

INDIAN LEGAL FRAMEWORK AND GROUNDWATER MANAGEMENT

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ABSTRACT

Groundwater resources have now attained the status of being an important element of maintaining a standard livelihood for the citizens of a Nation. In India, there has been found significant decrease in the existing amount of groundwater available and it is expected that in the near future many major cities of the country will get wiped out from having groundwater accessibility. But whatever has been lost can be revived if systematically utilized the existing groundwater resources in a planned manner which we can learn from the aftermath of Cape town water crisis. However, for achieving such systematic management of groundwater resources on the principle of sustainable utilization, laws have a major role to play. This makes studying the legal framework governing such management utmost important. This paper therefore analyses the Indian legal framework whereby several issues were highlighted along with the need for nationalizing ownership over groundwater resources.

Keywords:

Groundwater; Management; Sustainable Utilization; Conservation; and Ownership Rights

INTRODUCTION

Groundwater is an important source to meet the requirements of both domestic and industrial sectors in India. It is considered to be a part of overall hydrologic cycle and can be defined as a precipitation which percolated down the earth and forms a part of underground water reservoir. The average annual precipitation in India is higher than that of every other continent in the world except that of South America.²²³⁴ Groundwater is a common property accessible to all and anyone can bore a well and pump out as much water as (s) he wants. Our great Indian thinker like Manu was not only interested in exploring the means of storing rain-water but also exploring the methods to locate groundwater sources. Works like Brihatsamhita and Arthasatra describe the interior of the earth to be water channels further subdividing it into thousands of streams at different levels supporting life of different plants and trees on the earth. As per the writings of the great sages, the groundwater resources can be explored in the areas where surface water is not available.²²³⁵

It has become the backbone of our economy. India's Groundwater use went up from 70km³ in 1940 to about 290km³ in present day. As per the reports India at present is tapping about 253 BCM of water annually. As per Planning Commission Twelfth Five Year Plan (2012-2017)²²³⁶ the number of groundwater irrigation structures is now around 28 million. Apart from overexploitation of groundwater, another issue is contamination which is also posing a

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²²³⁴The Wrath of Nature: The Impact of Environmental Destruction, CENTER OF SCIENCE AND ENVIRONMENT(Oct 10, 2019, 01:12 AM)

<http://www.indiaenvironmentportal.org.in/files/file/the%20wrath%20of%20nature.pdf>.

²²³⁵ Report of Expert Group, Groundwater Management and Ownership,(2007), Planning Commission Report (Oct 10, 2019, 01:13AM) http://planningcommission.nic.in/reports/genrep/_grndwat.pdf.

²²³⁶ Planning Commission Twelfth Five Year Plan (2012-2017).

threat to water table. It has been observed that almost 70% of all districts in our country have issues related to quality of groundwater. India is facing a serious groundwater crisis with reports from different parts of India highlighting the same. It calls for need and mitigation both in the fields and in the policy of our country.

Groundwater extraction rights of the landowners in India is based on the Indian Easement Act, 1882,²²³⁷ a pre independence legislation which is based on the principle that landowners have right to collect and dispose groundwater within his own limits. Thus, it makes it difficult to regulate ground water law as it is owned by person by whom land is owned. The landowners have thus become powerful with respect to water rights. The present Model Laws adopted by the Government focuses mostly on allocation and have failed to control the powers of the landowners.

The shortage and exploitation of groundwater is not new. Pollution and depletion of groundwater is because of human activities. Groundwater contamination is due to presence of nitrate, chloride, arsenic and other contaminants which are in excess than limits prescribed. Bacteria, heavy metals, domestic sewage, leakage from septic tank, etc. are other forms of contaminants. It has been highlighted in reports²²³⁸ that almost every district is facing both water quality and water availability issues. The world is facing the biggest problem of all time. The groundwater table is declining at a faster rate because of unscientific and unplanned use of water by people. The situation demands immediate action from the side of Government agencies as well as communities. Recognizing the growing problem of water crises legislations were adopted both at National as well as State level by the Government of India to combat the problem.

CONTAMINANTS	NUMBER OF STATES AFFECTED	NUMBER OF DISTRICTS AFFECTED
ARSENIC	10	68
FLUORIDE	20	276
IRON	24	290
CHLORIDE	21	385

Table: States and Districts Affected by Contamination of Groundwater²²³⁹

This paper will therefore try to analyze the key concerns of the Indian Legislative Frameworks with an objective to understand the reason as to why after having so many laws and policies, groundwater issues are increasing rather than getting solved?

INDIAN LEGAL FRAMEWORK ON GROUNDWATER MANAGEMENT

²²³⁷The Indian Easement Act 1882, No. 5 of 1882, Acts of Parliament (India).

²²³⁸Overview of Groundwater in India, PRS INDIA, (Oct 10, 2019, 01:33 AM)

<https://www.prsindia.org/administrator/uploads/general/1455682937~Overview%20of%20Ground%20Water%20India.pdf>.

²²³⁹*Ibid.*

At the time of framing of the Constitution, no one was aware of the need for protecting the water resources. So, no provisions were inserted initially by the founding fathers of the constitution towards protection of natural resources especially water. The lawful system for groundwater in India is limited by two fundamental components. To begin with, it is one of only a handful couple of frameworks on the planet where groundwater rights are not officially vested in the state (in the significance of the administration and its authorities). Secondly, the capability to administer on water related issues is left with the individual States instead of the Central Government. Most States have ordered laws directing groundwater use or have Bills pending last endorsement. India has adopted regulatory instrument to protect and preserve groundwater resources.

