

Groundwater laws and regulation

Groundwater plays a central role in the maintenance of India's economy, environment, and standard of living. The resource is of importance as a source of drinking water and food security for the billion of Indian population, and supplies 80 percent of water for domestic use in rural areas and perhaps 50 percent of water for urban and industrial user[1] Groundwater covers more than 50 percent of the irrigated land and in drought years groundwater represents the primary and reliable sources of irrigation. It has been pointed out that India's ability to feed its rapidly growing population depends on its capacity to increase its agricultural production and that depends, in turn, on irrigation[2] Access to groundwater can be a major engine for poverty alleviation and economic development in rural areas.

With rapid expansion in groundwater extraction, development related problems have begun to emerge. The effective management and use of groundwater not only as a source of supply of water for drinking, for irrigation and for other consumptive purposes but also as a supplementary source of surface water flows, of wetlands and of wildlife habitats calls for increasing attention to two major and interdependent sources of concern. namely, depletion and pollution. The former is linked to the extraction and use of groundwater. the latter to the contamination of available supplies from point to non-point (diffuse) sources The groundwater is also important in maintaining the flow of rivers in dry periods and in contributing to the water balance of lakes and wetlands. Further it is asserted that over extraction of groundwater also contributes to the raising sea levels and sea erosions in the coasts. Therefore, focus on development activities must now be balanced by management mechanisms to achieve a sustainable utilisation of groundwater resources. The groundwater management rather than development is the major challenge facing water resources organisations in India.

The groundwater management will need to address the broad array of resources and allocation problems now emerging. Overdraft, pollution, poor quality and the array of impacts that declines in the groundwater table have on the environment and third parties, must be address. In addition, as urban areas and the non-agricultural economy grows, mechanisms must be found to ensure that water is allocated to high-value, generally non-agricultural uses. Effective management of India's groundwater will require institutions capable of addressing problems that vary greatly both in character and in scale. Legal frameworks and institutional approaches will need to respond to this variability. The existing law on groundwater appears to be inadequate to deal with the needs of groundwater management because legal rules concerning regulation of groundwater extraction and use and polluting activities have largely,

but not entirely, based on archaic private law principles. An attempt is made in this paper to analyse briefly the basic legal principles governing groundwater regulation, proposed changes in the legal framework and certain alternative suggestions are made to achieve sustainable utilization of groundwater resources.

I. Salient Features of Existing Groundwater Law

Under common law in India, which is derived from English common law groundwater extraction rights are chattel to land and extraction of percolating waters with no limit on quantity is the right of every landowner.[3] Landowners generally regard wells as their own and view others including government, as having no power to restrict or otherwise control their rights to extract groundwater[4] This private ownership regime of groundwater regulation based on basic principles of Roman law appears to be at odds with modern needs of groundwater management. However, Moslem tradition, instead, regards water as a public or communal commodity, a gift of God, which cannot be owned. Only wells can be owned, whereby exclusive or priority user rights in the water accrue to the well owners and the ownership of wells entails ownership of an area around the well in which new wells cannot be dug.[5]

It is argued that private ownership regime for groundwater regulation is hardly suitable to meet the requirements of modern groundwater management for the following reasons. First, the regime is inequitable because it leaves and all the landless and tribal who do not enjoy private ownership of land.[6] Second, as experienced in some states like Tamil Nadu, Karnataka and Gujarat, even sale of groundwater by tube-well owners remains unregulated.[7] Third, commercialisation of groundwater has the tendency to decline in groundwater table.[8] The fall in water table has resulted in large number of tube wells becoming dry during crucial summer. Last, the exploitation of groundwater has a bearing on the user's fundamental right to life under Article 21 of the Constitution, his right to dig bore wells cannot be restricted by executive fiat and therefore this right may be regulated only by an Act of the legislature.[9] But the same High Court in another case rightly pointed out that right to have water for irrigation purposes cannot form part of right to life under Article 21 of the Constitution.[10] Similarly, right to groundwater extraction for commercial purpose is not a fundamental right and therefore, can be restricted through administrative regulation.[11] However, the easement and irrigation laws "proclaim absolute right of the government in all natural water",[12] but not many irrigation statutes deal with groundwater. Amongst the state irrigation laws, the Karnataka Irrigation Act, 1965 contains provisions for the control by the state over the construction of wells in areas where public irrigation works are undertaken'[13]The Gujarat amendment to the Bombay Irrigation Act introduced restrictions on

construction of bore wells or artisan wells exceeding 45 meters in depth. Similarly, certain other states such as Tamil Nadu, Haryana and Maharashtra introduced a system of permits to sink wells in certain notified areas.[14] These laws are not primarily concerned with regulation and use of groundwater as they are enacted for the purpose of maintaining irrigation works such as canals, dams and others.

Until the Supreme Court judgement in *M.C.Mehta v. Union of India* {Groundwater case},[15] Union Government was of the view that central legislation may not be permissible since "water" was a state subject under the Constitution.[16] Each state was required to introduce separate legislation to regulate and control groundwater resources and to assist the states: a Model Bill was circulated in 1996.[17] The Model Bill 1996 recommends the establishment of a groundwater authority in each state and Union Territories. The Bill empowers the groundwater authorities to regulate groundwater extraction and use through a system of permits and registration. The Bill was primarily concerned with regulation of extraction of groundwater in notified areas and did not entice many states to enact legislations until the said decision of the Supreme Court.

