

## **CHAPTER 5.0: THE GOVERNANCE FRAMEWORK**

### **5.1. Policy and legal framework for groundwater management**

#### **5.1.1. National Water Policy**

The main policies affecting groundwater management are the 1998 National Water Policy (NWP) and the 2002 amended version. Both have no statutory status, and thus cannot be legally enforced. They are the outcome of intensive political discussions. State governments could find them useful in developing their own water policies by adapting them to their specific agro-climatic and socioeconomic characteristics leading to the implementation of the Expert Group<sup>21</sup> recommendations:

- Water resources should be managed in the context of the environment, ecology, sustainability, equity, social justice, conservation, participation of stakeholders, and role of women.
- There should be a periodical reassessment of the groundwater potential on a scientific basis, taking into consideration the quality of the water available and economic viability of its extraction.
- The abstraction of groundwater resources should be regulated so as not to exceed the safe yield while ensuring social equity.
- The detrimental environmental consequences of over-abstraction of groundwater need to be prevented by the central and state governments.
- Groundwater recharge projects should be developed and implemented for improving both the quality and availability of groundwater resources.
- Integrated and coordinated development of surface water and groundwater resources and their conjunctive use should be considered from the project planning stage, and should form an integral part of project implementation.

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<sup>21</sup>Planning Commission. 2007. *Report of the Expert Group on Groundwater Management and ownership*. New Delhi: GoI.

- Over-abstraction of groundwater should be avoided, especially near the coast, to prevent ingress of seawater into freshwater aquifers.
- Both surface water and groundwater should be regularly monitored for quality.
- A phased program should be undertaken for improvements in water quality.
- For effective and economical management of India's water resources, there needs to be considerable improvement in knowledge by intensifying research efforts in various areas.

The Ministry of Water Resources, Government of India ("Ministry") is responsible for laying down policy guidelines and programmes for the development and regulation of country's water resources. Amongst others, the Ministry has been allocated the function of "overall planning for the development of groundwater resources, establishment of utilizable resources and formulation of policies of exploitation, overseeing of and support to State level activities in groundwater development." The Revised National Water Policy (2002) has the following recommendations related to ground water.

- Exploitation of ground water resources should be so regulated as not to exceed the recharging possibilities, as also to ensure social equity. The detrimental environmental consequences of over exploitation of ground water needs to be effectively prevented by the Central and State governments. Ground water recharge projects should be developed and implemented for improving both the quality and availability of ground water resource.
- Integrated and coordinated development of surface water and ground water resources and their conjunctive use should be envisaged right from the project planning stage and should form an integral part of the project implementation.

- Over-exploitation of ground water should be avoided especially near the coast to prevent ingress of sea water into sweet water aquifers.

### **5.1.2 National Environmental Policy**

Since the Centre's power to legislate on groundwater is based on environmental grounds, the National Environment Policy has suggested the following action points in relation to ground water:

- Take explicit account of impacts on ground water tables due to electricity tariffs and pricing of diesel.
- Promote efficient water use techniques, such as sprinkler or drip irrigation among farmers. Provide necessary pricing, inputs and extension support to feasible and remunerative alternative crops for efficient water use.
- Support practices of contour bunding and revival of traditional methods for enhancing ground water recharge.
- Mandate water harvesting in all new constructions in urban areas design techniques for road surfaces and infrastructure to enhance ground water recharge.

### **5.1.3 Legal framework**

Groundwater in the Indian legal system falls within a complex, multilayered framework, consisting of arrange of constitutional and statutory provisions at the central and state levels.

The right to groundwater has traditionally been seen as following the right to land, based on the Indian Easements Act of 1882. However, this long-established —real property groundwater right is challenged by the emerging public interest dimension of groundwater use. In 1996, the Supreme Court, ruling under the Environment (Protection) Act (1986), instructed the government of India to establish the Central Groundwater Authority (CGWA) to regulate and control groundwater development with a view to preserve and

protect this resource. The decisions made in a more recent case involving the Coca-Cola Company also affirm the government's right and obligation to protect groundwater under the right to life guaranteed by the Constitution of India. The Court recognized that the State as a trustee is under a legal duty to protect natural resources. It considered that these resources, meant for public use, cannot be converted into private ownership. The presiding judge, Justice K Balakrishnan Nair, asserted that the government had a duty to act to "protect against excessive groundwater exploitation and the inaction of the State in this regard was tantamount to infringement of the right to life of the people guaranteed under Article 21 of the Constitution of India."

The Constitution lists —water supplies which are understood to include groundwater—under the state List, thereby giving the states jurisdiction to regulate and control groundwater. However, the central government also has a concurrent power to make laws with respect to any matter for any part of the territory of India. Accordingly, the central government has sought to support states in a pragmatic way through the circulation of the Model Groundwater Bill.

#### **5.1.4. Model Groundwater Bill**

The rationale for the bill is to provide a template for consideration by state governments, which can modify and adopt it according to their needs. It was first developed in 1970 and has subsequently been revised and circulated many times. Among other things, the bill recommends the establishment and empowerment of some form of —state groundwater management agency, and registration and control of at least the larger groundwater users. It is important Ministry of Water Resources has been pursuing the matter regarding enactment of law on ground water with all States/UTs. The Model Bill was initially circulated in 1970 which has been re-circulated in 1992, 1996 and 2005 to the States /Union Territories to enable them to enact suitable legislation for regulation and control of ground water development on the lines of Model Bill. So far, 14 States/UTs have already enacted and implemented the legislation in

this regard. 16 other States/UTs are in the process of enactment of legislation. Latest status of enactment of legislation by various States/UTs is given below: -

**States/UTs where Model Bill already enacted and implemented**

Sl. No.	States/UTs
1.	Andhra Pradesh
2.	Assam
3.	Goa
4.	Tamil Nadu
5.	Lakshadweep
6.	Kerala
7.	Pondicherry
8.	West Bengal
9.	Himachal Pradesh
10.	Bihar
11.	Chandigarh(Regulations & Byelaws)
12.	Dadra and Nagar Haveli
13.	Jammu and Kashmir
14.	Karnataka

**States/UTs where initiatives taken for enactment of Model Bill**

Sl. No.	STATES/UTs	Sl. No.	STATES/UTs
1.	Maharashtra	10.	Jharkhand
2.	Gujarat	11.	Meghalaya
3.	Haryana	12.	Madhya Pradesh
4.	Mizoram	13.	Uttaranchal
5.	Orissa	14.	Andaman & Nicobar
6.	Rajasthan	15.	Chhattisgarh
7.	Uttar Pradesh	16.	Punjab
8.	Daman & Diu		
9.	NCT Delhi		

**States which feel not necessary to enact legislation**

Sl. No.	States/UTs
1.	Nagaland
2.	Sikkim
3.	Tripura
4.	Manipur
5.	Arunachal Pradesh

## 5.2 Legal Position

Unlike several countries, India does not have any separate and exclusive water law dealing with all water resources and covering all aspects. Instead the water related legal provisions are dispersed across various irrigation acts, central and state laws, orders/decrees of the courts, customary laws and various penal and criminal procedure codes. As a result, understanding of the exact legal position with respect to ground water becomes rather cumbersome.

