



GROUNDWATER AND LAW, NEW CHALLENGES AND SUSTAINABLE DEVELOPMENT AN OVERVIEW WITH REFERENCE TO KARNATAKA STATE

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Abstract-- Groundwater is an integral part of the environment, and it is the important and valuable natural resources. It has great importance, because of the existence of the human society depends on such source for domestic, agriculture, industrial and other purposes. More importantly, it's a major source of drinking water in both urban and rural Karnataka. The demand for groundwater has been increasing now a day's and this has led to water scarcity in many parts of Karnataka and also this source has aggravated by the problem of water pollution or contamination.

The freshwater crisis occurred mainly, due to improper management of groundwater resources and environmental degradation. There has been lack of adequate attention of concerned statutory authorities in implementation of laws, policies, for water conservation, groundwater recharge, and in rainwater harvesting for ecosystem sustainability. These are also main reason for groundwater scarcity. The importance of groundwater and its fundamental contribution and its sustainable development is recently recognized. Maintaining this source as a source of freshwater is necessary in the wealth and health of the nation and in broader context for social and economic development and environment improvement.

The object of the paper is to highlight the issues regarding the groundwater resources in Karnataka and it will ascertain the true reason to the present unsolved problems. And the paper critically explores the loopholes and lacunas of present legal framework in Karnataka. Thereby the study is more confined to examine and evaluate the current groundwater status and it understands the required effective and transparent legal framework for prevention of groundwater related crisis and balances the ecosystem by environmental friendly measures in the light of sustainable development.

INTRODUCTION

Groundwater as a major source of drinking water in both urban and rural Karnataka it has a great importance, because of the existence of the human society depends on groundwater for domestic, agricultural and industrial purposes. Being an important and integral part of hydrological cycle, its availability depends on rainfall and recharge conditions. The demand for water has increased over the years and this has led to the water scarcity in many parts of India and another situation which is aggravated by the problem of water pollution or contamination, due to this reason we can see the fresh water crisis mainly due to the improper management of water resources and environmental degradation, which has led to a lack of access to safe water supply to millions of people.

Groundwater crisis is not the result of natural factors; it has been caused by human actions. During the past two decades, the water level in several parts of the state has been palling rapidly due to increase in extraction and intense competition among users for agriculture, industry and domestic sectors are driving the groundwater table lower. Besides this, discharge of untreated waste water, and disposal of solid wastes also contaminates groundwater, thereby reducing the quality of fresh water resources.

ENVIRONMENTAL CHALLENGES

Today's major problem is polluting the groundwater resource, this has been happened due to pollution of Air, Water and Land and ultimately effects in the contamination of groundwater. Waste generated in the form of solid, liquid, and in gracious, if not treated properly it results in pollution of environment, this affects the groundwater due to the hydraulic connectivity in the hydrological cycle. Pesticides and fertilizers are also reason of pollutants they are reached through leaching into the aquifers if there is no proper recharge process. Municipal solid waste, industrial waste, agriculture wastes have additionally leachates and also polluted surface and groundwater and due to this people are affected by water pollution marked by excess fluoride, arsenic, iron, or the ingress of salt water.



In many regions of Karnataka groundwater termed as critical resource for maintaining the human health and health ecosystems. Water quantity and water quality are inextricably linked. For most uses, quantity alone does not satisfy the demand. Water quality also can be concern. As development increases, activities that could threaten the quality of groundwater also increase. Human health needs to be safeguarded, as does the health of many other organisms that rely on clean water. Thus, the major groundwater resource issues can be seen in quantity of groundwater, interaction of the surface water with the groundwater, changes in groundwater quality as development expands, and ecosystem health in relation to quality and quantity of water. Groundwater is major natural resources in Karnataka and it also important to ecosystems. Therefore, groundwater resources need to be characterized according to their occurrence, availability, quality and use to develop a sustainable supply for all uses.

GROUNDWATER AND SUSTAINABLE DEVELOPMENT

Unlike surface water, groundwater does not recycle readily. Rates of groundwater turnover vary from days to years and from years to millennia, depending on aquifer location, type, depth, properties, and connectivity. Through human intervention, groundwater is subject to artificial discharge, that is, the process of pumping groundwater from an aquifer to satisfy the a socio economic need, there is a lack of human intervention to artificial recharge of the aquifers in order to conserve the groundwater resources. Excessive pumping or over extraction can lead to groundwater depletion. Depletion can have significant effects on surface and unsaturated subsurface waters, and other ecosystems which depend on these waters. The existing legal framework has not focused on the sustainable development of groundwater resources. It is the time to address the sustainable groundwater management through policies, plans and laws in the light of groundwater quantity and quality because, the human induced loss of groundwater quality is a pervasive problem.

