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# **INTEGRATED WATER RESOURCES MANAGEMENT NATIONAL AND INTERNATIONAL LEGAL AND INSTITUTIONAL REQUIREMENTS A NEW VISION**

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### 1. Introduction

The purpose of this working paper is to discuss legal and institutional requirements for integrated water resources management, both surface and underground, in the countries of the Middle East and to investigate possible avenues for the possible resolution of conflicts among ESCWA Member countries as well as between ESCWA Member countries and their neighbouring States.

Such a discussion would normally necessitate the prior inventory of the water resources in those countries, of the state of their national water legislation and corresponding institutions, and a review of those international treaties which, over time, have addressed the regulation of transboundary waters among those political entities.

Under the aegis of ESCWA, however, the hydrological and hydrogeological state of those water resources, the water economy, the national legislation and the international law status of Member countries have been the subject of numerous studies undertaken with the assistance of international and non-governmental institutions of great expertise, not to mention the substantial contributions made by the Member Governments themselves. It may be said that the overall water situation in the Region is well known and documented and that consequential national and international implications facing those Governments have been analysed and discussed at great length. It is therefore not the purpose of this working paper to repeat what has already been stated in a most competent manner.<sup>1</sup>

This working paper will aim, however, at briefly reviewing some specific concepts such as those of the hydrologic cycle, the drainage basin, integrated water resources management, the legal regime of water resources and water management institutions at the national level, water resources management planning, water pricing, the fundamental principles of international water resources law and, in particular, that of 'equitable utilization', and the relationship between domestic and international water resources law, including the prevention and settlement of water disputes.

It will also recall the tenets of Islamic water law<sup>2</sup> as well as the intrinsic values of customary law and institutions within traditional societies in an attempt to outline the elements of what could be called a 'New Vision' towards the resolution of water resources management problems.

## **2. Some Basic Concepts**

### **2.1 Water, the Hydrologic Cycle and the Drainage Basin**

It is now a recognized fact that water, unlike land, sub-soil, plant, animal and human life, because of its transient nature, escapes the legal definition of 'thing' or 'object'. Since, to the legal scholar however, everything requires legal definition in order to become subject to the rule of law, use has historically been made of a fiction according to which water is classified as an appurtenance of the land. Hence, at Civil Law, he who owns the land owns the water falling on, surging from, flowing along or across his land or contained within its sub-soil. At Common Law, this is called the 'riparian doctrine' although there, rather than ownership, it is the rightful access to the water that qualifies the user.

Strictly speaking, the lawyer has never been fully satisfied with such a fiction when applied to water in movement. This is why all legal systems have always made a distinction between 'measurable' water which, when contained in a cup, a container, a

pond or a well 'of which the bottom can be seen', could be legally owned on the one hand, and atmospheric, running, percolating or flowing waters on the other hand which were either declared to follow the legal regime of the appurtenant land, were classified as escaping the legal realm (*res nullius*) or were legally appropriated by the sovereign under such doctrines as the 'Public Domain' at Civil Law or of 'State Ownership' or 'State Control' at Common Law.

The importance of this distinction lies in the fact that water has historically been one way or the other the subject of 'appropriation', be it by the individual under private law or by the sovereign under public law. It is worth in this connection to underline the fact that, where private and public ownership of water co-exist, the sovereign enjoys a better ownership than private owners.

At private law, absolute ownership, the strongest private right in theory, soon became assorted with a whole array of limitations commanded by the rules of good neighbourliness which defined what became known as the regime of 'easements and servitudes' intended to protect the interests of third-parties in opening to them ways of access to, or a form of protection against third-party land based harmful effects of, this precious resource.

With the advent of the concepts of nationalities, of political states and of national territories, these private law principles were imported into nascent international law to become the well known but dead-locked concepts of 'absolute territorial sovereignty' and of 'absolute territorial integrity' sanctioning the behaviour of upstream and downstream riparian States like that of landlords at private law.