Indian Constitution and Groundwater management

In Constitution of India water is placed in the state list in “Entry 17”²²⁴⁰ of List II in the seventh schedule. Subject of water is however not left completely in the hands of States. “Entry 17” is subject to provisions of “Entry 58” List I of the seventh Schedule i.e. Union List. Although groundwater under “Entry 18” of List II in State List provides rights over land but water has come for special treatment under “Entry 17” of the said list and subject to “Entry 56” of List I provisions.²²⁴¹ Thus, groundwater falls within purview of Parliament also. Parliament can in public interests use its executive and legislative power to preserve, protect and monitor the use of groundwater. In spite of these powers of the Parliament, the Supreme Court’s power of judicial review is utilized from time to time in deciding matters and legitimacy of legislations. The Constitution has imposed general obligations upon States to provide clean and portable water to the citizens of India and has also provided that resource is to be used in equitable and just manner and without causing maximum harm to the environment and some of such provisions can be highlighted as below:

Article 38

As per Article 38(1) of the Constitution of India, the State is to verify a social request for advancement of welfare of the individuals in which legal, social, monetary, and political interests will illuminate regarding the organizations of national life.

Further the State is under duty to specifically make arrangement towards verifying that the possession and control of material assets and the activity of the monetary framework doesn't bring about the grouping of riches and means of creation to the regular impediment.²²⁴²

*Article 48A and Article 51A(g)*²²⁴³

²²⁴⁰IND. CONST. “Entry 17 of the List II in the Seventh Schedule “Water, that is to say, water supplies, irrigation and canals, drainage and embankments, water storage and water power subject to the provisions of Entry 56” of List I.”

²²⁴¹*Id.* “Entry 56 of List I in the Seventh Schedule (Union List) Regulation and development of inter-State rivers and river valleys to the extent to which such regulation and development under the control of the Union is declared by Parliament by law to be expedient in the public interest”.

²²⁴²*Id.* Ar. 39(b) & Ar. 39(c).

²²⁴³*Id.* Art. 48A-

As per these two articles, both the State and the citizens are under fundamental duty to protect and improve the environment. Although the constitution provides these ideals but planning and policy strategies are not up to the mark. The reason behind this can be this that directive principles are not enforceable and gives rise to mere duty or obligation towards the State as well as citizens. But if interpreted in good way, it will be effective. For example, in *Ratlam Municipality Case*²²⁴⁴ it was held by the Supreme Court of India that a citizen can take a legal action against state and local bodies for non-implementation of statutory duty through writ of mandamus.

Article 21

Right to Life under Article 21 of the Constitution of India also deals with Right to Pollution free water as decided by judiciary in landmark cases. This has been made possible due to liberal interpretation by the Supreme Court and High Courts of India. Article 21 has been interpreted from time to time by our judiciary to include some new rights like right to food, right to shelter, right to livelihood, etc. Recognition of new rights, i.e; Right to pollution free water and right to clean environment is of significant importance and it is directly connected to management and conservation of groundwater. Originally, right to water was not recognized as a fundamental right and was nowhere mentioned in our Constitution. It was only through judicial pronouncements that right to water became a part of Article 21. In the famous case of *Subhash Kumar v State of Bihar*²²⁴⁵, Right to live was recognized as a fundamental right. Along with this, right to live in pollution free environment and right to full enjoyment of one's life, was also recognized to be a part of Article 21. In case where a person is denied of above mentioned rights, he can approach the Supreme Court under the provision of Article 32. Thus, Right to water has been highlighted in number of judicial pronouncements and now it has become the law of the land.

In the case of *Attakoya Thangal v. Union of India*²²⁴⁶, Kerala High Court held that pumping and distribution of water in excess was violative of Article 21 of the Constitution of India. In this particular case the Lakshadweep Island's administrative authorities entered into an agreement for supply of water by digging wells for meeting increasing demands of potable water. This agreement was challenged by petitioners on the ground that it was violative of Article 21 as there was shortage of groundwater in the islands and excessive pumping would result in complete depletion and would disturbed to a large extent the fresh water equilibrium.

Further in the case of *Gautam Uzir & Anr. V. Gauhati Municipal Corp.*²²⁴⁷ it was held by the court that municipal corporation was responsible for supplying clean drinking water and has a responsibility to look into scarcity and impurity of potable groundwater.

Thus, it can be said that environmental constitutionalism received growth at around 1978 with the interpretation of *Meneka Gandhi*²²⁴⁸ case by the Supreme Court of India. The

"The State shall endeavour to protect and improve the environment and to Safeguard the forests and wild life of the country".

Art. 51A(g) –

To protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures"

²²⁴⁴ *Ratlam Municipality v. Varichand*, A.I.R. 1980 S.C. 1622.

²²⁴⁵ *Subhash Kumar v State of Bihar*, AIR 1991 SC 420

²²⁴⁶ *AttakoyaThangal v. Union of India* 1990 (1) K.L.T. 58.

²²⁴⁷ *Gautam Uzir & Anr. V. Gauhati Municipal Corp* 1999 (3) GLT 110.

court held that the correct view is to expand the ambit of fundamental rights and not to attenuate the meaning by judicial interpretation. Supreme Court's interpretation has led to emergence of new environmental jurisprudence. It has been declared repeatedly by the judiciary that right to water is law of the land and each and every State is bound by it.²²⁴⁹

Fundamental Right to Water also highlights few obligations which the State is bound to fulfill. Likewise, State is bound to take up steps from time to time to restrict illegal extraction of groundwater, prevent over-exploitation and pollution of groundwater basin. India has successfully imposed several restrictions on illegal extraction and over use of groundwater. In recent days, the development is also reflected in number of orders which has been passed by the National Green Tribunal, restricting commercial activities. Under these circumstances, it is the duty of the State to take up both legislative and executive steps to obstruct commercial activities involved in illegal extraction of water.

GOVERNMENT POLICIES RELATED TO GROUNDWATER MANAGEMENT

In the year 1960 water management was serving needs of flourishing economy, India was gaining wealth but at the same time environment and other resources were degrading. A number of changes took place at national and State level to combat water problems. The concern of Government towards maintaining of purity, potability and availability of groundwater resulted in taking up of some important policies by the Central Government for maintaining groundwater level and its purity.

Some important policies were taken up in the government of India are:

*National Water Policy 1987*²²⁵⁰

A fresh water policy was adopted by the Government in the year 1987 by committee consisting of Chief Ministers of all the States under the chairmanship of Rajiv Gandhi. With respect to groundwater management, the policy speaks about assessment of groundwater on scientific basis. It further highlighted the issue of exploitation of groundwater resources and the need for taking up of groundwater recharge projects for reaching available supplies. The policy rightly addressed the need for conjunctive use of both surface water and groundwater.

