Journal of Advances and Scholarly Researches in Allied Education
Vol. 21, Issue No. 2, March-2024,(Special Issue), ISSN 2230-7540

A Study the concept and legal principles of Water Management

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Abstract- Water management is a multifaceted concept that encompasses the planning, development, distribution, and optimal use of water resources. It is crucial for ensuring the sustainable supply of water for various human needs, including drinking, agriculture, industry, and recreation, while also maintaining the health of aquatic ecosystems. Effective water management involves the integration of scientific, technical, economic, and social considerations to balance competing demands and protect water quality. Legal principles play a pivotal role in guiding water management practices. These principles provide a framework for regulating water use, resolving conflicts, and promoting sustainable practices. Key legal principles in water management include the doctrine of equitable and reasonable use, which ensures fair allocation of water resources among users; the precautionary principle, which mandates proactive measures to prevent water pollution and degradation; and the principle of public participation, which emphasizes the importance of involving stakeholders in decision-making processes. International agreements and national laws often incorporate these principles to address transboundary water issues and domestic water governance. Effective implementation of these legal frameworks requires robust institutional arrangements, transparent governance, and enforcement mechanisms.

Keywords- Water, Legal, Resource Management, International Water Law, Sustainable

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INTRODUCTION

Water is a vital component of agriculture, fisheries, and the food supply chain. It is widely employed in the production of energy, hydroelectricity, and the cooling of thermal power plants. Energy is required for food production, preparation, storage, and delivery. Also crucial are water treatment and transportation. Because of its nature, water cannot be controlled for a single purpose. Water management must take into account the competing requirements and interests of many sectors and stakeholders across various geographic areas, periods, and levels of government. Internationally, management of water resources is a huge problem for policy and law makers. There are several environmental doctrines which works as most useful tool for managing water effectively. The principles of equality and social justice must guide water management and access. Without a question, socio-economic rights are politically controversial, necessitating a reallocation of public funds. Rather of focusing on acquiring water ownership rights, the government should focus on guaranteeing equitable distribution. The privatisation of water and water resources based on the concept of water as a valuable asset might have a significant impact on underprivileged populations.

Ministry of Environment and Forests, Government of India, State of Environment Report India (2009) concludes that "the core challenge of water resources development and management in India is one of governance." IWRM is the quantitative and qualitative management of interconnected surface waters, aquifers, and coastal waters in order to foster social and economic progress while improving ecological efficiency, and should be the focus of governance, according to the report. Water supply isn't a one-off issue but rather an issue enmeshed in a wider political, and socio-economic environment, according to the central notion of integrated water resource management.

Water resource management is becoming increasingly more common. In order to make sound short- and long-term choices and ensure compliance with those decisions, effective water management involves legislative action and the application of legal processes, as well as the establishment of suitable administrative and judicial institutions. Water and law do not mix well. Water is a dynamic, sculpting, and life-giving substance. It is all about ensuring consistency, predictability, and freshwater management for the advantage of a few property owners or communities. Water, by definition, does

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not distinguish between flowing waterways, navigable waters, Water, coastal waters, or seas. Water law, on the other hand, has typically focused on these issues. Water scarcity are forcing a more holistic approach to water management, and a rising understanding of the linkages between ecosystem sustainability and human societies. Water law and policy are being dragged along, watershed by watershed, river by river, state by state, and fight by fight.

There's no reason to hope for better results as long as water legislation is teetering on the precipice. No such thing as a "water law" exists. It is, more precisely, a name that applies to a variety of state, federal, and tribal legislation. It includes personal as well as public rights and obligations. It has deep roots in both common and civil law, with applications in admiralty and environmental law. In addressing the law on water management, water will be broadly classified into surface water and Water.

CONCEPT OF WATER MANAGEMENT

From a social science standpoint, there has been a lot of previous debate on "law in development" has been stuck at a point of abstraction that isn't useful. Fortunately, many in the field are increasingly focusing their attention on specific topics where concreteness allows for interaction and mutual learning between attorneys and social scientists. "Water management" is one of these areas. The art of water management aims to strike a balance between demand and supply. It's all about getting the best distribution possible, and exploitation of a finite renewable source while balancing economic goals, social requirements, and environmental sustainability.