Moreover, India does not have any explicit legal framework specifying water rights. The Supreme Court of India has, however, reinterpreted Article 21 of the Constitution of India to include the right to water as a fundamental right to life. The Easement Act of 1882 made all rivers and lakes the absolute right of the state. But as per the provisions of the Easement Act 1882 as usually understood and the Transfer of the Property Act of 1882, a land owner is supposed to have a right to ground water beneath his land as it is considered as an easement of the land. So, the land owners own the ground water on their lands. Ground water was considered an easement connected to land: he/she who owns the land: owns the ground water beneath the land. Ownership of ground water, therefore, accrues to the owner of the land above. Ownership of ground water is transferred along with the transfer of ownership of land. Thus, ground water is viewed as an appendage to land. This absolute ownership concept has allowed unlimited withdrawals of ground water beneath the land by the owners. There is no limitation on how much ground water a particular land owner may draw. As a result, a person is free to draw water more than his/her personal requirement and sell the same in the market. Moreover, the landless have no right on ground water. Similarly the tribes who have no ownership right over land have no right on ground water.

The legal aspects governing ground water resources have continued to remain the same despite substantial changes in ground water scenario that have taken place since then.

Rapid expansion in the exploitation of ground water resources in India for irrigation and other uses has led to an over-exploitation of ground water in several parts of the country. As a result, the above law is no longer in harmony with resource sustainability and economic requirement.

It may, however, be mentioned that the Directive Principles of State Policy [Article 39 (b)] of the Indian Constitution has made it incumbent on the state to ensure that the ownership and control of the material resources of the community are so distributed as to sub serve the common good in the best possible manner.

Moreover as already pointed out, since the Constitution does not have an entry relating to 'Environment', using the residual powers, the Union has enacted laws on environment and control of pollution, which have effects on water use, including ground water and its exploitation. Moreover, a correct understanding of the Easement Act 1882 implies that it does not give unlimited power to the land owner to exploit ground water regardless of the adverse effects on other users. We examine this aspect in the following section.

### **5.2.1 The Indian Easement Act 1882**

An easement is a right which the owner or occupier of certain land possesses as such for the beneficial enjoyment of that land, to do and continue to do something or to prevent and continue to prevent something being done, in or upon, or in respect of, certain other land not his own.

In the first and second clauses of this section, the expression "land" includes also things permanently attached to the earth, the expression "beneficial enjoyment" includes also possible convenience, remote advantage, and even a mere amenity, and the expression "to do something" includes removal and appropriation by the dominant owner, for the beneficial enjoyment of the

dominant heritage, of any part of the soil of the servient heritage, or anything growing or subsisting thereon. Section 7(g) the Indian Easement Act, 1882 which came into force in July 1982, states that:

- (a) "The right of every owner of land to collect and dispose within his own limits of all water under the land which does not pass in a defined channel and all water on its surface which does not pass in a defined channel". This clause explicitly relates to ground water and is the basis for prevailing thinking that land owners have absolute rights over water underneath their land. The provision has been based on the common English law under which ground water is viewed as an easement connected to land.
- (b) The Act also contains several provisions regarding natural streams which include underground streams also as per explanation provided in the Act which states that "a natural stream is a stream whether permanent or intermittent, tide or tideless, on the surface of land or underground, which flows by the operation of nature only and in a natural and known course".
- (c) The right of every owner of land that the water of every natural stream which passes by, through or over his land in a defined natural channel shall be allowed by other persons to flow within such owners limits without interruption and without material alteration in quantity, direction, force or temperature, the right of every owner of land abutting on a natural lake or pond into or out of which a natural stream flows, that the water of such lake or pond shall be allowed by other persons to remain within such owner's limits without material alteration in quantity or temperature. (Sec. 7h)
- (d) The right of every owner of upper land that water naturally rising in, or falling on such land, and not passing in defined channels, shall be



allowed by the owner of adjacent lower land to run naturally thereto.  
(Sec. 7i)

The burden of these clauses (Section 7h and i ) is to draw attention to interdependent nature of water flows.

A close reading of the relevant portion of clause 7 of the Act may, however, give a new insight. The Act says: "*The right of every owner of land to collect and dispose within his own limits of all water under the land which does not pass in a defined channel and all water on its surface which does not pass in a defined channel*". The crucial words of "defined channel" have been totally forgotten by our political executives, engineers and administrators. The Easement Act does not permit land owners ownership of ground water if it is passing in a defined channel. As much of ground water is a dynamic resource which flows through defined channels, owners of land cannot claim absolute ownership over water under their land. A proper implementation of this Act would require authorities to provide information whether ground water in an area is passing through a defined channel. This is not done presumably because most parts of ground water pass through defined channels with the result that the more one person withdraws ground water from his/her land, the less ground water becomes available to the person owning the neighbouring land.

The introduction of high powered technology of extracting ground water strikes at the very root of ground water as a property right available to every property owner. A few land owners who install powerful borewells/tubewells in the beginning and thereby succeed in withdrawing higher proportion of water may leave little water for other land holders who join the race later on. The newcomers, therefore, would have little or no rights to water in actual practice. The restrictions imposed on new structures by the state under the new ground water law tend to reinforce this trend and give it a legal backing. This phenomenon is described as the Appropriation Rule which results in gross inequity and denial of rights to water for the late comers, who usually happen

to be the have-nots. What is needed is either Reasonable Use Rule which allows a property owner to use water under his/her land as long as the use is reasonable in comparison to the water needs of his/her neighbours or correlative Rights Rule which apportions ground water resources of an area on the basis of the amount of land owned by each person.

In this connection, one may cite the case of the Kerala Act dealing with ground water. This Act appears to uphold the principle of reasonable use of ground water by all concerned. This is reflected in the provisions in the Act which allow the Authority to include conditions or restrictions on ground water use. The conditions are prescribed on the basis of an examination of the following factors:

1. Purpose for which water is used
2. Existing users of the locality
3. Availability of ground water
4. Quality of ground water
5. Well spacing and well density in the area and the possibility of well interface
6. Rate of recharge
7. Chances for ground water pollution
8. Long term water level trend

### **5.2.2 The Water (Prevention and Control of Pollution) Act 1974**

Water (Prevention and Control of Pollution) Act, 1974 was passed by the Parliament in 1974 for prevention of pollution of water due to discharge of liquid effluents from industries. Subsequently, another Act namely Water (Prevention and Control of Pollution) Cess Act 1977 was enacted for enabling the effective implementation of the earlier Act. All the states adopted the Act by 1990 and State Pollution Control Boards of the respective states were inter-

alia set up under the Act. Central and state Pollution Control Boards adopted the environmental norms for water discharge from different types of sources. This Act contains specific provision for prohibiting the use of stream or well for disposal of polluting matter, prescribing restrictions on new outlets and new discharges, laying down rules regarding existing discharge of sewerage or trade effluents, emergency measures in case of pollution of stream or well and power of the Board to make application to courts for restraining apprehended pollution of water in streams or wells. The said Act also incorporates provisions for creating Central and State Pollution Control Boards and prescribing powers and functions of these Boards to take various steps and measures for regulating the prohibition, prevention and control of water pollution. Some states have also enacted separate water pollution Acts, e.g. Orissa River Pollution Prevention Act, 1953 and Maharashtra Prevention of Water Pollution Act, 1969.