The Supreme Court in *Groundwater case* expressed a prima facie view that Article 253 of the Constitution and the provisions of the Environmental Protection Act 1986 (EPA) empowered the Central Government to regulate groundwater.[18] The Courts' observations were made on an application by the petitioner urging Central Government to constitute a national authority under section 3(3) of the EPA. On the basis of recommendations made by the National Environment Engineering Institute, Nagpur, the Court directed the Union Ministry of Environment and Forests to constitute the Central Ground Water Board (CGWB) as an authority to regulate the indiscriminate exploitation of groundwater. The Court also interpreted several constitutional provisions as having implications on groundwater management. These include Article 21 concerning the right to life, Article 48A which directs the state to endeavour to protect and improve the environment and Article 51(g), which provides that "it shall be the duty of every citizen to protect and improve the national environment including forests, lakes and rivers". The implications of the Court rulings and creation of the groundwater authority have yet to emerge. Further, practical mechanisms through which the Central Groundwater Authority (CGA) and state groundwater organisations could regulate well boring and groundwater extraction are far from clear.[19] Various states have initiated legislative measures to enable them to regulate groundwater. It has been observed that these approaches are fragmentary and focus on management by technical agencies and in most cases legislation has yet to prove effective.[20] The next section of this paper examines salient features

of the Central Model Bill 1996 and the Karnataka Model Bill 1996 with a view of identify thrust areas to be covered by groundwater management.

II. Proposed Legislations:

The Supreme Court directions provided for (a) establishment of Central Water Resource Management to co-ordinate groundwater conservation activities, (b) preparation of medium and long term national use plan of groundwater in respect of agriculture, human settlement, and industrial establishments, (c) periodical review of ground water level and its quality, (d) restructuring of irrigation practices and, (e) among other charging water rates to prevent waste[21] On the basis of the Court directions Central Government is now insisting state to adopt either 'Model Bill 1996' or to enact separate groundwater statutes.

Feature of 'Model Bill 1996'

The Model Bill-1996 proposes a highly centralised approach to groundwater management. According to CGWB, this model legislation is being revised to incorporate management as well as regulatory functions. The current version provides for creation of groundwater authorities (GWA) at the state level. Each state authority would be led by a chairman to be appointed by the state government. Members of the authority would consist of representatives of the each department, which are concerned with survey, exploitation, development, management and protection of groundwater to be appointed by the state government and such other members who, in the opinion of the government, have specialised knowledge or practical experience in matters relating to groundwater to be appointed by the government.[22]

The primary function of the GWA was to advice the State Government to declare any area to be notified area for the purpose of control and regulation of groundwater extraction and use[23] The GWA was authorised to regulate groundwater through a system of permits,[24] registration and licences[25] The GWA was empowered to inspect wells, to require the user of groundwater to install water-measuring devices, to size any equipment used for illegal sinking of wells, and to impose penalties for contravention of the Act and the rules made there under.[26] Further the Bill also provides for prosecution and punishment of those who contravene or fail to comply with the Act, rules, and orders passed by the GWA.[27]

It has been pointed out that the Bill failed to address two important issues pertaining to groundwater management. The first relates to the regulatory structure, whether the centralised regulatory approach is likely to be effective. The second concerns the content i.e. the numerous groundwater needs that the proposed regulatory structure may not address- waterlogging, pollution, quality, and conjunctive management.[28]

The Proposed Karnataka Groundwater Bill

Taking the cue from the centre, the Government of Karnataka prepared a draft Karnataka Groundwater (Regulation and Control) Bill 1996 (the Draft Bill) and it is yet to be passed even though more than six years have been passed after its introduction. The provisions of the draft Bill are more or less similar to the central 'Model Bill 1996'. However, there are certain modifications, which might eat the vitals of the central Model Bill 1996.[29] The title to the draft Bill proclaims that it is meant for better regulation and control of extraction of groundwater and prevention of waste of groundwater in the state and the following are some of the key provisions of the draft Bill. Firstly, the draft Bill provides for the establishment of Karnataka Groundwater Authority (KGA) consisting of eight official members belonging to various government departments and agencies such as NABARD, KPTCL and two representatives of farmers to be nominated by the State Government.[30] Secondly, for the purpose of regulating extraction and use of groundwater the Bill requires existing user of groundwater to register their wells with KGA within a period of ninety days from the date of commencement of the Act.[31] Thirdly, the draft Bill provides for a system of permit to extract groundwater after the commencement of the Act and prescribes the minimum distance to be maintained between two bore wells or other wells to check depletion in groundwater table. However, the requirement of permit can be dispensed with in respect of extraction of groundwater for domestic and drinking water purposes[32] Fourthly, it is provided that any person carrying on the business of sinking bore wells or extraction groundwater or any activity with sinking wells shall obtain a licence from the K.GA.[33] Fifthly, the K.GA is empowered to cancel certificate of registration, permit or licence granted to any person under the Act under certain circumstances[34] and K.GA makes an individual extracting groundwater without valid certificate, permit or licence ineligible for financial assistances such as subsidies and power tariff concessions. [35] Sixthly, the Bill empowers KGA to declare certain District and Taluks as critical and water scarcity areas and it can totally prohibit extraction of groundwater of the purposes of irrigation, industrial and other uses except for drinking water purposes.[36]