Water governance, according to Rogers and Hall (2003), at all levels of society, it refers to the political, social, economic, and administrative systems and processes to develop and manage water resources and provide water services. It is more about how a country's government as well as other communities engage with its population and make water management choices. But also about the legal frameworks that control who will have authority and also how the power is exercised in the field of water management. Water infrastructure, environmental quality, finance and economics, organizations and community, public health, and technology are common water management indicators.

Water management was mostly about control for much of the twentieth century, with engineering projects are evolving from fixed, single-method projects to numerous, multiple-method projects. The emphasis was on supply-side development, with management following to increase efficiency in the face of competing for environmental and societal demands.

While doing research, the researcher came across another nomenclature i.e. ―Sustainable Water Management‖ (SWM) which has been defined as fulfilling current water needs without jeopardising future availability for all water consumers. SWM should, in particular, assist to societal goals while maintaining environmental, ecological, and hydrological integrity.

The definition proposed by Alley and other for Water management mentions environmental, economic, and societal protection as components of the sustainability triple bottom line. Agenda 21 provides a more comprehensive goal, ensuring that ―adequate supplies of water of good quality are maintained for the entire population of the planet, while preserving the hydrological, biological and chemical functions of ecosystems, adapting human activities within the capacity limits of nature and to combat vectors of water-related diseases.‖

Further, the researcher came across another term known as Integrated Water Resources Management (IWRM) which is needed to be defined. The concept of Water recharge is both reasonable and enticing. Its foundation is the interdependence of many various uses of water resources. In integrated management, all of the many applications of water resources are considered. When it comes to water development and usage, the consequences of one use on the others are taken into account. They may think about long-term socio-economic goals like environmental sustainability. The Global Water Partnership (GWP-2000) defines IWRM as "a process that promotes the coordinated development and management of water, land, and related resources to maximize the resultant economic and social welfare in an equitable manner without jeopardizing the long-term sustainability of vital ecosystems."

LEGAL PRINCIPLES OF WATER MANAGEMENT

Different philosophical and legal approaches to water resource issues have led to legal and organizational arrangements that impede water resource management. The use of water as a resource and its control are explained through the concepts and traditions of water management legislation. The origins of western water law, which include Roman, French, Common, Germanic, and Scandinavian law, are mostly in charge of enacting water legislation. The term "principle" has several meanings. It is frequently used as a synonym for non-legal norms, and it's also a term for a fundamental reality that underpins a system of thought or action. The term "principle" is used in this study to refer to more broad norms for water resource management.

Dublin Principles

The Dublin Principles have a strong effect on contemporary thinking on critical strategic challenges in water administration. The Dublin principles were created in 1992 during the International Conference on Water and Environment in Dublin (Ireland) in preparation for the United Nations Conference on

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Environment and Development in Rio de Janeiro. The adoption of the Dublin principles by 114 countries, 14 UN entities, and 38 non-governmental organisations (NGOs) marks the official commencement of global integrated water resource management (IWRM). During the Rio conference, the idea of integrated water resource management (IWRM) was coined, and four principles for sustainable water management were proposed. These are as follows:

i). Freshwater is finite, vulnerable and essential resource which should be managed in an integrated manner.

ii). Water resources development and management should be based on a participatory approach involving all relevant stakeholders.

iii). Women play a central role in the provision, management and safeguarding of water.

iv). Water has an economic value and should be recognized as an economic good, taking into account affordability and equity criteria.

The first principle calls for a systematic perspective to water administration that takes into account all aspects of the hydrological cycle, in addition to its relationships with other natural resources and ecosystems. Water is needed for a variety of purposes, activities, and services, according to the idea. As a result, holistic management takes into account the various demands that different organisations make on a natural resource. This concept also underlines the necessity in order to take a more comprehensive approach to water management at the institutional level, which includes natural system management and coordination with a variety of human activities. In order to create a water-sensitive political economy, policies at all levels of the community and pertinent government concerns must be integrated.