National Water Policy 2002

The National Water Resources Council under the Chairmanship of the Prime Minister on 1st April 2002²²⁵¹ adopted the new National Water Policy 2002. The Policy of 1987 was updated in 2002 with more or less same views on groundwater management. It also highlighted the need for regulating of groundwater resources and prevention of over exploitation so that overuse does not exceed recharging limits. This policy was however mere

²²⁴⁸ Meneka Gandhi V. Union of India, AIR 1978 SC, 594.

²²⁴⁹ IND. CONST. Art. 141.

²²⁵⁰ National Water Policy 1987 (Oct. 20, 2019, 02:38 AM) http://cgwb.gov.in/documents/nwp_1987.pdf.

²²⁵¹ PIB report (Oct. 20, 2019, 02:54 AM) <https://pib.gov.in/PrintRelease.aspx?relid=70832>.

suggestive in nature and more focus was based on surface water management rather than groundwater management. Approach to groundwater was blurred.²²⁵²

National Water Policy 2012

The Ministry of Water Resources on June 7, 2012 published the draft NWP 2012 to address issues related to water scarcity, planning and management of water resources.²²⁵³ Latest version of National Water Policy 2012 has been explicit on groundwater management. The policy rightly focuses on management of groundwater as a community resource by the state under the principle of public trust doctrine to achieve complete food security and sustainable management of groundwater.

Analyzing the policy, it can be deduced that this policy besides being scientifically and technically more advanced than previous water policies, also recommended that surface water should be used in conjunction with both rainwater and groundwater. Further focus is also on separation of electricity supply for pumping water from underground for agricultural and other rural uses.²²⁵⁴

GOVERNMENT PLANS FOR GROUNDWATER MANAGEMENT

Some of the important plans undertaken by the Government of India for groundwater management are:

- i. India saw shift in priority from surface water to groundwater in the year 1966-1967 with coming of the Third Five Year plan. The focus was on groundwater management due to scarcity of water resulting from drought that hit the eastern parts of India during 1966.
- ii. Subsequently in the Fourth Five Year Plan a comprehensive policy was adopted for water management focusing on refilling of water in water scare areas.
- iii. Further, by Sixth Five Year Plan broader objectives were adopted like:
 - a. Groundwater Management
 - b. Organization and functioning of authorities
- iv. By Seventh Five Year Plan a strategy for water management has been taken up and includes plans for exploration of groundwater on basis of priority and focus on eastern and north eastern states. It further provides for conjunctive use of surface water and groundwater.

²²⁵² National Water Policy 2002 (Oct. 20, 2019, 02:31 AM) http://cgwb.gov.in/documents/nwp_2002.pdf.

²²⁵³ Draft National Water Policy 2012, PRS report, (Oct. 20, 2019, 02:54 AM) http://www.prsindia.org/administrator/uploads/general/1345794528_Draft%20National%20Water%20Policy%202012-Summary.pdf.

²²⁵⁴ PIB Report (Oct. 21, 2019, 01:11 AM) <https://pib.gov.in/newsite/Printase.aspx?reid=90775>.

v. *National Aquifer Management (NAQUIM)²²⁵⁵*: This particular programme was launched on the recommendation of the 12th Plan Working Group on Sustainable Groundwater Management of the erstwhile Planning Commission. One of the important objectives of the programme is to promote and enhance participatory groundwater management. The programme aims to educate local communities with seamless flow of information regarding local water aquifers.

vi. *Water Policy and Action plan 2020²²⁵⁶*:

The policy is put forth by the Planning commission of India. The goals put in are to do justice to all users of water. At present central and State government are empowered to play key role in water management. But by this action plan focus is shifted to community level and communities are made to conserve and manage resource at local level by themselves.

The policy suggests some important changes at the micro level like suggesting setting up of community-based organizations to monitor and manage water resources. The policy highlights that first right to groundwater resources should not be in the hand of landowners rather such rights should be in the hands of concerned community. Community based organizations shall have full authority to monitor and inspect groundwater use by private landowners.

vii. *Pani Panchayat for Managing water Level²²⁵⁷*: Pani Panchayat has been operational since 2015 in the State of Orissa. Under the Pani Panchayat Act of 2002, Pani Panchayats are formed by conducting elections. Since 2015, Pani Panchayats have strengthened 6 major irrigation projects in Orissa. In year 2016, in Sunei Medium Irrigation Project, coordination of Pani Panchayats along with rotational irrigation practices led to 36% increase in water level, when the State was facing drought like situation.

viii. *Atal Bhujal Yojana²²⁵⁸*: The goal of this particular program is to highlight community led practices of sustainable groundwater management. The program is aimed at improving the groundwater level in some water stressed areas like Rajasthan, Gujarat, Haryana and Madhya Pradesh. It also aims at changing the behavior of community through conducting awareness and training program. The scheme further aims at financially aiding the State Governments for investing in suitable programs.

²²⁵⁵ Press Information Bureau Government of India Ministry of Water Resources (Oct. 21, 2019, 02:12 AM) <https://pib.gov.in/PressReleaseDetail.aspx?PRID=1556633>.