It is very difficult to say that the Bill seeks to accomplish two basic aspects of legal framework for groundwater management, namely, the regulatory structure that is suitable for groundwater management and numerous groundwater management needs such as regulation of waterlogging, pollution, quality, and conjunctive management. The Bill fails to address certain key issues. First, the regulatory structure is highly technical and centralised and therefore there exists doubts about its efficacy. Groundwater management, although require a sophisticated technical understanding of resources dynamics, is not primarily a technical subject.[37] The effective management requires a conducive political, economic and social environment because regulations will prove intrusive and may lead to opposition form local population. The regulatory institutional framework should recognise the broad nature of management needs and the great variations in local conditions. Accordingly, it is suggested that local landowners and water users must have some say in the groundwater management within a broad legal framework.[38] Second, waterlogging represent as important an environmental challenge for groundwater management in India's as overdraft. The Bill appears to concentrate only on overdraft. Surface irrigation command areas often experience major waterlogging and associated salinity, and alkalinity problems and the studies indicate that water logging and salinity, to ascertain extent, associated with groundwater depletion[39] Hence, there is the immediate need to revise the Bill to meet conjunctive management of groundwater and surface water. For example, in western United States conjunctive management of surface and groundwater resources is emerging as a major water management technique. The system provides for an integrated approach in which surface and groundwater are managed together as part of single water supply system.[40]

Third, groundwater pollution represents one of the challenges in effective groundwater management. The Madhya Pradesh High Court directed the state government to extend free medical treatment and to make compensation to those who drank water from hand pumps sank by the state containing excessive fluoride, which caused bone diseases and deformities.[41] A study conducted by a team of Down to Earth reporters in 1999 found that numerous factories deliberately injected untreated effluents into the ground contaminating underground aquifers. Samples drawn from eight sites in Haryana, Gujarat and A.P. showed the traces of heavy metals like iron and Zinc in all the samples, cadmium in five and lead in three. All samples also contained dangerously high levels of mercury, known to cause minamata disease, neurological disorder, retardation of growth in children and abortion. The reporters also found that GWA and State Pollution Control Boards were completely ineffective in checking pollution.[42]

The need for good management of groundwater resources has recognised by the Kerala High Court in a public interest petition filed by local islanders in Lakshadweep. The petitioners apprehended that the government scheme to pump out groundwater in the island would cause saline intrusions into the fresh water table, which would in turn; imperil the potable water supply in the island[43] Therefore, there is the need to evolve management structure and norms, which lead to integration of pollution control management and groundwater management. The conspicuous absence of such provisions may prove the Bill to be very ineffective. Even though groundwater pollution and quality need to be recognised as points of environmental significance but they affect usability of groundwater resources for domestic, industrial or agricultural applications.

Last, but not the least, it has been pointed out that in the Indian context legal frameworks need to ensure not only integration of surface and groundwater, water quality and prevention of water pollution but also economic and use allocation problems associated with groundwater management. The legal framework must provide for rules regarding extraction and distribution of groundwater amongst its users. Accordingly, it has been suggested that legal framework must provide for water rights and creation of water markets, which enables the government to allocate groundwater[44] The Bill address as only portion of the issues currently raised in the context of groundwater regulation and control.

Conclusions

The present and proposed legal framework for groundwater management cannot effectively meet the challenges posed by overdraft, waterlogging, pollution and water quality by virtue of apparent conflict between development on the one hand and maintenance of human environment and sustainable utilisation of natural resources including natural water on the other. The common law model of legal regulation is not suitable to modern conditions and therefore it is suggested that it may be replaced by water rights model based on public trust doctrine.

The doctrine of public trust developed by the U.S. Courts[45] and, recently, by the Indian Supreme Court[46] might be very narrow but it was also suggested that the doctrine would play an important role in rational management of natural resources.[47] It is argued that the doctrine imposes three types of limitations on governmental authority to deal with certain common properties such as seashore, rivers lakes, and forests. First, the property subject to the trust must not only be used for public purpose, but it must be held available for use by the general public. Second, the property may not be sold, even for fair cash equivalent; and third; the property must be maintained for particular types of uses[48] It can be

said that in respect of groundwater management the doctrine is useful at least in regulating groundwater extraction rights. It is also suggested that this doctrine can be employed by the government to regulate use of private property as it imposes an easement over private property rights. It is believed that effective groundwater management requires revision in the draft Bills. The revision must concentrate on issues such as decentralisation of groundwater authority, limiting the governmental or administrative discretion by enacting mandatory provisions in posing certain duties upon authorities. For example, designated authorities must periodically test the groundwater to ascertain its quality. The groundwater management must involve effective participation of experts; NGCYs and local population and this in turn require integration of various governmental agencies.