



The feasibility of implementing the water market in the Brazilian legal ordinance

La viabilidad de la implantación del mercado del agua en el ordenamiento jurídico brasileño

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Abstract: Water is a public domain good, however this natural resource is limited, justifying the concern of environmentalists with the imminence of a water crisis. The objective of this work is to study the feasibility of applying the water market in the Brazilian legal system as an alternative for preserving and guaranteeing present and future life. At this juncture, there is a necessary problem for the development of the research: The application of the water market would be viable in Brazil for the preservation of environmental resources, or would generate more scarcity and concentration of water in a limited number of people, as a result of the commercialization of water? As a method of approach, the deductive method will be used, the method of procedure will be qualitative, and the research technique will be exploratory, documentary and bibliographic. The theme gives rise to great divergences and discussions among environmentalists, jurists and scholars, both with the same aim, seeking a sustainable solution for the exploitation of natural resources and guaranteeing human life. Thus, noting its social relevance, it is necessary to recognize water as a fundamental guarantee and its preservation, in addition to society's participation and awareness in the discussions surrounding the topic.

Keywords: *Brazil; Water resource; Scarcity.*

Resumen: El agua es un bien de dominio público, sin embargo este recurso natural es limitado, lo que justifica la preocupación de los ecologistas ante la inminencia de una crisis del agua. El objetivo de este trabajo es estudiar la viabilidad de la aplicación del Mercado del Agua en el ordenamiento jurídico brasileño como alternativa para preservar y garantizar la vida presente y futura. En esta coyuntura, se plantea un problema necesario para el desarrollo de la investigación: ¿La aplicación del Mercado del Agua sería factible en Brasil para la preservación de los recursos ambientales, o generaría más escasez y concentración del agua en una parte restringida de personas, como resultado de la comercialización del agua? Se utilizará el enfoque deductivo como método de aproximación, el método de procedimiento será cualitativo, y la técnica de investigación será exploratoria, documental y bibliográfica. El tema suscita grandes divergencias y discusiones entre ecologistas, juristas y estudiosos, ambos con el mismo propósito, buscar una solución sostenible para la explotación de los recursos naturales y la garantía de la vida humana. Así, observando su relevancia social, es necesario el reconocimiento del agua como garantía fundamental y su preservación, además de la participación y concienciación de la sociedad en los debates en torno al tema.

Palabras clave: *Brasil; Recursos hídricos; Escasez.*

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INTRODUCTION

This research has as its theme: "The feasibility of implementing the water market in the Brazilian legal system". It is known that water is a natural resource essential for the development and existence of human life on planet Earth. The poor distribution of this resource, associated with climate change and misuse, may lead in the not so distant future to a water crisis that will trigger a shortage in some regions of the planet, wars, and a consequent environmental devastation.

Environmental conditions generate concerns that reach social, political, and economic spheres, at a time when environmental problems require reflection on the use of nature's resources in all countries, industrialized and developing. It is no longer a secret that the planet's water resources are gradually being depleted and that, besides the pollution of rivers and springs, irresponsible consumption without a sustainable basis in economic development is a relevant factor in the process of water reduction. (DETONI, 2008)

The demand for water worldwide is growing and - considering that most countries have already explored lower-cost water sources - the use of new sources becomes more and more expensive. One of the solutions indicated for the issue is the regulation of water markets, which could induce the allocation of water resources in a more efficient way, in order to generate more economic benefit. (MARIÑO; KEMPER, 1999).

The research starts from the premise of the fundamentality of the right to life, and water as an indispensable resource for human life on earth. The main objective of the research is to analyze from a legal point of view a possible application of the Water Market in the Brazilian legal system, through Law No. 9,433/1997, known as the Water Law, and Bill No. 495/2017. The specific objectives of the research are To present water as a fundamental right to life on planet Earth; To study the concept and regulation of the Water Market through Law No. 9.433/1997; To investigate the international experience where the Water Market has already been applied; To ponder the feasibility of applying the Water Market in Brazil, considering Bill No. 495/2017.

The Mercado das Águas is an institute that is not regulated in Brazil, although it has already been mentioned in Law No. 495/2017, for a possible application it is necessary to ponder several factors, whether social and natural, that directly influence a possible water commercialization. For some researchers, water commercialization is seen as a solution for a fair and balanced water distribution. At this juncture, would the application of the Water Market be viable in Brazil for the preservation of environmental resources, or would it generate more scarcity and concentration of water for a restricted number of people, as a result of water commercialization?

