

Groundwater Crisis vis-à-vis Sustainable Development: A Socio-Legal Exploration

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Abstract

ISRO, World Bank, NITI Aayog and other authorities have alarmed India about serious Groundwater Crisis. NITI Aayog reports, till 2030 the demand for water will likely to be double the available supply and India is highest groundwater user at global level. The main reasons behind the crisis are: over-extraction, lack of legal restrictions and mismanagement of available resources. There are adverse social impacts which lead to social disturbance, violation of fundamental rights and other social setbacks. To combat this crisis and to achieve sustainable development goals, 'Management' of groundwater resources is the need of the hour which will ultimately result into 'healthy' society. The Judiciary has also contributed to this social illness through landmark decisions and guidelines which underline the performance of various authorities in connection with Groundwater Management. 'Law' plays a significant role by hitting all purposes which are to be achieved while fighting with this extremity. The Researcher here throws light and tries to analyse Socio-Legal perspectives of Groundwater Crisis and factors which are holding back 'Sustainable Development'.

Key Words: *Groundwater Crisis, Management, Sustainable Development, Social Issues, Legal Issues*

1. Introduction

“पृथिव्याम त्रीणि रत्नानी जलमन्नं सुभाषितं”

The above mentioned Sanskrit quote means that, there are three gems on Earth which are Water, Food and *Shloka*. The poet here signifies that these gems are very valuable and utmost care is to be taken because without these 'gems'; human life is impossible. Being one of the main components of nature, water is a treasure for all living organisms. Are we forgetting value of this precious treasure? Whether we are following the intention which this poet wants to convey through this quote?

Human beings are dependent on nature and not vice versa. The natural resources are inevitable part of human life without which life is impossible. We are getting water as well as air for free of cost. Natural resources are there to fulfil our needs. But what about life of nature? Whether water in nature is immortal?

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Today, in this technologically developed and globalised world, we are battling with water crisis. One should not be surprised if the next world war is fought for water. As per Strategic analysis paper published by Australia's Global Interests, India is the world's highest user of groundwater. It consumes over a quarter of the global total equivalent to 230 cubic kilometres per year. An assessment of 6,607 groundwater units in 2011 found that 1,017 were "overexploited", indicating the rate of groundwater extraction exceeded replenishment. Around one-third of all units in India were under stress. The World Bank predicts that by 2032, around 60 per cent of aquifers in the country will be in a critical state. Sustainable management of this scarce resource has become a challenge nowadays owing to increased demands of increasing population, growing urbanization and rapid industrialization combined with rising agricultural production.² These are not merely 'figures' but this 'figures' out the real situation in India. If this situation is to be compared with sustainable development, then it is clear that management is needed in this regard. Groundwater contamination and its equitable distribution are significant issues which have serious social and legal implications.

Groundwater contamination is a 'qualitative' facet while equitable distribution is a 'quantitative' aspect regarding groundwater resource management. The quality of water is affected by various factors like rate of monsoon, dilution during monsoon, high evaporation rate during the summers, sporadic pollution loads from various anthropogenic activities, flow rate of water and so on.³ The human right to safe drinking water and sanitation is derived from the right to an adequate standard of living and inextricably related to the right to the highest attainable standard of physical and mental health, as well as the right to life and human dignity.⁴ India, being the country extracting highest amount of groundwater, has to consider this issue seriously because quality of drinking water is directly proportional to the health of citizens.

Unrestricted extraction of groundwater is one of the major reasons for groundwater contamination. Here, the question of distribution of water arises and more specifically, the question is about 'equitable' distribution. In conflict with of 'right' and 'conservation'; right to water prevails resulting into over-extraction. In relation with sustainable development, equitable distribution has become serious subject matter of groundwater management. Being the major concerns of groundwater management, researcher throws

² Government of India, Report: *DYNAMIC GROUND WATER RESOURCES OF INDIA* (Central Ground Water Board Ministry of Water Resources, River Development & Ganga Rejuvenation, 2017).

³ Government of Maharashtra, Report: *E- Bulletin of Water Quality National Water Monitoring Programme* (Maharashtra Pollution Control Board).