GROUNDWATER AND GOVERNANCE

Inadequate governance of existing government is the major threat to the groundwater resources. The concept of groundwater governance comprehensively extends in matters to political, social, economic and administrative systems. Such matters have been influenced and explicitly aimed at developing and managing the water resources at different levels of the society. Administrative responsible personalities are weakening in their capacities because, lack of professional integrity, transparency, accountability, and also inadequate mechanisms including financing, knowledge, and technical capacities, and on the other hand failure to enforce laws, policies, strategies, relating to groundwater resources, and ignoring the stakeholders' rights to equitable access to groundwater use, poor management of groundwater projects, inherent corruption in groundwater management process.

GROUNDWATER UTILITY

The state envisages to provide a drinking water at the rate of 55 liters per person per day in the rural areas, 70 liters per person per day in towns and 100 liters per person per day in the city municipal council areas and 135 liters per person per day on city corporation areas and the state intends to provide a legislative, administrative and infrastructural environment, which will ensure fair, just and equitable distribution and utilization of the water resources of the state to benefit all the people of the state. But finally the intention is remain as intention due to lack of will power of regulating and implementing authority. Urbanization has increased rapidly in the last two decades paving way for layouts and industries, which have wiped out many tanks and lakes, which were helpful in maintaining the groundwater level. In Bangalore district¹, the main problems affecting the groundwater are

- A. Sewage pollution and industrial pollution.
- B. High Nitrate concentration in groundwater.
- C. Over exploitation of groundwater resources.

¹ Groundwater information booklet, SWR, Bangalore 2008



Improper environmental planning has given room for establishment of new residential layouts without proper sewerage system. The municipal effluents from such natural drains leading to tanks and lakes deteriorate the quality of the water. Sedimentation of the pollutants has not only reduced the surface area of the water, which in turn, has increased evaporation rate, but also reduced groundwater levels on account of poor permeability with more and more silt, clay deposits, trash and toxic waste accumulation in the lakes year after year. Nitrate concentration is the single major constraint for suitability of groundwater for drinking is concerned. Major part of the shallow groundwater i.e., 45% of the area is affected by high nitrate content which may be due to natural sewage and industrial pollution. Many parts or regions in the state are faced different problems. Those are like fluoride, and chloride concentration which has crossed the permeable limit and concentration of the sulphate ion was also another problem.

RESEARCH METHODOLOGY

The methodology adopted in this research paper is doctrinal, analytical, and descriptive in nature, and also used acts, regulations, policies, books, articles, reports, journals, case laws, official gazettes, websites and etc, as secondary sources.

REVIEW OF LITERATURE

A review of literature is one of the effective evaluations of selected topic. A review forms an essential part of the research process. The related literature review of this research work has been incorporated so as to give more clarity for this research investigation. The review of literature contains books, journals, web-based materials and government documents in public domain. And the review of literature helped me to understand and identify the ideas, problems, findings critiques, comments and themes contained in literature. The review of literature reflects the views of the critical analysis on groundwater problems and it focuses on the current issues regarding to groundwater pollution and contamination problems.

OBJECTIVE OF THE STUDY

To find out the main reason relating to groundwater pollution and its different kinds of manmade contaminated activities, and to suggest and to secure the proper position by adopting sustainable development oriented legal factors. It has also an object to discover the practical position and ascertain the existing legislative loopholes and lacunas in controlling and regulating position of groundwater in proper manner and suggesting the effective mechanism.

SIGNIFICANCE OF THE STUDY

Groundwater is the major water resources for domestic needs, agriculture, and for industry. Earth is not able to provide a good quantity and quality of water if human being has continues the polluted and contaminated activities on groundwater. There are many groups of problems are there in contamination and reduces the groundwater utility. Those are discharge and withdrawal problems. They are arisen from discharge of toxins, metal, organics and many other materials into the groundwater supply and create groundwater contamination and ultimately affect inhabitants and ecosystems. Environmental legislations and groundwater related existing legislations have failed and neglected the groundwater. It is the right time to stress and to recommend strategy in conservation and preservation of groundwater from pollution and contaminated activities.