The importance of seeing water as a commodity in which everyone has a stake is emphasized in Principle 2. True participation occurs only when all institutions are involved in decision-making. This might happen right away if local people come together to make decisions management and consumption alternatives of water supply. Whereas Principle 2 emphasizes all institutions' engagement, Principle 3 focuses on women's decision-making involvement, that is intertwined with gendered hierarchies and responsibilities in many communities. Water is a monetary-valued economic good, according to the fourth Dublin Principle. Many of the past failures in water resource management initiatives may be traced back to the resource being perceived as a free product, or at the very least, the true worth of water not being acknowledged.

As a result, the fourth principle's most critical argument is that water should not be allocated minimal purposes that statutory institutions, being the dominating institutions, believe to be of little economic value in a competitive market for limited water supplies.

The Common-Law Doctrines

The absolute dominion rule, or the English doctrine, is the progenitor of all modern ground water doctrines. This rule was developed in an age when ground water was considered a "furtive invader" into the soil beneath an owner's land. The courts theorized that, if the landowner could trap this water and use it, he was entitled to do so absolutely, without regard to whether anyone else was injured. Many courts began phrasing this right in terms of a property right of the owner of the overlying land. This rule is still applied with only slight modification in some humid eastern states. The modification consists of insisting that the use be neither malicious nor constitute an unnecessarily wasteful use.

Principle of Reasonable Use

This doctrine arose out of the Katz v. Walkinshaw case decided in 1902 and has been fully developed by subsequent decisions. Every landowner who owns land that is next to a standard water supply has the right to use the water for reasonable beneficial uses on or in conjunction with his overlying land. The word "reasonable usage" does not imply that one of two or more people with correlative water rights can take whatever is fairly useful to his property regardless of the demands of others. If there isn't enough to meet everyone's requirements, he may only take a reasonable portion of it. In effect the doctrine is one of public ownership of the ground water by all overlying land owners. Appropriation is allowed only of that amount in excess of the reasonable need of overlying landowners. Appropriation means non overlying use and includes use by public water suppliers, whether or not the lands receiving such public service are overlying lands. Appropriative rights may be vested if they have existed for the prescriptive period.

The Precautionary Principle, Public Trust Doctrine, and Polluter Pays Principle

Even if there is no demonstrated damage between the compounds and their trans-boundary impact, the precautionary principle dictates that hazardous substance releases be avoided.

The polluter-pays concept states that pollution prevention, mitigation, and control must be paid for by the polluter. In most countries, water management is centered on preventing pollution, mitigation, and remediation as well as the "polluter pays" principle." States accomplish so by using regulatory tools such water quality targets, discharge rules, the best available technology, and monetary strategies that are consistent with addressing the basic requirements of the population. Concessions on water may be issued for a certain length of time and be subject to periodic review.

In this landmark case of Vellore Citizens' Welfare Forum v. Union of India, it dealt with tannery-related water contamination victims' compensation. The Supreme Court adopted the Polluter Pays Principle and the Precautionary Principle into state environmental legislation, under Indian constitutional law, linking them to the basic right to life. The Supreme Court stated, "The Constitutional and legislative provisions guarantee a person's right to fresh air, pure water, and a pollution-free environment, but the root of the right is the inalienable common law right to clean environment." Furthermore, the Supreme Court has acknowledged that Water is a communal resource that the state must keep in public trust in order to sustain the goal of intergenerational equality. The Court stated in M.C. Mehta v. Kamal Nath:

The legal system's jurisprudence includes the concept of public trust, which is based on English common law. The state is entrusted with all natural assets that are by their very nature intended for public use and pleasure. The general public benefits from the shoreline, flowing streams, air, woodlands, and environmentally sensitive areas. The state has a lawful commitment to safeguarding environmental capital as a trustee. Commercialization of these public resources is impossible.

The Water Management Golden Rule

The "Golden Rule" of water management is followed in California, which states that the state's water should be managed for maximum beneficial use. This is codified in Article X, Section 2 of the California Constitution. However, there is a proviso to the Golden Rule: water management must "preserve water right priority to the extent that such priorities do not contribute to excessive consumption." This criterion is known as the Mojave Rule, after a ruling by the California Supreme Court in the case of City of Barstow v. Mojave Water Agency. In California, the Golden Rule is the bedrock of management of water, whereas the Mojave Rule is the determining factor.