The Water (Prevention and Control of Pollution) Act, 1974, as amended in 1978, makes even the companies and the Heads of the Government Departments punishable under the said Act, if the offences under that Act are found to have been committed by a company or a Government Department, ( section 47 & 48) as the case may be.

Under the Water (Prevention and Control of Pollution) Act 1974 as amended in 1978, if the State Government, after consultation with, or on the recommendation of the State Boards, is of the opinion that the provisions of this Act need not apply to the entire State, it may, by notification in the Official Gazette restrict the application of this Act to such area or areas as may be declared therein the water-pollution-prevention and control area or areas and thereupon the provisions of this Act shall apply only to such area or areas.<sup>22</sup>

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<sup>22</sup> The Water (Prevention and Control of Pollution) Act, 1974, Section 19(1).

### **5.2.3 The Environment (Protection) Act (EPA), 1986**

Environmental (Protection) Act (EPA), 1986 was passed by the Union Parliament in 1986 and was notified by the Union Ministry of Environment and Forests. This Act covers different areas of "environment" including water as well as items interrelated to water.

In exercise of the powers conferred by sub-section (1) and (3) of section 3 of the Environment (Protection) Act, 1986 the Central Government has constituted an authority known as "Water Quality Assessment Authority". It consists of members drawn from the concerned ministries like Ministry of Environment and Forests and Ministry of Water Resources.

The Authority exercises the following powers and functions:-

1. To exercise power under section 5 of the said Act for issuing directions and for taking measures with respect to matters referred to in clauses (ix), (xi), (xii) and (xiii) of subsection (2) of section 3 of the Act.
2. To direct the agencies (government/local bodies/non-governmental) for the following.
  - (a) To standardize methods for water quality monitoring and to ensure quality of data generation for utilization thereof.
  - (b) To take measures so as to ensure proper treatment of waste water with a view to restoring the water quality of the river/water bodies to meet the designated best uses.
  - (c) To take up research and development activities in the area of water quality management.
  - (d) To promote recycling/re-use of treated sewage/ trade effluent for irrigation in development of agriculture.
  - (e) To draw action plans for quality improvement in water bodies, and monitor and review areas, implementation of the schemes launched/to be launched to that effect.

- (f) To draw schemes for imposition of restriction in water abstraction and discharge of treated sewage/trade effluent on land, rivers and other water bodies with a view to mitigating crises of water quality.
  - (g) To maintain minimum discharge for sustenance of aquatic forms in riverine system.
  - (h) To promote rain water harvesting,
  - (i) To utilize self-assimilation capacities at the critical river stretches to minimize cost of effluent treatment.
  - (j) To provide information to pollution control authorities to facilitate allocation of waste load.
  - (k) To review the status of quality of national water resources (both surface water and ground water) and identify "Hot Spots" for taking necessary actions for improvement in water quality.
  - (l) To interact with authorities/committees constituted or to be constituted under the provisions of the said act for matters relating to management of water resources.
  - (m) To constitute/set up State Level Water Quality Review Committees (WQRC) to coordinate the work to be assigned to such committees, and.
  - (n) To deal with any environmental issue concerns surface and ground water quality which may be referred to it by the Central Government or the State Government relating to the respective areas, for maintenance and/or restoration of quality to sustain designated best-use.
3. The Authority shall exercise the powers under section 19 of the said Act.
  4. The Authority may appoint domain experts for facilitating the work assigned to it.

5. The Ministry of Water Resource shall create a cell to assist the authority to carry out the assigned functions.
6. The Authority shall furnish report about its activity once in three months to the Ministry of Environment and Forests.

The Central Ground Water Authority, constituted under Environment (Protection) Act of 1986 has been a major institution created for regulating over-exploitation of ground water. For the protection of coastal environment in India, including ground water resources, a Coastal Regulation Zone Notification (CRZ), 1991 has been issued. National Coastal Zone Management Authority and State Coastal Management Authorities constituted under Environment Protection Act (1986) are other legal bodies for overall protection of coastal environment including ground water.

#### **5.2.4 The Model Bill**

The need for restricting excessive exploitation of ground water was realized by the Centre as early as about 40 years ago. But the Centre could not do much since regulation of ground water was supposed to be a state subject. What it did was to prepare a model bill for the purpose and circulated the same to the state governments for enactment and implementation. The Draft Model Bill was circulated to all States/Union Territories by Government of India, Ministry of Agriculture (which was the concerned ministry at that time) as early as in 1970. The bill envisaged empowering the state governments to acquire powers to restrict installation of new ground water structures like borewells, tubewells and even dug wells by private individuals or groups for purpose other than drinking water. The Bill was revised thrice, once in 1992, second in 1996 and then in 2005 by the Ministry of Water Resources (MoWR) (which became the concerned ministry later on)

The salient features of the 1970 model bill were as under:

- (a) The State Governments were to acquire powers to restrict the construction of ground water abstraction structures (including wells,

borewells, tubewells etc.) by individuals or communities for all uses except that of drinking water in any area declared as notified area based on report from Ground Water Authority of State in public interest.

- (b) For discharging the various functions to be acquired by the Government under the legislation, a Ground Water Authority was to be constituted by each state. The Authority was to consist of a Chairman, representative of the concerned State Government Departments and knowledgeable persons in the field of ground water appointed by the State Government. The authority was to be provided with support of technical persons and other staff considered necessary for enforcing the legislation.
- (c) Application for sinking wells for purposes other than domestic use were to be considered by the Ground Water Authority keeping in view the purpose for which water was to be used, the existence of other competitive users, the availability of ground water and any other relevant factor.
- (d) Persons/organizations desirous of taking up the business of sinking of wells/tubewells were required to register with the Ground Water Authority. The Authority was also to be vested with the power to cancel any permits, registrations or licenses issued by them.
- (e) Finally, the Authority was to be provided with complete legal support to enforce the various provisions of the legislation. It was also provided that the orders issued by the Authority would fall outside the purview of the Civil Court. The Civil Courts were to be barred from granting injunctions on any decision taken by the Authority.

But the states failed to rise up to the occasion. They ignored the Centre's advice completely. Thereafter, the issue remained more or less dormant for 20 years after which the Central Government revived the bill and made some

revisions. The revised bill was circulated to states for adoption with modification if any in the year 1992.

