides the overwhelming part of water uses to an overwhelming majority of the population.

Reforms need to be built around existing principles of the legal framework, including the Constitution, judicial decisions and principles that have developed over the past few decades. There are some easy starting points like the recognition of the fundamental right to water and the public trust doctrine.

Yet, while the starting points may be relatively well marked, the road towards a framework, which ensures the implementation of groundwater legislation that ensures equitable and environmentally sustainable availability of groundwater for all will be a long one. Indeed, it is not enough to simply introduce the principle of public trust to remedy the ills of a system putting most control over groundwater in the hands of bigger landowners and the State. The principle of public trust is not in itself a magic pill against abuse of power by the State in its exercise of its duties as a trustee. This requires many more safeguards. Further, delinking land rights from control over groundwater may be an immediate necessity to remedy decades of atomised regulation. At the same time, this will only achieve its desired environmental and social goals if the laws adopted ensure that this does not pave the way to another form of privatisation through the setting up of tradable entitlements.

The road to a 'better' framework is narrow. The economic and political environment at a macro level may not be conducive to effectively implementing reforms based on the principle of subsidiarity. Yet, the status quo is untenable because it is a status quo that leads to further deterioration of the resource on a yearly basis. It is thus imperative to introduce reforms but these reforms must include all the necessary safeguards to ensure that delinking access to groundwater from land rights does not lead to another, possibly more insidious form of privatisation in the form of tradable entitlements, that would further affect the overwhelming majority of small users of groundwater.