Operational Theory of Social Values

An operational theory of social values must play a central role in any water management effort which aims at rationally serving the public interest. In many programs concerning water resources and natural resources more generally, a topic will appear entitled economic and social aspects. In this connection it is important to realize that normative or welfare ‘economics, as distinct from so-called positive economics, is a theory of social values. Moreover, two things may be claimed about this theory: (a) it is consistent with some very fundamental value judgments that most people would accept about our society including the judgment that individual tastes and values are to govern the use of resources in a free society; and (b) it is the only theory of social values sufficiently detailed, precise, and logical to yield the necessary decision criteria. However, being a theory, it is a simplification of reality and if it is to be used judgment must be accepted that it is an appropriate simplification.

Islamic Principles

Humans were given precedence, followed by animal watering, and last agricultural needs, according to Islamic regulations and custom. On the Resurrection Day, Allah will not speak to or gaze at many sorts of people, according to Hadith. They are: After the Asr prayer, a person who makes a fake oath in order to seize a Muslim's property, and a person who refuses to drink any of hissurplus water, Allah would declare to him, I will withhold My Grace from you today, just like you withheld the surplus of what you've just not produced.

The Prophet granted everyone the water right in order to avoid water shortage and individual control over water resources. On his advise, Uthman purchased Ronna's well and converted it into a Waqf (a common property that is open to the public) for the Muslem community's benefit. Az-Zubair had a disagreement with an Ansari man about a date-palm-irrigating stream in the Harra. "O Zubair!" Allah's Apostle exclaimed, commanding Zubair to be reasonable. Irrigate first, then leave the water for your neighbour. "He continued, "O Zubair!" Irrigate (your property) until the water reaches the trenches that encircle the trees, then turn off the water. The Prophet's words "Irrigate (your land) and retain the water until it reaches the walls between the trenches surrounding the trees" were taken by the Ansar and others to imply "up to the ankles."

Islamic legal concepts have had a direct influence on the establishment of an effective water management system in most Islamic nations, which looks to be able to fulfill the country's continually expanding demands. Positive water demand management for home, agricultural, and industrial needs has been achieved thanks to Islamic lawenforced measures and regulations.

The principle of subsidiarity

According to the concept of subsidiarity, rules and legislation should be made at the smallest feasible level of government. The concept's aim is to enhance legislative efficiency and local autonomy while preventing centralised governance and authority consolidation at the highest echelon of government. Although the concept of subsidiarity is not yet recognized as a customary norm of international law, it is becoming more widely recognized as an important part of good governance frameworks. Its legislative validity as a fundamental concept of EU law is perhaps the most well-known aspect of the concept, according to which supranational intervention is only when particular state action fails to govern effectively can it be justified.

Decentralised water service delivery has been recognised as having political and administrative

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advantages by states, as well as the notion of subsidiarity for management of water resource has acquired a lot of popularity in recent time. The subsidiarity concept of water resources management, like the general idea of subsidiarity, implies that management of water and the supply of services should begin at the simplest level of governance that is appropriate. Developing nations are interested in decentralising water resource management to ease strain on central government institutions (and money) while simultaneously empowering local communities. The advantages are attractive to industrialised countries, notably those who have democratic or libertarian institutional mechanisms and beliefs.

Policy Based Principles

It will be necessary to reassess a country's water policy to transform its water management system to one that is more comprehensive and integrated. This is now taking place in several nations throughout the world. The formulation of a limited number of core concepts as well as the purposes like the necessity for long-term development and acceptable socio-economic growth, is frequently the first step in developing a water strategy.

The three 'E's, as described by Postel (1992), are three essential policy principles:

a) Equity: Water is a basic need. No human being can live without a basic volume of fresh water of sufficient quality. Humans have a basic human right of access to water resources (Gleick, 1999). This policy principle is related to the fact that water is often considered a public good. Water is such a basic requirement for human life and survival that society has to defend the uses of the water resources in the public interest. From here a number of other issues can be derived, such as security (protection against floods, droughts, famine and other hazards).

b) Ecological integrity: Water resources can only persist in a natural environment capable of regenerating (fresh) water of sufficient quality. Only sustainable water use can be allowed such that future generations will be able to use it in similar ways as the present generation.

c) Efficiency: Water is a scarce resource. It should be used efficiently; therefore, institutional arrangements should be such that cost recovery of the water services should be attained. This will ensure sustainability of infrastructure and institutions, but should not jeopardise the equity principle. Here comes in the issue of water pricing, and whether or not water should be priced according to its economic value.