MEANING OF GROUNDWATER

Groundwater in a general term referring to water beneath the earth's surface, but in law it has deferent meanings, those are as follows...

According to P. Ramanatha Aiyer's –Concise Law Dictionary "Groundwater means water existing in any aquifer below the surface of the ground at any particular location of the local area, regardless of the geological structure in which it is stationary or moving and includes all groundwater reservoirs².

² P. Ramanatha Aiyer's –Concise Law Dictionary: Third Edn, Lexis Nexis, P.508.2011



The Karnataka Groundwater (Regulation for Protection of Sources of Drinking Water) Act, 1999 Section 2(4), "groundwater" means water existing in an aquifer below the surface of the ground at any particular location regardless of the geological structure in which it is stationary or moving and includes all groundwater reservoirs³.

According To the Draft National Water Framework Act⁴ as prepared by the Sub-Group (Ramaswamy R. Iyar, Chairman, Members: Philippe Cullet, K. J. Joy, K. C. Sivaramakrishnan, Videh Upadhyay, M. S. Vani Assisted by Mahadevan Ramaswamy) on a National Water Framework Law set up by the Planning Commission's Working Group on Water Governance for the Twelfth Plan) in its definition, "Groundwater means water which exists bellow the ground surface in the zone of saturation and can be extracted through wells or any other means or emerges as springs and base flows in streams and rivers."

The Karnataka Groundwater (Regulation and Control of Development and Management) Act, 2011 se 2 (I) "Groundwater" means the water, which exists bellow the ground surface in the zone of saturation and can be extracted through wells or any other means or emerges as springs and base flows in streams and rivers⁵.

Though we have other legislations like The Environmental (Protection) Act.1986, and The Water (Prevention and Control of Pollution) Act, 1974, these Acts does not have any definitions about the groundwater.

COMMON LAW AND GROUNDWATER

The common law system that gives the absolute ownership to land owners, this is created different problems that the land ownership is indicative of the large disparities. The groundwater rights belong only to landowners and can only transferred when the plot of land is transferred, thus the poor who cannot afford to buy land are legally incapable of purchasing a right to pump a groundwater as well. So for there was no any effort was done by the governments to make the amendments are to enact the new legislations to separate the land rights from the water rights. This change would make the water available without regard to land ownership.

Though the situation was occurred to enforce the effective legislation so for governments have not made any efforts, the Supreme Court in many occasions expressed the 'Public Trust Doctrine' which can end the common law doctrine which was regulated in colonial era in India, still under the easement rights which are conferred by the Act⁶, the land owners have given complete rights to draw as much water as they want without a liability or responsibility towards neighboring landowners.

GROUNDWATER AND ENVIRONMENTAL LEGISLATIONS

The first effort was made by the Indian parliament while enacting the Water (Prevention and Control of Pollution) Act, 1974, to provide for the prevention and control of water pollution and maintaining or restoring of wholesomeness of water, and for the establishment boards for the prevention and control of water pollution, for conferring and assigning powers and functions to such boards relating to matters connecting to water issues. In the object of the act it clearly stated that parliament has no power to make laws for the states with respect to any of the matters aforesaid except as provided in articles 249and 250 of the constitution. Both the provisions seeks the permission of the states in making the legislation, otherwise parliament has no power in respect of state matters is concerned. Though, some of the states in pursuance of clause (1) of article 252 of the constitution resolutions have been passed by them to give an effect of this central law.

The Water Act also has not contained any of the term or word or definition of groundwater. But deals under se 2 (j) relating to stream, river, water course (whether flowing or for the time being dry), inland water (whether natural or artificial), sub terranean waters, and sea or tidal waters, this was the first inconvenience in matters of groundwater issues is concerned. The second attempt was based on the decisions which were taken at the United Nations Conference on the Human Environment held at Stockholm in June 1972, in which India is participated to take the appropriate steps for the protection and improvement of human environment, based on

³ The Karnataka Groundwater (Regulation for Protection of Sources of Drinking Water) Act, 1999

⁴ Draft of Natinal Framework Act 2011

⁵ The Karnataka Groundwater (Regulation and Control of Development and Management) Act, 2011

⁶ Indian Easement Act, 1882



that decision central government considered to take necessary steps to implement the suitable legislation. Due to this reason the Environment (Protection) Act, 1986 came into force.