The following provisions were included in the revised version of the Model Bill (1992):

- (a) Extension of the bill to cover all uses including drinking and domestic use, and
- (b) Exemption of small and marginal farmers from obtaining prior permission of the proposed Ground Water Authority for the construction of ground water abstraction structures provided these were for their personal use (not commercial).

The states, however, continued to adopt a non-responsive attitude. Meanwhile, the Model bill was further revised and circulated again to states for implementation in 1996. The main revision made was with respect to the earlier provision related to small and marginal farmers. That provision was replaced by the following.

*"The person or persons will not have to obtain permit if the well is proposed to be fitted with a hand operated manual pump or water is proposed to be withdrawn by manual devices".* Further, the latest Bill warranted that all wells sunk even in the non-notified areas with certain exceptions would require registration. Certain changes were also made in the penalties to be imposed. Another significant change was that the provision of bar of jurisdiction by civil courts made in the earlier draft bills did not find a place in this bill.

Yet another revision was made in the "Model Bill to Regulate and Control the Development of Ground Water" by adding Chapter III-"Rain Water Harvesting for Ground Water Recharge" for identifying the areas for recharge by the Authority, encouraging roof top rain water harvesting and promotion of mass awareness and training for the same. It was circulated in January, 2005 to all states/UTs



The main thrust of all versions of the Draft Model Bill sent by government of India, however, remained the same i.e. constitution of State Ground Water Authority (SGWA) which would identify the critical areas that are over-exploited (where exploitation is much more than natural recharge to ground water and depletion is quite high) and would notify such areas as "Notified Areas". Owners of ground water structures in such areas would be required to get themselves registered with such Authority. For installation of any tubewells in such Notified Areas, a permit would be required from such Authority and penalties can also be imposed for failure to comply with provisions of the Act.

Thus, Government of India has been requesting States/UTs since 1970 to implement Model Bill by enacting ground water legislation. It was also printed out by the Central Government that before attempting any such enactment, common people as well as farmers should be fully educated about the need of judicious regulation of ground water. However, as in June, 2005, out of 30 States and 5 UTs of the country, only 7 had enacted and implemented the legislation and three had passed the Bill but did not notified the same. The reasons for non-implementation of the proposed legislation could be several. But the most important one seems to be lack of political will, Political parties have been reluctant to impose restrictions on use of ground water due to fear of losing support of the electorate.

It would, of course, be unrealistic to expect that the implementation of the Model Bill in its present form would take care of the problem of over exploitation of ground water. It cannot do so because it has no provision for restricting the extent of ground water extracted by the existing users. It would have some minor advantages only. For examples, implementation of the bill would help in improving the information base with respect to ground water. By registration of structures it may be possible to collect and maintain basic data of all existing wells/tubewells viz. location, depth, design, discharge, command area, canal irrigation at village level. Data of various aquifer characteristics

under different hydrogeological conditions, density and quality of ground water may also become available. The legislation may be easier to implement in urban areas to protect drinking water source and water supply to industrial units. But it would be extremely difficult to implement it for agriculture use which consumes bulk of ground water. The number of farmers owning tubewells is too large to be regulated by a central agency especially when these farmers have political backing because of their voting power. No coercive policy is expected to succeed when the number is quite large. The legislation may lead to widespread corruption and intimidation in some cases. Further the constitution of the authorities comprising mainly of representatives of concerned departments is such that these become a technical wing of the state government. There is little scope for participation of local population. Thus the Model Bill, in its present form is not expected to be a panacea for the problem of over exploitation of ground water resources. It is surprising and speaks poorly of the relevant wings of Government of India that the later versions of the model bill did not take any notice of the 1992 (73<sup>rd</sup> and 74<sup>th</sup>) amendments to the Constitution regarding giving powers to Panchayat and Municipalities in management of local resources of which ground water is a good example. Thus an excellent opportunity was lost.

Notwithstanding what has been stated above, the Model Bill represents a milestone in approach of the government. It places ground water in problem areas under public domain. It advocates the view that government has the right to regulate the extraction of ground water. Ground water, therefore, should not be regarded as private property like land.

### **5.3 Institutional Framework:**

With growing concerns and pursuance and interventions of the Central Government, in recent years and reports of declining water tables across India, the states has stepped into regulation and control of ground water use. However, inadequate legal and institutional provisions made regulation a difficult job. The recommendations in the National Water Policy and the

National Environment Policy should be the cornerstone of the ground water development and regulation policy in the country. However, the above policy statements should also be supported by creation of suitable institutional infrastructure and effective implementation mechanisms.

The Union Ministry of Water Resources is responsible for the overall planning and management of water resources in India. Central Ground Water Board (CGWB) is the apex national organization, working under the Ministry responsible for various activities related to exploration, development and management of ground water resources in the country. It has the mandate to *“Develop and disseminate technologies, and monitor and implement national policies for the scientific and sustainable development and management of India’s ground water resources, including their exploration, assessment, conservation, augmentation, protection from pollution and distribution, based on principles of economic and ecological efficiency and equity”*.

The Central Ground Water Authority (CGWA), Constituted under Environment (Protection) Act, 1986 in 1997 has been vested with necessary powers for regulation and control of GW development and management.

Central Water Commission (CWC), the Government agency dealing primarily with surface water resources of the country, has Integrated Water Resources Management included in its mandate.

The State Governments have their own organizational set-up for developing and managing ground water resources in their territorial jurisdiction. With the increasing dependence on ground water resources as a major source of water for various uses and the emergence of new challenges related to its sustained development and management, a number of non-governmental and voluntary organizations are also engaged in activities focused on sustainable management of ground water including capacity building, creation of awareness and ensuring stakeholder participation in management initiatives.

Measures taken to regulate ground water through licenses, credit or electricity restrictions work ultimately through some institutions. Institutional framework, therefore, plays a key role in the operationalization of the legal or regulatory set up. Hence an outline of the institutional framework related to groundwater governance would be useful background information. This is briefly described below.

### **5.3.1 National Level**

**National Water Resources Council** formed in March 1983 by Government of India is the apex body for water resources in India. But it is not a statutory body. The Prime Minister is the Chairman, Union Minister for Water Resources is the Vice-Chairman and a few concerned Union Ministers and all the Chief Ministers of States are its Members. Secretary Ministry of Water Resources is the Secretary of the Council. The functions of the Council are to (1) lay down the national water policy and review it from time to time, (2) to advise on the modalities of resolving inter-state differences related to water, (3) to consider and review major water development plans submitted to it, (4) to make such other recommendations as would foster expeditious and environmentally sound and economical development of water resources etc. The council is supposed to meet at least once in a year, but in actual practice it has held very few meetings. It is yet to establish itself as an effective body. Whether making it a statutory body will make it more effective is an open question.

**National Water Board** was constituted in September, 1990 by Government of India. Secretary of the Ministry Of Water Resources, Government of India is its chairman while secretaries of concerned Union Ministries and Chief Secretaries of States are its Members. Its functions are to review the programme of implementation of the National Water Policy and report to the National Water Resources Council and to take up several other specified matters related to development and management of water resources. The Board

has held meetings at frequent intervals and has served as a useful forum for Centre-State discussions at the senior officers' level. However, despite the overriding importance of ground water in India, issues related to ground water regulation and developments have seldom been referred to this body.

