

## **We Need Paradigm Shift!! - Managing Groundwater Better And Constitutional Scheme In India : A Way Forward**

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### **Introduction**

एकेन वर्णेन रसेन चाम्भश्च्युतं नभस्तो वसुधाविशेषान  
नानारसत्व बहुवर्णतां च गतं परीक्ष्यं क्षितितुल्यमेव<sup>1</sup>

“The water that falls from the sky with same colour and taste, assumes various colours and taste owing to the difference in the nature of the Earth. Hence it should be examined in relation to its environments.”

Water has great significance in Indian scriptures and that has been underlined in above-mentioned shloka from Brihat Sanhita. As mentioned above in the shloka it has different taste and colour; and also, different forms too. It is present in various forms like ponds, lakes, rivers, reservoirs, groundwater etc. which can be broadly divided into surface water resources and groundwater resources. From the point of view of living-lives; water is one of the basic needs. Above-mentioned shloka gives very important message to all of us that water should be examined in relation to its environment. I think this real essence of environmentalism and sustainable development about which is burning issue for today. It is fascinating that I think sustainable development is contemporary concept; but this was discussed and documented thousands of years back. By

reading this shloka many contemporary facts started flashing into my mind; especially groundwater.

The research paper published by IIT Kanpur has used more than 4,000 groundwater well data from north-west India to demonstrate that groundwater levels in the states of Punjab and Haryana have fallen to alarming levels in the last four-five decades<sup>ii</sup>. We are facing similar situation in other parts of India regarding depletion of groundwater levels at alarming pace. There is no law or the policy governing groundwater and its usage for various purposes. Rather as compared to surface water, groundwater is unregulated in India. This has been proven in various studies too. The irrigation systems are not functioning up to mark due to which it is not possible to irrigate the expected area which should come under irrigation and contrary to that; the agricultural production has been increased which clears the fact that most of the agriculture is dependent on groundwater where surface water doesn't reach. Also, it is the darker side of green revolution that use of pesticides and fertilizers lead to more and more consumption of water. The effects of this are still seen in the area of Punjab and Haryana which is epicentre of green revolution. Thus, it clear from above discussion that the inefficiency of irrigation systems has resulted into unbridled consumption of groundwater to meet various needs.

From constitutional and jurisprudential point of view, the rights related to groundwater are not clearly defined due to which it has become difficult to manage groundwater efficiently. It is well settled principle in India that the groundwater consumption rights are

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coming in connection with the property rights. Thus, groundwater is considered as property which results into uncontrolled usage. In the light of sustainable development, this fact is alarming. Here, fundamental right recognised by constitution and the statutory right by Property law is contrary. Therefore, to deal with this situation we need to have paradigm shift in fundamental principles regarding groundwater management. Here, in this research article I am going to discuss the need of paradigm shift and how it is going to affect positively to deal with groundwater management in efficient way.

### **Apex Water Authorities and their mandate in the light of Technological Developments**

On the backdrop of these alarming facts, one of the revolutionary attempt was made by Mihir Shah Committee report in 2016. The report titled “A 21st Century Institutional Architecture for India's Water Reforms” which strongly suggests for the paradigm shift in water governance. Contrary fundamental principles which I discussed above can be resolved by this report. According to me, this report is significance from two aspects: (i) the report gives suggestive measures about the fundamental principles governing water sector (ii) and along with that; it suggests for a new institutional mechanism dealing with the water governance. Thus, it is the blend of jurisprudential principles and the framework to implement those principles. Committee has suggested this mechanism on the basis of vast consultative process including all relevant stakeholders within and outside government. Thus, this report is giving 3D image of future water sector in India. In this section I will compare the existing

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water governance mechanism with the mechanism suggested by this report. The suggestions of this analysis will be helpful for making the existing systems water and user friendly.