An in-depth study on the commercialization of water is important, taking into consideration the countries that already apply the water market and also the social, geographical and natural conditions of Brazil, for a possible successful application.

The research is relevant in the academic, legal, and social areas, as well as in the chosen line of research, because it studies the possible efficiency in the application of the Water Market in Brazil, analyzing countries that already use this institute and observing the text of Bill No. 495/2017 that is in progress in the Federal Senate.

METHODOLOGY

Regarding the methodological procedures applied in this research, they can be classified as follows: the method of approach used in this research may be the deductive method, since it starts from a general analysis of the international scope of the application of the water market to a more specific analysis in Brazil.

As for the nature of the research, the adopted approach is applied research, with the objective of reaching a conclusion for a practical application of the water market. In turn, as to the form of approach to the problem, the modality used is qualitative, in view of the social importance that involves the theme.

This research will use a bibliographical technical procedure, because it will be developed from consultation and discussion of laws, resolutions, books, Internet and journal articles, which will allow a survey of the peculiarities of the Water Market and the possibility of applicability in Brazil. It is necessary to carry out a theoretical survey through recognized materials to guide the construction and raising of hypotheses, in order to trigger the importance of the theme with its legal and social consequences.

Thus, it is sought with the methods presented here that the research moves towards achieving its desired objectives, so that the expectations in relation to the theme are fully achieved and can serve as a basis for legal and environmental knowledge.

RESULTS AND DISCUSSIONS

Water as a fundamental human right to life

Water is an abundant natural element on planet Earth, which covers most of its surface and is the largest constituent of living beings. However, not all the water that covers the surface of the earth can be used for human consumption, and this small fraction of fresh water present on the planet available for use, worries environmentalists. In addition to climatic factors, human action and poor water distribution further aggravate water scarcity and compromise human life.

It is impossible to imagine human life on the planet without water, which makes this substance indispensable for the existence of human life on the planet. Water is synonymous with life.

Human beings are indissolubly linked to water, for they cannot go more than four days without it. Water is part of the right to life and, therefore, denying water to a person, or making it difficult to access or not cooperating in obtaining it is to condemn that person to death. (MACHADO, 2013).

The Federal Constitution of 1988 is crystal clear in stating in its legal text as an ironclad clause the right to life, precisely in its Article 5, caput:

All are equal before the law, without distinction of any nature, guaranteeing to Brazilians and foreigners residing in the country the inviolability of the right to life, liberty, equality, safety and property, in the following terms.

A fundamental human right comprises that which is innate to each and every person by the simple fact of being a human being. Such rights, due to their constitutional supremacy, are immediately applicable, constitute permanent clauses, have constitutional hierarchy and have as their cornerstone the dignity of the human person. (MEDEIROS; MOZETIC, 2015)

The right to access to water deserves to be understood as a universal human right, meaning that any person, anywhere on the planet, can capture, use, or appropriate water for the specific purpose of surviving, i.e. not dying from lack of water and, at the same time, enjoying the right to life and ecological balance. (MACHADO, 2016)

In view of this, it is fundamental that water be recognized as a fundamental human right, so that it can be assured to all human life on the planet, and also distributed and used in the right way to ensure the present and future life.

The water market: Concept and prevision in Law 9433/1997

Water has long been seen as an abundant and renewable resource on the planet, but the availability of this vital substance is beginning to challenge man's long-term survival.

The demand for water around the world is growing and - considering that most countries have already tapped into lower-cost sources of water - the use of new sources is becoming more and more expensive. One of the solutions indicated for the issue is the regulation of water markets, which could induce the allocation of water resources in a more efficient way, in order to generate more economic benefit. (MARINÕ; KEMPER, 1999).

The great challenge that arises in this century is in the management of supply and demand for renewable or non-renewable natural resources. In this context, the institute of the water market has emerged, which promises to achieve sustainable levels of use of this water resource in an intelligent way.

The industrial and service sectors, for example, can provide a thousand times more jobs and a financial return twenty thousand times greater than that obtained with the production of agricultural crops using the same volume of water. In addition, by allowing the purchase and sale of water use rights, the value of this resource becomes closer to its real market value, promoting rational use and reducing conflicts over its use. (ALLAN, 1996)

Law 9433/1997, also known as the Water Law, was created with the purpose of establishing the National Water Resources Policy, creating the foundations, objectives, instruments, infractions and penalties that must be followed and observed by the water resources management agencies and water users all over the country.