It is not until the beginning of the 19<sup>th</sup> Century that the hydrologist, the hydrogeologist and the water engineer defined the concept of the hydrological cycle as the time-space manifestation of water which contributed the long awaited definition of the water resources as the 'thing' so much looked after by the lawyers. Not quite, though, until the Water Resources Committee of the International Law Association finally formulated the concept of the 'international drainage basin' within the framework of its Helsinki Rules in 1966.<sup>3</sup>

It is opportune at this stage to recall the definition of the drainage basin as has been couched by the ILA in Article 2 of the Helsinki Rules : "*An international drainage basin is a geographical area extending over two or more states determined by the watershed limits of the system of waters, including surface and underground waters, flowing into a common terminus.*"

It follows that any water resource is measurable within the cup or receptacle formed by the surface watershed collecting atmospheric waters, their run-off into surface streams and

percolating waters into subterranean streams down to where both discharge into their common terminus, usually the sea, a definition applying to both national, or internal, and international basins.

The only exception suffered by this definition relates to contained aquifers, or fossil waters, which, like still waters, are measurable and therefore, as in the case of the water contained in one's cup, receptacle, pond or shallow well, is subject to appropriation and regulated at law as any other owned 'thing' or object.

## 2.2 The Legal Regime of Water and Water Resources

It is now a generally accepted principle that water resources, with the exception of water contained in one's cup, receptacle, pond or shallow well and contained, or fossil waters, should not be appropriated as these constitute a common good for those who depend on them.

If, today, the concept of the 'community of interests' has practically become an evidence at international law as concerns basin states, domestic law has not yet succeeded in freeing itself, in respect of water resources, from the concepts of Public Domain or of State Control; and although the concept of State Control could be interpreted as going away from that of state ownership, in practice it comes to the same as far as private rights are concerned.

The reason for this situation stems simply from the fact that if, at international law, shared water resources are evidently apprehended by the drainage basin, the domain of domestic law is the national territory which has nothing to do with a hydrologic unit. Drainage basins are either wholly comprised within the national territory or form part of an international basin. Historically, therefore, states have long left the resource in the dominion of individual landowners with, as the only limitations to their absolute ownership rights, the regime of easements and servitudes assorted with the principle of civil liability for damages and its corollaries of restoring the prior situation (the Roman Law *clausula rebus sic stantibus*) or of indemnifying (the Roman Law *restitutio in integrum*) themselves based on the moral principle of 'no harm' which the legal scholars of the 18<sup>th</sup> Century have couched in Latin terms as the maxim '*sic utere tuo ut alienum non laedas*' in order to probably give it a legal connotation which it does not have.

More recently, however, states have gradually excerpted navigable watercourses, then rivers declared public and ultimately all water resources from the private dominion in order to vest the national water resources in the State thereby leaving to individuals rights of utilization granted by means of permits, licenses and/or concessions; excepted, though, are those waters used for limited drinking, household and animal watering purposes which remain free of access to the riparian owner.

A somewhat similar trend of thoughts followed at international law. In order to try and resolve the dichotomy between the concepts of ‘absolute territorial sovereignty’ and ‘absolute territorial integrity’, legal scholars developed that of ‘limited territorial sovereignty’ based on the import from domestic law of the so-called maxim ‘*sic utere tuo ut alienum non laedas*’ the acceptance of which as a principle has received but little recognition at international law.

If, at international law, the concept of ‘community in the waters’, or of the ‘community of interests’ is now gradually substituting for those of ‘absolute territorial sovereignty’ and ‘absolute territorial integrity’, Article 4 of the Helsinki Rules establishes, limitatively, that “*Each Basin State is entitled, within its territory, to a reasonable and equitable share in the beneficial uses of the waters of an International Drainage Basin.*” It is noteworthy in this connection that States are no longer to be the appropriators of international water resources which are held in trust by the community of Basin States for an equitable sharing of the right to use them in the common interest.<sup>4</sup>

Expressed in practical terms, by adopting the principle of ‘equitable utilization’ the Basin States recognize that water cannot be quantitatively apportioned in an equitable fashion as any such quantitative apportionment, while equitable at the time of allocation, soon becomes inequitable due to seasonal changes in the hydrology and water use patterns within the basin, not to mention the periodic variations of the hydrologic cycle and unpredictable climatic alterations.<sup>5</sup>

To be equitable, the allocation of the waters is to be expressed in percentages of the total available resource in such a way that, if corresponding quantities of water do vary in time, all water users are affected or benefit in equitable proportions.

