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A STUDY OF GROUNDWATER DEVELOPMENT AND LEGAL REGULATION

By

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Abstract

At present, some initiatives have been taken at the national level to promote development of the resource. The National Water Policy of 1987, recognises the fact that questions of prudent groundwater resource management and conservation as well as equitable distribution have to be tackled on the basis of common policies and strategies. The beginning of the planning era witnessed an overemphasis on surface irrigation works. This was due to several reasons, such as, (i) long Indian experience in canal irrigation; (ii) uncertain assessment of groundwater potential; (iii) lack of availability of pumping equipment; and (iv) constraints on energy requirement. It is from the Third Plan onwards that we see a shift in favour of groundwater development mainly due to the severe drought experienced in eastern India during 1966-67 and the realisation that prudent management of the resource is imminent. Inspite of this, as already stated above, only thirty per cent of the groundwater potential in terms of safe yield of the groundwater basins, is being utilised. This clearly shows that much more attention needs to be given to this sector. The setting up of the Central Ground Water Board (CGWB), a body at the national level to conduct necessary surveys and investigations to be carried out by its regional offices and field offices located in various parts of the country, has again been a step forward for the development of the resource. In addition to CGWB, each state has its own Groundwater Survey Organisation which carries out similar work but at a minor level. These bodies have played a significant role because scientific assessment of the quantity and quality of groundwater is difficult and also preconditional to its development.

➢ Introduction

Groundwater is a potential resource for domestic and industrial requirements, livestock consumption and mainly for irrigation in India. However, in spite of its abundance, it has not been possible to ensure its proper utilisation, sustainable development and equitable distribution. Some of the factors contributing to this state of affairs are the temporal and spatial distribution of the resource and mainly the unplanned as well as unscientific manner of its development. Due to this, hardly thirty % of the resource has been developed in India.

More serious than underdevelopment is unscientific development. Ecological injury and inequity result from it. Whilst in some areas of the country the receding water table is threatening availability and fear of saline intrusion, in others the rising table is posing problems of drainage. This has contributed to devastating floods and droughts in many parts of the country. The availability of the resource has also been restricted to a certain class of people. Studies and surveys conducted in different parts of the country cause concern. E.g., in a study conducted by the Administrative Staff College, it was found that the depletion of the water table had inequitable repurcussions on the small and marginal farmers of the eastern part of the Indo-Gangetic belt who in 1983 numbered about 200 million. Similarly a study conducted in Bihar, revealed that whatever little development of groundwater through tubewells had taken place in the state was highly inequitous.

Keeping these facts in mind, it becomes imperative to regulate the use and development of the resource in an equitable and just manner. For this, other than the planning and policy-making mechanisms, the legal mechanism is important. However, legal regulation would be unsuccessful if the ecological and socio-economic framework on which the regulation is sought to be enforced is not kept in mind. Only when a particular set of conditions are given, will it be possible to determine the nature of regulation that is required. This paper examines the necessity, feasibility and character of legal regulation after considering the constitutional framework, availability and access to the resource, strategies adopted by different nations for regulation, existing legal framework and other problems which complicate regulation.

- Constitutional provision

The Constitution clearly mandates that the resource is to be used in an equitable and just manner with minimum harm to the environment. Various provisions have to be read together to arrive at this conclusion. Under the directive principles of state policy, the state is under a duty to secure a social order for promotion of welfare of the people in which justice, social, economic and political shall inform of the institutions of national life. Further the state has, in particular, to direct its policy towards securing that, (i) the ownership and control of material resources of the community are so distributed as best to subserve the common good; and (ii) the operation of the economic system does not result in the concentration of wealth and means of production to the common detriment.[1] The state as well as citizens are under a fundamental duty to protect and improve the environment.[2] Even though the Constitution prescribes these ideals the planning and policy making strategies fall far short of them. One excuse for this dichotomous situation could be the fact that directive principles of state policy are non-justiciable and therefore give rise only to an imperfect, positive duty on the state as well as the citizens. But much depends upon the interpretation of these articles. Therefore, whenever there is a duty, a right has to exist especially in the affected party. In India, the courts have in many social action litigation cases made use of this analysis indirectly. For example in the Ratlam Municipality case it was held that the citizen could, especially through a writ of mandamus take legal action against the state or local bodies for non-implementation of a statutory duty. Public nuisance arising from pollution was stated to be a challenge to social justice and therefore giving rise to a right in the vested party to compel the public functionary to act.[4]