⁴ G.A. Res. 16/2, at 1, U. N. Doc. A/HRC/RES/16/2 (April 08, 2011).

light on these issues in connection with sustainable development and analysis from socio-legal point of view.

2. Sustainable Development-Reality Check

The World Commission on Environment and Development, 1987 has defined 'sustainable development' as, "development that meets the need of present without compromising the ability of future generations to meet their own needs." When we consider the 'Groundwater' as a subject matter in connection with abovementioned realities, then sustainability of groundwater is in question. These crucial issues have to be taken into consideration while making the plan for management of groundwater resources.

While groundwater resources in nearly all regions of the world are stressed by overuse, population growth, and climate change, there are important differences in policy and management to minimise stressors on groundwater resources between the developed and developing world.⁵ With existing facts and circumstances, reality check is necessary for overall social and legal development. This reality check can be achieved by balancing the existing situation with sustainable development.

A very enthralling development in the constitution has taken place after *Maneka Gandhi*⁶ which has enriched life of human being. Life of human being has transformed into 'quality life'. An extended view of Article 21 of our Constitution enshrines 'right to health' as well as 'right to clean and healthy environment' as fundamental rights. Indian constitution has no express provisions for these rights. Indian Judiciary understood the silence behind Article 21 and interpreted that silence which resulted into extended view. While analysing the nexus between Groundwater crisis and sustainable development; interpretation of silence under article 21 which rightly pointed out by Judiciary which has paved a way to sustainability and development of environmental jurisprudence.

Now, it is high time to understand silence behind the definition of 'sustainable development'. Abovementioned definition takes into consideration the needs of present as well as of future generations. As far as natural resources are concerned; it is too difficult to fulfil needs of present generations. Then, should the present generations compromise their needs? The definition is silent on that. Thus, there is conflict of interests of present and future generations to meet their needs. The main reason behind that is 'one's conservation becomes another's consumption'. This conflict has

⁵ United Nations, Report: Groundwater and Climate Change (United Nations Educational, Scientific and Cultural Organization and International Hydrological Programme).

⁶ AIR 1978 SC 597

evolved the major concerns of ‘Groundwater Contamination’ and ‘equitable distribution of Groundwater’. Although a number of statutes have been enacted with a view to protect environment against pollution, and an administrative machinery has been put in place for the purpose of enforcement of these statutes, the unfortunate fact remains that the Administration has done nothing concrete towards reducing environmental pollution.⁷In regard with abovementioned issues, administrative actions are also to be taken into consideration to have effective machinery for groundwater management.

The NITI Aayog has expressed very serious concerns for Groundwater crisis. India is undergoing the worst water crisis in its history. Already, more than 600 million people are facing acute water shortages. Critical groundwater resources which account for 40% of our water supply are being depleted at unsustainable rates.⁸ Goal 06 of Sustainable development is “clean water and sanitation”⁹. Basin upon these goals of sustainable development, the Ministry of Statistics and Programme Implementation has published the report. As far as our discussion is concerned, following chart is the part of report which specifically revolves around the subject matter of sustainable withdrawals and water scarcity. This chart shows that the annual survey is carried out by MoWR regarding withdrawal of groundwater, its availability etc.

Target¹⁰	National Indicator	Periodicity	Data Source (Ministry/ Department)
By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water	Percentage ground water withdrawal against availability	Annual	MoWR (Ministry of Water Resources, River
	Per capita storage of water(m3/person)		

⁷ M P Jain, Indian Constitutional Law1173 (2014).

⁸ Government of India, Report: Composite Water Management Index (NITI Ayog, 2018).

⁹ Sustainable Development Goals, United Nations Development Programme-UNDP (Nov. 05, 2018), <http://www.undp.org/content/undp/en/home/sustainable-development-goals.html>.