²²⁵⁶ Water Policy and Action Plan for India 2020 (Oct. 21, 2019, 02:35 AM) http://planningcommission.nic.in/reports/genrep/bkpap2020/10_bg2020.pdf

²²⁵⁷ Pani Panchayat for Water Management (Jul 29, 2020, 3 AM) <http://jalshakti-dowr.gov.in/sites/default/files/BestPractice-PaniPanchayats.pdf>

²²⁵⁸ Atal Bhujal Yojana (Jul 29, 2020, 11 AM) <http://mowr.gov.in/schemes/atal-bhujal-yojana>

- ix. *Model Building Bye-Laws, 2016*²²⁵⁹: Under the Bye-Laws, a new provision has been inserted which provides that all types of buildings having plot size 100sq. m and above, is required to do rainwater harvesting. The bye-laws further recommended that recharging of groundwater by households having an area of 500 sq. m and above, should be made compulsory.
- x. **“(PMKSY)-Har Khet ko Pani (HKKP)”**²²⁶⁰: **This scheme became operational from 1st July 2015. It envisaged groundwater development through wells and main objective of this scheme is to improve farm water efficiency and enhancement of aquifers recharge. It aims at groundwater development without endangering groundwater sustainability.**

STATUTORY EFFORTS FOR GROUNDWATER MANAGEMENT

Some of the important legislative measures taken for groundwater management are enlisted below:

The Groundwater Model Bill 1970/2005

Growing problem of water scarcity and water pollution, the Government of India adopted a legislation to prevent groundwater depletion and management. The Government of India introduced a Bill by name Groundwater Model Bill 1970²²⁶¹. This was perhaps the flexible legislation as it could be adopted by the States according to their needs. For instance, some state like Karnataka has adopted Karnataka Ground Water Act 1999 for regulating drinking water issues in the state.

The main objective of the proposed Bill was establishment of a Groundwater authority to regulate groundwater resources. The groundwater authority is to consist of –

- i. Chairman appointed by the respective State Government or Union Territory
- ii. Members for conducting survey, exploration and protection of groundwater resources to be appointed by the State or Union Territory Government.
- iii. Members having special knowledge in field of groundwater are also to be appointed by the Government.

The proposed Bill also highlighted some of the important powers of the groundwater authorities. Some of them were:

²²⁵⁹ Model Building Bye-Laws, 2016, MINISTRY OF URBAN DEVELOPMENT, GOVERNMENT OF INDIA (Jul 29, 2020, 12 AM) <http://mohua.gov.in/upload/uploadfiles/files/MBBL.pdf>

²²⁶⁰ Har Khet ko Pani, PIB (Oct. 21, 2019, 02:11 AM) <https://pib.gov.in/PressReleaseDetail.aspx?PRID=1556633>.

²²⁶¹ Model bill to regulate and control the development of groundwater, Ministry of Water Resources (Oct. 22, 2019, 11:17 PM) <https://www.indiawaterportal.org/articles/model-bill-regulate-and-control-development-groundwater-ministry-water-resources-1992-1996> last seen at 21/10/2019

- i. The Groundwater authority has power to notify areas deemed necessary for groundwater extraction or use of water.
- ii. It may grant permission for extracting and use of groundwater in areas notified by way of permit. However, there was an exception to this rule as small farmers were not required to take permit for extraction of water for domestic purpose excluding commercial purpose.
- iii. The authorities have power to alter, amend the terms and conditions of permit.

The Model Bill on Groundwater 2011:

Planning Commission in its twelfth five-year plan recognized the need of a new legislation for governing groundwater crises across the country. The Bill was formulated with a view to allow States to adopt groundwater legislations according to their needs and circumstances. Some of the striking features of the bill are:

- i. The Bill recognizes groundwater as a public trust. This bought rule in conformity with the Supreme Court decision in the landmark case held that the bill by recognizing groundwater as public trust has enhanced the possibility of community management and control of water resources.
- ii. Further Section 8 of the said Bill recognizes fundamental right to water and importance has been given priority over other groundwater resources.
- iii. The Bill reflects the essence of 73rd and 74th amendment to the constitution of India. It lays down provisions for constitution of Gram Panchayat Groundwater Committee for regulating use of groundwater sources within their jurisdiction. At urban level, the Bill provides for constitution of ward groundwater committee and municipal groundwater committee to regulate groundwater resources.
- iv. The Bill also recognizes the need of sustainable use and protection of groundwater resources and thus provides for demarcation of groundwater protection zones with aim of protecting groundwater sources from deterioration due to chemical and other pollution.
- v. The Bill also consist a separate chapter on Social and environment impact assessment, dispute resolution mechanism and other miscellaneous provisions are also stated in the Bill.
- vi. Groundwater complaint redressal officials are given ward over all grievances emerging inside the region for which they have been selected. They are given similar forces and obligations as vested in a common court. Advances from the groundwater complaint redressal officials can be

taken to the Gram Nyayalya set up under the Gram Nyayalayas Act, 2008 in country regions and under the watchful eye of the sub-court in urban regions.

The Groundwater (Sustainable Management Bill) 2016

The Bill was drafted by the ministry of Water Resources in year 2017. Some of the Key features of the Bill are:

- i. The bill is based on current understandings of groundwater and its link with surface water and it is not based on legal framework of 1970.
- ii. The Bill recognizes groundwater as a public trust, the recognition of the fundamental right to water and the introduction of protection principles, including the precautionary principle, that are currently absent from water legislation.
- iii. The new Bill is based on decentralization and focuses on unitary nature of water and need for protection at the aquifer level.

FEW STATE REGULATIONS ON GROUNDWATER MANAGEMENT

Out of all 29 states in India, almost half of them have adopted measures in the form of State Legislations for groundwater Management in their respective states. The growing problem of water management demands for a universal legislation as most of the States are still ignoring and are not ready to adopt legislation due to political reasons. Some of the examples of Groundwater Acts of different States are:

The Andhra Pradesh Water, Land and Trees Act 2002

This particular Act was adopted by the state of Andhra Pradesh in year 2002 with the aim of regulating and promoting groundwater development as well as focuses on conservation of trees. Some important features of this Act are:

- i. As per section 3 of the said Act there shall be an authority for regulating all the groundwater resource in the state including wells and other water bodies.²²⁶²
- ii. The Act further empowers the Authority to prohibit pumping of excessive water if he is of the view that such excessive pumping would result in damage of groundwater table or environment and such prohibition can be extended to a period of 6 months.
- iii. Section 13 further provides for distance and depth at which pumping can be done in order to curb unhealthy tapping of water from deeper layers of water resource.

²²⁶² The Andhra Pradesh Water, Land and Trees Act 2002, (Oct 23, 2019, 01:12 AM)
<https://www.indiawaterportal.org/articles/andhra-pradesh-water-land-and-trees-act-2002>.