The principles are based on universally acknowledged norms from a range of sources, including international treaties like Agenda 21's Chapter 18, accepted by the Rio Conference on Environment and Development in 1992, as well as the concepts and rules incorporated in several international treaties and agreements. The European Water Charter integrates key elements from national legislation as well. It is a compilation of regulations that regulate the use of water resources as well as the role and obligations of individuals and government entities. Recommendation REC (2001) 14 of the Committee of Ministers on the European Charter on Water Resources had incorporated suggestions from several international agencies.

The OECD Principles on Water Governance

Water Governance Principles of the Organization for Economic Cooperation and Development (OECD)provides a framework for developing and implementing policies. They also allow for the identification, assessment, and closure of policy practice gaps. They are as follow

Principle 1: Assign roles and duties for water legislation, implementation of policy, operational processes, and regulation in a clear and distinct manner, and encourage collaboration among this relevant authority.

Principle 2: Within interconnected basin governance mechanisms, maintain freshwater at the appropriate scales to represent current context and promote coordination across the multiple scales.

Principle 3: Enhance policy coherence via coordinating policies across sectors, particularly in the areas of environmental water, health, energy, agriculture, industrial, spatial planning, and property usage.

Principle 4 : Adapt the competence of reliable management to the challenges of water-related issues that must be addressed, as well as the breadth of abilities required to fulfill their tasks.

Principle 5: Develop, maintain, and disseminate water and water-related research and data that is accurate, reliable, consistent, and policy-relevant, and then utilize it to educate, analyze, and enhance water policy.

Principle 6 : Ascertain that governance practices assist in the effective, transparent, and efficient mobilisation of water financing and allocation of financial resources.

Principle 7: Assist in the successful implementation and enforcement of good water managing various regulations in the benefit of the public.

Principle 8: Encourage all responsible agencies, levels of government, and key stakeholders to adopt and execute innovative water governance methods.

Principle 9: Improve decision-making accountability and confidence by incorporating integrity and

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transparency techniques into water policies, institutions, and governance mechanisms.

Principle 10: Encourage stakeholder participation in the development and implementation of water policies so that educated and outcome-oriented contributions may be made.

Principle 11 :Encourage the development of water governance mechanisms that will aid in the management of trade-offs between water users, rural and urban regions, and generations.

Principle 12: Maximum permissible monitoring and assessment of water policy and governance, communicate the findings with the public, and make necessary reforms.

INTERNATIONAL WATER MANAGEMENT LAWS

Due to the growing rise of water shortages across the world, the management of international watercourses has become a major global challenge. Water management concerns such as funding, monitoring, and infrastructure have all been listed as top priorities for decision-makers.

The international water law system is complicated, with multiple treaties and weaker rules. International law establishes an institutional basis for peaceful cooperation between countries. It establishes standards for drafting, interpreting, and resolving treaties, allowing countries to seek diplomatic and legally enforceable regarding water issues. Because nations share over 264 international rivers and several aquifers, consistent water management standards are required. The development of these rules has been aided by bilateral and regional agreements, conflict adjudication or arbitration, rule-making by joint river basin institutions, and multilateral law building.

Individual rivers, lakes, and freshwater ecosystems have traditionally spawned ad hoc international environmental legislation designed to safeguard freshwater resources from contamination and exploitation. The Permanent Court of International Justice recognised in 1929 that river use, including flow, should be governed by international law. Negotiation, legal enforcement actions, resolution of conflicts by the ICJ, and arbitration are all options for resolving water conflicts under international law. Water law has designed taking into account the concept that water should be regulated by common law and equity, sustainability, and collaboration.

The Convention Relative to the Development of Hydraulic Power Affecting More Than One State, 1923, which was drafted under the auspices of the League of Nations, was the first formulation of international watercourse protection regulations, limiting the right to develop hydraulic power within the territory of any riparian state.