**The Ministry of Water Resources** formerly (before September, 1985) designated as Ministry of Irrigation, is the nodal ministry in the Government of India for water resources. Its current mandate in the Allocation of Business is "development, conservation and management of water as a national resource; overall national perspective of water planning and coordination in relation to diverse uses of water". The Ministry is responsible for laying down policies and programmes for development and regulation of country's water resources including surface and ground water. This Ministry plays the role of co-ordination, synthesis and monitoring country-wide irrigation development and flood management. It plays a catalytic role in the above respects even though water is usually treated as state subject. The Ministry also helps the Planning Commission in the formulation, monitoring and review of Annual and Five Year Plans of the States in the water sector.

The functions with respect to ground water are carried out with the assistance provided by Central Ground Water Board having its office in Faridabad. The Union Ministry also has a ground water wing headed by a Joint secretary rank officer who in turn reports to the Secretary of the Ministry. The following are among the functions assigned to this wing.

- Procurement of equipment/machinery including release of foreign exchange.
- Budget (Plan & Non-Plan of the Central Ground Water Board).
- Bilateral projects to be taken up by the Board.
- Formulation of new Plan proposals.

- Parliament Questions on Central Ground Water Board/Authority (excluding service matters).
- Finalization/ implementation of the Programme of the Board.
- Monitoring various Reports received from the Board on drilling/survey activities.

The Ministry of Rural Development looks after drinking water in rural areas while the Ministry of Urban Development looks after the same in urban areas. The Ministry of Environment and Forests looks after environmental aspects of management and development of water resources. The Ministry of Agriculture plays an important role in irrigation management, and allied issues directly or indirectly connected with development, utilisation and preservation of water-resources. This Ministry has full responsibility for micro irrigation comprising of drip and sprinkler irrigation.

The Central Ground Water Board which was set up in 1954 and restructured in 1972 is an apex body at the national level responsible for investigation, exploration, assessment and rendering technical advice for development and management of ground water resources in India.

The Central Ground Water Board's mandate is to develop and disseminate technologies and monitor and implement policies for the scientific and sustainable development and management of country's ground water resources including their exploration, assessment, conservation, augmentation, protection from pollution and distribution based on principles of economic and ecological efficiency and equity. The Board carries out the following activities:-

- Hydro geological surveys.
- District Ground Water Management Studies.
- Ground Water exploration aided by drilling.
- Monitoring of national hydrograph observation wells.

- Water Supply investigations.
- Periodic assessment of ground water resources.
- Publication of maps and reports.
- Scientific source findings for drought affected states under the National Drinking Water Mission.
- Construction of deposit wells.
- Hydro-Chemical and geophysical studies.
- Hydro geological and hydro-meteorological studies.
- Remote sensing studies.
- Pollution studies.
- Mathematical modelling studies.
- Data storage and retrieval.
- Water balance studies.
- Artificial recharge studies.
- Studies on conjunctive use of ground water and surface water.
- Training activities related to ground water.
- Reviewing regulation of ground water development
- Rain water harvesting and artificial recharge of ground water

The office of the Board is located in Faridabad in Haryana (near Delhi) with a small office in Central Delhi. But it has regional offices in different parts of the country which look after specific states and UTs. The regional offices coordinate with the concerned state governments, develop and maintain data observation centres within the concerned states, collect ground water data from these centres and keep the central office informed of significant developments

within the area of their jurisdiction. They also assist Central Ground Water Authority.

The Central Ground Water Authority was constituted under sub-section (3) of the Environment (Protection) Act, 1986 on 14.01.1997 for purposes of regulation and control of ground water development and management. The Authority is headed by the Chairman, CGWB and has members of the CGWB, MoWR, MoEF, CWC and ONGC. The CGWA has been granted the powers to, amongst others, regulate and control, manage and develop ground water in the entire country and to issue necessary directions for this purpose.

The Authority has been empowered to exercise the powers and perform the following functions:-

- (i) Exercise powers under Section 5 of the Environment (Protection) Act, 1986. The Authority can issue directions in writing to any person, officer or any Authority and such persons, officer or Authority shall be bound to comply with such directions. For example - The Authority has power to direct the closure, prohibition or regulation of any industry or process and also the stoppage or regulation of the supply of electricity or water or any other service.
- (ii) To resort to the penal provisions contained in Section 15 to 21 of the Environment (Protection) Act, 1986. In Sections from 15 to 21 of the Act, it has been summarized that penalty should be levied in avoidance of the rules, orders and directions of the Act. Also if this offence is done by companies or Government Departments, every person, who at the time the offence was committed, was responsible and also the company or Govt. Department should be punished accordingly. Also the Central Govt. may ask from time to time, to the concerned officer, State Government or the authority to furnish the required information, report etc. All the members, officers and employees of such authority working under this Act shall be deemed to be public servants.



- (iii) To regulate indiscriminate boring and withdrawal of ground water in the country and to issue necessary directions with a view to preserve and protect the ground water.

State Governments have the jurisdiction and the authority to control and regulate the development groundwater within their territorial jurisdiction. However, in pursuance of the provisions of the Environment (Protection) Act, 1986 and the decisions of the Hon'ble Supreme Court of India, the Central Government, acting through the Ministry of Water Resources has devolved a role to oversee the overall planning for the development of groundwater resources, establishment of utilizable resources and formulation of policies of exploitation and for overseeing and supporting State level activities in groundwater development on a basis that groundwater is a prime natural resource and its planning, development and management need to be governed in national perspectives.

#### **Areas of Activities of CGWA**

To achieve the mandate, the Authority has divided its functions into following mentioned four sub-heads. These are detailed as follows.

- (a) Regulation of ground water.
  - (i) Extraction of ground water development
  - (ii) Construction of wells
  - (iii) Registration of ground water abstraction structures
  - (iv) Performance of business of drilling wells
  - (v) Sale of ground water
- (b) Conservation of ground Water

Conservation and artificial recharge of ground water including roof-top run-off harvesting storm water recharge and by other means etc.

- (c) Protection of ground water
  - (i) Protection of ground water quality deterioration from disposal of urban and industrial wastes.
  - (ii) Management of ground water in coastal aquifers.
  - (iii) Clearance of solid & liquid waste disposals sites.
  - (iv) Clearance for setting up of ground water based industries.
- (d) Mass Awareness - Promotion of education & Mass Awareness Programmes.

Declaration of any area as "Notified Area" has to be preceded by a mass awareness programme aimed at educating the people of the necessity and objectives of notification of the area. Detailed literature, in local language, should be published on ground water conditions. Mass contact functions should be organized involving the administration, political persons, schools and the users in the affected area.