Existing institutional framework with regard to water governance consists of two apex institutions: CWC (Central Water Commission) and CGWB (Central Ground Water Board) especially dealing with surface water and groundwater respectively. CWC operates through three wings: (i) Exploratory Drilling and Material Management Wing (ii) Designs and Research wing (iii) Water Planning and Projects Wing (iv) River Management Wing and CGWB operates through four wings: (i) Sustainable Management and Liaison Wing (ii) Survey, Assessment and Monitoring Wing (iii) Training and Technology Transfer Wing. Functioning of all of these wings is very significant; still these wings need to be restructured and strengthened. CWC was set up in 1945 and CGWB in 1971 by taking into consideration the need of time. Green revolution in India has relevance with an objective of these apex authorities CWC and CGWB. Green revolution in India as lead by M.S. Swaminathan in 1960s and this revolution was launched to address India's hunger crisis during Second Five Year plan. The revolution had focus on Rural Development, Industrial Development, Infrastructure and Raw Material. While achieving these objectives; implementation of this revolution led to advantages and disadvantages. The darker sides of green revolution were Limited coverage of High Yielding Variety Programme; excessive usage of chemicals and pesticides; Health Hazards; Bad impact on Soil and

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Crop production and health hazards. Most of these crops being cereals, required almost 50% of dietary water footprint. Canal systems were introduced, and irrigation pumps also sucked out the groundwater to supply the water-intensive crops, such as sugarcane and rice, thus depleting groundwater<sup>iii</sup>. Taking into consideration, the excessive need of water; dam construction and tube well drilling were considered to be the solutions and accordingly CWC and CGWB had their mandate in this regard. With the passage of time and due to unbridled usage of groundwater; this solution of tube well has become problem. Thus, the problem of groundwater management lies in the solution itself which was actually suggested to resolve an enhanced need of water.

### **Why Groundwater Crisis and Mismanagement...??: Legal Scenario**

As discussed above the mandate of apex water authorities was mainly aiming at the green revolution and enhanced need of water for various purposes, mainly for agriculture. The productivity of the crops was increased by the use of fertilizers, pesticides, and groundwater resources. However, mismanagement and overuse of chemical fertilizers, pesticide, and lack of crop rotation caused the land to become infertile, and loss of groundwater became a common occurrence in agricultural areas. These impacts made the farmers even more miserable, due to the increased expenditure spend on the cultivation of crops to overcome these shortcomings<sup>iv</sup>. Here in this part I will discuss how this resulted into groundwater crisis and mismanagement.

Due to green revolution, there was enhanced use of fertilizers, pesticides and high yielding crop seeds which demanded more and more water for production. The quality of soil also degraded which demanded for more water for production. To meet this need; there were the solutions of dam construction and groundwater extraction through tube wells. As far as river basin management and dam management is concerned; the mandate of these authorities was belonging to old era where these solutions were considered to be suitable to meet the need of water. In that regard, these authorities comprised mainly civil engineers and hydrologists which later on become drawback of water management systems. The reason was simple that these technical experts were not able to consider the social-legal-policy issues regarding water management i.e., interdisciplinary approach was lacking in functioning of these water management authorities. Apart from that, the solution of dam construction was misinterpreted in such a way that huge number of big-small dams were constructed in India without considering its hazard to environment and dam construction effectivity. According to study and opinion of social activist Parineeta Dandekar, there no dam proposal in India till the date which has been rejected. This opinion underlined the grey area in dam management and due to this mismanaged dam systems; farmers and other stakeholders moved to more convenient way of getting water i.e., Groundwater.

One of the significant issues of groundwater management is jurisprudential status of groundwater. The groundwater rights are connected with property rights i.e., those are considered as rights

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connected with immovable property. As per the existing law in India, if a person owns an immovable property, then he becomes owner of water below that land. This means, groundwater is considered as property and the owner of land is entitled to extract groundwater as much as he wants. This results into exploitation of groundwater resources; but this is permitted under law as an owner of that land. As per the constitutional framework, the extended view of Article 21 gives right have clean and healthy environment to citizen which includes clean and portable water. Here, constitutional right and legal right are contrary to each other. Legal right allows individual to extract groundwater with no limit while constitutional right imposes duty to extract groundwater in such a way that other citizens should be able to get clean and healthy water. Simply, in case of legal right, water is considered as property while in case of constitutional right, it should be considered as common pool resource. This legal glitch divides the society into rich and poor and differs in matter of accessibility to right. Therefore, water has great significance from economic point of view as well. The glaring example of this is Plachimada in Kerala where citizens in surrounding villages have protested against over-exploitation of groundwater by Coca-Cola bottling plant. Recently, former top bureaucrat K Jayakumar, who was then Kerala's Chief Secretary, revealed in an interview that the factory's operations in Plachimada were a 'betrayal' and that the 'voice of the poor had no value'. He also added that the Coca Cola factory 'had tried to approach him but he did not budge'<sup>v</sup>. There is legislative vacuum proves that the

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groundwater is considered to be property as far as existing property law is concerned. The whole scenario of governing groundwater is not in tune with an object of sustainable development which we are aiming to achieve.