- iv. The Act is comprehensive and provides reasonable opportunity of being heard, provisions of appeal and penal punishments area also there.

The Goa Groundwater Regulation Act 2002:

This particular Act provides for constitution of groundwater cell by the state government for regulating groundwater resources in the state. In consultation with the cell the State Government will notify the area which area scarce in water resources.²²⁶³ Permission is to be taken from the groundwater officers before sinking of a well and any act violating the provisions can be penalized.

Bombay Irrigation Act (Gujarat Amendment) Act 1976²²⁶⁴:

The State did not take up separate legislation for groundwater management but the provision of the Act has been applied in groundwater management. Section 99 of the said Act regulates and prohibits wastage of groundwater

Some other important State Acts regulating groundwater are

- Assam Ground Water Control and Regulation Act, 2012
- Bihar Groundwater Act 2006
- Chennai Metropolitan Area Groundwater (Regulation) Act, 1987
- Delhi NCT Groundwater Regulation Directions, 2010

Constitution of Central Groundwater Authority (CGWA)

In pursuance of Supreme Court's orders in number of cases since 1996, where the court directed for establishment of a separate Central Groundwater Authority under the provisions of the Environment Protection Act 1986. The purpose of setting up of such a separate authority was for better regulation and control of groundwater management. Further in a landmark decision of Vellore Citizens,²²⁶⁵ Supreme Court directed the Central Government to constitute CGWA under the provision of Environment Protection Act 1996.²²⁶⁶

Powers of CGWA

Some of the important powers of CGWA are as follows:

- CGWA has been entrusted with the power under section 5 of the Environment Act 1996 of issuing directions and taking necessary measures for groundwater management.
- CWGA has power to enforce penal provisions listed in section 15 to 21 of the said Act.

²²⁶³The Goa Groundwater Regulation Act 2002 (Oct. 24, 2019, 01:12 AM)

<https://www.indiawaterportal.org/articles/andhra-pradesh-water-land-and-trees-act-2002>

²²⁶⁴ Bombay Irrigation Act (Gujarat Amendment) Act 1976

²²⁶⁵ Vellore Citizen Welfare Forum v. UOI AIR 1996

²²⁶⁶ Environment Protection Act 1986, No. 29 of 1986, Acts of Parliament (India).

- CWGA has power to appoint officers under the provisions of the said Act.

Regulatory Measures taken by the CGWA

Certain important measures taken up by the authority for regulating groundwater management:

- i. CGWA has to notify overexploited areas for regulating groundwater management.
- ii. Another important activity is to promote efficient techniques of water management such as use of sprinkler or drip irrigation technique among farmers and to suggest alternative crops in order to ensure efficient water use.
- iii. CGWA ensures that no groundwater structures are constructed in areas notified as water scarce and permission in such cases are granted only to government authorized agencies for supplying water for drinking purpose.
- iv. Some recent measures adopted by the Board for ensuring groundwater management are:
 - a. CGWA has circulated the Model groundwater bills among all the states and union territories so that the state groundwater legislations are adopted as per the need of the State/UT's.
 - b. In the year 2013²²⁶⁷, a document was adopted for constructing almost a crore rainwater harvesting and artificial groundwater recharge structures in the country. The said plan was circulated among all the states for proper implementation.
 - c. CGWA has notified almost 162 regions as critical or exploited for groundwater management and some of them include areas in Delhi, Haryana, Punjab and many more²²⁶⁸.
 - d. CGWA has taken up new initiative of Aquifer Mapping²²⁶⁹. Major objective of such plan is to identify possible area for groundwater research so as to ensure sustainability of water and to meet the current issue of water contamination.

ROLE OF JUDICIARY IN GROUNDWATER MANAGEMENT

²²⁶⁷Master Plan 2013 (Oct 24, 2019, 01:15 AM)http://mowr.gov.in/sites//files/MeasuresForGW-Depletion_0.pdf.

²²⁶⁸*Ibid.*

²²⁶⁹*Ibid.*

India is facing unprecedented crises of groundwater and the major reason behind this is industrial growth, pollution, urbanization and poverty. From the very beginning more focus was placed on economic development of the country and less or no attention was given to the problem of groundwater depletion. India has to deal with two challenges namely pollution of surface water and secondly groundwater depletion. Water is a basic human need and its denial may mean denial to Right to Life. During the last ten years the groundwater level has gone down by 10 to 30 meters. According to recent report of Niti Aayog, Delhi will be among the first state which will run out of groundwater by the year 2020.²²⁷⁰

Need of judicial activism is the need of the hour. Of late judiciary has entered into a new era and has come down heavily against the policies of the Government which aim at environmental degradation. Some of the long course activities of judiciary, tribunals and green citizens, have resulted in resolving various issues of environmental protection. The courts in India played a crucial role in enlarging the scope environmental protection through a spate of cases covering various aspects of environment.

Role of Supreme Court of India

The Supreme Court of India has interpreted Article 21 from time to time and given a wider meaning to Right to Life under Article 21 of the constitution of India. The Supreme Court has cited in various cases that right under Article 21 includes right to livelihood, right to food and right to potable water.²²⁷¹ The right has been cited in few other cases as well.

Since 1996, the Supreme Court started applying the Public Trust Doctrine in deciding disputes having environmental importance. The doctrine is of Roman origin and is based on the basic principle that Government is the proprietor of certain important resources like rivers, shores, etc. in trusteeship for the citizens. Supreme Court of India has applied this doctrine in the year 1996 and held that the trustee cannot convert the resources for private use as it is a public trust. It was further held that State is a trustee and has a legal duty to protect natural resources for public good²²⁷². Further in another important case the Supreme Court has held that the trustee has no right to convert the trust property for commercial purpose and trustee is to hold and protect property for future generations.²²⁷³

In year 2018, The Supreme Court of India in case concerning unauthorized constructions in Delhi and its effect on groundwater, on a report submitted by the Central Groundwater Board directed the Ministry of Water Resources to look into the matter urgently and suggest some possible solutions to avoid water groundwater crises.²²⁷⁴

Role of High Courts

Not only Supreme Courts have shown an active participation in groundwater management but also the High Courts of India in the last two decades have enriched

²²⁷⁰Niti Aayog Report 2018, NITIGOV.IN (Oct 24, 2019, 02:10

AM)https://niti.gov.in/writereaddata/files/new_initiatives/.