¹⁰ National Indicator Framework, Ministry of Statistics and Programme Implementation-MOSPI (Nov. 05, 2018), http://www.mospi.gov.in/sites/default/files/main_menu/SDG_Framework/National_Indicator_Framework_6nov18.pdf.

scarcity and substantially reduce the number of people suffering from water scarcity	Per capita availability of water (m ³ /person)		Development and Ganga Rejuvenation)
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Due to the groundwater crisis, equitable distribution and availability of freshwater for human consumption; both of these are major concerned issues. On the large canvas of the society and law, both of these issues are very serious and must be considered to have check on sustainable development. 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 channel.¹¹ The phrase “all water under the land” signifies unlimited extraction of groundwater. Thus, this provision ultimately results into inequitable distribution of groundwater which is violation of fundamental right of citizen under Article 21.

Other issue of groundwater contamination has nexus with the health of citizens. Maharashtra Pollution Control Board has conducted investigation and submitted a detailed report to the Collector vide letter which also confirms the Groundwater contamination as the oil and grease contents in the well water is about 50 per cent which is abnormally high.¹² Groundwater contamination occurs when man-made products such as gasoline, oil, road salts and chemicals get into the groundwater and cause it to become unsafe and unfit for human use.¹³ Thus, it is evident that contaminated groundwater is hazardous for health due to which “public health” is in danger. Ultimately, when both of these issues are considered; it is clear that the sustainability of groundwater sources is in question. Is there any solution for meeting sustainability??

3. Groundwater Contamination and Health: Socio-Legal Analysis

Discharge of toxic elements from industries and landfills and diffused sources of pollution like fertilisers and pesticides over the years has resulted in high levels of contamination of groundwater with the level of nitrates exceeding permissible limits in more than 50% districts in India.¹⁴ A perusal of the report submitted by Central Pollution Control Board reveals many glaring things, as for instance, that the industries are operating without

¹¹ Indian Easements Act, 1882 (Act 5 of 1882), s. 7(g).

¹² Shri Sant Dasganu Maharaj Shetkari Sangh Akolner v. The Indian Oil Corporation Ltd., Application No. 42/2014 before NGT Western Zone Bench, Pune.

¹³ Groundwater Contamination, Groundwater (Nov. 10, 2018), <https://www.groundwater.org/get-informed/groundwater/contamination.html>.

¹⁴ Vishwa Mohan, “Across India, High Levels of Toxins in Groundwater”, *The Times of India*, Jul. 31, 2018.

obtaining a valid consent, operating in the premises which is actually in the name of some other closed industry, so as to give an impression that no industry is working in the said premises.¹⁵ Also, due to effluents from these industries, sources of groundwater are contaminated due to which health of the people in surrounding regions is in danger. Taking account of this, National Green Tribunal has ordered closure of 57 industrial units in Derabassi region of Punjab. This phenomena underlines the seriousness of groundwater contamination and its effects on the health of the public at large. While dealing with this particular issue, researcher has tried to investigate functions of various authorities and data regarding the groundwater contamination and its relation with public health. In comparison with the standards of drinking water by BIS (Bureau of Indian Standards) and WHO¹⁶ (World Health Organisation) with existing groundwater conditions as per the study conducted by CGWB (Central Groundwater Board); one can realise how the condition of groundwater is. The Following chart gives the permissible standards of various chemical components for healthy drinking water:

Authority	Fluoride (mg/l)	Nitrate (mg/l)	Arsenic (mg/l)	Iron (mg/l)
BIS¹⁷ (Bureau of Indian Standards)	1 to 1.5	45	0.01 to 0.05	0.3

Thus, it is evident that the Bureau of Indian Standards is functioning well in case of drinking water standards. The standards set are based on the various aspects of human health. When these standards are compared with the existing groundwater sources; pathetic condition is seen and the sources are contaminated to that extent that the water is too dangerous to the health. Central Groundwater Board has published the report regarding the contaminated sources of water and it is seen that the sources of groundwater have contaminated on greater extent. Thus, being a social concern, this particular issue was questioned in Loksabha. The questions were regarding the chemical contents of water, WHO (World Health Organisation) standards and reaction of Union Government on this issue. While answering these queries, the Minister of State for Water Resources, River Development and Ganga Rejuvenation has published evidentiary data of this issue.

¹⁵ Karnail Singh & Ors. v. CPCB & Ors., Application No. 30/2013, Order by National Green Tribunal dated 25/10/2018.

