



Applications of int'l water agreements and Iraq's water problem

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Abstract

Iraq's water quota, to which it has been accustomed for hundreds of years, has been affected by water pollution, the lack of sufficient water for agriculture, damage to the water environment of the marshes, the decline of the agricultural and animal sector, the spread of diseases and Population migration due to the lack of respect by the upstream countries for the (Tigris, Euphrates, Karkha, Yund, Mandali, Karon) and many other tributaries because there are no binding int'l water agreements without the consent of states regulating how to exploit these rivers to ensure their continuation and share their water fairly and fairly in line with the established int'l rules represented by the Helsinki Rules (int'l river basin concept) and the convention on the protection and use of watercourses (UNECE) and the convention on the law of the non-navigational uses of int'l rivers (int'l watercourse concept) and the int'l applications of these conventions, which supports Iraq's arguments in obtaining its reasonable and equitable water share, similar to the countries bordering int'l rivers around the world. Therefore, the research will focus on studying these three agreements and reviewing int'l applications on them and making a trade-off between them, any of which guarantees the interests of Iraq, paving the way for reaching realistic proposals that can be adopted by Iraqi specialists when negotiating with upstream countries of rivers that cross the Iraqi borders, as described in the research plan.

Keywords: River, international, quota, Aquatic, convention, aquarium, cross-border

Introduction

More than (330) trans-boundary water disputes occurred in the world during the period 1900-2017. Meshel T. 2. 2018) [37] therefore, attention was focused on the concept of an int'l river, as int'l efforts in the 19th & 20th centuries focused on the condition of navigation to be an int'l river, because of the great need for it in many rivers that penetrate European countries. As a result of this need, the concept of the int'l river was accompanied by freedom of navigation, & among the applications of this concept are the convention regulating the Rhine of 1868, which was renewed in 1945 & amended by the Strasbourg Convention of 1963, the convention on the management of rivers flowing into the seas between the USA & Canada in 1954, as well as on the establishment of a sea channel between them in 1959, and the Asuncion Law Convention on the use of the (La Plata) river between the river basin countries) Argentina, Uruguay, Paraguay, Brazil, Bolivia.

Interest in Int'l Rivers has increased after the I World War and even more so after the II World War, where (263) rivers cross the political borders of countries, & (153) countries share trans-boundary rivers, & they provide (60%) of the world's water needs & (40%) of the world's population lives on their banks, for example, the (Nile) Basin is inhabited by (263) million people, so, the total agreements that dealt with int'l rivers reached more than (400) four hundred agreements. (Bobekvaio: Stinnett, 2013; 2009) [8, 45] European & American countries have managed to use operational management to more than (70%) of the volume of trans-boundary river basins, a high percentage compared to the countries of Asia & Africa, where this percentage is (30%), and that climate change will increase the disputes of riparian countries over rivers in the future. The size of the water problem in the world is increasing, what are the proportions of peoples & the degree of their benefit, according to the quality of water, which indicates that the distribution of water is not fair & does not consider the need

& size of the people who should benefit from it. (UNESCO, form No.III) the amount of investment needed in the water sector in the world is estimated at \$ 1.7 trillion, which requires the establishment of new partnerships between countries? charitable organizations, private sectors and the widespread use of technology.

Because of the different trends of countries based on more than one legal basis, more than one definition of the int'l river has appeared, states are trying to adopt one of them in line with their interests, even if it is harmful to the interests of riparian countries, because the int'l rules are still not binding except with the consent of states, the Helsinki Rules of 1966, the convention on the protection & use of trans-boundary watercourses and int'l Lakes (1992) is influential in int'l applications, as countries prefer to conclude special agreements with Riparian countries are affected by political and economic relations more than int'l legal norms affect them, but int'l norms can achieve the aspirations of states to obtain their historical rights in trans-boundary waters in a manner consistent with the needs of peoples to which they have been accustomed for hundreds of years and in order to ensure their security, peace & continued stability without subjecting the disposal of water to considerations of the interests of a particular state at the expense and interests of other states.

The legal rules remain empty if they are not applied in good faith and high-level cooperation & coordination, represented by the establishment of a joint administration entrusted with the functions specified in the agreement and given competencies that will be delivered through continuous monitoring and follow-up to achieve the common interests of states.

The water quota of Iraq, to which it has been accustomed for hundreds of years, has been affected by water pollution, the lack of sufficient water for agriculture, damage to the aquatic environment of the marshes, the decline of the agricultural and animal sector, the spread of diseases &

Population migration due to the lack of respect of the upstream countries for the (Tigris, Euphrates, Karkha, Yund, Mandali, Karon and many other tributaries), due to the lack of agreements regulating how to exploit these rivers to ensure their continuation & share their water fairly & fairly in line with the established int'l rules represented by the Helsinki Rules (the concept of the int'l river basin) updated the Berlin rules & the convention on the protection & use of trans-boundary watercourses. The convention on the law of the non-navigational uses of int'l rivers (the concept of the int'l watercourse) & the int'l applications of these conventions, which supports Iraq's arguments in obtaining its reasonable & equitable water share, similar to the countries bordering int'l rivers around the world. Therefore, the research will focus on studying these three agreements and reviewing int'l applications on them & making a distinction between them & which of them is better in achieving the interests of Iraq, paving the way for understanding the nature of the water problem of Iraq & knowing the results of the research to reach realistic proposals that can be adopted by Iraqi specialists when negotiating with upstream countries of rivers that cross the Iraqi borders & shared water basins with neighboring countries, in addition to discussing the issue of joint management of trans-boundary waters and how to establish & specializations with examples of their importance in completing the research, as described in the research plan.

The Search Problem

Find out the position of int'l law on the int'l river & the int'l Basin as trans-boundary waters, & what int'l applications of int'l rules regulate them what is the position of Iraq & neighboring countries on the concept of int'l law of the int'l river & the int'l Basin what is the best concept of int'l law for the interests of Iraq in both What are the most important applications of these two concepts, & how is the joint management method the best way to manage int'l waters.

Purpose of the Research

Reaching a guarantee in the rules of int'l law & int'l applications of Iraq's water quota & what are the appropriate means for all riparian countries that Iraq can follow when negotiating with the upstream countries of its int'l rivers. As well as answering the following questions:

- What is the guarantee of the concept of the int'l drainage basin according to the Helsinki Rules of 1966, updated by the Berlin Rules of 2004.
- What is the concept of the int'l river basin what are the applications of the int'l river basin concept.
- What is the guarantee of the convention on the protection & use of trans-boundary int'l watercourses & int'l Lakes (Water Convention) of 1992.
- What is the guarantee of the 1997 convention on the law of the non-navigational uses of watercourses.
- What is the concept of an int'l watercourse, what are the applications of the int'l watercourse concept.
- How to differentiate between the two concepts (int'l drainage basin, int'l watercourse) which is a better understanding of the rights of Iraq.
- What is the concept of Joint Water Management, how is it established and what are its competencies?

Method of research

Determine the int'l rules in accordance with the int'l agreements governing the concept of the int'l river on the one hand & the int'l basin on the other hand, & how to apply them to int'l rivers and basins known among the countries of the world, by adopting scientific, specialized & modern sources that consider the latest developments and contemporary int'l applications.

1. Int'l Drainage Basin Guarantee

The concept of the int'l drainage basin was adopted in the Helsinki Rules for the uses of int'l river waters of 1966, which was the fruit of the efforts of the Int'l Law Society, which had an impact on the behavior of states regarding their use of Int'l Rivers, guidelines governing the use of trans-boundary rivers, and groundwater was not treated in them, so, this was supplemented in other agreements. States are required to preserve, use & manage water sources in a way that does not cause environmental damage, & have regulations to follow up on water within the country or that may share it, & that the use of water be fair & equitable & consider the needs of communities participating in int'l waters, providing data on Water Resources & use, rapid reporting on risks, dealing with floods and pollution, groundwater, protecting water facilities during armed conflicts, joint management, not harming the interests of other countries & settling disputes by int'l governing committees.

In 1970, the (UNGA) refrained from supporting the Helsinki Rules, & asked the Int'l Law Commission to work on a draft Convention on the use of rivers for non-navigational purposes, & this was achieved in 1997 in the adoption of a convention under the aforementioned title, & its implementation was delayed until 2014, so, the committee completed a draft convention covering the use of all types of water in 2004, approved by the int'l law it also imposed duties to achieve sustainability and prevent environmental damage, and most importantly, its unified vision among the waters Surface & underground, whether directly or indirectly related, & their regulation of all national and int'l aquifers, which is a modern & bold development of the Helsinki Rules. (Dellapenna, 2006) ^[17] the aquarium is the most important thing addressed by the Helsinki Rules and the Berlin rules, but the Berlin rules are still a project and haven't been implemented so far. In 2008, the (UNGA) adopted the creation of a draft law on transboundary aquariums. (UNGA, 2008) that the concept of an Int'l Basin is still limited by the principle of sovereignty adhered to by states on the one hand, & that the int'l rules of the convention haven't lived up to be binding on a global scale on the other hand, so, there are no absolute rules agreed upon, & the principle of sovereignty doesn't mean causing harm to others. (Sindico F. 2, 2021) ^[43] As early as the beginning of the last century, it was decided in an arbitration court that the sovereignty of the state over the waterway in its territory is limited by not detracting from the share of the countries participating in this stream.

