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# Groundwater Law and Management in India: Towards an Equitable Framework

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## ABSTRACT

*Groundwater continues to play the significant part in the lives of humans as it supplies the majority of the country's drinking water. Not only home users but the agriculturalists and industrialists also significantly rely on groundwater. Groundwater is under extreme strain worldwide because of indiscriminate, uncontrolled, excessive groundwater exploitation and use that has resulted in groundwater depletion and contamination. In this context, the article outlines and analyses the shortcomings of the legal structure governing the use of groundwater in India. The article also proposes some of the principles and norms that should mark the new legal framework governing groundwater use. Lastly, the article argues in favour of the Model Groundwater (Sustainable Management) Bill 2017 which inculcates most of the principles discussed in the second section.*

## I. INTRODUCTION

The reliance on groundwater as a source of water has increased enormously over the last few years. One of the reasons behind the increasing use of groundwater is the increasing population of India which is growing at the rate of more than 1 percent.<sup>2</sup> In a survey conducted, it was found that India's yearly groundwater extraction rate is larger than any other nation in the world.<sup>3</sup> India's distinctive climatic situation and the economy's heavy reliance on agriculture explain this result. India faces an inconsistent pattern of rainfall in which the duration of the summer monsoon witnesses 80 percent of the rainfall leaving a substantial part of the year without any major precipitation.<sup>4</sup> This makes India heavily reliant on the use of groundwater for the major part of the year. World Bank study estimates the 60 % percent reliance on irrigation and 80 % of drinking water needs on the use of groundwater.<sup>5</sup> In addition to this, the industrial demand also poses heavy reliance on groundwater use.

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<sup>2</sup> Daniel Aguilar, *Groundwater Reform in India: An Equity and Sustainability Dilemma*, 46 Tex Int'l L.J. 623, 624 (2011).

<sup>3</sup> *Id.*

<sup>4</sup> *Id.* at 625.

<sup>5</sup> Gardu & Ntilde;o, H., Romani, S., Sengupta, B., Tuinhof, A. and Davis, R., 2022. *India Groundwater Governance Case Study*. [online] Openknowledge.worldbank.org. Available at: <<https://openknowledge.worldbank.org/handle/10986/17242>> [Accessed 28 July 2022].

Given such heavy reliance on the groundwater, the quantity and quality of the groundwater are deteriorating day by day. A study conducted by the Central Groundwater Board along with some states shows how more than 14 percent of the aquifers in India are "overexploited".<sup>6</sup> The over-exploitation of groundwater has not only affected its availability of it but also adversely affected the quality of available groundwater. The groundwater in these over-exploited areas has started to record the presence of fluoride, high saline, and other contaminating materials such as arsenic and iron particles. This worsening situation of groundwater started to alarm the government in 1970 when they came up with the Model Groundwater Bill which has been amended several times with the latest being done in 2016. Given the importance of groundwater as a source of drinking water, irrigation, and industrial use, it becomes significantly important for the legal framework to ensure the equitable and sustainable use of groundwater in India.

Given the goal of equitable and sustainable use of groundwater and the right to water, this article attempts to provide a critique of the prevalent legal structure governing groundwater use in India. First, the article outlines and analyses the shortcomings of the legal structure governing the use of groundwater. Second, the article proposes some of the principles and norms that should mark the new legal framework governing groundwater use. Lastly, the article argues in favor of the Model Groundwater (Sustainable Management) Bill 2017 (hereafter Groundwater Bill 2017) which inculcates most of the principles discussed in the second section.

## **II. GROUNDWATER LAWS: IRREFUTABLE CLAIM OF LANDOWNERS AND MINIMAL REGULATIONS**

The prevalent laws governing the use of groundwater broadly have two characteristics. First, the conventional common-law understanding that the right to groundwater is the exclusive right enjoyed by the landowner continues to command the nature of groundwater right in India to date. Second, the state's adoption of laws governing groundwater based on the Model Rules of 1970/2005, although brings into picture the state government's control over the groundwater use by individuals, remains unsatisfactory to tackle the alarming crises of groundwater depletion.

### **A. Nature of Groundwater Right – Inherent Relationship to Land Ownership**

As evident from the title, the nature of groundwater rights in India is that it is considered a part of the land. The Indian Easement Act, 1882 recognizes the unfettered right of the landowner, although indirectly, to extract and use the groundwater as a part of his/her entitlement to enjoy

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<sup>6</sup> Aguilar, *supra* note.

the land. Section 7 of the said act provides that there exists "*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.*"<sup>7</sup> The application of the concept of the "defined channel" also does not really restrict the right of the landowner as it is very difficult to conclusively ascertain the prevalence of a defined channel beneath the land unless an actual survey exists.<sup>8</sup> Hence, it can safely be said that there is no such restriction on the right of the landowner to deplete or use the groundwater.