As a result, it may be said that the Helsinki Rules have achieved the transfer from the historical quantitative apportionment by States of international water resources into a new qualitative system of allocating to the Basin States an equitable share in the beneficial use thereof.

At this time, domestic law could gain immensely from such a system as developed at international law by holding the national water resources no longer in ownership or under any other form of preferred sovereign right but in trust for their equitable utilization by basin water users. Such a system, as will be seen later on, is in fact not different from that known by traditional societies or from that which prevailed in Europe until the French Revolution.

### 2.3 Integrated Water Resources Management

The water resources literature is replete with such terms as ‘rational management’, ‘conjunctive use’, ‘optimum use’, ‘environmental management’, ‘sustainable development’,

‘sustained yield’, ‘integrated resources conservation and development’, ‘equitable utilization’ and the like, each most probably appropriate within its particular field of specialization but none being of general application.<sup>6</sup>

To take but a trivial example as close as possible to water, a banker manages liquidities : cash in, cash out, cash balance, deposits, savings, reserves, investments, yields, spendings, cost accounting, loans, rate fixing and the like. Water resources, as the wealth of the community, require but the same kind of manager.

Water resources within the drainage basin need to be inventoried, quantitatively and qualitatively; the water demand needs to be assessed, and no more than available water may be allocated under pain of bankruptcy of the water bank. Water resources must be protected, quantitatively and qualitatively; they must be developed and used more efficiently in order to increase their availability. Water resources must be used in the best possible way, both quantitatively and qualitatively, in order benefit all users equitably. As is now recognized, surface and underground waters must be used conjunctively and the safe yield of underground water resources must be protected. Water resources must be managed in such a way as to respect the environment and, notwithstanding the assertions of the environmentalists, all natural resources, including man, must be managed in a way respectful of the environment because there is nothing on earth called the ‘Environment’ that is in any way manageable ! May be different environments or sets of environment, but no ‘Environment’ as such.

Therefore, ‘integrated water resources management’ should be construed as the sum of activities that will ensure ‘the conservation, development and utilization of the water resources of the drainage basin for the benefit of the basin community’.<sup>7</sup>

Under such a principle, there is no room for ‘optimum’ conservation, development or use as the optimization of one element would by definition have to be at the expense of the others. The criterion instead should be ‘balanced’ conservation, development and utilization which, in the legal realm, is expressed as ‘equitable’.

And, as with the definition of the drainage basin, that of integrated water resource management is applicable to the waters of both internal and international basins, let alone captured aquifers or fossil waters and, who knows, may be icebergs one day !

#### 2.4 The Water Resources Management Plan

The recognition of such principles as those of the ‘community interest’ and of ‘equitable utilization’ no doubt constitute the achievement of the 20<sup>th</sup> Century in water resources legal doctrine, if not in state practice. In promoting such principles and in setting-up mechanisms for the administration of international water resources and for the settlement of disputes, the Helsinki Rules omitted however to institutionalize the necessary instrument to convert the still subjective concept of ‘equitable utilization’ into an objective term of reference for integrated water resources management : ‘the water resources management plan’.<sup>8</sup>

There is no need here to elaborate on the planning function and its intrinsic technical, economic and social parameters which have been amply developed by the water resources engineer, economist and planner.<sup>9</sup> What needs to be stressed, however, is that international water resources management will always remain a highly political affair in the hands of sovereign states and that the only way to limit political intolerance in water affairs is by obliging states to make their decisions based on the evidence of bare, technical facts, economic realities and social imperatives.<sup>10</sup>

As has been seen before, states sharing the same basin need one ‘banker’ to manage their common water resources. And like the banker, the water resources manager has to establish the balance sheet of the available water resources, i.e., the quantitative and qualitative inventory of existing water resources, the quantitative and qualitative inventory of existing water uses, the quantitative and qualitative inventory of the water demand in order to compile the balance, which may be positive or negative, of available waters for an equitable allocation of corresponding water use rights.