The main objectives are set out in Article 2 of the above-mentioned Water Law:

To ensure the current and future generations the necessary availability of water, in quality standards appropriate to their respective uses; the rational and integrated use of water resources, including waterway transport, with a view to sustainable development; the prevention of and defense against critical hydrological events of natural origin or resulting from the inappropriate use of natural resources, and also to encourage and promote the capture, preservation, and use of rainwater.

The main objective is to promote the availability of water and the rational and safe use of water resources for current and future generations. It is important to point out that this law mentions the water market when it presents in its legal text the charging for the use of water resources, in which the amounts collected from the charging for the use would be applied in a priority way in the hydrographic basin where they were generated. This legal instrument would work as a way to encourage the rationalization of water use and also to recover and preserve the quantity and quality of the resources in the country.

The international experience of the application of the water market

The quantity and availability of water resources differ in each country, as do the hydro-climatic conditions, the legal systems, the forms of organization of the state, economic activities, and a number of other factors. These elements cannot be analyzed in isolation, but must be analyzed in their totality, to make the application of this foreign model feasible in the Brazilian reality, without triggering a hydric crisis.

From this perspective, the water market models that deserve study and emphasis for possible application in the Brazilian legal system are the models of the United States, Australia and Chile. This is

because these countries present different prototypes with their own peculiarities, but with an agricultural bias, which is a Brazilian characteristic.

In the United States, water markets have existed since the 19th century. They are concentrated in the Western region, due to recurrent drought events, low surface water availability and high water demand for irrigation. Irrigated crops account for 74% of total water withdrawals in the Western United States, while nationally they account for only 40% of the total. (VARGHESE, 2013)

The separation of water use rights from land ownership was also an important factor in the development of the water market in the Western United States. This allowed water to be separated from the land and diverted through canals to new locations (CERQUEIRA, 2016).

One aspect that is the target of criticism is the multiplicity of deliberative instances in the assignment of water use rights. In some cases, state, district, municipal, and even federal bodies participate in the decision, which compromises the efficient and timely allocation of water in situations of water scarcity. According to Donohew (2009), bureaucratic and negotiation barriers (inter-basin or inter-district) limit the ability to expand agricultural production, when there is an excess of water demand in a particular district or basin, and an excess of supply in another. In this case, water markets fail to maximize social benefits in the form of income generation. (CERQUEIRA, 2016)

In Australia, water use rights are legal rights that can, in principle, be revoked or modified without compensation. In practice, governments protect granted water users by buying water use rights from potential buyers to ensure environmental flow. (GRAFTON, 2010)

The Australian water market includes two types of trading: a permanent market for water use rights (which can vary with respect to the level of security of abstraction) and a seasonal market to deal with water allocations transferred each year based on a permanent water use right. According to the authors, while Australia has well developed water markets in a large area with irrigated agriculture, there have been few trades from agricultural to urban uses. This has been accentuated because state governments that control public water supplies have preferred to avoid purchasing water from rural areas as much as possible in order to protect family farmers and communities. (GRAFTON, 2010)

Chile has a similar system to Australia, The 1981 Water Code is the legal framework governing Chilean water resource management. In Chile, water resource use rights are separate from land rights and except for some restrictions, the holders can trade them with anyone for any purpose at a negotiated price. These water use rights can also be used as collateral, and can be inherited. Interested parties can apply to obtain new rights to water uses that have not yet been allocated. If third parties are interested in the same

rights, they will be sold at auction. Otherwise, the applicant will receive the use rights for free. (CERQUEIRA, 2016)

It is noted that these countries have been applying water markets for a reasonable amount of time and can be used for further study.

The viability of the Water Market in Brazil and Bill 495/2017

The vision of water as a natural good endowed with economic value had its historical milestone with the Dublin Declaration, approved at the 1992 International Conference on Water and the Environment. In its principle number 4, it states that:

Water has economic value in all competitive uses and should be recognized as an economic good (') the management of water as an economic good is an important means of achieving efficient and equitable use and encouraging conservation and protection of water resources. There is great scope for water savings in agriculture, industry, and household water supplies. Estimates indicate that 80% of the water consumed worldwide is used in irrigated agriculture. In many irrigation scenarios, up to 60% of this water is wasted on the way from the source to the station. More efficient irrigation practices will lead to substantial freshwater savings.

Inspired by this legal text, Law No. 9.433/97 already mentions in its legal text the charging for the use of water resources in Brazil, however, the water market has not yet been regulated in a precise way, regarding the issue of granting the rights of use.