²²⁷¹Attokoya Thangal v. Union of India 1990(1) KLT 580

²²⁷²MC Mehta v. Kamal Nath (1997) 1 SCC 388.

²²⁷³Fomento Resorts and Hotels Ltd v.Minguel Martins (2009) 3 SCC 571.

²²⁷⁴M C Mehta v. Union of India and Others , 2018.

environmental jurisprudence. By using the instrument of Public Interest Litigation High Courts have recognized water rights and enhanced the active participation in environmental matters. High Courts have recognized environmental rights as a part of Article 21 and cited some important cases. In an important decision the Andhra Pradesh High court held that drinking water is a fundamental right of the citizen and it cannot be denied at any cost. It further directed for setting up of a Committee to look and supervise on matters of groundwater pollution.²²⁷⁵

Further in the year 2006, a PIL was decided by the Kerala High Court and it held that State Government's inability to provide safe potable water to people of the State would amount to violation of Article 21 and Government is under an obligation to provide safe drinking water to all.²²⁷⁶

Recently, the Madras High Court²²⁷⁷ passed an order dated July 18 2019 on a plea moved by P R Sivasankar seeking direction from the court towards district authorities to take immediate action against those involved in illegal tapping of groundwater for commercial purpose in Poonamalle area in Chennai. The Madras High Court directed the Tiruvallur District Revenue Officer and Taluk Tahsildar to inspect and take immediate action by directing them to confiscate the vehicles and apparatus involved in illegal extraction of groundwater and also to impose heavy fine on the violators.

Role of National Green Tribunal

Both the Supreme Court and High Courts were active and prompt in discussing matters relating to environmental importance. But with time the courts were overburdened with filing of more cases. So, all the developments forced the Government to take an alternative step and as such the Government came up with the National Environment Tribunal Act and subsequently the National Environment Appellate Authority Act 1997. A progressive step was taken up by the Government of India by enacting the National Green Tribunal Act 2005 and since establishment is meeting the aspirations of long-time demand of environmental courts in India.

In a recent order²²⁷⁸, National Green Tribunal while considering an issue regarding illegal extraction of groundwater for washing silica, held that no unit shall be allowed to extract groundwater illegally without having a NOC, as required to be obtain from CGWA. Moreover, the Tribunal further directed that NOC cannot be issued to such units who are unable to ensure that groundwater will be duly recharged by them after used.

WORDS SPEAK

²²⁷⁵ Wasim Ahmed Khan v. Govt. of AP, 2002 (5) ALT 526

²²⁷⁶ Vishala Kochi Kudivella Samrakshana Samithi v. State of Kerala, 2006(1) KLT 919.

²²⁷⁷ P Narayan, Imposing Fine on water tankers not enough: Illegal Water Extraction, THE TIMES OF INDIA (Oct 24, 2019, 02:15 AM 2019) <https://timesofindia.indiatimes.com/city/chennai/crisis-cant-justify-illegal-groundwater-extraction-says-hc/articleshow/70299501.cms>.

²²⁷⁸ National Green Tribunal, Order dated 18/06/2020, INDIAN ENVIRONMENTAL PORTAL (Jul 29, 2020, 02:33 AM) <http://www.indiaenvironmentportal.org.in/files/file/silica-washing-units-NGT-order.pdf>

In the case of *Nand Kumar v Govt. NCT of Delhi*²²⁷⁹, NGT while hearing a matter on illegal extraction of groundwater for commercial purpose in a locality of Delhi, directed the Delhi Jal Board to immediately seal those bore wells which were used for extracting water. The Tribunal further directed Jal Board to recover compensation from the ones who were indulged in operating illegal bore wells.

NGT in a recent case directed that extracting groundwater for commercial purpose without having a NOC and not following safeguards to be discontinued²²⁸⁰.

NGT in case of *Mahesh Chandra Saxena Vs Central Pollution Control Board & Others*²²⁸¹ gave order dated 31 May 2019 that groundwater recharge by Jal Board and DDA with rainwater harvesting structures is not constructed on scientific manner and to a great extend causing groundwater contamination. NGT directed the Central Pollution Control Board and Delhi Pollution Control Committee to jointly conduct study to take samples and submit the report to the tribunal within 1 month.

In an another important order, National Green Tribunal in its order dated 31 July 2019²²⁸² in *Bain Attrain Village Case of State of Himachal Pradesh*, relating to illegal operation of Ispat factory in Kangra district Himachal Pradesh held that the factory was polluting groundwater with discharge of fine iron particles into water bodies and hence directed the Pollution Control Board of the State to look into the matter and take appropriate action.

Further in a recent order dated 11 September 2019, National green Tribunal in case of *Shailesh Singh Vs Hotel Regency*²²⁸³, directed constitution of a committee to look into the functioning of Central Groundwater Authority and look into the steps necessary for preventing Groundwater depletion. Further the Committee is directed to take steps to ensure that groundwater is not illegally extracted.

²²⁷⁹ National Green Tribunal, Order dated 06/05/2020, INDIAN ENVIRONMENTAL PORTAL (Jul 29, 2020, 10 AM) <http://www.indiaenvironmentportal.org.in/content/467503/order-of-the-national-green-tribunal-regarding-illegal-borewells-operating-in-mayapuri-delhi-for-commercial-purposes-06052020/>

²²⁸⁰ National Green Tribunal, Order dated 3/01/2020, LIVE LAW PORTAL (Jul 29, 2020, 10 PM) <https://www.livewlaw.in/environment/ngt-directs-discontinuation-of-groundwater-extraction-by-two-carpet-manufacturing-units-in-rewari-151443>.