Moreover, Art. 3 and 4 of the Convention encourage riparian governments to consider the interests of other riparian nations when growing their hydraulic capacity, as well as to engage in discussions and establish agreements on the riparian state's operations. The Helsinki Rules on the Uses of the Waters of International Rivers of 1966 (1966 Helsinki Rules) were created by the International Law Association (ILA) to codify state practice in the utilization of interstate watercourses for navigational and non-navigational purposes. These standards have been adopted as customary international law by most of the world's nations.

The UNO passed a resolution in 1977, in its United Nations Water Conference. India is also a signatory country. It resolved unanimously, inter-alia, as under: —All people, whatever their stage of development and their social and economic conditions, have the right to have access to drinking water in quantum and of a quality equal to their basic needs.

On the 10th of November, 1980, when International Drinking Water Supply Sanitation Decade was proclaimed by the UNO, in which the significance of water purity was stressed. India is also signatory to this Declaration.

The United Nations Conference on Environment and Development(UNCED), 1992in Rio de Janeiro stands out as one of the most important global water management events in recent decades. The International Conference on Water and the Environment, with its extremely important "Dublin Principles," educated UNCED on a wide variety of development concerns. In Sec. 2 of Chapter 18 on Freshwater Resources, the UNCED published "Agenda 21," which stressed, —The holistic management of freshwater and the integration of sectoral water plans and programmes within the framework of national economic and social policy, are of paramount importance for action in the 1990s and beyond. Chapter 18 called for —the application of an integrated approach to the development, management and use of water resourcesǁ. This "integrated method," frequently abbreviated as IWRM, is now widely implemented, and the outcomes of such adoption are the subject of the survey conducted.

Early international cooperation on rivers and lakes was primarily focused on the use of watercourses for specific purposes like navigation or irrigation, as well as the control of specific hazards like floods. Initially, specific water pollution concerns were handled when damaging activities arose in adjacent nations, using trans-frontier pollution precedents and standards. Thereafter, as international environmental law developed, governments adopted norms and principles regulating the protection and equitable use of common environmental assets by multiple countries.

The United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses, which was signed in 1997 but has yet

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to enter into force, contributed significantly to this discipline by describing a watercourse as a system of surface water and ground waters that flow normally to a common terminus.

The 2008 Draft Articles on the Law of Transboundary Aquifers were later adopted by the International Law Commission, which defines an aquifer as —a porous water bearing geographical formation underlain by a less absorbent layer and water confined in the formation's saturated zone. These articles sought to discuss the matter of Water management issues caused by water contamination in an aquifer. States are also required to adhere to the 2008 Draft Articles "Because of the nature and breadth of an aquifer system or transborder aquifer , as well as its vulnerability to contamination, a cautious approach should be used. The law's provision that governments use a cautious approach to protecting, preserving, and managing Water emphasizes the law's greater scope of protection. The United Nations General Assembly also supports this. States were invited by the General Assembly to "create suitable bilateral or regional agreements for the proper management of their transboundary aquifers, taking into consideration the proposed articles' provisions.

LAWS IN DIFFERENT COUNTRIES

Water legislation in most countries mandates the gathering of information and data about freshwater with the goal of expanding one's perspective. Perhaps the best example is provided by EU countries, where law currently represents the need set by the Water Framework Directive to create water resource monitoring programmes aiming at presenting a comprehensive picture of water resources and consistent assessment of the water situation in each river basin district (Art. 8). Although climate change "has the power to affect all quality components contained in the definition of ecological state," recommendations recently issued imply that the directive's principles underlying monitoring and evaluation should stay unchanged (European Commission 2009).

Some of the concepts pursued in EU nations are reflected in the water laws of other countries outside the EU. The South Africa National Water Act of 1998 mandates the Minister of Water Affairs to establish tracking systems for freshwater ecosystems, as well as water consumption, quality target compliance, aquatic ecosystem health, and atmospheric conditions. The minister is to establish procedures to coordinate monitoring after consulting with stakeholders. Establishing information systems for disaster management is another ministry responsibility. Under the Water Law of Indonesia of 2004, an inventory of basin-level water resources will provide information on hydrological, hydrometeorological, and hydrogeological conditions, water resource potential and needs, the environment, and socioeconomic factors. The law already indicated appears to allow for a broadening of the knowledge base to include climate change risks and uncertainties.