The Act⁷ does not contain any definition in respect of groundwater. While defining the term 'Environment' under section 2(a), it expresses that 'environment' includes water, air, and land and the inter-relationship which exists among and between water, air and land, and human beings, other living creatures, plants, microorganisms and property. The main object of this Act is to prevent the environmental pollution and creating good and hygienic environment to sustain life of human beings. This Act has no provisions directly to control and to regulate the groundwater resources.

GROUNDWATER AND CONSTITUTION OF INDIA

Constitution of India contains many provisions in matters pertaining to water resources but it does not contain any direct word about groundwater. Article 246 of the Indian Constitution places water resources in the legislative jurisdictions of the state. Here 'water resources' it encompasses 'water supplies, irrigation and canals, drainage and embankments, water storage and water power'. Further, Article 248 provides any policy not explicitly granted to the states is reserved for the central government.⁸

Impliedly it means that the central government has power in matter regarding the groundwater, because, the term groundwater nowhere mentioned in any provisions of the Constitution apart from the word 'water resources'. It means that this is an express power to the states and implied to the central government in policy matters. In the Constitution water is a matter which is included in entry 17 of list II, i.e. state list. The central government may establish its absolute power with harmonious co-operation of the states under entry 97 of list I the seventh schedule, which expresses that the central government has power to make legislations on 'any other matter not enumerated in list II or III including any tax not mentioned in either of those lists'. So for there are attempts by the central government towards this function except providing Model Bill to the states even which are not mandatory to the state governments.

GROUNDWATER AND NATIONAL WATER POLICIES

The first National Water Policy⁹ was framed and determined the water as natural resources, and as a basic human need and a precious national asset. Planning and development need to be governed by national perspectives, further, water as a resource is one and indivisible; rainfall, river waters, surface ponds and lakes and groundwater are all part of one system and also is a part of larger ecosystem. While explaining the values of groundwater, the development and exploitation of the country's groundwater resources also give raise to questions of judicious and scientific resources management and conservation. All these questions need to be tackled on the basis of common policies and strategies. And it was stressed to implement the strategies for information system and maximizing the water resources availability, and considered recycling and re-use of water should be an integral part of water resource development.

While stressing about the groundwater development it prescribes that, there should be a periodical reassessment on a scientific basis of groundwater potential, taking into consideration the quality of the water availability and economic viability. Exploitation of groundwater resources should be so regulated as not to exceed the recharging possibilities as also to ensure social equity. Groundwater recharge projects should be developed and implemented for augmenting the available supplies. Integrated and coordinated development of surface water and groundwater and their conjunctive use, should be envisaged right from the project planning stage and should form an essential part of the project, over exploitation of groundwater should be avoided near the coast to prevent the regress of sea water in to sweet water aquifers.

It states the water quality, drinking water, conservation of water, and to adopt the science and technology in groundwater hydrology and recharge, rain water harvesting should be the prioritized areas. Central and the state governments were not taken any strict and sincere effort in the implementation of this policy, because it was an

⁷ Environment (Protection) Act 1986

⁸ V.N.Shukla- Constitution of India, 11th Edn, Eastern Book Company, Lucknow ,2008

⁹ National Water Policy 1987



object without will of the then governments had not character of mandatory which would be followed by the stats.

Again in the year of 2002 National Water Policy¹⁰ was came into force as a result of number of issues and challenges were emerged in the development and management of water resources, some extent it has same object of the previous policy that, water is a scare and precious national resources and the country has centered the 21st century, efforts to develop, conserve, utilize and manage this important resources in a sustainable manner, have to be guided by the national perspective. It come out with new statement that the than country's population which is over 1027 million (2001 AD) and is expected to reach a level of around 1390 million by 2025 AD.

And it focused o the Non-conventional methods for utilization of water such as through inter basin transfers, artificial recharge of groundwater and desalination of brackish or sea water as well as traditional water conservation practices like rainwater harvesting, including roof-top rainwater harvesting, need to be practiced to further increase the utilizable water resources, and states that, taking into account of surface and groundwater for sustainable use need to be incorporating quantity and quality aspects as well as environmental considerations. Though, it has such valuable objectives the state governments are deliberately ignoring and object of this policy has not been satisfied. It is a time to rethink in this aspect by evaluating the results of administration and the governance of states.

GROUNDWATER AND STATE WATER POLICY

Karnataka State Water Policy¹¹ has come into force in 2002 where National Water Policy 2002 was existed at the national level. It emphasized that, unless water resources are properly developed and managed, the state will face acute crisis within the next two decades. The same situation has been happening present days and it will continue if there is no proper measure. The important matter in which it estimated that, the availability of groundwater is estimated as 485 TMC.