1.1. The Concept of the Int'l Drainage Basin

It is a geographical area that extends across two or more states, the boundaries of which are defined by the watersheds of the water network, including surface groundwater flowing into a common estuary. It consists of the following elements:

- a. **Geographical area:** It is the area bounded by watersheds across two or more countries. it is the geographical area that receives water falling on it or in which ice bodies melt.
- b. **Watersheds (watershed):** It is related to the geographical area. which is the area of the Earth where water flows on its surface or in its cavity towards a common access point. and its wildlife vegetation.
- c. **Common estuary:** It is the place where the flow of surface and groundwater ends with the end of the flow of the drainage basin.
- d. **Water network:** It means the water network. which is the network of surface and groundwater heading to the common estuary.

Groundwater is required to cross international borders or contact surface waters when it does not cross borders.

That is. the concept of a river basin includes the geographical area on which rains fall. as well as watersheds consisting of rainwater & water that descends from the Highlands & flows in a winding stream. into which the water falling on the Highlands is poured from tributaries. groundwater & what that land carries of water-consuming fauna & flora.

The river basins are spread among the riparian countries to include (69) basins in Europe. (59) basins in Africa. (57) basins in Asia. (40) basins in North America & (38) basins in South America. therefore. the countries of the world organized the affairs of these many basins through the Helsinki Rules of 1966 in order to ensure equity in water shares & avoid the exclusivity of downstream countries in how to dispose of water & consider the needs of riparian countries.

In 1989. the Bellagio agreement came & it was called the Bellagio project. which came in application of the Helsinki Rules for regulating trans-boundary groundwater & considering the principles of unity of Management. common interests & optimal use on a fair and equitable basis that considers the subsurface ocean. (Hayton. 1989)^[22]

Since 1990. int'l institutions have emerged that are interested in the countries of the int'l river basin. trying to find a ground for cooperation between upstream & downstream countries. find formulas & rules that bring together stakeholders and move away from the method of individual management. although these efforts face great difficulties related to bearing costs & sharing benefits among riparian countries & that their decisions will be abstract impact & effectiveness. (Berardo. 2012)^[7]

This concept contradicted the states' adherence to traditional sovereignty. which was reflected in their adherence to the old concept that an int'l river should be navigable and penetrate only several countries. Although this position doesn't correspond to developments in int'l rules. including the Helsinki Rules. the modern trend is moving towards reducing traditional sovereignty in the face of int'l problems. including the fair & equitable distribution of transboundary waters & the possibility of achieving mutual benefit for all countries of the same basin. exploiting the potential of the river in an integrated manner & the establishment of a network of cooperation relations between riparian countries. (Wouters. 2005)^[51] In addition. int'l water rules impose on states an obligation not to harm others. & this obligation is not related to the principle of

sovereignty. (Sindico F. 2. 2021)^[43] And that violation of these rules may cause significant damage. (Meshel. 2020)^[38]

Turkey. Syria & Iran did not respond to this concept. and Iraq also did not adhere to it. which missed the opportunity to take advantage of it because of the positives that support Iraq's arguments and claims & prepare a solid ground when negotiating with the countries of the sources of Iraq's main rivers.

The fact that riparian countries continue to prioritize their own interests and don't cooperate in the management of trans-boundary ecosystems that ensure the dynamics of the continuous flow and fair quantities of int'l rivers & the need for effective water management capable of avoiding damage to the interests of riparian countries will expose the local & regional environment to the risk of armed conflicts. (Baenoch. Beneventisl. 2002:1996)^[2. 6]

Therefore. many int'l river agreements include a monitoring system to support coordination. exchange of information and enforce negotiations in order to provide information & data on water sources & technological & environmental issues to help make the right & fair decision for all riparian countries. (Heams: Stinnett. 2010; 2009)^[23. 45]

The principle of equality of Rights is ahead of the principle of sovereignty (Zeng C L. 2012)^[52] & jurists don't agree on the definition of interests. & does it include all economic. water. historical. social & environmental benefits Cooperation & coordination may include the sharing of water stored in dams as well as the sharing of hydraulic energy & even bear the costs of constructing dams or aqueducts. as is the case in the (Columbia) River agreement between Canada & the USA as well as the (Senegal) River agreement between Mauritania. Senegal & Mali. (Changchun. 2019)^[12] economic & political factors continue to play a big role in the conclusion of such agreements. as it is clear the extent of cooperation between European countries on the (Danube) River and between African countries on rivers (Limpopo. Okavango. Orange). (Bobekvao: Stinnett. 2013; 2009)^[8. 45] Cambodia. Laos & Vietnam have cooperated through three institutions (Development Bank only Sewee. (Mekong) River Commission. Assembly of nations Southeast Asia) on effective management of shared waters. They are trying to include the (Red) River between China & Vietnam & the (Arawad & Salween) rivers between Myanmar & China in order to ensure reconciliation in the quantities & type of water in addition to the continuity of its flow. as well as what the Joint Water Committee between Jordan & Israel is responsible for implementing the provisions of the 1994 agreement between them on the rivers (Jordan and Yarmouk) & that the lack of cooperation & coordination between riparian countries may cause great risks and threaten security and peace. as is the case between Egypt & Sudan on the one hand & Ethiopia on the other. (Menga. 2016)^[36]

1.2. Int'l drainage Basin Applications

In application of the concept of the int'l river basin. the countries have concluded int'l agreements that are consistent with it & form int'l precedents in how to deal with int'l rivers & distribute water in a fair way to riparian countries & provide permanent solutions that are not affected by political considerations & int'l variables & preserve the interests of the common peoples of these waters. &:

- The boundary waters agreement between the USA & Canada of 1909.
- The water treaty between the USA & Mexico of 1944. (Sánchez. 2006)^[42]
- The arbitration decision on the use of (Lake Lato) between France & Spain in 1957.
- The (Indus) river agreement between India & Pakistan of 1960.
- The (Columbia) river treaty between the USA & Canada of 1964.
- The agreement on common watercourses between the Soviet Union (formerly) & Finland of 1964.
- The (Indus) River Treaty between India & Pakistan of 1966.
- The (La Plata) river basin treaty (Treaty of Brasilia) in South America of 1969.
- Agreement on the regulation of the exploitation of the waters of the river (Senegal) between Senegal, Mauritania & Mali of 1972.
- The statute of the river (Uruguay) between Uruguay & Argentina of 1975.
- Convention for the protection of the (Rhine) river from chemical pollution of 1976.
- The water sharing agreement (Kanka/kangis) for the faraka region (Farakka) between Bangladesh & India in 1978, which was developed in 1996.
- The highland water project (Lesotho) agreement between South Africa & Lesotho of 1986, which was developed in 2011.
- Agreement on the Joint Use & protection of trans boundary waters between Russia & Ukraine of 1992.
- Agreement on joint management of the use & protection of water sources between Kazakhstan, Kyrgyzstan, Tajikistan & Turkmenistan of 1992.
- Agreement on cooperation & basic development of the (Mekong) river basin between Thailand, Laos, Vietnam & Cambodia of 1995.
- Protocol on the sharing of waterway systems for community development in southern Africa of 1995, amended in 2000.
- Agreement on cooperation in water management issues between Uzbekistan & Turkmenistan of 1996.
- The judgment of the Int'l Court of justice in the case of projects implemented on the (Danube) River between Hungary & Czechoslovakia in 1997.
- Agreement on the use of water & energy resources of the (Sayr Darya) river basin between Tajikistan, Kyrgyzstan, Kazakhstan & Uzbekistan of 1998.
- Agreement on cooperation for the protection & sustainable use of the (Portuguese – Spanish) river basin (Albufeira agreement) of 1998.
- The framework agreement on the (Sava) river basin (Sava convention) of 2002. (FAOLEX. 2002) - The water charter in the river basin (Senegal) between Mauritania, Mali & Senegal of 2002.
- Agreement on the protection, use, recharge & monitoring of the groundwater reservoir between France & Switzerland in 2008.
- The Guarani Aquifer agreement between Argentina, Brazil, Paraguay & eastern Uruguay of 2010.
- Cooperation agreement on trans-boundary groundwater control between Latvia & Lithuania in 2016.
- The (Orange-Cinco) river groundwater cooperation mechanism between Lesotho, South Africa & Namibia for 2017.