### **Operational Modalities**

The Authority has taken a decision that instead of adopting a policy strategy, it should adopt a pro-active approach and sensitise persons and users at the different levels with regard to need for judicious use and scientific management of ground water. The Authority has, therefore, decided to adopt the following plan of action.

1. Organise mass awareness programmes involving the users and NGOs to explain the objectives of the notification of any area. The effort shall involve:
  - (i) Preparation and issue of literature in local languages,
  - (ii) Establish one to one contact by involving voluntary agencies, and
  - (iii) Education through schools, etc.

2. Issue of messages through news, media for seeking cooperation of the people in the effort.
3. Organise activities like registration of wells, grant of permission for the replacement of the existing or the construction of new wells, organizing roof-top rain water harvesting without causing any inconvenience to the people.
4. Issue insertions through electronic display boards,
5. Production of films, etc.
6. Issue of notices to offenders giving them sufficient time to explain their position and take corrective actions.
7. Personal hearing before imposition of penalties.

To regulate indiscriminate boring and withdrawal of ground water in the country and to issue necessary regulatory directions with a view to preserve and protect the ground water.

The approach, policies and operations of CGWA have been modelled on the pattern of the Model Bill. Hence, these have the same advantages and disadvantages as those of the Model Bill. Its impact, therefore, is doubtful.

### **5.3.2 State Level Institutions**

Water being a State subject, the State Governments have primary responsibility for use and control of this resource. The administrative control and responsibility for development of water including ground water rests with the concerned State Departments and Corporations.

Major and medium irrigation is handled by the irrigation/water resources departments. Department of Irrigation (Water Resources) is responsible for the enforcement and implementation of the irrigation Acts within the respective States and exercises administrative control over all irrigation projects including major irrigation, minor irrigation and irrigation through ground water resources

such as tubewells etc. It also prepares plans and schemes for irrigation and flood control.

In most of the States no single department is there to look into all the component of ground water as whole. Minor irrigation (Ground Water component) is looked after by various departments such as water resources departments, minor irrigation corporations, Zilla Parishad/Panchayat and by the other departments such as agriculture. Urban water supply is generally the responsibility of urban development and Panchayat take care of rural water supply. Government tubewells are constructed and managed by the irrigation/water resources department or by tubewell corporations set up for the purpose. The concerned state department has its offices at district and in some states even at still lower levels like subdivision, taluka, block or mandal.

In some states, departments other than the water resources department are also involved in management of ground water. For example in Andhra Pradesh four Govt. agencies are involved in supplying ground water for different purposes namely rural water supply, ground water department, irrigation department and A.P. State Industrial Development Corporation. Revenue Department is also involved for registration of existing ground water structures. However, ground water department is only concerned with exploration, controlling and regulating development of ground water.

Similarly, in Punjab, four Departments of state government are involved in ground water namely Agriculture, Punjab State Water Supply & Sanitation, Irrigation & Punjab State Tubewell Corporation. However, only Irrigation & Agriculture Departments are involved in exploration & control and regulation of ground water development. In West Bengal the departments involved are Water Resources Development Department, Public Health Engineering Department, and ZilaParishad working under Panchayati Raj Department.

In Gujarat, two agencies are involved viz Narmada Water Resources Water Supply and Kalpsar Department and Gujarat Water Supply and Sewerage Board. Of these, the first one is the major one. However, in Tamil nadu and Delhi only one department was involved in ground water administration in these states.

Several agencies in States are involved in ground water management; there is sometimes a coordination committee between these agencies at the state level as in Andhra Pradesh and Punjab. But coordination is usually quite weak. While in Andhra Pradesh, the meetings of the coordination committees were held at quarterly intervals, in Punjab and West Bengal, there was no specified schedule for such meetings. In Gujarat, there was no system of coordination between the two agencies. In most states, there was no coordination at the district or lower levels. It may, however, be mentioned that in the states which have established Ground Water Authorities whether through an Act or through administrative order as in the case of Gujarat, some coordination takes place in an indirect manner since representatives of the concerned departments are members of the Authorities in their respective states. In case of Andhra Pradesh coordination committee functions even at the district and mandal levels and their meetings are held at quarterly intervals.

Thus a multiplicity of agencies deal with ground water with degree of coordination among them varying from state to state. But, in general, the ground water department/directorate/ division/corporation of the state government has a major role to perform.

The government was perceived by households to be the major agency for formulating laws/rules pertaining to the regulation of ground water use. This was reported from Andhra Pradesh, Delhi and West Bengal while in states like, Gujarat, Punjab and Tamil Nadu, Panchyats were also perceived to frame rules

for groundwater governance. In Punjab & Tamil Nadu Municipalities also formulated rules in this regard.

**Table 5.1: Agency involved in Formulation of Laws/Rules/Procedures to Regulate Use of Ground Water**

Agencies	Andhra Pradesh		Delhi		Gujarat		Punjab		Tamil Nadu		West Bengal		All India		Total
	U	R	U	R	U	R	U	R	U	R	U	R	U	R	
Government	7	12	20	38	0	0	0	0	0	0	8	15	35	65	100
Panchayat	0	7		0	0	9	0	9	0	20	0	5	0	50	50
Local Resident	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Customary Practices	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Municipal Corp.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Municipality	5	0	0	0	1	0	8	0	10	0	4	0	28	0	28

*U-Urban; R-Rural*

### 5.3.3 Local Level Institutions

The block level administration along with Panchayat are perceived to play some role in regulation of ground water use as can be seen from responses in

the villages and towns tabulated below. Water supply department has also a role in regulation of drinking water supply.

**Table 5.2: Officials Empowered to Regulate Use of Ground Water (No. of villages/towns)**

Agency	States					
	Andhra Pradesh	Delhi	Gujarat	Punjab	Tamil Nadu	West Bengal
Panchayat	8	-	6	6	8	6
Block	-	-	-	-	-	-
Water Supply Department	-	8	2	2	-	2

#### **Credit and Power Distribution Institutions**

Regulation of ground water extraction or expansion is also exercised through institutional credit and supply of power. The instrument of credit becomes operative if farmers apply for a loan from a bank or other financial institutions for meeting the cost of installation of tubewells/borewells. The National Bank for Agriculture and Rural Development (NABARD) which provides guidelines as well as refinance to banks and other financial institutions on credit for rural areas occupies an important place in this respect. NABARD with its headquarter in Mumbai has a separate department which looks after this aspect.

Availability of electricity is another key instrument which influences the installation and operation of ground water structures. This is a much more potent instrument than credit since it affects even those structures which are not dependent on credit. The cheap or free availability of power has been a major factor in the phenomenal growth of tubewells/borewells in India. Electricity in

each state is provided by State Electricity Boards which are State Public Sector Undertakings and are, therefore, subject to respective state policies. Besides, there is a national agency namely Rural Electrification Corporation (REC), a central Public Sector undertaking which has also played a very important role in terms of financing to State Electricity Boards for several schemes in operation.