Of paramount importance is to recall that a water resources plan is never complete; it is a dynamic, ongoing exercise requiring continued adjustment in accordance with changing hydrologic, economic and social conditions. In this sense, the Member countries of ESCWA enjoy an inventory status far more advanced than most international basins under development and should therefore no longer wait before initiating or, in some instances such as with the Nile, Jordan or Shatt-al-Arab Basin, actively pursuing their water resources planning exercise.<sup>11</sup>

### **3. Traditional Societies and Islamic Water Law<sup>12</sup>**

As all ESCWA Member countries are Moslem countries which observe Islamic Law, it is essential here to briefly recall the basic principles of Islamic water law as these are enshrined in the *Sharia* and practiced under Moslem customary law (religious ‘*urf*’ and man-made ‘*ada*’).

The cornerstone principle of Islamic water law enounced by Prophet Mohammad establishes that ‘water is a gift of Allah (blessed be His Name) entailing for man a religious obligation deriving from the very nature of water out of which every living thing was created.’ Further, Prophet Mohammad established the principle that ‘free access to water is a right of the Moslem community.’<sup>13</sup>

Considering in addition that, under Islamic Law, the legal status of land comprises not only public lands (‘*Miri*’) and private lands (‘*Mulk*’ or ‘*Milk*’) as in Western law, but such further categories as religious endowment lands (‘*Waqf*’), i.e., the use of which is reserved for pious foundations (mosques, cemeteries, community fountains, Koranic schools, etc.), and vacant lands (‘*Mawat*’) which belong to the community and on which only use rights may be exercised, it is not surprising to find that water resources naturally follow a similar

classification.<sup>14</sup> As a result, under Molsem customary law, the administration of water rights has always taken precedence over the purely academic water ownership question.

Furthermore, until the 19<sup>th</sup> Century when they acquired independence following the fall of the Ottoman Empire and until the end of colonial rule in the early 20<sup>th</sup> Century, traditional Moslem communities were not organized as western democratic States but as communities under the traditional hierarchical authority of the Sultan, himself a vassal of Allah (blessed be His Name) in exactly the same way as Western Feudal Kings considered themselves prior to the French Revolution or until Emperor Napoleon, in a sign of supreme individual power, crowned himself !

This system of traditional relationships among God, man and nature was not only the one prevailing in the traditional Western World, but is also still present in such eastern living civilizations as the Hindu, Buddhist and Chinese, for instance, and, notwithstanding the recent birth of the Jewish State, this system still underlies the living fundamentals of traditional Hebrew communities (*'kibbutzim'*).<sup>15</sup> As to the purest traditional water management system, it is most probably that of Hindu Bali.<sup>16</sup>

It is opportune at this juncture to remind the proponents of the Western civilizations, whose scientific and material advances are praiseworthy, that there are still different, traditional civilizations living on Earth and which, manpower wise, largely exceed in number those of the Western World. Those civilizations are just different, and 'different' does not mean 'better' or 'worse' : it means just 'different' and calls only for mutual respect.<sup>17</sup>

In this sense it is noteworthy that, under Islamic Law, individual water rights have from the origin been highly regulated : private appropriation is limited to the water contained in one's cup, receptacle, pond or shallow well; if upstream land is entitled to irrigation first, water retained therefore 'should not reach over the ankle'; intakes on flowing water, diversion canals and groundwater wells are to be protected by a peripheral no-trespass area (*'harim'*); in order to limit private appropriation, water may not be sold; all individuals enjoy an unrestricted right to quench one's thirst and to water one's animals (*'haq-as-shafa'*) as riparian land owners are entitled to an unrestricted right to water their gardens and orchards (*'haq-as-shirb'*); while fishing rights are unrestricted for all.<sup>18</sup>