- Agreement on the establishment of a bilateral commission for the integrated management of water resources in the trans-boundary basins shared by Peru & Ecuador for the year 2017.

The number of states that have arrangements at the level of all their common water basins is 24. That these applications are related to large int'l rivers, & despite the criticism directed at the concept of the int'l river basin that it does not correspond to the practical aspect & characteristics of each int'l river, but it indicates a positive int'l response to the extent of confidence in the updated Helsinki Rules of 1966 & the extent of conviction in the ability of the concept of the int'l river basin a permanent riparian zone that stabilizes peoples, reduces mass migrations in search of water sources & prevents disturbance in int'l relations due to the arbitrariness of upstream countries in the disposal of water flowing from them. Although the consent of the States is a prerequisite for the initiation of the (ICJ), which makes the cases considered by it few? nevertheless, the ruling in 1997 in a case between (formerly) Czechoslovakia & Hungary on the river (Danube) emphasized the need to reconcile economic development & environmental protection with the fair & reasonable use of river water. (Godana. 1985)^[19] In the case of Argentina & Uruguay on the construction of (pulp mills) along the (Uruguay) River, the importance of the role of joint int'l institutions were emphasized as the best ways capable of creating cooperation & finding a just settlement. (Berardo. 2012)^[7]

2. Guarantee of Int'l Watercourses

This guarantee is shared by two conventions, the first is the convention on the protection and use of trans-boundary watercourses and int'l lakes, called the (Water Convention) of 1992 & entered into force in 1996, & it has two protocols (The First; related to water & health in 1999, The Second; related to civil liability in 2005) & sponsored by the (UN) Economic Commission for Europe (UNECE), that is, it was specific to the countries of the (EU), & supervised by the economic, social & Cultural Council (ESCOSOC), then opened for all (UN) member states in 2016. Chad, Senegal & Guinea joined it, & the number of countries joining it reached from Africa, Latin America and the East the Middle (11) states, & the number of states parties to this convention reached (44) states. This agreement aims at political & technical cooperation, on the basis of which (100) or more agreements on water have been concluded, resulting in raising the capacity of water exploration, reducing losses caused by floods & droughts, or supporting the agriculture & energy sectors. As it is based on three foundations, namely: the commitment of guarantor diligence to prevent serious Trans-boundary effects, Control & limit them, commitment to the rule of non-harm by adopting the principle of fair and reasonable use, and the application of the principle of cooperation as a means of achieving the two previous principles. (Meshel T. 2020)^[38] & didn't explicitly mention pollution prevention. The agreement provides for non-exclusive terms of reference for joint bodies established by the parties to the agreement on shared waters between them (art.9) & reflects the basic tasks that can be adjusted in light of needs and developments. The legal effect of the decisions of the joint bodies should be determined at the time of their establishment, since they are not specified in the convention. And the obligations are embodied in the

conclusion of agreements or arrangements. the establishment of joint bodies. consultations. information exchange. the establishment of alarm & alert systems. the provision of mutual assistance upon request. In order to facilitate the implementation of the obligations provided for by the convention. the Legal Council of the convention has developed a guide for the implementation of the water convention. which was adopted by the meeting of the parties in 2009. the guide contains clarifications of the requirements of the convention & examples of their practical application. Accession to the convention also puts the state party in an institutional framework for the implementation and development of the convention & the exchange of experiences. & has made achievements in the field of enhancing water quality. improving human health. reducing floods and droughts and preserving ecosystems. & as a result supported regional integration & conflict prevention at the European level & beyond through task forces & official guidelines. One of the positive results of this agreement for the Eastern European countries that have joined it is the establishment of Integrated Water Resources administrations in eastern Europe. as well as in the Caucasus & Central Asia (Uzbekistan & Turkmenistan).

In the event of a dispute between two or more parties over the interpretation or application of the agreement. they should seek a solution through negotiation or any other means agreed upon. Other such means include mediation. investigation. conciliation. arbitration. judicial settlement. recourse to regional arrangements or agencies. With regard to the dispute that could not be resolved on the basis of Paragraph (1) of Article (22). paragraph (2) of this article provides for the wording of the choice of arbitration or compulsory award by the (ICJ). Thus. arbitration & judgment are not mandatory under the agreement. & remain optional. Several parties to the agreement have made statements that they choose arbitration. judicial judgment in cases. or both options together. The cases considered by the (ICJ) represent the establishment of important case precedents in cases of water disputes. such as the (Gabchikovo – Nagymaros) case between Hungary & Slovakia in 1997 (Bourne. 1997)^[9] & the (Pulp mills) case between Uruguay & Argentina in 2010. May also refer to the arbitration decision between India & Pakistan on the river (Indus) in 2012.

The convention does not contain provisions on liability in case of violation of its rules. In 2012. a mechanism was established to support the implementation of the convention & an implementation committee was established under this mechanism. This committee aids. cooperation & facilities that facilitate the implementation of the convention from a technical and financial point of view. In 2003. a trust fund was established to cover the expenses of joint administration and the establishment of task forces to facilitate the implementation of the convention. The World Bank also provides financial facilities to riparian countries on the condition of concluding cooperation agreements on their common waters.

The second agreement is the convention on the law of the use of int'l watercourses for non-navigational purposes of 1997. this agreement represents the fruit of efforts that lasted (23) years related to the uses & conservation of all waters crossing int'l borders. including surface and groundwater. & entered into force in 2014. and both Iraq & Syria ratified it. and Turkey voted against the agreement &

still refuses to approve it. And represents an int'l legal framework for cooperation between riparian states on the int'l river. Where it was adopted as a legal framework in the preamble of the agreement between Syria & Lebanon on the sharing of the waters of the (Southern Great) River Basin in 2002. And came up with the concept of an int'l watercourse to provide a new guarantee for riparian countries commensurate with the nature of a section of int'l rivers & achieve justice and fairness in how to use and preserve trans-boundary waters for the benefit of all peoples involved in them. & to be another guarantee in how to use and distribute the waters of Int'l Rivers. this agreement was greatly influenced by the principles of the convention for the protection of the (Danube) river of 1994 and influenced by the (Rhine) convention of 1999 in addition to its impact on river agreements between Russia. Ukraine & Kazakhstan ' and were considered in the Charter of water cooperation of riparian countries on the (Senegal) River of 2002. as well as in the water charter of the (Niger) River Basin of 2008. as well as in the Charter of Lake Chad of 2012. (HUB. 2015) & had a significant impact on the efforts of cooperation between riparian countries on the (Nile). especially on the draft Nile of 2010. & Iraq could benefit from it in its relationship with the upstream & downstream countries of its int'l rivers in addition to the ratification of Turkey & Iran. Syria has ratified it. as we will explain in the following two demands.

The two conventions are complementary to each other. in the 1997 convention detailing the equitable & reasonable use of water (art.6). (Tyagi. 2019)^[48] a definition of notification & consultation procedures (Section III). & a description of the trans-boundary impact (art.7). The 1992 convention details the specific agreements & the tasks of the joint bodies (art.9). details the information that should be subject to joint assessment & Exchange (art.11 & 13). & provides guidance on water quality objectives & best available technologies (annexes to the convention I. II and III). There are differences between the two conventions described in the approach below. and each convention is considered binding on the state's parties to it. The differences don't affect the implementation of the two conventions if the state is a party to both because they are interdependent & Complementary and based on the same principles. so, the UN secretary-general called in 2018 for the need to join both conventions & work on their full implementation. The trans-boundary waters used in the two conventions are meant to be the waters of surface watercourses. shared lakes & shared groundwater.

A comparison between the two agreements & how Iraq can benefit from them can be seen in the approach shown in Figure (5). The two conventions combine common concepts & common principles that make them interdependent and complementary in their treatment of trans-boundary waters. providing appropriate protection & managing them collectively & institutionally efficiently & sustainably. accession to both of them enhances int'l cooperation and increases the opportunity to share water more fairly & equitably.

In addition to the above. the (Espoo) convention of 1991 (Form 6. 1997). which entered into force in 1997 & has (44) parties. mostly European. imposes obligations on states parties to provide a comprehensive framework & procedures related to the implementation of their obligation to conduct an environmental impact assessment in the case of expected

and potentially transboundary impact activities. for the participation of parties potentially affected by these activities. The (Espoo) convention can also provide relevant legal guidance to parties to the water convention that aren't parties to the (Espoo) Convention. & its standards have become a customary general practice. The importance of the (Espoo) convention has increased significantly in the past decade following the conclusion by the (ICJ) in 2010 in the pulp mills case that environmental impact assessment of the potential impacts of a major project on an int'l watercourse is now a generally applicable requirement of customary int'l law.