The legal nature of groundwater as an easementary right of a landowner is largely influenced by the common law jurisprudence of Britain. First in the line of cases that gave the uncontrolled right to the landowner is the case of *Acton v Blundwell*<sup>9</sup>. In this case, the court held that the landowner has every right to extract the groundwater for "*his own purposes at his free will and pleasure*" and no legal action can arise on the ground of depletion of groundwater beneath the neighboring land. Similarly, in the case of *George Chasemore v. Henry Richards*<sup>10</sup>, the court held that the landowner enjoys the natural right to extract the groundwater beneath his land, and the harm caused to the neighbor cannot be a ground for the legal challenge.

The legal position established in such cases continues to remain in force because of the operation of Article 372<sup>11</sup> of the Constitution of India that upholds the pre-constitutional laws unless repealed or changed. As no legislation has been brought that changes the customary right of the landowner to groundwater, the traditional nature of the right continues to remain in force. Further, various judicial decisions and the report of an expert committee of the Planning commission also affirm their adherence to this traditional rule of common law.<sup>12</sup> Even the adoption of specific groundwater laws by the states does not change this position as most of the laws aim to regulate the existing right of the landowner thereby indirectly upholding the common law right of the landowner.

### **B. Regulating Groundwater Use – Early Reforms by Government**

In response to the increasing use of tubewell by individuals after independence, the first Model of Rules was brought in by the Government of India in 1970 for adoption by the states. The rules were further amended several times with the latest amendment being made in 2016. The Model

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<sup>7</sup> Indian Easement Act, 1882, s 7.

<sup>8</sup> Sujith Konan, *Revamping the Groundwater Legal Regime in India: Towards Ensuring Equity and Sustainability*, 12 SLR 45, 49 (2020).

<sup>9</sup> *Acton v Blundwell* [1843] 152 ER 1223, p. 1235.

<sup>10</sup> *George Chasemore v. Henry Richards* [1859] 7 HLC 34.

<sup>11</sup> The Constitution of India, 1950, Art. 372.

<sup>12</sup> Sujith Konan, *supra* note 7, at 50.

Rules of central government only act as a reference for the state as water is placed in "Entry 17" of List II in the seventh schedule of the constitution.<sup>13</sup> Hence, the power of the central government is restricted with respect to the laws made on groundwater. However, most of the states have adopted similar laws because they are more or less based on the rules of 1970/2005.<sup>14</sup> So, it is appropriate to look at these rules as a model for the broad analysis.

The scope of these Model Rule, formulated by the central government, is broadly restricted to the regulation of the use of groundwater. The Rules does not deal with the issue of legal status and nature of groundwater right as enjoyed by the landowner. As a result of the restricted scope of these rules, access to the resource of groundwater continues to remain a land-based right. Now, coming to the regulation aspect, the groundwater laws broadly provide for three regulatory tools.

First, the rules provide for the classification of areas based on the level of scarcity faced. Such areas are notified by the groundwater authority established under the rules. Based on the recommendation of authority, the state government has been given full discretion to notify such areas where there is a need for state intervention or regulation.<sup>15</sup> One such example is that of Goa, where the groundwater law provides of classification of different regions into "*scheduled, water-scarcity and over-exploited areas*".<sup>16</sup> Second, the rules envisage a permit system. Under this system, the people residing in the notified areas are obliged to seek a permit from the authority if they wish to use the groundwater unless they only wanted to use the handpumps.<sup>17</sup> Third, the rules also include the provisions pertaining to the registration of drilling companies.<sup>18</sup> This extends the permit system to not only users but also the drilling companies which now need to fulfill certain conditions as laid down by the groundwater authority to obtain a permit. Apart from these model rules, the Central Ground Water Authority (CGWA) has also been established under the Environment Protection (1986) Act by the central government.<sup>19</sup> The authority's jurisdiction extends over the entire country however, it specifically exercises jurisdiction where states have not enacted their Groundwater Laws.

### C. Shortcomings of the Prevalent Framework

Despite the regulatory framework built in the Model Rules of 1970/2005 on which most of the

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<sup>13</sup> The Constitution of India 1950, Art. 246 & Seventh Schedule.