All other water uses are considered 'common' or 'collective' uses and are regulated in detail, always with a view to ensuring the community interest. So are irrigation rights from major and minor flowing waters, from intermittent streams (*'wadi'*)<sup>19</sup> as well as from man-made canals and waterworks, always providing for corresponding equitable cost sharing or manpower contribution arrangements. The use of groundwater resources by means of shallow wells, deep wells and underground water conveyance systems (*'falaj'*) are similarly highly regulated in accordance with that same principle of the 'community interest'.<sup>20</sup>

In fact, it may be said that all the principles underlying the Helsinki Rules are present, in substance, in Islamic customary law as it is in the customary law of all traditional societies.<sup>21</sup> No wonder, therefore, that the Member States of the United Nations Economic Commission for Africa and those of the Mekong Committee in South East Asia have been among the first emerging nations to formally subscribe to the Helsinki Rules!<sup>22</sup>

#### **4. Domestic and International Water Resources Law**

The fundamental difference between national, or domestic, and international law lies in the fact that, if at domestic law, there is a legislator enabled by the Constitution and a judicial power capable of ensuring law enforcement, international law lacks both.

##### **4.1 International Water Resources Law**<sup>23</sup>

Notwithstanding the hopes placed first in the League of Nations and its Permanent Court of International Justice and, subsequently, in the United Nations with its Security Council and Court of International Justice, one has to realize that unless States are prepared to abandon part of their sovereignty in favour of some type of ‘supra-national’ entity, such institutions, while extremely useful as discussion fora, are bound to remain limited by the veto power of a privileged few and, irrespective of their name as ‘courts’, to serve but as mere arbitral tribunals. Indeed, State sovereignty remains a political absolute and limitations thereto will only be acceded to on a strictly voluntary and reciprocal basis.<sup>24</sup>

This does not mean, however, that there is no international law. Very much to the contrary, but subject to some qualifications. According to Article 38 of the Statute of the International Court of Justice which has been ratified by a very large number of members of the international community, the sources of international law are : a) international conventions, whether general or particular; b) international custom as evidenced by a general practice accepted as law; c) the general principles of international law; and d) judicial decisions and the teaching of the most highly qualified publicists of the various nations, ‘as subsidiary means for the determination of rules of law’.

The first source, conventional or treaty law, consists in the bulk of specific treaties and/or conventions entered into by States over time.<sup>25</sup> General conventions are those promoted by international organizations and offered for voluntary ratification by member states or for adhesion by non-member states. Such conventions, e.g., the 1921 Barcelona Convention on the freedom of navigation and the 1923 Geneva Convention on the development of hydro-electric power, for instance, generally receive few ratifications. The reason is probably that sovereign states prefer to commit themselves on specific matters rather than on so-called principles of general application.

The second source, international custom as evidenced by a general practice accepted as law, considers the actual behaviour of states as reflected by the international treaties and conventions which they have executed. For an international custom to be so recognized, such treaties and convention must however evidence (i) that signatory states systematically refer therein to the same principles when applied to similar conditions and (ii) that they are convinced of the obligatory force thereof.

The third source, the general principles of international law, aside from those of 'law and justice' incorporate in fact mere moral precepts such as the obligation to respect signed treaties (*'pacta sunt servanda'*) or the so-called no-harm clause (*'sic utere tuo ut alienum non laedas'*) and its corollary at water law expressed as the 'natural flow' doctrine the respect of which is left in practice to the free will of sovereign states. Indeed, even if a state is recognized in breach of any such principle by the International Court of Justice, enforcement of the Court's sentence is left to the traditional remedies at international law, i.e., retorsion measures such as embargo, or war.

As to the fourth source, judicial decisions and the teaching of the most highly qualified publicists, and although labeled 'subsidiary', it has undoubtedly considerable weight in identifying what may be called the 'consensus' of the community of nations, which consensus is not without having a determinant coercive power on individual States.

In the absence of a supra-national legislator, and considering that the above sources are listed according to the way in which the International Court of Justice is to consider them when attempting to resolve an international dispute, it may be argued that the sources of international law, in essence, comprise:

- a) customary rules as evidenced by international treaties and conventions; and
- b) judicial decisions and the teaching of the most highly qualified publicists, as a subsidiary source.