2.1. The Concept of the Int'l Watercourse

The Int'l Law Commission defined an int'l watercourse as a system of surface & groundwater that, by virtue of their natural relationship with each other, form a single whole & usually flow towards a common access point. (http://. 1998) Thus, the definition doesn't include rivers within one country or between its territories. (Meshel T. 2018)^[37] The elements of the definition are what follows:

a. Surface & groundwater network

There has not been clear int'l agreement on the surface & groundwater network. & countries have tried in some agreements to define it as all watercourses (surface & groundwater) natural or artificial, as well as installations, procedures, works that may affect the water economics of watercourses & installations that form the borders of state or cross these borders.

The Int'l Law Commission has interpreted the int'l watercourse network as a pipe that carries water through the territory of two or more states, and may include, in addition to Rivers, other units connected to rivers such as tributaries, lakes, canals, glaciers, groundwater, which by virtue of their natural relationship form a single whole.

The Int'l Working Group of the Int'l Law Commission explained that the term watercourse network is formed by hydro-graphic components located in the main course of the river and other units related to it, in addition, any effects occurring in one part of the network affect in another place of it.

This concept extends the rights of riparian states to the upstream countries of the int'l river that goes beyond the course of the river to include the water network connected to it & any related effects. (Heams; Stinnett. 2010; 2009)^[23, 45] Therefore, many countries did not agree on this concept, which includes the watercourse network? & was the reason why the 1997) UN Convention was not in force for a long time.

Groundwater accounts for (90%) of fresh water on Earth (matsumoto. 2002)^[34] & consists of water that is underground & flows to the surface of the earth through Springs & Wells. It is constantly moving vertically or horizontally, as it moves from places of high pressure to places of low pressure, & collects from sources of snow & rain that penetrate the ground. Water reservoirs are formed that may extend between more than one country, so, they form common groundwater, & may be associated with surface water. Its continuous movement & its connection with the surface waters of more than one country are two essential characteristics to be shared by more than one country.

Examples include the water reservoir between the kingdom of Saudi Arabia and Bahrain, between Algeria, Libya and

Tunisia, between Chad, Niger & Sudan, and between Egypt & Sudan, & the (Franco-Swiss) agreement of 1978 for the protection, use & recharge of the aquifer (Genova) is one of the most famous agreements.

b. The natural relationship between surface water & groundwater. And in this element, there are two components

First: The natural relationship between surface water and groundwater, which means the link between both surface water & groundwater due to nature & the environment that contains them, & it is a reciprocal relationship because it works in two directions, surface water supplies the aquifer with water, & may appear on the surface of the earth to return & supply the surface watercourse with water, & so on in an endless circular motion.

Most opinions are that this relationship is achieved when it extends between more than one country & surface waters or groundwater cross int'l borders, we will be in front of an int'l watercourse.

Secondly: They form a single whole, that is, they are interconnected & connected to each other & one of them affects the amount of water of the other in more than one country. This does not include confined groundwater because they don't form a single whole.

c. Flow towards a common access point

It means the flow of surface water, whether in one direction or multiple directions, towards a common access point. It is intended to collect all the components of Water Resources with a common estuary within the framework of the watercourse.

The following criticisms have been made of this concept:

- a. It makes the territorial sovereignty of the pelvic state.
- b. The ambiguity of the term int'l watercourse, some believe that it includes border & successive international rivers, lakes, canals, & other type Surface waters. Others add the border and successive rivers & their tributaries, in addition to groundwater discharged to the surface, all of them are located on the territory of one state & flow into the watercourse.
- c. The term is of a theoretical nature the agreement requires that the use be fair & equitable and that the following be considered:
 - Geographical, hydro-graphic, hydro-logical, ecological factors, & other factors that have a natural character.
 - The social & economic needs of the watercourse countries concerned.
 - The population dependent on the watercourse in each of the watercourse countries.
 - The effects of the use or uses of the watercourse in one watercourse State on other watercourse States.
 - Existing & potential uses of the watercourse.
 - Conservation, protection and development of the water resources of the watercourse, economy in their use & the costs of measures taken in this regard.
 - The availability of alternatives, of comparative value for a particular potential or existing use. (Barberis. 1991)^[4]

In addition to the above, riparian countries must not cause harm to each other through water pollution, failure to provide timely data and damage to aquifers, otherwise they bear int'l responsibility and consequent compensation.

(Burch, 2005^[11]) The convention also requires the provision of advance notification of its projects & plans that may cause damage to water quotas or disturbance of aquifers to give other countries sufficient opportunity to negotiate or take measures that reduce the damage.

Iraq has ratified the convention on the law of non-navigational uses of int'l rivers, which adopts the concept of an int'l watercourse[?] as well as Syria, which enables the two countries to conclude agreements between them on the (Euphrates) River, but Turkey has opposed this agreement since the vote so as not to abide by its provisions in its relationship with Iraq on the (Tigris & Euphrates) rivers, and Iran has not yet approved it so as not to be binding on the rivers that cross to Iraq.

We believe that the provisions of this convention represent int'l legal norms & have been settled in the form of an int'l convention, where the principle of equitable & reasonable utilization has been referred to in the fourth article of those rules, eleven factors have been identified to explain the concepts of justice and reasonableness included in the 5th article of these rules, namely the river basin, the hydrological system of the basin, the geography of the basin, as well as the avoidance of waste that may harm when using the basin, & the extent of the population's dependence on the aquifer, therefore, it can be an argument for Iraq in its negotiations with Turkey & Iran, this is what will be addressed in the proposals.

2.2. Applications of the Int'l Watercourse Concept

One of the modern applications after the adoption of the concept of the int'l watercourse in 1997 based on the convention, which replaced the concept of the int'l river basin according to the rules (Helsinki) with the concept of the navigable int'l watercourse, which is narrower than the previous concept, which came in response to the desire of many upstream countries of Int'l Rivers, because:

- Convention on the protection & use of trans-boundary waters & int'l lakes (Helsinki convention) of 1992.
- The Economic Commission for Europe in Helsinki on trans-boundary watercourses, established in 1992.
- Agreement for the protection of the river Scheldt between France, the Netherlands, the Walloon region, the Flemish region & the capital region of Belgium of 1994.
- Protocol on shared waterway networks in the southern African region for common development of 1995 (there are those who consider it an application for the river basin Int'l).
- Treaty on the integrated development of the (Mahakali) river between Nepal and India of 1996.
- Convention on the law of the use of int'l watercourses for non-navigational purposes of 1997.
- Agreement on the use & management of the (Narva) River between Russia & Estonia of 1997.
- Agreement on the rational management and protection of trans-boundary water bodies between Russia, Belarus & Tajikistan of 1998.
- Agreement on the rational management and protection of trans-boundary waters between Russia, Belarus & Tajikistan of 1998.
- The (Amazon) River agreement between Peru & Ecuador of 1998.
- Agreement for the protection of the (Rhine) river between Germany, the Netherlands, Luxembourg,

Switzerland, France and the European community in 1999, updated to cover all countries the Joint Water Basin was established in 2001 by a Coordinating Committee covering Austria, Liechtenstein & the Walloon region of Belgium.

- Agreement between Kyrgyzstan & Kazakhstan on the (Joiy, Chui & Talas) rivers of 2000. (Legislation, 2000)^[31]
- Ministerial declaration of the World Water Forum 2000. (Becci Dale, 2001)^[5]
- Waterway sharing protocol for community formation in southern Africa, 2000.
- The (Meuse) river agreement between France, the Netherlands & Belgium of 2002.
- The agreement on the river (Sava & its tributaries) between Bosnia & Herzegovina, Slovenia, Serbia & Croatia of 2002.
- The agreement on the (Incomati) River and the (Maputo) River between Mozambique, South Africa & Swaziland of 2002.
- The Lake (Tanganyika) agreement between Burundi, Congo, Tanzania & Zambia of 2003.
- Agreement on the establishment of the watercourses Commission of the River (Zambezi) (Zambezi agreement) between Angola, Botswana, Malawi, Mozambique, Tanzania, Zambia & Zimbabwe for 2004.
- Agreement on the rational use & protection of trans-boundary waters between the Russian Federation & the people's Republic of China of 2008.
- The (Pripyat) river management project between Ukraine & Belarus for 2008.
- The water charter of the river basin (Niger) between Niger, Benin, Chad, Guinea, Cote d'Ivoire, Mali, Cameroon & Burkina Faso of 2008.
- Draft Convention on the management of trans-boundary water sources for 2008.
- Agreement on the management & use of the (Samur) River between the Russian Federation & Azerbaijan of 2010.
- Agreement on the management of trans-boundary water bodies between the Russian Federation & Kazakhstan of 2010.
- Treaty on cooperation, protection & sustainable development of the (Dniester) River Basin between Moldova & Ukraine of 2012.
- The water charter on the Lake (Chad) Basin between Cameroon, Central Africa, Libya, Niger, Chad & Nigeria for 2011.
- The (Great Lakes) agreement between the states (Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Wisconsin), the province of Ontario & the Commonwealth for the Pennsylvania & Quebec governments of 2012.
- Agreement on the conservation of the ecosystem of the (Ural) River Basin between the Russian Federation & Kazakhstan of 2016.
- Agreement on cooperation in the field of development, management & sustainable use of water resources of the (Buzi) waterway between Mozambique & Zimbabwe of 2016.
- Agreement on the establishment of the Bilateral Commission for the integrated management of Water Resources in the trans-boundary basins shared by Ecuador & Peru for the year 2017.