In the Senate, the Bill No. 495/2017 is being processed, which aims to create the water market as an instrument to promote more efficient allocation of water resources. This bill, if approved, will be one of the basic instruments of the National Water Resources Policy, essentially changing its central aspect. It argues that water is an inalienable public good, which cannot be controlled by private interests, and a limited natural resource with economic value. The proposed changes restore the private ownership of water, banned by the 1988 Constitution, allowing the users of the hydrographic basin to sell their grants, as long as the high incidence of conflict over the use of water resources is decreed by the basin's committee.

The regulation of the right to use water resources and the charging for its use, from an economic point of view, could give water a commodity meaning? This is one of the main concerns about the viability of the implementation of the Water Market in the Brazilian legal system. The use of water resources by private parties is allowed, as long as it is authorized through the granting of the right to use water resources, which grants them the right to use. The granting of concessions aims to "ensure the quantitative and qualitative control of water use and the effective exercise of rights of access to water" (art. 11 of the PNRH).

Through the granting of concessions, the government will manage all qualitative or quantitative interferences in water bodies, which can be derivations (channels), surface and underground abstractions, effluent discharges, use of hydroelectric potentials, among others. (CERQUEIRA, 2016)

It is important to point out that the procedure for granting the right of use permits is slow, and in many cases the issuance of the right of use permit for surface water takes years to be ready. Besides this, the grant is not a very flexible act, since any change in its terms requires the modification of the grant, an equally time-consuming procedure. If the user wants to change activity, for example, from agriculture to pisciculture, he must fill out forms and present documentation to obtain the new allocation. Therefore, we can see that the efficient allocation of water resources will not happen with the exclusive action of the government, depending on alternatives such as water markets. (CERQUEIRA, 2016)

With the implementation of the water market in Brazil, the holder of a right of use grant could negotiate it at a certain value with purchasing users, under the rules established in the regulation. The law itself determines that water in Brazil is inalienable, therefore, the rights to use water resources, the grants, would be traded on a temporary or permanent basis. This is the way most water markets around the world work. However, one point to be observed is the functionality of these two grants, to what extent a temporary grant would compromise the long-term investments to be made in the watershed, which would reduce the number of users benefiting from water markets.

Despite this, there are other limitations that deserve study and that need to be respected for an application of this water market, which would be the respect for the rights of third parties and especially, the ecological flow of the watercourse. It is observed that there are numerous possible forms of application of the water market, which can have positive effects on the economy, generating employment and income, and also improving the management of water resources. However, for a positive result, the control exercised by the State must be dosed in the correct way, so as not to generate operational unfeasibility and a water crisis. On the other hand, this discussion still deserves to be the fruit of much study, because despite the numerous benefits cited that can make the application of this institute successful, there is a major dilemma in this application, which is the commodification of water and the commercialization of a good of common use and public domain, which can generate more shortages.

CONCLUSIONS

In light of what was exposed through this research, the importance of water as a fundamental right in human life can be seen, as well as its indispensability for the balanced and sustainable functioning of planet Earth. The research does not aim to bury scientific discussions and research conducted by

environmentalists, jurists, and society in general on this subject. It clarifies, that it has the purpose of studying and understanding the feasibility of the application of the Water Market in the Brazilian Legal System, under a legal and practical aspect.

Water is a fundamental right guaranteed by the Federal Constitution of 1988, when it established as a fundamental clause the "Right to Life", because without water there is no life. Due to the importance of this water resource in human life, discussions about its preservation and sustainability have arisen, mainly to guarantee life for future generations as well.

In Brazil, Law 9433/97, the Water Law, established the National Water Resources Policy, with the aim of ensuring the current and future generations the necessary availability of water, with quality standards appropriate for its use, but still its application is not sufficient.

The scarcity of water already affects several places in the world, and although Brazil has a large water reservoir, there are places in the country where access to water is difficult or even nonexistent, due to drought and even poor distribution. The water market was an institute presented as a solution to promote a more efficient allocation of water resources, in order to commercialize the assignment of water use rights. However, despite being applied in several countries with similar characteristics to Brazil, it is an institute that deserves much attention and care because it can turn water into a private good that can be commercialized, even seen as a commodity and violating the 1988 Federal Constitution.

Still, it is relevant to state that the discussion is extremely important in contemporary times due to the environmental problems derived from the unbalanced use of water resources and the attempt to commodify water, as well as the legal and social impacts that may arise with the approval of Bill 495/2017.

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