Articles 14 and 21 of the Constitution which deal with the fundamental right to equality, life and personal liberty, are also directly relevant to the groundwater issue.[5] Social action litigations wherein a liberal interpretation of these articles was taken are many. However, cases relating to groundwater are scanty. In a recent case in the Kerala High Court, Attakoya Thangal v. Union of India, it was held that excessive pumping of water and disturbance of its quality was violative of article 21.[6] In this case the Administration of Lakshadweep Islands had evolved a scheme to augment water supply by digging wells for meeting increasing demands of potable water. Implementation of the scheme was challenged by the petitioners on the ground that it was violative of article 21 of the Constitution. This was so because of the limited availability of groundwater in the islands and also the fear that pumping of water by electrical or mechanical devices would disturb the fresh water equilibrium by the intrusion of saline water from the surrounding Arabian Sea. The court recognised the fact, after an expert committee report, that the right to sweet water was an attribute to the right to life.

Case law proves the fact that interpretation of the Constitution in keeping with the mandates of justice and equity is as important as the text itself. In fact, what is to be insisted is a liberal and just interpretation as well as application of statutes. Constitutional ideals have to be followed in the planning, policy making and law making processes as well.

Coming to specific provisions relating to development of the resource, in the Constitution of India, water, that is to say water supplies, irrigation, canals, drainage, embankments, water storage and water power are items of list II of the seventh schedule of the Constitution, i.e., the state list.[7] Accordingly, if in any one of these matters there is need for a legislation, the states in India will be empowered to legislate and not the Centre. However, under article 252 of the Constitution, Parliament is given the power to legislate for two or more states on matters falling even in the state list, if the states so desire and resolutions are by all the Houses of the Legislature of those states.[8] In the groundwater regime, if there are problems which concern more than one state, which is probable as groundwater aquifers do not conform to geographical divisions, then the Centre can be asked to make the appropriate law.

- **Availability and access**

(1) Availability

There are two sources of irrigation, viz., (i) surface water; and (ii) ground- water. Surface water refers to that part of precipitation or melting snow which runs off the surface of the earth and flows into rivers or is stored into dams, ponds or tanks. Groundwater, on the other hand, is that part of precipitation or melting snow which infiltrates in the soil and takes the shape of underground storages when it meets some impermeable layer on the way.

Groundwater availability in any area is largely governed by the state of cementation and compaction of the formation. The geographical formations may be broadly divided into the unconsolidated, which comprise the alluvial plains in Central India, some parts of Gujarat and Western Rajasthan, the semi-consolidated in some parts of east coast, west coast Andhra Pradesh, Bihar and Orissa, and the consolidated formations which are hardrock areas and comprise almost the entire South India. The consolidated areas have the biggest groundwater potential

followed by other areas. Even within the unconsolidated region, the level of utilisation is not uniform. In the North-western region (Western Uttar Pradesh, Haryana and Punjab), withdrawal of groundwater has exceeded 80 per cent of the known potential. In contrast, in the eastern Gangetic region, where groundwater potential is greater, the utilisation is poor. In areas, where both surface and groundwater resources are plentiful, as in the Indo Gangetic Plain, there has been traditionally more stress on surface water irrigation. Scientists of various disciplines have confirmed that surface systems could accentuate the already serious problem of water logging, deterioration of soil quality and as a result land productivity and problems of drainage, whereas groundwater use or conjunctive use of ground and surface water can not only arrest these problems but also help in mitigating ill effects of floods. In the hardrock areas there is overexploitation of the resource caused by inadequate recharge to the aquifer and consequent falling of the water table and spread of intensive water using crops such as sugarcane and turmeric. Here strategies will have to be evolved to check overextraction of water and regulate the types of crops to be grown.

(2) Access

Access to the available resource depends on many factors among which availability, extraction and, of course, socio-economic conditions are the most important. Having discussed availability at a macro level, it is important to examine the extraction possibilities. This will include groundwater structure and institutional arrangements prevailing at present.

(3) Structures

The type of groundwater structure in any area depends upon the type of hydrogeological setting and also the size of farm holding. The private groundwater structures in India may be divided into three categories, dug-wells, dug-cum-bore wells and tubewells. There are community owned tubewells as well as public tubewells.

(4) Institutional arrangement

It is important to formulate the best institutional arrangement for ensuring equitable access to the resource. The various arrangements that need to be looked at are private ownership of wells and water markets, community and public ownership. Only when this exercise is complete, will it be possible to recommend the nature of rights that need to be promoted, the nature of the resource as well as the legal strategy to attain this arrangement.