- The water charter for the Volta river basin between Ghana, Benin, Burkina Faso, Cote d'Ivoire, Mali & Togo for 2019.
- Agreement on the development, management & sustainable use of water resources in the (Buzi) stream between Mozambique & Zimbabwe for the year 2019.

The percentage of countries that have organized int'l Int'l Water Agreements is less than half of the number of countries that share trans-boundary rivers. (Conca. 2016) ^[14] That the limited applications mentioned after the conclusion of the agreement in 1997 indicate the fear of states for their own interests & their desire to use the waters of their rivers without restrictions & not considering the need of riparian countries, even if they cross int'l borders, and their disagreement with the designation of Transboundary rivers as int'l rivers so as not to include the int'l rules approved by the agreement & more cautiously, they haven't approved the 1997 agreement so far, such as Turkey & Iran. This doesn't mean the loss of Iraq's rights, which can be based on the peaceful use of Transboundary waters. (Elver. 1982) ^[18] Although there are few applications, they represent practical facts on how to address the needs of riparian countries in a more just & equitable way, especially on the subject of joint management of trans-boundary water sources, if the draft Convention on trans-boundary aquifers of 2008, which the Int'l Law Commission (ILC) worked on & submitted (18) reports until 2008, was approved (McCaffrey S. C. 2009) ^[35] to enable the riparian states to reach solutions that consider the interests of all, far from being isolated in the decision. (Suhardiman. 2017) ^[46]

The review of the above applications shows us that the countries signed the 1997 Agreement & committed themselves to it, while at the same time trying to take the concept of the river basin approved by the rules (Helsinki) because it allows them to follow the affairs of the int'l river from the source until crossing it to other countries through the joint management system, that is, the last agreement of 1997 came in response to the pressures of the upstream countries (basin) at the expense of the countries of the source & the exploitation of all available means of pressure on them.

3. Differentiation Between the Concepts of the Int'l River Basin & the Int'l Watercourse

Whether any of the two concepts is applied, the countries that have cooperated through agreements emanating from effective joint administrations have achieved many interests embodied in the fields of food security, health & well-being, clean energy, countering climate change, protecting the Marine & terrestrial ecosystem, peace & security in the most important int'l rivers & water basins in Europe, America, Asia & Africa. Most countries still don't cooperate in providing adequate data on shared groundwater reservoirs, & African countries have advanced over other countries due to their integration of interacting groundwater & surface water in most major sewage arrangements, in addition to their cooperation in an effective joint management system to promote sustainable groundwater development.

The two concepts have in common the following:

- a. In order to exceed the limits of navigation in int'l rivers, the int'l river does not have to be navigable as it was prevailing before the two concepts.

- b. Groundwater is included as an important source with surface water provided that it is not confined.
- c. Political boundaries don't prevent taking measures to protect water resources & jointly to preserve river ecosystems, shrinking the concept absolute territorial sovereignty over the river for riparian states.
- d. Adopting the concept of the water network as an important source of the int'l river.

The concept of an international drainage basin is distinguished from the concept of an int'l watercourse in the following:

- a. It includes more hydro-logical components, it absorbs fresh water in all its forms, & it includes groundwater more broadly and does not require the presence of the relationship between them & surface waters as well as includes confined groundwater.
- b. It includes types of surface waters such as glaciers that are not included in the watercourse concept.
- c. It expands on the concept of a river network, it includes surface & groundwater and the interrelation between them, with non-contact, negotiation and exchange information, coordination & conclusion of agreements that guarantee the water quota of each participating country in the int'l river as we have seen in int'l applications including it is reflected on its economic & social stability. Therefore, many upstream countries rejected it because it determines their uses.
- d. D. It is the most logical & consistent with scientific concepts, effectively contributes to the joint management of int'l river waters, cooperation between Basin countries & the exchange of Technical data & information leading to equitable utilization & meeting regional water requirements & achieving better management of Water Resources. (Flora Lu. 2014)
- e. Exceeding the limits of navigation in int'l rivers, the int'l river is not required to be navigable as it was prevailing before the two concepts.
- f. Groundwater is included as an important source with surface water provided that it is not confined.
- g. Political boundaries don't prevent from taking measures to protect water resources & jointly to preserve river ecosystems, shrinking the concept absolute territorial sovereignty over the river for riparian states.
- h. The damage from pollution is paid when the procedures begin in the basin & before the water reaches the Int'l stream, the treatment is in the basin & the area geographical & catchment, the work in the basin keeps to protect the ecosystem of the river & preserve the nature of the water. (Malta. 2005) ^[32]

The above trade-off shows us that the concept of the int'l drainage basin is the one that comprehends the components of the int'l river in an integrated manner & achieves the common interests of riparian countries away from the concept of absolute sovereignty, which is outdated, the common int'l interests & the historical rights of peoples to obtain their water share, which has continued to obtain for hundreds of years, are. (Cross. 2000) ^[16] this concept prevents one country to use the waters of the river crossing the int'l borders individually without considering the need of the countries with which it shares the river, so, communication, negotiation, exchange of information, coordination & the conclusion of agreements that guarantee

the water share of each country participating in the int'l river. as we have seen in int'l applications. reflecting on its economic and social stability. Therefore. many upstream countries rejected it because it determines their uses. (Torrijo. 1999)^[47]

Some went to reconcile the two concepts. taking the concept of a basin if it relates to water in environmental and ecological terms & pollution. & taking the concept of a stream if it relates to water uses and the water quota system. and the Int'l Law Commission did not accept this opinion because it leads to a conflict between the two concepts. & it was more instead of acceding to the watercourse's convention of 1997. it has its own int'l rivers. There are those who believe that the water agreements & their applications and memorandums of understanding on shared waters constitute a broad base. as customary rules that are the basis for any understanding that can be reached between Iraq & neighboring countries. (Sindico2021: Bondansky. 1995-1996)^[43] In the Treaty of Lausanne of 1923 stipulated that the entities that inherited the Ottoman Empire (such as Turkey. Iraq. Syria & northwestern Iran) respect the rights of some of them in agriculture. irrigation & hydraulic energy by concluding agreements and. if they fail. resort to arbitration. (Treaty. 1923) between 1921-1930. Turkey & France concluded several agreements that referred to the use of the (Tigris & Euphrates) rivers & that the riparian countries consider the rights of some of them to ensure justice & fairness. Iraq also concluded a protocol with Turkey in 1946 regulating cooperation between them on the protection of water & the use of the waters of the (Tigris & Euphrates) rivers. the exchange of information. the establishment of a joint committee & understanding between them on projects that can be established on the two rivers. but Turkey didn't adhere to it when it built dams (Ataturk. bersik. kargamish & Keban). then they concluded a protocol of economic and technical cooperation in 1971 and Syria joined it. referring to the sharing of water between them. consultation on filling dams on the two rivers and confirmation of the establishment of the Joint Committee. but Turkey & Syria didn't adhere to it either because it was supposed to conclude an agreement regulating the issue of water definitively. (Waterbury. 1994)^[49] in 1980. a tripartite protocol was concluded to share the Euphrates river. and after many meetings stopped in 1992 without result. & in 1987. a protocol was concluded between Syria & Turkey to share the waters of the (Euphrates) River. (Protocol. 1987) & in accordance with which a joint committee was formed between them in 1993 & the terms of reference of this committee were developed in 2001. and then a protocol was concluded between Iraq & Syria in 1990 to share the waters of the (Euphrates) river crossing from Turkey. And finally. in 2008. a strategic agreement on water sharing between Iraq & Turkey was concluded. and based on this agreement. memorandums of Understanding were issued between Turkey & Iraq. and Syria joined it. including the use of water sources & could be an expansion of coordination & understanding to resolve the common water problem (MoU. 2009)^[39] The unjust use of the (Tigris & Euphrates) Rivers was accompanied by their pollution. which led to their unsuitability for human use & the need for expensive sanitary & chemical treatments. (Kirshner. 2012)^[28] Therefore requires riparian states to agree to protect the environment from the risk of pollution of these two rivers. (Grey. 2011)^[21]