### **Ineffectiveness of Legal and Institutional Framework**

The legal and institutional framework as outlined in earlier sections of this chapter has proved to be grossly inadequate to tackle the trend towards over-exploitation of ground water in the country. The Central Ground Water Authority came into existence in January, 1997. More than ten years are over but there has been no reversal of the trend towards increase in number of over-exploited, critical and semi-critical areas. Far from that, their number has been increasing. Based on 1984 methodology, there was 7063 assessment units in 1995 of which 3 percent were categorized as dark and 4 percent over-exploited. But in 2004 out of the 5723 assessment units, 15 percent were categorized as over-exploited, 4 percent as critical and 10 percent as semi-critical by CGWB based on the latest 1997 methodology. "Even though the 2004 estimates are not strictly comparable with the 1995 estimates, they clearly indicate deterioration, as the differences between the two estimates are too large to be explained by the minor differences in the classification methodology used in the two estimates. The percentage of over-exploited blocks has increased from 4 percent to 15 percent, making over exploitation of ground water a matter of concern."<sup>23</sup>

The enactment of ground water legislation by some of the states has also produced little impact in the respective states. In response to our question, Gujarat, no doubt, stated that water level had increased but during discussions

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<sup>23</sup> Planning Commission, Report of the Expert Committee, 2007



of the Principal Investigator with state officials, it turned out that there were other factors like increased rainfall that had taken place in Gujarat in recent years as well as effect of the Narmada water reaching Gujarat.

### **Reasons for Ineffectiveness**

The lacuna in the prevailing measures indicate that something is fundamentally wrong with respect to the present approach to regulation of ground water resources. The major flaws in the system are discussed below.

1. The most important deficiency relates to interpreting regulations in the narrow sense of controlling permits for drilling new ground water structures like borewells/tubewells only and not the existing ones. This is true for both Central Ground Water Authority and State Ground Water Authority

Authority working under the respective state Acts which, in turn, are based on the Model Bill circulated by the Centre. The same is true of indirect measures like credit or electricity restrictions. The focus is entirely on stopping installation of new ground water structures. There are no provisions for restricting the quantum of water extracted from the existing ground water structures. As a result, the owners of such structures are free to extract any amount of water they wish to extract. Thus tubewell owners/operators who have been responsible for over-exploitation of ground water are completely left free, whereas restrictions are placed on the newcomers. The problem of over-exploitation in the over-exploited area would persist so long as this deficiency is not removed. The above measure is not only unsustainable but is also iniquitous. It favours those who are already enjoying benefits from ground water as against those who have been deprived of these benefits so far. It is also known that the better off farmers in the rural areas were usually ahead of others in taking advantage of this technology because they had requisite capital or borrowing capacity from banks, whereas the small and marginal farmers as well as landless labourers usually lag behind. If this is so, then the equity implication of the present legal system becomes even more serious. Authorities

must, therefore, give the maximum attention to this aspect and give powers to regulatory bodies to put a ban on unreasonable or excessive withdrawal of ground water by existing users and also work out a satisfactory institutional framework for enforcing this provision.

2. While the ground water regulation laws have been enacted and authorities have been created, administrative implications of the regulatory system have not been either understood or properly followed. As a result, appropriate actions have not been taken to ensure proper implementation of the legal framework created. The institutions which for years have been oriented towards development of ground water like the Central Ground Water Board and the state ground water departments and their personnel who have been trained mainly for exploring and developing ground water resources have suddenly been entrusted with the additional responsibility of doing the opposite namely controlling expansion of ground water structures. A similar pattern has been followed at the district levels where the officers of the state ground water department or division have been saddled with this responsibility as an additional charge. The organizational frame of CGWB has been designed to take care of supply side management mainly. Its technical and management staff have the expertise needed for supply side management namely "hydro geological controls which determine the yield and behaviour of ground water levels under abstraction stress, the interaction of surface and ground water in respect of river base flow and changes in flow and recharge rates due to their exploitation"<sup>24</sup>(Saleem Romani, *Groundwater Governance*, 2007). But an entirely different type of expertise is needed for demand side management which is the need of the hour. As has been pointed out by Dr.Saleem Romani, an ex-chairman of CGWB, demand side management requires expertise for dealing with socio-economic aspects related to the "managing the users of water and land". This would require knowledge of regulatory and participatory

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<sup>24</sup> Romani Saleem, *Ground Water Management: Emerging challenges in Ground Water Governance: Ownership of Groundwater and Pricing* (ed.): Dr.Saleem Romani and others, Capital Publishing Company, New Delhi 2007

aspects, awareness generation modalities, water rights and economic incentives etc. The present organizational framework, both at the centre and in the states which have created SGWA, is grossly inadequate with respect to demand side management. Personnel appointed for their expertise with respect to supply side management have been entrusted with the responsibility of demand side management also. This is far from the professional approach. It is, therefore, suggested that an entirely different organizational framework having members from economics, sociology and legal background apart from the hydrological one and headed by a judicial expert may be set up at both centre and state levels. If panchayats have to play a part at the local level, then a senior representative of the Panchayati Raj Ministry/Department should be a member of the authorities at national and state level. Similarly, given the role of electricity and credit in regulation, it would be appropriate to associate senior representatives of NABARD and Ministry of Power in the regulatory bodies at both centre and state.

Adequate funds as well as manpower having dedicated responsibility and proper accountability exclusively for regulation and control are not provided. The authorities have been able to notify only 43 areas whereas number of over-exploited areas is 839 and that of critical areas is 226 as per March, 2004 data provided by CGWB. This indicates that it is not in a position to cope up with the work. In the 22<sup>nd</sup> meeting held recently, the Authority decided to take up 747 new over-exploited areas, but how much time it will take one does not know. Moreover considerable numbers of applications have been lying undisposed in the secretariat of CGWA as mentioned in Minutes of the 23<sup>rd</sup> meeting of the CGWA held on 28<sup>th</sup> August, 2007. Similar situation exists at the state level. For example, in Gujarat it was observed during October 2007 that out of the 187 applications received for installation of new tubewells, only 4 were disposed off while the remaining 183 were pending for decision.

Further the CGWA has no legal personnel, nor does it have agricultural or socioeconomic experts. It is reported in the Minutes of a meeting of CGWA

that the need for a legal personnel in Secretariat of CGWA was felt by its Member Secretary. But it was decided to take the help of the services of legal personnel of the Ministry of Environment & Forests despite the fact that the representative of this department was not even attending the meetings of the Authority of which he/she is a member. The works as a result got neglected. Many members of the Central Authority from departments other than CGWB do not show interest even to attend the meetings.

As a result, the Central Ground Water Authority essentially becomes the Central Ground Water Board and the State Ground Water Authorities become the State Ground Water Departments or Directorates as the case may be. Similarly, at the district level, it is essentially the ground water departments.