¹⁶ Drinking Water Quality Guidelines, World Health Organisation-WHO (Nov. 20, 2018), https://www.who.int/water_sanitation_health/publications/drinking-water-quality-guidelines-4-including-1st-addendum/en/.

¹⁷ Water Quality Standards, Central Ground Water Board-CGWB (Nov. 20, 2018), <http://cgwb.gov.in/Documents/WQ-standards.pdf>.

State ¹⁸	Fluoride (mg/l)	Nitrate (mg/l)	Arsenic (mg/l)	Iron (mg/l)
Maharashtra	17	30	--	20
West Bengal	7	2	9	15

Hence, it is very clear that the groundwater contamination has resulted into health issues which are affecting social structure of health. And immediate action is needed for the same.

4. “Need” versus “Fulfilment” of Water: Legal Conflict for Equitable Distribution of Groundwater

In the world of industrialisation, we, as human beings, are neglecting our environment. Any development which compromises with the environment is not sustainable. Plachimada, a village suffered calamity of water crisis; not due to any ‘natural disaster’ but due to uncontrolled utilisation of natural resources by human. The bottling plant of Coca-Cola was set up nearby Plachimada and due to over-extraction of groundwater, the people in nearby villages have suffered groundwater crisis. The people in surrounding villages didn’t get water for their daily needs and also due to increasing percentage of salts and chemical ingredients, people were facing health issues. It was only after the people protested that the plant was closed within 3 years after its opening. In this instance, the significant issue which is to be noted is that, due to over extraction by Coca-Cola unit, the people in surrounding area were deprived of their fundamental right.

Fundamental rights are not absolute; they come with ‘reasonable restrictions’ which take care of another’s right. Basing upon this principle itself, the judiciary has considered the interest of greater number of citizens and ordered closure of bottling plant. The battle between ‘need’ and ‘availability’ is now difficult to manage in case of groundwater; because providing ‘sufficient water’ for daily needs of human is not possible as far as groundwater crisis is concerned. Thus, we are left with only solution of harvesting (to maintain and increase groundwater table) and to restrict use of water.

We, as human beings don’t pay a single rupee for available natural resources. Being the owner, the state can impose ‘charge’ on consumption of water by which usage can be administered and controlled. On this basis, the gains out of imposition of ‘cess’ on water, can be reused for the same purpose i.e. conservation as well as management of groundwater resources. This will make the citizens as well as the state aware about their duties towards environmental conservation and effective management to face the

¹⁸ Government of India, Ministry of Water Resources, River Development & Ganga Rejuvenation, Lok Sabha, Unstarred Question No. 341 Answered On 19.07.2018.

calamity of groundwater crisis. This principle has been incorporated in Maharashtra Groundwater (Development and Management) Act, 2009.¹⁹

As per the Water (Prevention and Control of Pollution) Cess Act, 1977 the industry consuming water is liable to pay water cess based on the quantity consumed for which records are to be maintained and are liable for verification. Therefore it is always possible for the authorities to ensure that the industry does not exceed the allowable quantity.²⁰ Still, when we notice the similar circumstances like 'Plachimada'; effectiveness of implementing Water (Prevention and Control of Pollution) Cess Act, 1977 is in question.

The reason behind non-effectiveness of this Act is that the cess which is imposed is too less that it will not serve the purpose of prevention. There is no balance between amount of cess and extent of water on which it is applicable. In comparison with quantity of water; payment of cess becomes easy way transaction which results into non-deterrence. This whole scenario ultimately ends at environmental degradation due to which sustainability cannot be achieved.

In *Mazibuko v. City of Johannesburg* (2009), the applicants challenged the legality and constitutionality of the City's policy of imposing prepayment water meters, as well as the provision of a free basic water supply of 25 litres per person per day or 6,000 litres per household per month.²¹ The design of this policy was that to provide free basic water i.e. 25 litres per person per day or 6000 litres per household per month. And once the allocation was done, the meters would automatically shut. This meant that the applicants went without water for almost 15 days. The high court held this system to be unlawful, unreasonable and unconstitutional and ordered to provide 50 litres free water per person per day. In appeal, the Supreme Court, on examining the facts and circumstances, ordered 42 litres water per day per person. In contradiction with both of these orders, Constitutional Court opined that 25 litres free water per day per person was reasonable. Along with this, Constitutional Court has emphasised on accountability of citizens towards state through litigation.