The countries haven't limited themselves to the current cooperation in the field of trans-boundary waters. but have gone beyond that by developing future plans for several years to come to develop the areas of their joint cooperation in this area. The development of human capacities working in and supporting joint committees contributes to raising the efficiency of monitoring trans-boundary waters and exchanging data related to them in a timely manner. so countries. the UN & other int'l agencies are seeking to support & develop these capabilities. And the importance of int'l water laws. the University of Geneva has provided a platform for Int'l Water Law. under the auspices of UNESCO. China established the Academy of Int'l Water Law at Wuhan University. (<http://.> 1957) In 2015. the GA developed a plan for sustainable development until the year 2030. which was unanimously approved. & in an essential part of IT related to the entire water cycle. which emphasizes the integrated management of Trans-boundary Water. which accounted for (48%) of water resources. as the main means for the success of sustainable development globally. The World Bank has announced its readiness to provide loans to cover environmental protection expenses. & int'l transit waters are one of the main components of the environment. where it is possible to cover the expenses of joint administrations. the costs of experts. control procedures. sustainability & compensation for damage caused by misuse of these loans to protect the use of int'l waters to be more equitable & fairer. (Group. 2009) The principle of sovereignty no longer means giving precedence to one state over another. but means that it has equal rights to use the common waters.

4. Joint Water Management

Joint Water Management represents a legal & basic means of ensuring the implementation of the agreement. the policies & visions of countries & their actions on shared waters may differ in order to achieve their interests. which requires the existence of a reference point that is able to unify the principles and measures towards finding common ground in the interpretation & implementation of the agreement. it has been proven that joint cooperation in the management of int'l trans-boundary waters is the best way to share water. maintain its continuity. maintain its quality & ensure justice. fairness & non-harm to the participating countries. therefore. many water conventions & int'l practices have dealt with the organization of how to establish joint management. as well as determining its terms of reference on which it is based when carrying out its work.

4.1. The Concept of Joint Water Management & How to Establish it

Joint Water Management means the arrangements & procedures agreed between the state's parties to the water agreement (stream or basin) & reflects the desire of these states to cooperate and coordinate to achieve the interests of all in a fair & just manner. The joint administration works on the basis (Rahaman. 2009)^[41] that fresh water is an essential element of life. & of economic value for its developmental Renaissance. & if water crosses the state borders. its use is through the participation of all countries that share it. and these bases are called (Dublin principles). Examples include the Joint Commission for the (Niger) Basin. which deals with the development of Water Resources & the regulation of fishing. pollution. energy & agriculture. as well as the UNECE in 1992. which

specializes in the protection & use of water resources for streams and basins. which has achieved achievements on the protection of the use of common waters of the state's parties to the water agreement. maintaining their quality & quantity. continuity of flow. pollution prevention & overcoming water conflicts. (Jager. 2016)^[24] And can serve as a role model in the fair & equitable sharing of water. the sustainability of the flow of water. the reduction of pollution and the settlement of disputes between European riparian countries.

According to Article (24) of the convention (law on the use of watercourses for non-navigational purposes) of 1997. riparian states may hold consultations on joint management (Leb. 2015)^[29]. which means that there is no obligation to establish it. despite its importance. in order to embody the adherence of states to the principle of sovereignty. which is still influential in int'l relations? although joint management is an indispensable means in the way of Transboundary Water Management. (Sindico2021: Bondansky. 1995-1996)^[43] Instead. countries have focused on limiting joint management to water pollution protection & quality control only. The committee's work. which requires data. often runs into the barrier of compromising national security as an excuse not to cooperate with the committee. which affects its effectiveness in confronting the water management process? (Wouters P. 2013)^[50]

Under Article (31) of the Helsinki Rules of 1966. disputes concerning the use of the int'l river basin are referred to a joint agency. which may be required to conduct a survey of the common water basin & indicate plans or recommendations for its best use for development. However. the (Helsinki) Rules have not been approved by many countries because they grant rights to countries located below the water basin. while the countries located at the top of the water basin want to capture the largest amount of water. so. there are not many applications to work according to these rules to establish joint administrations.

In practice. because of the importance of joint administrations in protecting and preserving the rights of riparian countries. they were established more than two centuries ago and continued to operate in Europe in 1994. examples include the Int'l Joint Commission (IJC between the USA & Canada when it was a British colony in 1909). between the USA & Mexico in 1889. which was developed in 1944. & between South American countries (Brazil. Argentina. Bolivia. Uruguay) on the (Lapata) River Basin in 1968. In Africa. Joint administrations have been distinguished & efficient. as between Egypt & Sudan in 1959. between Senegal. Mauritania. Mali. Guinea & Guinea-Bissau on the river basin (Gambia) in 1964. between South Africa & Lesotho on the waters of the Highlands (Lesotho) in 1986. & between the Central Asian countries Kazakhstan & Uzbekistan on the Aral Sea. which is the largest body of fresh water in the world. & because of the cutting of its feeder Rivers. most of it has turned into a desert. & as well as the joint commission between India & Pakistan on the (Hindu) river basin in 1960. between Afghanistan & Iran on the (Helmand) River in 1950. & between India & Bangladesh on the Ganga river in 1957. And the modern agreement on the joint management of the groundwater basin is the one concluded between Switzerland & France in 1978 on the underground Basin (Genevois). which was named the agreement on the protection and use of recharge of the French - Swiss aquifer

of the province (Genevois). (UNESCO. 2018) And between Hungary. Croatia & Slovenia on the joint management of trans-boundary waters between them in 1994. as well as with Ukraine in 1998. and with Romania in 2003. In April 2024. Algeria. Libya & Tunisia reached an agreement on the joint management of the common groundwater basin. which is in danger of decline due to the lack of its sources of nutrition & increasing withdrawals from it. where the Sahara and Sahel Observatory (OSS) was assigned to oversee the study. research and coordination with int'l funders to cover the expenses of joint management. (http & //. 2024) The (Mekong MRC) was established between Cambodia. Vietnam. Laos. Thailand. Myanmar & the Chinese province of Yunnan to ensure the dynamics of the continuous flow of the international river & they tried to include the (Red) River between China. Vietnam & the (Irrawaddy & Salween) rivers between Myanmar & China by ensuring the timing. quantity & type of water in addition to the continuity of its flow. where they intervened in the agricultural fields in the mountains of Laos that affect Cambodia because it was carried out in coordination between these countries. (Badenoch. 2013)^[2]

Cooperation between Kazakhstan & Uzbekistan on the (Syr Darya) River. Mozambique & Zimbabwe on the (Buzi) River Basin. Botswana. Namibia & South Africa on the (stampret) system of trans-boundary aquifers is highlighted. & cooperation includes the areas of financing. political will. data collection & Exchange. & capacity development. The countries on the (Indus. Jordan & Mekong) rivers have successfully cooperated jointly to manage them & have been able to avoid competing over limited water supplies. affecting water quality & controlling the time of water flow. these are the main causes of trans-boundary water conflicts & represent the greatest human development challenges for the int'l community. (Heams: Stinnett. 2010: 2009)^[23. 45]

As for the Joint Committee (JIC) between Turkey. Iraq and Syria on the (Tigris & Euphrates). which is supposed to be an important channel for knowing the hydro-logical policies along these two rivers. it was unable to perform its work and did not reach the level of the body capable of providing data to decision makers in these countries because of Turkey's lack of cooperation & opposition that this committee has the authority to oversee the implementation of agreements. & the economic factor can be exploited to influence Turkey. as happened between the countries of South Africa on the rivers (Limpopo. Okavango & Orange).