<sup>14</sup> See *case studies* in Sarfaraz Khan, Tony George, and Sanu Paul, *Groundwater Law and Management in India* (1<sup>st</sup> edn, Springer 2021).

<sup>15</sup> Model Bill to Regulate and Control the Development and Management of Ground Water, 1970/2005, s 5(2).

<sup>16</sup> Goa Groundwater Regulation Act, 2002.

<sup>17</sup> *Id.* at s 7.

<sup>18</sup> *Id.* at s 9.

<sup>19</sup> Environment Protection Act 1986, s 3(3)

state laws are based, the rules fail to address the problem of conceptualization of groundwater as a right vested in the landowner. The current framework still operates on the assumption that the only stakeholder in the management of groundwater is landowners. The assumption is problematic on various grounds such as: Firstly, it fails to take into consideration the prevalent scientific understanding of groundwater which situates the groundwater at the same level as surface water.<sup>20</sup> This is specifically important because surface water is considered a public commodity as opposed to groundwater. One such case where the Supreme Court applied this modern scientific understanding of groundwater is a dispute of Coco-Cola Company in Plachimada, Kerala in which the High Court observed that groundwater should be declared as a public trust.<sup>21</sup> Secondly, as the right of the landowner is derived from the British cases, it fails to take into consideration the different climatic conditions of India as compared to England. Thirdly, the assumption ignores the plight of landless users of groundwater for whom it is the main source of drinking water and other purposes.

Apart from the rules' failure to address the problematic connection between groundwater and land ownership, the rules also suffer from other deficiencies. The licensing and the permit system provided for in the rules fails to tackle the pre-existing exploitation of groundwater as the rules allow for the existing users to simply apply for registration without having to limit the extraction of water. Such a rule implies that the already existing users of groundwater continue to extract the water without being made subject to equitable and sustainable use of groundwater.

The framework of authorities prescribed under the Model Rule of 1970/205 also fails to provide for effective execution of the rules and regulations. First, the rules do not provide for a single overarching authority that would have the jurisdiction to govern every aspect of groundwater management. Second, the rules fail to acknowledge the role of decentralized regulation as it follows the top to bottom approach. The rules provide for the establishment of management bodies at the level of state only and do not entail any provision for institutional presence at the level of local bodies such as municipalities or panchayats.

More broadly, the major drawback of the prevalent legal framework is the absence of any constructive measures for the preservation of the groundwater at the level of the aquifer.<sup>22</sup> The main reason behind this is that the rules focus on regulating the use of groundwater by individual landowners without making them adhere to larger aquifer-level preservation guidelines. The

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<sup>20</sup> Phillipe Cullet, *Groundwater Law in India: Towards a Framework Ensuring Equitable Access and Aquifer Protection*, 26 JoEL 55, 61 (2014).

<sup>21</sup> *Perumatty Grama Panchayat v State of Kerala* (2004) 1 KLT 731.

<sup>22</sup> Phillipe Cullet, *supra* note 19, at 63.

framework does not provide for any cooperation mechanism among the landowners who extract water from the same aquifer. The result of not incorporating a broader protection mechanism at the aquifer level is that the scope of legal regulation becomes limited to the small groundwater extraction units such as tube wells which is not sufficient to deal with the crisis of depletion of groundwater.

### III. TOWARDS A NEW LEGAL FRAMEWORK ON GROUNDWATER REGULATION

Having pointed out the shortcomings of the present legal regime governing groundwater, the article now moves towards suggesting some changes that will help in overcoming the shortcomings.

#### A. Moving away from the land-based Groundwater Right

The Fundamental Rights and the Environmental Law jurisprudences offers us the ground for moving away from a conventional common-law understanding of groundwater right. First, the inclusion of the right to water and right to a pollution-free environment within the ambit of the fundamental right of life and liberty under Article 21<sup>23</sup> highlights the larger societal interest in water resources including groundwater. The recognition of these rights along with Article 48(A)<sup>24</sup> and 51(a)(g)<sup>25</sup> puts the positive as well as negative obligation on the state to ensure the right to water and a clean environment for everyone and further not to interrupt the peaceful enjoyment of the same. The obligation of the state to take positive measures to ensure the realization of human rights has also been rigidly entrenched by the human rights jurisprudence.<sup>26</sup> Given the detrimental effect of private ownership of groundwater rights on right to water and a clean environment, the positive obligation requires the state to take groundwater out of the ambit of the landowner's right.