Studies have proved the fact that the spread of private tubewells in the country have led to inequitable distribution of benefits because of the inability of small and weak sections of farmers to invest the requisite amount for extraction, difficulties in getting credit facilities, high transaction costs, etc. With enhanced technology conditions, rich private owners are at an advantage to bore deeper and pump more water. Excessive pumping leads to disturbance of the groundwater table especially in hardrock areas where water scarcity is prevalent. There is also the possibility of drying up the neighbour's well by excessive pumping. Another recent phenomenon is the emergence of water markets in different parts of the country. A water market has been defined as a localised, village level institutional management through which owners of an irrigation system supply irrigation service to other members of the community at a price. One peculiarity of such markets is that sellers neither own nor produce

the water they sell. However, they enjoy unchallenged de facto ownership rights in the community's groundwater resources. These markets are spontaneous, initiated by private individuals to exploit a mutually beneficial opportunity, unregulated, localised, fragmented and seasonal in nature. In terms of efficiency they are a success as the amount of groundwater lifted at a much lower cost is significantly more than in public or community systems. However, what has not to be lost sight of are the externalities, the effects that accrue to parties who are not part of the transaction. These are mainly ecological injury and inequitable distribution.

- **Legal framework**

After a look into the institutional arrangements existing in India as well as strategies and arrangements evolved by other countries, it is necessary to formulate, if possible, a legal framework for regulation of groundwater resources. As already stated, this paper seeks to explore regulation of only groundwater resources for irrigation and rural domestic purposes. Groundwater utilised for industrial requirements, urban supply, etc., remain outside the framework of this study. Further, groundwater deterioration, in terms of quality and quantity, is not only determined by withdrawals but also by construction activities like dams, roads, buildings, etc., for various reasons. These have serious repurcussions on the availability of groundwater. However, such problems have to be tackled at the policy planning stages. Concerned statutes like the Land Acquisition Act, Forest Act, Ordinances relating to construction of dams, etc., have a bearing on this issue. Also, groundwater aquifers do not conform to geographical boundaries. Therefore, regulation of groundwater has to be looked into from the interstate and international perspective. This paper does not take into account these factors inspite of their importance as it seeks to examine the problem from only the limited perspective of localised groundwater extraction.

(1) Existing framework

At present, the only statute having a direct bearing on the groundwater issue is the Bombay Irrigation (Gujarat Amendment) Act 1976, which came into force in March 1988. This Act sought to amend the Bombay Irrigation Act 1979 applicable to the State of Gujarat. In some areas like Mehsana and Banaskantha districts the water table had gone down considerably, and it had also become difficult to obtain water by digging additional wells. In order to prevent further decline of the water table, it was considered necessary to regulate the construction of tubewells, artesian wells and borewells exceeding forty five metres in depth on any land assessed or held for the purpose of agriculture and provide for matters incidental thereto. The Act is administered by the Irrigation Department officials, mainly the regional canal officer. Article 94 provides that notwithstanding anything contained in the Land Revenue Code or any other law for the time being in force, no holder of any land assessed or held for the purpose of agriculture within the meaning of the Code shall, after the commencement of this Act, construct, cause or permit to be constructed, any tubewell, artesian well or borewell, exceeding forty five metres in depth for extracting groundwater except under and in accordance with the terms and conditions (including conditions relating to the maintenance of such well) of a licence. Section 99 further provides that owners of wells shall not allow any water to be used for purposes other than that of agriculture or drinking. If how ever, the regional canal officer permits, subject to any general or special order made by the state government,

the water may be used for other purposes also. The Act also provides under section 96 that where any tubewell, artesian well or borewell was in existence on an agricultural land at the commencement of the Act of 1976, and its depth is in excess of forty five metres, then the holder of the agricultural land shall, within three months from such commencement furnish information in respect of the well to the regional canal officer having jurisdiction in the matter and if he is satisfied that the well was in existence, he can grant to the holder of the land a certificate in the prescribed form to that effect. According to section 97 of the Act if the regional land officer is satisfied that any licence granted under section 95 has been obtained by fraud or misrepresentation or that the holder of the licence has, without reasonable cause, failed to comply with the terms and conditions subject to which the licence has been granted, then he may, after giving the holder an opportunity of showing cause, by order, cancel the licence. The Act also contains other penalising provisions. Under section 100 if any person contravenes the provisions of sections 94, 96 or any rules made under section 101 of the Act, in respect of the construction or maintenance of tubewells or any of the terms or conditions specified in a licence granted under section 95, he shall, on conviction be punishable with, imprisonment for a term which may extend to six months, or fine up to five hundred rupees, or both. In a nutshell, the Act regulates the extraction of groundwater through licensing methods. Penal sanctions are used for contravention of rules laid down under the Act.