4.2. Terms of Reference for Joint Water Management

In order to enable the joint administration to perform its functions in monitoring the implementation of an int'l water agreement. it requires facilitating its access to data on water. its types and quantities of surface & groundwater & the extent of the need of countries for this water for all purposes & any other matters. it needs competencies & powers that include all the duties assigned to:

- a. Identify projects that riparian countries can establish on the course or basin of the int'l river. & supervise the development research of water. as in their agreement in 2000. Greece. Albania & Macedonia agreed to share. protect and use (Prespa Lake) in accordance with int'l laws. they also agreed to establish a (Prespa Park) the formation of a coordination committee (Co-ordination Committee for the Prespa Park).
- b. Monitoring the operating systems installed on the riverbed or basin and making sure that they comply

- with the agreed controls. such as the system you have developed the Economic Commission for Western Asia (ESCWA) in cooperation with (UNESCO) with the aim of building capacities for sustainable management & use for the protection of Int'l shared groundwater in the Mediterranean region for the years 2006-2008. which was supported by the (UNGA) issuing its numbered decision (A / CN.4/L.731) of 2008 on the draft groundwater law to encourage states to correct management Although some see the position of the GA as a retreat in int'l law. (McCaffrey S. 2009)^[35]
- c. Develop a system that riparian states should follow in providing financial resources to cover the operating expenses of the joint administration and ensure its continuity.
 - d. Develop a specific mechanism to be followed by riparian states in providing data related to shared waters. and this mechanism shall have priority over legislation European countries have incorporated the 1970 directives on trans-boundary waters into their national legislation. which have been updated in 2000. then updated in 2014 & finally in 2022. these guidelines have become applicable in all EU countries. (Commission. 2023)
 - e. Determining the quotas of riparian countries of common waters in the light of their study of the quantities of common waters monitoring the extent of compliance with them. As carried out by the committee in 1991. the (UNECE) took the initiative to inventory groundwater in Europe as an extension of what happened in the Caucasus and Central Asia in 2007. & then in 1999 UNESCO launched the program for mapping & evaluation of hydro-logical maps (world hydro-logical program IHP) to determine quantities in 2000. (UNESCO) launched the (ISARM) program for the management & development of trans-boundary groundwater for the purpose of its development and development. where (270) trans-boundary aquifers have been inventoried. That these efforts require broad international participation and through int'l organizations capable of mobilizing. especially providing financial cover due to their huge costs. (Marina. 2011)^[33]
 - f. Set limits for wastewater emissions. evaluate the effectiveness of control programs. participate in environmental impact assessments in accordance with int'l regulations.
 - g. Develop joint action programs to reduce pollution caused by fixed sources (industrial & municipal) & diffuse sources (agricultural).
 - h. Develop a mechanism for settling water disputes between riparian countries and ensure its implementation. The India-Pakistan agreement of 1960 imposed the use of Arbitration to settle their disputes regarding the agreement. That unilateralism & lack of cooperation & coordination with riparian countries on int'l waters causes many conflicts & damages int'l waters. affects biodiversity & does not provide vital human needs. (Brels. 2008)^[10]
 - i. Set common goals & standards for water quality and propose conservation & improvement measures. The European. American. Southeast Asian & some African countries have been pioneers in strengthening water agreements by establishing effective management by

granting them sufficient powers to monitor. audit and supervise the strict & continuous implementation of the states parties to the agreements and their obligation to implement their recommendations urgently & follow early warning systems & the ability to exchange information on the quantities & quality of for development & cooperation by supporting data sharing Hydrology is conducted daily on this trans-boundary Basin. & after 2015 the data became available on the internet. (Coopération. 2014) And the need to supplement the conventions with protocols regulating the provisions of civil liability for damage caused by states to others & compensation for such damage. a good example is the European Economic Commission. established in 1947. (UNECE 2. 2004) as well as the Joint Commission's discussions on the deep channel between the (Danube) & the (Black Sea) for Romania & Ukraine. the (geolesti) refinery for Moldova & Ukraine. and the agreement of the parties to the (Danube) River Protection Convention to establish a transnational monitoring network. the results of which are published in an annual book. after 2007. its work extended to the river basin as well. giving a general picture of surface & groundwater masses & their quality. according to the (UNESCO) report on the progress of cooperation in the field of transboundary waters it is possible to see the scale & type of benefits achieved for countries participating in int'l waters. this report also reports on the new mechanisms reached by several countries on cooperation in the field of transboundary waters for the period 2017-2021. these two tables represent positive examples of the extent of cooperation of countries involved in transboundary waters. which represent facts on which to base negotiations on the settlement of disputes on similar or similar issues. We can propose the wording of the cooperation agreement on international trans-boundary waters to be a working guide for the most important items of the agreement so that all important aspects are covered to be effective management & capable of Sustainable Water Development & ensure fair & equitable sharing of water & provide reliable information on the quantities & quality of water & prevent its pollution & not harm any participating country according to the attached table.

5. Conclusion (Results & Recommendations)

5.1. Results

- a. The int'l river is no longer just a waterway that crosses int'l borders or a river that is suitable for int'l navigation. as was the case in the past two centuries. but int'l rules have developed in response to the common need of peoples to obtain sufficient quantities of water suitable for human. agricultural and animal uses continuously & characterized by stability due to its relationship with Social Security
- b. The updated (Helsinki) Rules have come up with the concept of an int'l drainage basin in order to achieve a fair & equitable distribution among riparian countries through joint management of water of all kinds. from the source & place of precipitation to its mouth in a trans-boundary river. Due to the adherence of many states to the traditional concept of sovereignty. they have refrained from adopting this concept despite its many positives.

- c. The convention on the law of the non-navigational uses of int'l watercourses of 1997 introduced the concept of an int'l watercourse in an attempt to respond to the wishes of states to dispose of the waters of trans-boundary rivers & reduce the restrictions imposed on them. it neglected a lot of water in the geographical area of the basin and focused on the interconnected water network that forms a single whole, which is the int'l watercourse. Despite the wide scope of the aquarium states to dispose of their internal waters without significant control or joint management, they did not approve the last convention so that it would not be legally binding.
- d. Both Turkey & Iran, with which Iraq shares, which agreed to it, did not accept the last agreement, despite its negatives, & abandoned the concept of the int'l drainage basin despite its many positives, thinking that it would reach agreements with Turkey & Iran on the common rivers between them on the basis of the last Agreement, & what Iraq expected did not happen, and the two countries continued to dispose of the waters of the common rivers without considering Iraq's historical share & far from justice and fairness, as we see in the int'l applications of cross-border rivers.
- e. The existence of an effective joint administration that oversees the implementation of Water Agreements is essential to ensure common rights, in addition to supplementing the agreements with a protocol to determine the liability of states that violate the agreements in preparation for compensating the damage they cause to others.
- f. The lack of a global body specialized in shared water & has the respect and cooperation of countries to refer to in the case of water disputes, can play an advisory role in bringing points of view closer and make proposals to find a fair & equitable settlement.

5.2. Recommendations

- a. Iraq should restore its position by adopting the concept of the int'l drainage basin because of its advantages and guarantee of Iraq's water share, & calls to give priority to this issue and mobilize his efforts on it because of the importance of water for the present and future of the Iraqi people & ensuring their Social Security, which is no less important than other aspects of security.
- b. Iraq should focus its attention on ensuring its historical water quota, which is consistent with its current & future needs, as a first priority that may force it to entice Iran & Turkey to exchange them for the available raw materials in Iraq at special prices in exchange for permanent agreements on the rivers passing through them.
- c. Using all means affecting the riparian countries of its rivers to prevent them from establishing facilities on them or changing their course, which causes damage to its water share this is a strategic goal in Iraqi politics.
- d. Raising the issue of Iraq's water quota with neighboring countries at all int'l levels (UN, Arab League, Int'l Arbitration, organizations Human rights) & to be one of the priorities of our institutions at home & abroad.
- e. To work on the establishment of effective joint administrations with the riparian countries on our int'l rivers & to give them sufficient powers to carry out their work in accordance with the experiences of other countries.
- f. We recommend the establishment of a global observatory for water and peace (GOWP), in the form

of an int'l facility for water diplomacy in order to facilitate, promote & activate Diplomatic efforts to leverage water for comprehensive peace, develop a common vision, build trust, & explore options for peaceful solutions. And to play an advisory role & stimulate understanding of the political importance of cooperation in the field of water. It should also facilitate the possibilities of facts & good offices when necessary.