¹⁹ Section 8(3): On the advice of the State Authority, the State Government shall give such guidelines to the concerned Authority to levy such cess as may be prescribed, on the use of existing deep-wells in the non-notified areas. Provided that, the proceeds of cess levied shall be forwarded by the concerned Authority to the Panchayat or the urban local body, as the case may be, and the same shall be used for implementing groundwater conservation programme.

²⁰ M.D. Yogesh and Ors. vs. Union of India and Ors. (13.02.2017 - NGT) : MANU/GT/0012/2017.

²¹ United Nations Report on: The Right to Water, UN Fact sheet No. 35 (United Nations).

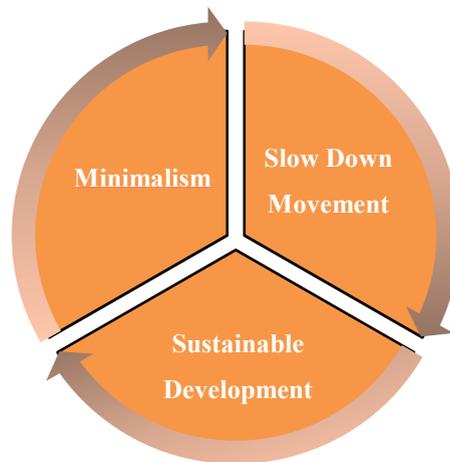
5. Concluding Remarks and Suggestions

In order to prevent the pollution of groundwater resources, it is important that periodic analysis of sources of groundwater be promptly made by the Government. This periodic assessment can be determined on the basis of various factors like, establishment of new industry, digging of new bore wells, effluents from industries and various factors which are responsible for contamination of groundwater. On the basis of these factors, the policy of groundwater contamination assessment can be developed in co-operation with the health department which can examine an extent of contamination in connection with public health. Also, to arrive at practically possible conclusion, exhaustive research is needed. To conduct good research, various administrative authorities should maintain data integrity so that it will be useful for further research.

With the concern about equitable distribution of groundwater and levy of cess to restrict usage of groundwater, the amount of cess should be such that the wrongdoers will have to pay substantial amount of their income by which only deterrence will be created. For non-payment of cess, heavy punishment be imposed and effectively implemented so that citizens will understand the value of water and will take the duties seriously. By implementing these solutions, along with creating awareness in citizens and creating seriousness about duties towards environment; the sustainable development can be achieved.

“Slow-Down Movement” and “Minimalistic Theory (Minimalism)” are the ideologies developed for sustainable development as well as water usage. Minimalism implies living deliberately and considering the consequences of your actions. Through minimalism, humans can reduce their eco-footprints and make sure overconsumption doesn’t strip the Earth bare.²² Thus, minimalism can be a way to the conservation of water which will be helpful for sustainable development.

²² Minimalism: How to living simply meet recycling, Global Citizen (Feb. 07, 2019), <https://www.globalcitizen.org/en/content/minimalism-how-to-living-simply-meet-recycling/>.



Slow movement talks about doing the things at appropriate time in right pace. These concepts fall under a relatively new cultural revolution known as the ‘slow movement’, which is against the notion that fast is always better. It espouses the need to move with purpose, to prioritise quality over quantity, and to savour moments rather than treat things as a means to an end. It is also about balance: doing things at right speed; speeding up when it’s purposeful to do so, slowing down when needed or riding the in-between.²³ In this globalised world, human being is concerned about ‘development’ rather than protection and conservation of environment. To be powerful in the world, every nation is trying to grow fast which compromises environment and at the end ‘environment’ is only the treasure of nation on the basis of which it can develop. Thus, from the point of view of sustainability and groundwater resource management, we need to apply the principles of minimalism as well as slow movement. This will make management efficient and successful ultimately resulting into happiness of citizens from all perspectives.

²³ Why slowing down creates joy, Mindful Company (Feb. 07, 2019), <https://www.mindful-.com/blogs/notebook/the-slow-movement-why-slowing-down-creates-joy>.