(2) Problems

For any legal regulation to succeed, the institutional arrangement for management of the resource to be regulated, strategy for regulation and sanctioning mechanisms have to be clearly looked into. As already discussed above, the institutional arrangement most suitable for Indian conditions would be community wells maintained and run by local authorities like panchayats. The Gujarat Amendment Act suffers from many defects. First, it seeks to control private extraction through the mechanism of external control that it permits. The feasibility of effective implementation of such a law is questionable. It is as such difficult to moniter the digging of wells and with it even more difficult to check overextraction from them. Second, the strategy of giving these responsibilities to the canal officer does not also promote efficiency. A much more sophisticated, specialised and efficient machinery is required for such purposes. Third there is not even any provision in the Act wherein it is provided that the authorities implementing the Act have to work in cooperation with the CGWB, its regional offices or sections. Fourth, the penalising provisions in the law are again defective. Punishment should be of a certain quality that would discourage deviance and not promote it. Six months imprisonment or a fine of five hundred rupees may not be of much consequence to a rich influential farmer. What is necessary is changing the deterrent strategy to a more innovative one and designing appropriate imaginative sanctions.

(3) Strategies

In law various strategies are available for regulation, e.g., (i) deterrent strategy; (ii) regulatory strategy; and (iii) managerial strategy. The deterrent strategy involves criminal liability and depends for its success on effective regulation. The regulatory strategy entails delegated powers and relies on the administrative powers to give licences and incentives or deprivation of opportunities. The managerial strategy involves the setting up of organisational infrastructure that facilitates achievement of desired ends.

Since private ownership of wells is not going to be the ideal institutional arrangement, the regulatory strategies of licensing and delicensing may not have much relevance. The deterrent strategy is inadequate to deal with environmental deviance as the behaviour sought to be regulated does not satisfy the requirements of a traditional crime. In environmentally deviant behaviour the deterrent theory is ineffective also because it fails to deter and the cost for non-compliance is far less than that of compliance. While promoting community institutions, the strategy should be managerial. The organisational infrastructure should be so efficient that problems arising out of groundwater extraction get settled at the local level itself.

(4) Dispute settlement

At present, enforcement of punitive sanctions are time consuming and cumbersome. A hierarchy of dispute settlement mechanisms operate only to further complicate matters. The analysis of just one case would vouch for this statement.

In a recent public interest litigation in the district court of Goa, the petitioners sought an injunction against the Water and Pollution Control Boards and a fertiliser company, Zauri Agro Chemicals, for pollution of groundwater. The company had been discharging untreated effluents into the sea through pipes which had eroded over the years. These effluents had seeped into the subsoil polluting the subsoil water. Despite many reports and findings indicating the company, the court did not grant a temporary injunction because the petitioner had accepted compensation Similarly the High Court and Supreme Court refused to interfere in the matter because of yet another technical reason, i.c., the order was an interlocutory one. The district civil court finally dismissed the main suit on the ground of lack of jurisdiction. If the issue had been solved at the initial stages, continuing pollution and unnecessary delay could have been avoided. Sanctions for misuse of groundwater have to be worked out keeping in mind the socio-economic costs for compliance. Taxation, compensation for injury caused, regulating permits for withdrawals, etc., would be more effective than just fines and imprisonment. The forum for settlement of disputes could be the nyaya panchayats or environment courts more specialised in dealing with these matters. The problem with nyaya panchayats could be that they may not have the requisite scientific enterprise.

If management is given to local bodies, then active cooperation of the Groundwater Boards and Pollution Control Boards would be imminent. Even though the community would be actively involved in management, yet disputes are unavoidable. Scientific enterprise would also be absolutely necessary for determining, (i) the extent of groundwater to be extracted; (ii) the quality to be maintained; and (iii) areas to be protected from digging. Therefore, if management of community wells is given to local authorities, active collaboration with CGWB, its various divisions and Pollution Control Boards would be necessary.

(5) Rights

If only community wells are to be permitted under the Act, then the question of rights to the resource will have to be settled. It has to be determined what the nature of rights are at present. Are they individual or group, positive or negative, private or public, usufructory or riparian rights, etc. The object of this paper is not to go into a detailed rights discourse, but to identify a practical workable proposition of the right to groundwater so that

regulation can be made feasible. At present, a landowner has the right to sink a well on his land and extract any amount of water. According to the Easements Act 1882, the owner of the land also owns the ground- water beneath it. This implies that the right to use groundwater is basically an individual negative right which cannot be infringed or interfered with by any external agency. However, this arrangement has another dimension too. India being a welfare state undertakes or can undertake developmental work relating to groundwater extraction of which the benefits go to the users. If groundwater is harnessed and augmented by construction of percolation tanks, check dams and so on, it cannot be said that the users enjoy a negative individualistic right over it. Similarly, the English common law recognises the doctrine of riparian rights to regulate proprietory rights in water. Each co-riparian has the right to have the water flow past his lands in the same quantity and quality. There is a duty cast upon the upper ciparian to see to it that the lower one is not denied this right. There is also a difference between an underground stream where riparian right is applicable and groundwater wherein private right is recognised. It is according to this tradition that Indian statutes like the Easement Act were designed.