²²⁸¹ National Green Tribunal, Order dated 31/05/2019, INDIAN ENVIRONMENTAL PORTAL (Oct 24, 2019, 02:33 AM) <http://www.indiaenvironmentportal.org.in/files/file/groundwater-recharge-contamination-NGT-order.pdf9>.

²²⁸² National Green Tribunal order dated 31 July 2019. INDIAN ENVIRONMENTAL PORTAL (Oct 24, 2019, 02:56 AM) <http://www.indiaenvironmentportal.org.in/content/465312/order-of-the-national-green-tribunal-regarding-ms-id-sood-ispate-factory-being-illegally-operated-at-kandrori-district-kangra-himachal-pr9>.

²²⁸³ National Green Tribunal order dated 11 September 2019, INDIAN ENVIRONMENTAL PORTAL (Oct 25, 2019, 01:11 AM) <http://www.indiaenvironmentportal.org.in/content/465609/order-of-the-national-green-tribunal-regarding-falling-groundwater-level-in-the-country-11092019/>.

The National Green Tribunal in an another order dated [July 9, 2019](#)²²⁸⁴ asked CPCB and EPPCB Boards of State of Uttarakhand, to take action against two industries for discharging untreated and hazardous chemicals in open drains as it was resulting into ground water pollution and soil degradation in the agricultural fields. The Boards were also ordered to fine the industries with 1 crore.

LIMITATIONS IN THE LEGAL FRAMEWORK REGULATING GROUNDWATER MANAGEMENT

Water crises have a negative impact on the economy as well as on the environment of our country. Despite of plethora of decisions and legislations, India is facing groundwater crises. The decline of groundwater levels, contamination of water sources and increased consumption are some big problems. Existing rules are outdated and have failed to address the issues of groundwater depletion and contamination. Some of the existing limitations to legal frameworks are discussed below:

Groundwater Right under Section 7g of the Indian Easement Act 1882

The right under the Easement Act which provides every landowner right to collect and dispose groundwater within limits of his land owned is discriminatory and is not suited in present times. This rule has proved to be discriminatory for landless people as they do not have access to groundwater mostly. On the other hand, there are instances of landowners over exploiting the groundwater resources and using it for com purpose. According to survey by National Land Reforms 2013²²⁸⁵ almost 30% houses have no land and other 20% have less than 1-hectare land. Thus, this shows access of water resources are at hands of big landlords.

Groundwater Model Bill 2005

Firstly, the Bill failed to address the main problem that was to limit exploitation at appropriate level. The Bill only talks about the restriction which is to be imposed on sinking new wells but no restriction is put on existing wells. The bill allowed the landowners to exploit and extract groundwater as much as they require and at the same time sell it to nearby farmers illegally.²²⁸⁶

Secondly the Model Bill failed to classify and explain the commercial and non-commercial uses of groundwater. It has failed to break the relation between ownership and water extraction and further the Bill doesn't spoke about environmental concerns.

²²⁸⁴ National Green Tribunal order dated July 9 2019, DOWN TO EARTH (Oct 25, 2019, 12:14AM)<https://www.downtoearth.org.in/news/environment/court-digest-major-environment-hearings-of-the-week-july-8-12--65620>.

²²⁸⁵ Draft National Land reforms 2013, LANDSEA (Oct 25, 2019, 12:45 AM)<https://www.landesa.org/press-and-media/indias-new-land-reform-policy/>.

²²⁸⁶ Planning Commission Report (Oct 25, 2019, 02:13 AM)http://planningcommission.gov.in/mta/11th_mta/chapterwise/water.pdf.

Thirdly, the Model Bill provided for registration of existing groundwater sources and thus extended control of Government over the groundwater resources. But it was a failed model as it failed to provide solution to overuse of groundwater and at the same time the Bill did not laid any provisions for increasing issue of groundwater contamination.

Groundwater Model Bill 2011

Groundwater Model Bill 2011 was to replace and brings about certain changes in the existing legal framework but the new Model Bill 2005 was inadequate and failed to address the issue of groundwater crises. The Bill has failed to incorporate a provision to centralized water management in India or overcome the center-state relation. The Bill also failed to address the necessity of community participation and addressing the issue in bottom up approach. The Bill highlighted provisions in top down approach and failed to give recognition to Gram Sabhas and Panchayat in water management.

Further the draft Bill provides for aquifer level management which is not possible for practical implementation as the States are not well equipped with the knowledge of adequate aquifer level. Lastly, too many bodies/authorities have been involved and powers have been delegated to them for groundwater management but this could result in undesirable Red Tapism.

Groundwater Sustainable and Management Bill 2016

The new draft rules informed that area officers i.e. District Magistrates have power to grant No Objection Certificate in event of use and extraction of water was above 20 to 50 cubic per day to industries. If the limits exceed then the matter will be dealt by State Groundwater Board and Central Groundwater Authority (CGWA). Earlier power was in the hands of CGWA and this is major shortcoming of the present rule as the District Magistrates are administrative officers and they might not be well equipped with environmental problems. Giving power to grant NOC's can be misused by them at the same time.

Earlier Rules provided that the industries or project proponents extracting groundwater were to recharge the groundwater sources. But the present Bill had removed this clause and, in its place, has introduced the concept of conservation fees. Now they are required to pay fee depending upon the amount of extraction. This is not good provision as this will further lead to exploitation as the one who pays more, extracts more.

The government has moreover apportioned with the required clause of reuse and recycle of extracted water. No limit of using groundwater is notified in the present rules.

REFERENCE TO SOME INTERNATIONAL DEVELOPMENTS

Oman's successful strategy for sustainable groundwater management

Groundwater is the focal water resource inside the country and its organization is fundamental to the nation's economy and thus demands improvement just as those of other resources. Oman is by and by progressively dependent on non-customary water sources, for example, desalination and treated waste water (TWW) to fill gap among supply and Oman

has taken measures²²⁸⁷ like obligatory registration of all wells, introduction of well permits, prohibition of wells at less than 3.5 km from the mother-well of a 'falaj', filling up of illegally constructed wells, confiscation of drilling contractor's equipment involved in illegal drilling, a national well inventory, well-metering, well-field protection zoning, water treatment, leakage control, improving irrigation techniques and public awareness campaigns for water conservation. On other hand Oman has adopted the strategies of both flood control and groundwater recharge. Treated waste water is supplied instead of groundwater in Muscat area for watering parks, roads etc.