Groundwater resources have not been exploited uniformly throughout the state. And it found that the exploitation of groundwater in the dry taluks of north and south interior Karnataka is higher as compared to Coastal, Malnad and irrigation command areas. At that time there was overexploitation of groundwater in about 43 taluks; groundwater extraction and exploitation has exceeded 50% available resources in the 29 taluks of the state. There were 72 taluks critical from the point of view of groundwater exploitation.

The main object of this policy is to provide a drinking water at the 55 litres per person per day in the rural areas, 70 litres per person per day in towns and 100 litres per person per day in the city municipal council areas and 135 litres per person per day in city corporation areas, and it has view to provide a legislative, administrative and infrastructural environment, which will ensure fair, just and equitable distribution and utilization of water resources of the state to benefit all the people of the state. It expresses the demand for drinking water in the urban and the rural areas will increase in the coming years. This demand cannot be met entirely from the groundwater sources. In about 4500 villages groundwater is not fit for drinking purposes on account of high fluoride or iron content or brackishness.

Policy mentions about the water quality problems like, degradation from Agro-Chemicals, industrial and domestic pollution, groundwater depletion, water logging, salinisation and siltation are reducing the effective water availability. Though it expresses the than condition on which the state had been in on the responsibility to take all precautionary measures, the than credible ignorance results the present day's many groundwater related problems.

GROUNDWATER LEGISLATIONS IN KARNATAKA

In Karnataka 20 years back no legislations were there in respect of groundwater. The ministry of water resources, government of India, had circulated a model bill for regulation and control of development and management of ground water in the year 1992 and subsequently in the year 1996 in the

¹⁰ National Water Policy 2002

¹¹ Karnataka State Water Policy 2002



meanwhile, the government of Karnataka has enacted the Karnataka Groundwater (regulation for protection of sources of drinking water) Act 1999 (Karnataka act 44 of 2003) to give priority for drinking water and for protection of drinking water sources in the state.

The above said act¹² 1999 Act contain the provisions and concentrate only on protection of sources of drinking water by any over exploitation acts against private persons, but in this act there is no even single provision regarding protection from contamination of groundwater.

Again there was an another important effort made by the government of Karnataka in 2011 where in the state enacted the legislation that is Karnataka Groundwater (regulation and control of development and management) Act, 2011 based on the Model Bill which is circulated by the Ministry of Water Resources, Government of India. It is general legislation to control indiscriminatory exploitation of groundwater especially notified areas in the state. The main object of the Act is to give a priority for drinking water and for protection of drinking water sources in the state and this Act also does not contain any provision towards the protection of groundwater from contamination.

THE NATIONAL WATER FRAMEWORK ACT ¹³

This Act was prepared by the Sub-Group (Ramaswamy R.Iyer, Chairman, Members: Philippe Cullet, K.J. Joy, K. C. Sivaramkrishnan, Videh Upadhyay, M.S. Vani. Assisted by Mahadevan Ramaswamy.) On a National Water Framework Law set up by the Planning Commission's working group on Water Governance for the Twelfth Plan. While explaining the necessity of national water law the group expressed its view as follows....

1. Water, like air, is one of the most basic requirements for life. If a national law is considered necessary on subjects such as the environment, forests, wildlife, biological diversity, etc. a national law on water is even more necessary. Water is as basic as those subjects.
2. Under the Indian constitution water is primarily a state subject, but it is an increasingly important national concern in the context of:
 - a) The right to water being a part of the fundamental right to life;
 - b) The protection of water crisis because of the mounting pressure on a finite resources;
 - c) The threat to this vital resource by the massive generation of waste by various uses of water and the severe pollution and contamination caused by it;
 - d) The long term environmental, ecological and social implications of efforts to augment the availability of water for human use;
 - e) The equity implications of the distributions, use and control of water, equity as between uses, users, areas, states, countries, and generations.

And whereas fresh water is coming under increasing pressure because of the growth of human population and the processes of urbanization and the economic growth, leading to over-use / depletion, abuse, waste, scarcity, conflicts, pollution, and overall unsustainability of the resource itself and of the ecological system of which it is a part.

The act further explaining the precautionary principle means the principle that advocates the adoption of a cautious approach, including anticipatory preventive or mitigatory action, towards an activity that holds the possibility of causing harm to human beings or the environment, even if that possibility is not fully established scientifically, with the onus of proving that there will be no such harm resting on the proposer of the activity.