The evolution of the environment law principles also provides legal ground to curtail the right of landowners over groundwater. Having recognized the importance of groundwater as a public water resource, the link between surface and groundwater, and the need to take immediate measures to prevent depletion, the environmental law principles such as the public trust doctrine, common heritage, and precautionary principles should be extended to the use of groundwater. The public trust doctrine has been applied by the court to surface water in *M.C. Mehta v Kamal Nath*.<sup>27</sup> The doctrine provides that "certain interests are so natural and inherently

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<sup>23</sup> Subhash Kumar v. State of Bihar AIR 1991 SC 420, para. 7.

<sup>24</sup> The Constitution of India, 1950, Art. 48(A).

<sup>25</sup> *Id.* at Art. 51(A)(g).

<sup>26</sup> Sujith Konan, *supra* note 7, at 56.

<sup>27</sup> *M.C. Mehta v Kamal Nath* (1997) 1 SCC 388.

linked with every citizen that their public nature makes their adaption to private use inappropriate."<sup>28</sup> Given the new scientific understanding that does not distinguish between surface and groundwater, there is no reason why these environmental principles should not be extended to groundwater.

### **B. Need for Decentralisation and Participatory Approach for Regulation**

As highlighted above, the existing framework follows the centralized and top-bottom approach where authorities at the level of state exercise all the control. However, there is a need to bring decentralization in the institutional framework governing groundwater. The decentralization can be justified on the basis of various pragmatic and environmental grounds. The 73<sup>rd</sup> and 74<sup>th</sup> Amendments recognize the importance of decentralization of powers with respect to water supply, irrigation as well as fisheries.<sup>29</sup> The need for decentralization has been felt in reform concerning surface water also. The ongoing water reforms recognize decentralization and participation as basic principles.<sup>30</sup>

Apart from these reasons, the nature of groundwater availability and the plural cultural nature of Indian society itself makes a strong case for the decentralization of groundwater management. The availability of water in India primarily relies on the amount of rainfall received by a particular area.<sup>31</sup> As the amount of rainfall differs from area to area, a centralized institutional framework fails to accommodate the area-specific diversities. Further, the local customs, practices, and knowledge play a huge role in the management of natural resources which the centralized framework fails to acknowledge.

In addition to decentralization in the institutional framework, there is a need to bring in the principle of participation in the management and regulation of groundwater. Meaningful participation of local communities in the decision-making process will not only ensure accountability and transparency but will also reduce the scope of disputes over the use of groundwater amongst the communities. The recognition of the principle of participation can be found in several policies governing water resource management. For example, The National Water Policy, 2002 entails the provision for active participation of all the stakeholders and beneficiaries in the local research and decision-making process.<sup>32</sup> While this principle has been recognized in various other policies, it does not find a place in the groundwater regulation so

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<sup>28</sup> Sarfaraz Khan, Tony George and Sanu Paul, *supra* note 13, at 313.

<sup>29</sup> The Constitution of India, 1950, Art. 243G & Eleventh Schedule.

<sup>30</sup> Sujith Koonan, *supra* note 7, at 65.

<sup>31</sup> *Id.* at 66.

<sup>32</sup> National Water Policy, 2002, para 6.8.

there is a need for the government to incorporate this principle into the same.

### **C. Making Aquifers a Unitary Framework for Regulation and protection.**

As highlighted in the shortcomings of the present legal framework, one of the major reasons behind the failure of groundwater regulations is the absence of a holistic approach to tackle the depletion of Aquifer as a whole. The adoption of an aquifer-based approach will prove advantageous as the focus of regulation will shift to the treatment of groundwater as a public or common natural resource. This approach will prevent the uncontrolled extraction by the individual groundwater user as they will have to comply with the aquifer-based regulations.

Further, It will also enable effective groundwater preservation and management since it relies on the aquifer as a whole (including recharge and release areas) and so benefits from institutions and practices founded on hydrological units. It will also guarantee that groundwater regulation is envisaged in a broader framework that avoids old surface-groundwater divisions.

## **IV. THE GROUNDWATER BILL, 2017 AS A TEMPLATE**

The Groundwater Bill, 2017 is an updated version of the Model Bill for the Conservation, Protection, and Regulation of Groundwater Bill prepared by the Planning Commission in 2011. The Groundwater Bill, of 2017 provides a ready template for the state governments to enact their own groundwater laws. The bill has been updated keeping in mind the developments in environmental law, changing scientific understanding, and the existing constitutional provisions and jurisprudence.<sup>33</sup> The bill reflects the inclusion of measures as suggested in the previous section of this article.