China

The Water Law, 2002 and the Ministry of Water Resources are principally responsible for the management of water resources arrangements that affect the urban sector. This law mandates the creation of 'water resources allocation plans,' which specify the amount of water available for various uses inside a river basin, as well as between administrative units within that basin. 'Annual water resources regulatory plans' determine the availability of water on a yearly basis. The Water Law of 2002 and the Regulations on Water Abstraction Licensing and Collection of Water Resources Charges of 2006, provide a "water abstraction permit system" that governs abstraction of water by different uses. Permissions are controlled by yearly plans of water abstraction that must be in accordance with appropriate annual water resources regulation plans. Drought contingency plans take precedence over other strategies during periods of severe drought, forcing revisions to yearly water abstraction plans. As established by the 2002 Water Law, these contingency plans are primarily intended to maintain water supply for urban consumers, particularly for vital family demands.

Water supply corporations for the general public (occasionally, wholesale providers or retail utility companies) that offer end-users with urban water supply services frequently have permits (despite the fact that some of the world's largest industrial users are in charge of their own water collection and distribution systems). Water supply and usage contracts, as well as the providers' 'water supply plans,' regulate both the suppliers' and users' rights and duties for continuous and annual entitlements to water. Costs of municipal water, water supply rates and pressures, metering requirements, and the quality of water delivered are all covered by these plans and contracts. The Ministry of Health establishes national criteria for drinking water quality that must be satisfied by municipal water providers. These procedures are required and regulated by the Urban Water Supply Regulations,1994; Urban Planning Law,1989; Contract Law, 1999; Regulations on the Administration of Water Abstraction Licensing and Collection of Water Resources Charges, 2006 and Urban Water Supply Quality Regulations, 2007.

Kenya

Kenya's national government has pushed rainwater collection by establishing enabling laws, such as the recently passed Water Act 2016, to increase rainwater storage. The National Water Harvesting and Storage Authority, among new water-related institutions established by the Water Act of 2016, is charged with developing a national water collecting strategy and implementing other water management techniques to improve flood and drought resilience and ensure that water is both safe and economical in nature.

The hydrologic cycle from a holistic perspective; a significant stress on pollution control, management, and reduction in the environment; the precautionary principle and the polluter-pays concept; and a clearer mandate for basin commissioners as riparian states' joint entities are just a few of the provisions of the European Convention that go far beyond the U.N. Convention. Water law hasn't traditionally been thought of as a tool for adaptive water management. However, there is a growing recognition of the necessity for the flexibility needed to manage climate change challenges.

United States (California)

The California Water Quality Control Act divides the state into nine geographical areas. These were chosen on the basis of surface watershed areas which coincide, for the most part, including the most important Water basins. The State Water Resources Control Board has final authority, but each region is given enough autonomy to enable it to pursue statewide goals in the light of the differences between regions. The California method of controlling pollution is similar to the approach of most of the recent legislation.

All waste discharges must be reported to the regional board. Failure to report enables the regional board to seek prosecution through the local District Attorney's office. The board may then set the maximum quantity and potency of the waste materials, but it may not dictate the treatment methods for conforming to these standards. If the discharger is found to be exceeding the standards, the board has the authority to issue a halt and prohibit order. If the discharger still fails to comply with the requirements the board may request the Attorney General to seek an injunction. Only in cases involving the periodic waste disposal can the board get summary abatement, since a cease and desist order would be ineffective.

WATER MANAGEMENT LAWS IN INDIA

Every year, severe water shortages occur in several parts of India. This not only stresses the Indian populace but also harms industrial output, causing the economy to suffer. Water shortage may be alleviated to a large extent by implementing a systematic and effective water management strategy. This involves developing area based strategies for the correct quality and amount of water consumption, including cutting-edge water conservation technology, and reusing effluents after adequate treatment. Wastewater should be treated as a source of water rather than a waste to be disposed of in areas where fresh water is scarce. As a result, utility providers and customers in businesses must take rapid action to reduce water usage, enhance quality, and maximize reuse.