Groundwater law in India gives individual landowners overwhelming control over groundwater. This is inappropriate in a context where groundwater is now the main source of water for the realisation of the human right to water. This also fails to provide the basis for effective protection of groundwater at aquifer level<sup>vi</sup>. The state becomes the guardian or trustee of groundwater resources. The right to access and use of groundwater is independent of the regime of the overlying land. Any user who wants to abstract groundwater must apply for a permit (also styled license, authorization, or concession) in order to obtain a “right to use”. The separation between ownership and usufructuary rights is one of the cornerstones of modern formal water rights regimes and allows the government to manage and protect groundwater resources in the interest of the public<sup>vii</sup>. The fact is clear that, water is state subject due to which the centre is not having power to legislate on water governance. All states have power to legislate on this subject under Indian Constitution; but only few states have taken legislative action for groundwater management. Rather all states must take an action on immediate basis regarding groundwater management in national interest.

### **Conclusion and Suggestions**

From above discussion and analysis, it is clear that the groundwater exploitation has caused due to dam mismanagement

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and tussle between legal and constitutional right. As far as functional aspects are concerned, the apex authorities should adopt an interdisciplinary approach to manage groundwater in better way. To bring the co-operation between groundwater and surface water management; the suggestions and recommendations given by Mihir Shah Committee report must be implemented as earliest. As per suggestion of this report, there should be establishment of only one single apex water management authority titled 'National Water Commission' having eight wings namely: (1) Irrigation Reform Division (2) River Rejuvenation Division (3) Aquifer Mapping and Participatory Groundwater Management Division (4) Water Security Division (5) Urban and Industrial Water Division (6) Water Quality Division (7) Data Management and Transparency Division (8) Knowledge Management and Capacity Building Division. Apart from this, the paradigm shift is needed moving to participatory groundwater management. Rather than spending the money on construction of new dams; it is required to maintain the existing dam structures and to have check on functioning of dams.

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<sup>i</sup> Dakargalam, Chapter 54 of Brihatsanhita by Varaha Mihir

<sup>ii</sup> Punjab, Haryana witness alarming dip in groundwater level: Study, Economic Times, (May 1, 2021, 9:00 AM) <https://economictimes.indiatimes.com/news/india/punjab-haryana-witness-alarming-dip-in-groundwater-level-study/articleshow/84167585.cms>

<sup>iii</sup> Green Revolution, Drishti, (May 1, 2021, 5:35PM) <https://www.drishtias.com/to-the-points/paper3/green-revolution-1>

<sup>iv</sup> Eliazer Nelson, A.R.L., Ravichandran, K. & Antony, U. The impact of the Green Revolution on indigenous crops of India, (Journal of Ethnic Foods,

- 2019), (May 3, 2021, 7:40 PM) <https://doi.org/10.1186/s42779-019-0011-9>
- v 'Plachimada was a betrayal of the poor': Former Chief Secy reveals that Coca Cola tried to influence him, The News Minute, (May 4, 2021, 4:15 PM) <https://www.thenewsminute.com/article/plachimada-was-betrayal-poor-former-chief-secy-reveals-coca-cola-tried-influence-him-136563>
- vi Cullet, Philippe. Groundwater Law in India: Towards a Framework Ensuring Equitable Access and Aquifer Protection, 55-81 (Journal of Environmental Law, 2014), (May 5, 2021, 10:25 AM) <https://www.jstor.org/stable/26168506>.
- vii Kerstin Mechlem, Groundwater Governance: The Role of Legal Frameworks at the Local and National Level, Established Practice and Emerging Trends, (2016)