Regulating ground water management through demand driven measures is a very difficult task in a country like India where focus so far has always been on the supply side measures. It is entirely a new approach which can succeed only if the administrative hierarchy at all levels especially local levels, panchayati raj institutions and the farmers in particular are convinced about its need and are aware of the modalities of the same. Massive awareness programme is, therefore, required for the successful implementation of the new regulation. The CGWA has rightly selected awareness as one of the components of the activities to be undertaken by it. But the scale of operation of this programme has been too meagre to have any impact on the situation. For example, during the period August 1998 to October, 1999 massive awareness programme consisted of holding one day meeting at 13 places in the country, whereas the problem lies in around 839 blocks/talukas etc. This is like a proverbial drop in the ocean. CGWA must have a strategy for launching massive programme on a continuous basis so as to cover at least 500 places in a year so that the programme gets repeated in a particular area in order to have an impact on the mind-set of the public as well as local administration.

3. It is worth noting that no punitive action (including imposition of fine) has been taken anywhere even though the number of over-exploited, critical and

semi-critical units is increasing. The laws that have been enacted are, therefore, toothless. They give a false impression of regulation and control.

4. The regulatory machinery at all levels, from centre to state to district and below is entirely bureaucratic. Public is nowhere in the picture not even at the village panchayat, municipality or block levels. One wonders how it is possible to enforce control through a bureaucratic system when millions of farmers who are spread over throughout the length and breadth of the country are involved and when control implies affecting such vital aspects of their life as their livelihood, earning power, food security, which every farmer would like to protect. In such a situation either there will be little control or the control may degenerate into widespread corruption. In the absence of public cooperation, the last date for adoption of roof top rain water harvesting in National Capital Territory of Delhi has been getting extended from year i.e. June 2006 to June 2007 to June 2008 etc. It is surprising how the authorities while devising a control mechanism completely forgot to take into account the existence of local self-government institutions like the panchayats and municipalities, even though the new legal measures came into being much after 73<sup>rd</sup> and 74<sup>th</sup> amendments of the constitution through which an attempt was made to strengthen the local self- government institutions.
5. The extent of awareness among officials of legal provisions relating to regulation of ground water resources was perceived to be far from adequate. The interaction of the Study Team with officials in different states revealed several misconceptions. Many officers were not even aware of the Easement Act and some of those who were aware had not read it. They had a vague understanding that every land owner has full ownership rights over the ground water in his/her plot of land and that the state had limited right to intervene in the matter. But no one was aware of the exact wordings of the relevant clause of the Easement Act which states quite clearly that no land owner has absolute right over the ground water if the ground water is passing in a defined channel. But utilizable ground water is a dynamic resource which flows into defined

channels such that if one person makes excessive withdrawal then the supply available to the neighbours would become less. Under these situations which are the normal situations, the absolute ownership position no longer holds good. Ground water, therefore, becomes an item in the public domain. But this awareness is completely missing at all levels whether Centre, State, District or below. Most officers also lacked understanding of the Environmental Protection Act 1986. Many state officials dealing with water resources in every state were harping on the point that ground water is a state subject and, therefore, Centre has no right to interfere in the matter even if excessive withdrawal of ground water starts posing a threat to environment and ecology. They were not aware that Centre has been given power for this purpose under Environmental Protection Act, 1986. In one state very senior officers responsible for policy making were not aware of the existence of Central Ground Water Authority and the functions performed by this agency, even though one district collector in that state had already been contacted by the Central Ground Water Authority for notification. The concerned state had enacted its own ground water laws. Hence the state level authorities were under the impression that licensing, notifications etc. come under the exclusive jurisdiction of the state ground water authority as constituted by the state government. Since officials at the state level keep on changing because of transfers, it would be advisable if the central circulars regarding Central Ground Water Authority are sent to the state governments at periodic intervals and this item be discussed whenever meetings of state Ministers or state Secretaries dealing with ground water take place. As regards awareness of local officials like Executive Engineer, B.D.O., TDO, MRO, Patwari etc. the same position as stated earlier for senior officials was more or less found to hold good. In other words, they also think that the government had no control over the utilization of ground water since it is a private property. In view of this background they appeared hesitant in taking any punitive action in this respect. The above point out to the need for orientation training of officers (at

all levels from centre to state to district and below) associated with ground water regulation.

6. Another root cause that limits effectiveness lies in lack of political will in this respect. Barring a few exceptional cases, political and administrative leaderships in most states have been reluctant to impose any restrictions for management of ground water. The Model Bill has been in circulation ever since 1970 i.e. for the last 37 years. But there have been very few takers. The state of Punjab for example, has been avoiding passing the ground water Act since 2002 when a draft legislation had been prepared and discussed within the Government. Punjab incidentally is a state which is under tremendous pressure with regard to exploitation of ground water resources. Tamil nadu which passed Act in the year 2004 has not implemented it so far. Implementation has not started because Government on some pretext or the other has not constituted the State Ground Water Authority which alone has powers to implement the Act. In Rajasthan also, a ground water regulation bill was prepared in 1996. But after some discussion, it was shelved. Rajasthan, therefore, has no law even though it is one of the worst states in India in terms of ground water over-exploitation (268). States do not care to respond to the directions issued by CGWA. For example, a direction was issued on 8 August 2006 to the Chief Secretaries/Administrators in 12 states and 2 UTs for adopting artificial recharge to ground water/promoting rain water harvesting in the 839 over-exploited blocks and 226 critical blocks. But only 3 states and one UT could send the action taken report by the end of one year i.e. August 2007. Far from controlling over-exploitation of ground water, many of the states are encouraging this by providing subsidy on electricity for use in extraction of ground water in areas which include over exploited and critical. Some state governments go to the extreme by providing free power for tubewells/borewells in such areas. These are suicidal measures which indicate lack of political will and short sighted approach by the state governments. The lack of political will might be due to the following.

- (a) The number of users of ground water structures runs into millions because of which governments find it difficult to regulate the use of ground water.
- (b) Imposing restrictions on further expansion might amount to denying water to those who want to develop.
- (c) Regulation might go against the well established view based on a misinterpretation of the so called Easement Act of 1882 that owners of land have secure and unfettered right over water beneath their land.
- (d) Ground water depletion often starts with meeting the needs of drinking water during periods of droughts when ground water becomes the last resort for drinking water supplies for both human and livestock population. As a result, the determinations to enforce regulatory provision tend to weaken. However, once in place, the ground water structures continue to be used even when the drought is over.

The broad conclusion that emerges from the above is that the present institutional set up is totally inadequate to take care of the increasing incidence of over exploitation of ground water in the country. A complete revamp is needed. This should involve substantial changes in composition of the Authority, nature and size of supporting staff, content of the programme, role of stakeholders etc. The Authority should be headed by a judicial person and should have a multidisciplinary team covering socio-economic, agriculture and hydrology. Chairman, CGWB should be ex-officio member. It should also have senior representatives from concerned government departments like Water, Power, Environment and Forests, ICAR as well as NABARD. It should have a full time Member Secretary. Other members as well as chairperson could be on a part time basis. It should have an adequate office staff with the requisite budget for its activities including vigorous awareness generation campaign