Keeping in mind the institutional arrangements available today, the difficulties in regulation, the cost of enforcement and the socio-economic conditions, it would be unwise to consider groundwater as giving rise to an individual, private negative right. It would be better to consider it as a common property resource like forests, air and surface water which can be regulated through minimal state intervention, that is, a resource in which individuals enjoy only a limited, positive, group right.

Entrusting management of the resource to local bodies working in collaboration with the groundwater boards and regional offices would be the most suitable arrangement keeping in mind, (i) diversity in availability of the resource and need to design different strategies depending on it; (ii) fragmentory nature of land holding: (iii) difficulty of regulation if private ownership and permits are encouraged; and (iv) problems of forming well adjusted communities working on standards of equity and justice. However in doing so the accountability of these bodies has to be very foolproof. This can be done through various mechanisms. If the local body is a panchayat or any other institution created by yet another statute relating to groundwater, then people's participation has to be encouraged at all levels beginning from the policy planning to the implementing stage. The participation should be to such extent that local needs are taken care of in any project and monopolisation by a few representatives does not take place. The authorities implementing the project should be made accountable for, (i) any act done in excess of their authorised powers; (ii) violating the principles of natural justice; or (iii) inaction. The dispute settlement. mechanism can take care of speedy disposal of cases if sanctions are clearly laid down in the Act.

(6) Related statutes

Some of the related legislations would also have to be scrutinised if public tubewells with active community participation are to encouraged. First, the Electricity Act will need looking into. Along with manipulation of water supply, delay in repairs and cumbersome procedures, another major complaint against the public tubewell system has been frequent power cuts and irregular electricity supply, whereas in other states overexploitation of groundwater is further increased due to subsidised electricity and house power linked tarifl. Regulation in the peak periods, encouraging pro rata metred tariff rather than flat rates and such other options

could be thought of. For this, one hard task before formulating a groundwater law would be to rectify the lacuna in the Electricity Supply Acts or in the administrative set up. Second, extraction structures have to be put up on places recommended by the groundwater boards. It may well be possible that private ownership could come in the way of implementing the scheme. The Land Acquisition Act which has separate provision for acquisition of land for public purposes, has also to be studied,[9]

- **Conclusion**

The above discussion on groundwater development and legal regulation reveals the following facts:

(i) It is not possible to articulate a uniform law relating to groundwater whether it is regionwise or sectorwise because of the divergence in geographical distribution and peculiarities in the problems of various sectors like industrial, urban water supply, agricultural and rural water supply.

(ii) Localised management of the resource would be the answer. For this, the appropriate institutional arrangement as far as water for irrigation and rural domestic use is concerned would be public tubewells to be managed by local bodies, e.g.. panchayats or institutions specially created by state legislation.

(iii) In case panchayats are given the responsibility of management, accountability mechanisms to ensure efficiency and equity, have to be devised. The Panchayat Acts, a neglected area, would have to be revisited and rejuvenated to meet this task.

(iv) The local bodies especially the panchayats may not have the scientific enterprise to decide on the location extraction or dispute settlement issues. Therefore close collaboration with the regional and field offices of CGWB would be necessary. Collaboration with Canal Authorities for promotion of conjunctive use of ground and surface water, especially in the command areas has also to be activated.

(v) The related statutes that have a bearing on groundwater like the Electricity Acts, Land Acquisition Acts and other codes would have to be looked into.

(vi) The dispute settlement forum would have to be the nyaya panchayats or environmental courts which have yet to take birth.

(vi) In this arrangement, the resource is to be considered as a common property resource to be managed by local bodies with the help of local communities.

Refrences

1. Constitution of India Part 4 Article 39(b)(c)

2. Constitution of India Part 4 Article 48 and 51A(g)

3. Ratlam Muncipality v. Vardhichand, A. I.R. S. C. 1622.

4. M.C. Mehtav. Union of India, A.I. R. 1988 S.C. 115.

5. Constitution of India Part 3 Article 14 & 15

6. Constitution of India Part 3 Article 21

7. Constitution of India, Item 17 (State List)

8. Constitution of India Part 3 Article 252

9. Land Acquision Act 1894

10 Environment and protection