Recognizing water as a limited resource has resulted in market-based reform legislation along with a comprehensive water management system. By looking at these characteristics, we can see how governments (and society, if we think that governments mainly represent society's will) have grown to appreciate the vital significance of water and the modern relevance of environmental issues in its management and usage.

Constitutional Protection

The Indian Constitution is a rare constitution with a stated revolutionary intent, created at a period when the freshly independent state was drawn to human rights ideas and objectives. The Constitution embodies global human rights ideas, recognising the necessity of law and rights in redressing colonial India's harsh disparities with their inequalities of status, race, gender, and faiths. Under the constitution, the Centre, States, and Local Bodies all have duties to play in water management. The United States, on the other hand, looks to have the upper hand on this issue. According to entry 17 of List II State List of the Seventh Schedule, "water, that is, water supply, irrigation and canals, drainage and embankments, water storage, and water power, subject to the restrictions of article 56 of List I."

Management and expansion of international rivers and river valleys, to the proportion that such control and advancement is proclaimed to be in the public interest by Parliament through legislation, pursuant to Entry 56 of List I of the 1970 constitution's Seventh Schedule. As a result of this entry, and in recognition of the possibility of disagreements over the use, distribution, or management of waters in an international river or river valley, Art. 262 establishes legislative law for the resolution of such disagreements. If Parliament passes such a statute, as per Article 262, no court, even the Supreme Court, has jurisdiction over any type of disagreement or complaint. This crucial function in management of water has advanced during the previous century. In pre-independence India, the government concentrated responsibility for irrigation projects, and the principle was optimal use regardless of political boundaries. Irrigation was classified as a provincial issue during the Montague-Chelmsford Reforms of 1919, however, it was assigned to a specific group as "reserved" for central government intervention, giving it significant power. With the exception of interstate disputes, which were settled under the auspices of expert investigatory commissions and central administrative judgments, the Government of India Act, 1935 granted power to the provinces.

Panchayats and municipalities have now been given the authority to manage water as a result of the 73rd and 74thConstitution Amendment Acts, as well as the addition of the eleventh and twelfth Schedules. Panchayats have a responsibility for "minor irrigation, water management, and watershed development," according to the 11thSchedule's item no. 3. Item 11 assigns responsibility for 'drinking water.' Item 13 specifies "waterways" as a mode of communication, while Item 29 discusses "community assets" upkeep. The 12thSchedule contains "water

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supply for household, industrial, and commercial uses" under Item No. 5, and "environmental preservation and promotion of ecological features" under Item No. 8, among other things, in the case of towns.

The River Boards Act of 1956 gave the federal government authority over interstate rivers, allowing it to regulate them either via special legislation or by establishing a board to supervise them. However, neither option has been used by the central government to build a distinct river basin organisation in actuality (The Ganga Basin Authority was established in 2009 under the Environment Protection Act). Governments' inability to establish a political agreement on the matter has been cited as one of the causes behind this.

Water legislations

When it comes to drafting legislation, the Indian government's ministry of water resources distributed a "Model Bill to Regulate and Control the Development of Ground Water" to the states in 1992, 2005, and again in 2016. It is a state issue when it comes to water, over which the central government has minimal direct responsibility under the Indian Constitution. These Model Bills have no practical regulatory impact. The model is significant, though, since it shows the central government's (and many of the country's top water experts') views on how to effectively solve increasing ground water challenges. Because of the central government's clout over money flows, this way of thinking might have a major impact.

CONCLUSION

Fixing water prices, taking into consideration the scarce value of water and modifying them as needed, ensuring that everyone has fair access to water, and creating suitable water user organisations at the national and state levels, vesting them with usufruct rights and aiding them with technical information, finances, and other resources. All of these items should be included in a water legislation. To summarise, intelligent management of India's water resources is required for long term development. We now have the necessary technology, monetary and resources, as well as a legal systemin India for sustainable management of water. The adoption of appropriate water-saving technology on a wide scale is inadequate, as evidenced by NGOs and a few government organisations in the nation using them on a modest scale.

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