References

1. African Development. A. B. Lesotho Highland Water Project Phase II. 2019. Available from: https://www.afdb.org/sites/default/files/documents/environmental-and-social-assessments/rap_summary_for_lesotho_highland_water_project_ii.pdf (reviewed on Aug.30/2024).
2. Badenoch N. From Tea to Temples and Texts: Transformation of the Interfaces of Upland-Lowland Interaction on the China-Myanmar Border. *Southeast Asian Stud.*2013;2(1):103.
3. Baenoch N. Trans Boundary Environment Governance Principles & Practices in Mainland Southeast Asia. World Resources Institute. 2002.
4. Barberis J. The Development of Int'l Law of Trans-boundary Groundwater. *Nat Resour J.*1991;31(1):169.
5. Becci Dale C. The Worlds Intl Freshwater Agreements: Historical Developments & Future Opportunities. Oregon State Uni. 2011. Available from: chrome-extension://mhnlakgilnojmhinhkckjpcnpbhabphi/pages/pdf/web/viewer.html?file=https%3A%2F%2Fna.unep.net%2Fsiouxfalls%2Fpublications%2Ftreaties%2F2_WorldsAgree-ments_atlas.pdf (reviewed on Aug.13/2024).
6. Beneventist E. Collective Action in the Utilization of Shared Freshwater: The Challenges of Int'l Water Resources Law. *AJIL.*1996;90(3):384.
7. Berardo R. Conflict & Cooperation along Int'l Rivers: Crafting a Model of Institutional Effectiveness. *Glob Environ Polit.*2012;12(1):102.
8. Bobekva E. Rivers of Peace: Third Party Conflict Management of Trans-boundary River Disputes. National Center for Peace & Conflict Studies, Uni. Otago. 2013.
9. Bourne CB. The Case Concerning the Gab'cikovo-Nagyymaros Project: An Important Milestone in Int'l Water Law. *YB Int'l Envtl L.*1997;8:6-10.
10. Brels S. *et al.* Trans-boundary Water Resources Management: The Role of Int'l Watercourse Agreements in Implementation of the CBD. CBD Technical Series, No. 40. Secretariat of the Convention on Biological Diversity, Montreal, Canada. 2008.
11. Burch S. *et al.* Groundwater in Int'l Law: Compilation of Treaties & Other Legal Instruments. FAO Legislative Study 86. FAO of the UN. 2005.
12. Changchun Z. *et al.* Benefit Sharing on Trans-boundary Rivers: Case Study and Theoretical Exploration. *J Resour Ecol.*2019;10(1):6.
13. Commission E. Ensuring Groundwater Quantity and Quality Across the EU. 2023. Available from: https://environment.ec.europa.eu/topics/water/groundwater_en (reviewed on Aug.16/2024).
14. Conca K. 5 Focal Points for U.S. Global Water Strategy. *New Security Beat.* 2016. 3.
15. Cooperation ID. Int'l Office for Water (IO Water). 2014. Available from: <http://www.imomohub.kg/eng/home/>.

16. Cross G. National Sovereignty & Intl Watercourse. Geneva: Green Cross Intl. 2000.
17. Dellapenna JW. The Berlin Rules on Water Resources: The New Paradigm for Int'l Water Law. Res Gate. 2006. Available from: https://www.researchgate.net/publication/268599996_The_Berlin_Rules_on_Water_Resources_The_New_Paradigm_for_International_Water_Law (reviewed on Aug.19/2024).
18. Elver H. Peaceful Uses of Intl Rivers: The Euphrates and Tigris Rivers Dispute. Third Report on the Law of the Non-navigational Uses of Intl Watercourses. by Mr. Stephen M. Schwebel. Special Rapporteur. Yearbook of the Int'l Law Commission.1982:2(1):87-92.
19. Godana B. Africa's Shared Water Resources: Legal & Institutional Aspects of the Nile Niger & Senegal River System. France-London-Colorado. 1985.
20. Governance IW. Niger Basin. 2004. Available from: <http://www.internationalwatersgovernance.com/niger-basin.html> (reviewed on Aug.30/2024).
21. Grey C. *et al.* Iraq- A Strategy to Negotiate with Co-Riparian State Responding to a (Note Variable) to RBAS. UNDP. 2011.
22. Hayton RD. Trans-boundary Groundwaters: The Bellagio Draft Treaty. Nat Resour J.1989:29:668-722.
23. Heams GS. Analysis of Process Mechanisms Promoting Cooperation in Trans-boundary Water. Uni. British Columbia. 2010.
24. Jager N. *et al.* Transforming European Water Governance? Participation and River Basin Management under the EU Water Framework Directive in 13 Member States. Water.2016:8(1):156.
25. Joint C. Joint Communique` Cooperation Between Syria & Turkey. UNTS.1993:1724:30070.
26. Joint C. Joint Communique` Between Syria & Turkey. 2001. Available from: <http://ocid.nasce.org>.
27. JUS MUNDI. Pulp Mills on the River Uruguay (Argentina v. Uruguay). 2006. Available from: <https://jsumundi.com/en/document/decision/en-pulp-mills-on-the-river-uruguay-argentina-v-uruguay-judgment-tuesday-20th-april-2010> (reviewed on Aug.30/2024).
28. Kircshner AJ. The Waters of Euphrates & Tigris: An Int'l Law Perspective. Max Plank UNYB.2012:16:362.
29. Leb C. One Step at a Time: Intl Law and the Duty to Cooperate in the Management of Shared Water Resources. Water Intl.2015:40:21-23.
30. Legislation C. Agreement Between the Republic of Uzbekistan and Turkmenistan on Cooperation on Water Management Questions. 1996. Available from: <https://cis-legislation.com/document.fwx?rgn=25361> (reviewed on Aug.28/2024).
31. Legislation C. The Agreement Between the Government of the Kyrgyz Republic and the Government of the Republic of Kazakhstan on Use of Water Management Constructions of Interstate Use on Chu's Rivers and Talas. 2000. Available from: <https://cis-legislation.com/document.fwx?rgn=4965>.
32. Malta KB. The Legal Regime of Int'l Watercourses: Progress & Paradigms Regarding Uses & Environmental Protection. Juridiska Institutions. Stockholm Uni. 2005.
33. Marina SR. Towards Joint Management of Trans-boundary Aquifer System: Methodological Guidebook. UNESCO's Int'l Hydrological Programmed Division of Water Sciences. Paris. 2011.
34. Matsumoto K. Trans-boundary Groundwater & Int'l Law: Pastorates & Current Implications - A Research Paper. Dep. of Geoscience. Oregon State Uni. 2002.
35. McCaffrey SC. The Int'l Law Commission Adopts Draft Articles on Trans-boundary Aquifers. AJIL.2009:103(2):272.
36. Menga F. Domestic and Int'l Dimensions of Trans-boundary Water Politics. Water Alternatives.2016:9:704-713.
37. Meshel T. Int'l Law and Trans-boundary Fresh Water Resources. PhD Thesis. Faculty of Law. Toronto Uni. 2018.
38. Meshel T. Swimming Against the Current: Revisiting the Principles of Intl Water Law in the Resolution of Fresh Water Disputes. Harv Intl L J.2020:61(1):140-142.
39. MoU. The MoU Between Iraq & Turkey. Strategic Foresight Group. 2009.
40. Quigley J. Rempel T. Jerusalem: The Illegality of Israel's Encroachment & The Significance of Israel's Partial Annexation of East Jerusalem. The Palestine Yearbook of Int'l Law.1996/1997:9:19. The Middle East J.1997:51(4):520-526.
41. Rahaman MM. Principles of Intl Water Law: Creating Effective Trans-boundary Water Resources Management. Intl J Sustain Soc.2009:1(3):207-210.
42. Sánchez A.1944 Water Treaty Between Mexico & USA: Present Situation and Future Potential. Frontera North. 2006. 18(36). ISSN 2594-0260.
43. Sindico F. National Sovereignty Versus Trans-boundary Water Cooperation: Can You See Int'l Law Reflected in the Water? Symposium on Interstate Disputes Over Water Rights. Cambridge Uni. Press. AJIL UNBOUND. 2021. 115. Available from: <https://doi.org/10.1017/aju.2021.24> (reviewed on Aug.18/2024).
44. Staff I. Protocol on Shared Watercourses in the Southern African Development Community (SADC) Region. Int'l Water Law Project. 1995. Available from: <https://www.internationalwaterlaw.org/documents/regionaldocs/sadc1.html> (reviewed on Aug.12/2024).
45. Stinnett DM. The Institutionalization of River Treaties. Int'l Negotiation J.2009:14(1):233-240.
46. Suhardiman DA. Power. Alliances & Pathways Towards Deliberative & Just Water. Int'l Water Management Institute (WMI). 2017.
47. Torrijo XF. The Criteria for the Equitable Utilization of Int'l Rivers. Br Y B Int'l L.1999:67:405.
48. Tyagi H. *et al.* What Constitutes a Fair and Equitable Water Apportionment? Water Resources and Environmental Engineering I: Surface and Groundwater. In: Maheswaran Rathinasamy *et al.* editors. 2019.
49. Waterbury J. Trans-boundary Water & the Challenge & Cooperation in the Middle East. In: Roger P. Lydon P. editors. Water in Arab World: Perspectives & Prognoses. 1994.
50. Wouters P. Dynamic Cooperation in Int'l Law & the Shadow of State Sovereignty in the Context of Trans-boundary Waters. Environ Liability.2013:3:88.
51. Wouters PK. Sharing Trans-boundary Waters: The Legal Assessment Model. IHPV1. Paris: Technical Documents in Hydrology. No.74. UNESCO. 2005.
52. Zeng CL. H X. Legal Analysis on the Sharing Nature of Int'l Rivers. J China Uni Geosciences (Soc Sci Ed).2012:12(2):29-34.