First, the Groundwater Bill changes the legal nature of groundwater and includes it within the ambit of the public trust doctrine.<sup>34</sup> The application of the public trust doctrine reflects the recognition of groundwater as a public or common good. The recognition of groundwater as a public trust indicates the significant shift from the present status that essentially defines groundwater rights in terms of individual land ownership. In practice, it does not completely take away the right of landowners but prioritizes the conservation of aquifer and community needs over one individual landowner. The Groundwater Bill also recognizes other environmental law principles such as prevention principles which could be found in section 7 of the act.<sup>35</sup> The Bill furthers the positive obligation of the state to ensure the right to water and

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<sup>33</sup> Phillippe Cullet, *Model Groundwater (Sustainable Management) Bill, 2017: A new paradigm for groundwater regulation*, 2 ILR 263, 271 (2018).

<sup>34</sup> Model Groundwater (Sustainable Management) Bill, 2017, s 9(1).

<sup>35</sup> *Id.* at s 7(2).

a clean environment by providing that water rights should be given the highest priority in decision-making while taking into consideration competing interests.<sup>36</sup>

Second, the Groundwater Bill also recognizes the necessary link between groundwater management and a decentralized institutional framework. It recognizes the principle of subsidiarity by providing a decentralized institutional framework. The Bill provides for the setting up of groundwater management committees at the level of panchayats and municipalities.<sup>37</sup> Not only this, but the Bill also provides for a multi-tier structure at the level of Block, District, and state. This is done to ensure that the institutional authority at the higher level is present to oversee the activities that require the collaboration of more than one local institution. For example, the function of the District Groundwater Council includes the coordination of schemes for aquifers which are divided among several municipalities or panchayats.<sup>38</sup>

Lastly, the Groundwater Bill recognizes the aquifer as the unit for regulation in contrast to previous regulations which focused on individual landowners. The bill introduces regulatory measures such as Groundwater protection zones and Groundwater security plans. The bill provides that the aquifers that are under threat because of some fluids such as arsenic or land use patterns, can be declared as protection zones.<sup>39</sup> These protection zones will act as an implementation ground for security plans that are made to ensure the availability of fresh drinking water and to prevent worsening of the quality and quantity of groundwater. Another provision that reflects aquifer as a basic unit is Section 17(c) which provides District Groundwater Council with the power to coordinate schemes for aquifers that are divided among several municipalities or panchayats.<sup>40</sup> The bill's focus on aquifers reflects its consonance with the international standard as countries like Canada also classify aquifers as per their vulnerability to pollution and the extent of extraction of water.<sup>41</sup>

## V. CONCLUSION

The development of a distinct legal framework for groundwater by many state governments over the last decades demonstrates the rising relevance of groundwater control and monitoring. The groundwater regulations, though, do not alter the land-based foundation of groundwater rights. That is the reason why existing groundwater regulations fail to address the crisis of

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<sup>36</sup> *Id.* at s 10.

<sup>37</sup> *Id.* at s 14 & 16(1).

<sup>38</sup> *Id.* at s 17(c).

<sup>39</sup> *Id.* at s 13.

<sup>40</sup> *Id.* at s 17(c).

<sup>41</sup> Farzin Naz and Jayanta Boruah, *Groundwater Management under Indian legal Framework*, 1 ILR 1, 15 (2020).

groundwater depletion.

The 2017 Groundwater Bill is a great place to begin when it comes to reforming groundwater policy. At the very same time, it must be adapted by state governments without first being adopted by state legislatures, which hadn't been done successfully in the past. In other words, the work doesn't end with the writing of model law at the federal level; each state must create its legislation. At this level, the task will be to ensure that states not only begin writing groundwater laws but also that states that currently have laws based on outdated model legislation upgrade their existing regulatory framework. Further broader discussions at the state and local levels are also required, which have yet to take place.

A number of additional measures must be put in place to ensure that every state law represents all of the core concepts included in the Groundwater Bill, 2017 in a manner that is guided by the particularities of each state. The success of the successful implementation of the Groundwater Bill, 2017 largely depends on how effective and efficient the local bodies of the state are. The states with a relatively weak institutional framework at the level of local governance pose a significant challenge to the effective governance of any natural resource at the local level.

Finally, though the Groundwater Bill 2017 does the task of addressing infirmities prevalent in the legal framework, there is a need for the state government to take the task of drafting their groundwater legislation in a sensitive manner giving due recognition to different environmental, hydrological and social conditions of the particular state.

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