Water Reforms of Mexico

By the Act Nation's Water's 1992, Mexico has declared groundwater to be the government property or national property. Now the users are required to legitimize their rights through procuring water concessions. The Act provides for setting up of a National Water Commission to monitor and look after water concessions granted and to collect volumetric fees.

Water Reforms of US

With respect to water rights, federal government reserves the right as per Federal Reserved Water Rights Doctrine. As per this doctrine, when the Government acquire certain land for fulfilling a particular objective (such as reservation for national monument), then the Government at the same time reserves right to water to accomplish the undertaken objective. The doctrine was established by US Supreme Court in the famous case of *Winters v United States* and the same doctrine has been extended to surface water too. For groundwater monitoring, US Geological Survey Agency is responsible. The Agency has developed groundwater models and other software tools for monitoring groundwater level in aquifers. The Agency is also responsible in providing both short and long term forecasts about changing groundwater level²²⁸⁸. Artificial Recharge is carried out in Las Vegas. It is a part of groundwater management program of US. Recharge takes place between the month of October and May. Amount of treated water from the Colorado River is injected into groundwater basin and thus due to recharge, groundwater levels in Las Vegas are quite stable²²⁸⁹.

Aquifer Classification system adopted by Canada

To support the management of groundwater, British Columbia has developed a system of aquifer classification system. In this system, the aquifers are classified according to their vulnerability and contamination and are also ranked according to use of water. The system

²²⁸⁷ Groundwater use and policies in Oman, GWMIWMI (Oct 25, 2019, 02:45 AM) <http://gw-miwmi.org/wp-content/uploads/sites/3/2017/04/Rep.14-Groundwater-use-and-policies-in-Oman.pdf9>

²²⁸⁸ Peter Folger, *The Federal Role in Groundwater Supply: Overview and Legislation in the 115th Congress*, CONGRESSIONAL RESEARCH SERVICE (Jul 29, 2020, 11 PM), <https://fas.org/sgp/crs/misc/R45259.pdf>

²²⁸⁹ Id; at 42.

has identified near about 157 aquifers, out of which 10 has been identified as highly contaminated and vulnerable.²²⁹⁰

Lesson Learnt:

Mexico's reformed water law which regarded groundwater as a national property. India can too switch to this and declare groundwater as a national property instead of declaring State as a trustee as this will be effective in combating groundwater crises. Further the strategy adopted by Oman of deftly combining demand side measures to control, protect and conserve water resources with supply side measures to augment the resources has the potential for successful replication in India. Artificial Recharge system adopted by US by treating river water and then adding it into groundwater basin can also be successfully adopted by India.

CONCLUSION AND SUGGESTIONS

Keeping in view the growing problem of groundwater contamination and groundwater scarcity it can be rightly argued that there is a need for development and change in the policies. The scarcity of groundwater resources has to a large extent threatened food security as well as environment issues. Availability of drilling technology and other scientific methods have led to increase in groundwater extraction and its exploitation. Since groundwater is commonly accessible to all, people are extracting as much they can and when they fail to extract or when the groundwater level falls down, high powerful motors are installed and in turn people end up investing huge amount of money. Recent example of acute groundwater crises was witnessed in Bangalore in June 2019. Thus, the water crises in our country needs holistic and widely resonant solution, specially groundwater is in badly need of reform in modern times. In order to achieve systematic and improved efficiency there is need for combination of instruments and incentives like legislations and policies.

Thus, looking at the current scenario, following steps can be taken to minimize the groundwater exploitation and better groundwater management. Some of them are discussed below:

Policy and legal framework changes

Groundwater extraction is linked with ownership rights as per the provisions of Indian Easement Act and groundwater is till date considered as a private property. Thus, there is a need for change in status of groundwater from being a private property and groundwater should be declared as national property to limit its overexploitation.

Further legislation should be adopted at national level to declare the areas under acute water scarcity and the one's involved in over exploitation of groundwater for either domestic or commercial purpose should be compelled to curb their extraction. Imposing hefty fines would not lessen the problem as the one's paying more will extract more. Thus, when declaration is made for curbing the extraction, people will be hurt economically, for instance

²²⁹⁰ Simon Cheval king, *Ideas for Groundwater Management*, IUCN (Jul 28, 2020, 12 AM), <https://www.gwp.org/globalassets/global/toolbox/references/ideas-for-groundwater-management-metametaiucn-2008.pdf>

when a farmer is asked to cut down on certain irrigation areas or switched to some new cropping practices, they will suffer from economic crises and thus it would compel them to use water justifiably.

Some other supplementary measures can be adopted like steps should be taken for groundwater management by enhancing participation of all stakeholders specially the users at the bottom level (for example: local communities) and delegating responsibilities in a hierarchal manner.

The government should create public awareness and giving subsidized power supply for irrigation purposes to farmers in rural areas should be avoided except for those who are socially and economically backward and small landless farmers should also be exempted.

Currently water is a state subject. So to enhance better management of water resources water can be placed under concurrent subject by way of amendment so that both the union and the state government can take appropriate measures.

Technical Measures

Focus should be on renovating the traditional water structures. Advanced technology like remote sensing and geographical information system can be employed for groundwater management. Use of these highly specialized tools and technology can make groundwater management more efficient and systematic.

Electricity Pricing and Supply in rural areas

Water markets are a reality these days. Instances can be found in the State of Gujarat where landowners, who owns his own well usually, extract water by installing high powered motors and sell the waters in nearby areas to those who have no access to water and thus are making huge profit out of it. This calls for increasing the electricity price and thus when the tariff rate is high then owners will extract less water.

Community Participation

Community participation should be encouraged at large. Government should take initiatives to make people aware of the acute crises and what can be done to combat the same. Moreover, incentives can be provided to motivate further participation like awards or puraskars may be given to the community or village where the groundwater is managed properly.

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