Regarding the sustainability it has meaning that the kind and level of use of water or other natural resource that ensures the continued availability of that resource for the present and future generations, without depletion or deterioration or dysfunctionality, and the continued healthy functioning of the related ecological system. It says the 'water for life' means water required for human survival, including drinking, cooking, bathing, personal hygiene, sanitation, and related personal or domestic uses, with an addition for women special needs; as also the water required for survival for live stock and other animals and birds and by wildlife.

¹² Karnataka Groundwater(Regulation for Protection of Sources of Drinking Water) Act 1999

¹³ Draft of National Framework Act 2011



The Act describes about the water quality and pollution that is as follows...

1. Subject to the provision of the Environment (Protection) Act 1986 and the Water (Control and Prevention of Pollution) Act 1974, the approach to the prevention and control of pollution and contamination of water resources shall include....
 - a. Reducing water-use in all categories of the use
 - b. Minimizing the generation of waste in all water uses
 - c. Recovering, to the extent possible, water for some uses from wastes, and
 - d. Ensuring that nothing that does not meet certain stringent quality standards, to be prescribed, is allowed to enter water sources.
2. A. In all water supply systems, rural or urban and public or private, good water quality status, that is to say, water quality conforming to such standards as may be prescribed, shall be achieved throughout the country by (2020).
B. water quality in all rivers, streams, surface water bodies, aquifers and other water sources throughout the country that are heavily polluted and/or contaminated shall be restored by (2020) through special programs.

This Act covers almost all provisions in matters to deal or to meet the water issues. Groundwater related problems would solve if the said act come into force mandatorily in all the states across the country. But as above mentioned Karnataka state Acts have not contained the same provision of the Framework Act.

GROUNDWATER AND JUDICIAL APPROACH

The judiciary made the significant effort in recognizing the water as a common pool of resources, In *Permatty Grama Panchayat v State of Kerala*, in this case 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 of life of the people guaranteed under the Article 21 of the Constitution of India'.

GROUNDWATER, JUDICIARY AND RIGHT TO LIFE

The sincere efforts were made by the courts specifically to recognize the right to water in the constitution. Supreme Courts and High Courts have on various occasions read the right to water in to the right to life. In *Subhash Kumar v State of Bihar*, the Supreme Court asserted that the right to live is a fundamental right under Article 21 of the constitution and it includes the right of enjoyment of pollution free water and air for full enjoyment of life.¹⁴

While expanding the scope of Article 47, Supreme Court considered the Right to Water in *Hamid Khan v State of Madhya Pradesh*¹⁵, in this case the government was sued for not taking the appropriate precautions to ensure that the drinking water supplied through hand pumps in Mandla District was free from excessive fluoride. The court ruled that under Article 47, the state has the responsibility to improve the health of public by providing the unpolluted drinking water. In *Vishala Kochi Kudivella Samarkshana Samithi v State of Kerala*^{16, 17}, the court specifically provided that the government is bound to provide a drinking water to the public and this should be the foremost duty of the government, further ruled that failure of the state to 'provide safe drinking water' to citizens amounted to a violation of the right to life.

¹⁴ AIR 1991 SC,420

¹⁵ AIR 1997 MP 191

¹⁶ 2006 (1) KLT 919 (High Court of Kerala, 2006) Para 3

¹⁷ 2006(1) KLT 919 (High Court of Kerala, 2006) Para 3.



CONCLUSION AND SUGGESTION

Groundwater is an immensely important resource, excessive withdrawals made its depletion and scarcity, contamination and pollution of groundwater resources are major threats to the drinking water resources in both urban and rural areas. Therefore, it must be protected and should manage properly by implementation effective legal framework. The government of Karnataka has not made any long-term, sustained program of monitoring the quality of its groundwater. People have to play a vital role in determining, and in understanding how clean our water will be.

Proper measures should be initiated in ensuring that our groundwater stays free of man-made contaminants requires in understanding how water and pollutants enter aquifers. We are responsible for protecting these resources. Prevention is the best policy. Preventing pollutants from reaching groundwater is cost effective and demonstrates good stewardship. Removing pollutants from groundwater is extremely expansive. And often the water cannot be restored to drinking water quality. Proper storage and removal of potential pollutants, proper land use management, and protection measures around wellheads and sinkholes, will prevent groundwater contamination.

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