If the application of court decisions as a subsidiary source of international law does not require qualification, the matter of how to consider the teaching of the most highly qualified publicists, i.e., the doctrine, deserves some comment.

Such works as the Helsinki Rules of the International Law Association,<sup>26</sup> the Bellagio Draft Treaty<sup>27</sup> or, to a certain extent, the Draft Convention prepared by the International Law Commission (ILC) of the United Nations<sup>28</sup> do fall into this category as do all studies, books and articles in Law Journals and other similar publications contributed by scholars of international law.

The work of the Anglo-American International Law Association undertaken as from 1958 in continuation of that initiated by the European 'Institut de Droit International' in 1911 and which produced the 1966 Helsinki Rules, as complemented and supplemented through 1996, is commonly labeled 'codification of international law', a term which may be misleading.

Indeed, to the Civil Law lawyer, ‘codification’ has the meaning of ‘making law’, a function which is definitely not that of the doctrine. To the Common Law lawyer, however, ‘codification’ may mean making law by writing out recognized Common Law rules into a Code of laws; it may also mean, simply, ‘stating the law’, i.e., declaring what the law is, or should be.

It is evident that the Helsinki Rules are merely declaratory of what the rules of international law state or should state. As a matter of fact, great care has been taken by their authors in distinguishing between rules *de lege lata*, or which *shall* be considered as binding, and those *de lege feranda*, or which *should* in fact be considered as recommendations or as rules of law ‘in the making’ also sometimes referred to as ‘soft law’.

Symptomatic of this distinction is the fact that the ILC in undertaking its parallel drafting work felt the need to prepare a Convention intended to be submitted to Member Nations for ratification. This fact in itself evidences the ILC’s implied position that, in the absence of a general convention, or of a great number of specific treaties evidencing a rule of customary law, there is no international law.

It may be that the initiative of the ILC was to try and attract support to the recognition of the Helsinki Rules as, in fact, the contents of the Draft Convention adds little or nothing thereto.<sup>29</sup> Unfortunately, by having gone through the international political debate, the outcome is most disappointing in that the terminology carefully carved out, and the logical sequence engineered, by the ILA in drafting of the Helsinki Rules have been totally lost to the effect that, notwithstanding the large representation of states in the various ILC sessions, very few ratifications, if any, should be expected.

As to the Bellagio Draft Treaty, which falls into the same category as the Helsinki Rules, it constitutes a most interesting attempt at making a specific practical experience available to the international community in a ready-made treaty format. Considering that its two original authors have been active members of the ILA Water Resources Committee which produced the Helsinki Rules, this effort could have been expected to yield most rewarding results.

Unfortunately, if the Draft Treaty can no doubt serve as a useful tool in the specific field of transboundary underground waters, and although earnest attempts have been made in the commentary to try and make it applicable to both surface and underground waters, this effort, as stated by the authors themselves, will have fallen short of expectations due to the same situation as was faced by the ILC Draft Convention which, after it was submitted to a large political debate, suffered a complete revision. As the authors of the Draft Treaty themselves report : ‘Some of the substantive changes made do not meet fully the expectations and suggestions of our several contributors and advisers. Remaining inaccuracies and errors of judgment can be attributed only to the final revisers’.

Some examples of such discrepancies include the aim of the exercise itself, namely ‘to achieve joint, optimum, utilization of the available waters’ while, in the preamble, use is made of such expressions as ‘rational use and conservation’, ‘equitable basis’, ‘optimum and efficient use’, ‘rational management’ and ‘conjunctive use’, a series of conflicting propositions; at Article I, definition 4., ‘conjunctive use’ is defined as ‘the integrated development and management of surface and groundwater as a total water supply system’, a verbiage conflicting with prior definitions; at Article II. 1, mention is made of ‘reasonable and equitable development and management’ while, in Article II. 2., reference is made to ‘optimum utilization and conservation’; at Article V. 1, the creation and maintenance of a comprehensive and unified database is limited to ‘. . . pertaining to transboundary groundwaters’ in contradiction with the predicament of ‘conjunctive use’; the treatment of transboundary transfers at Article XI is so succinct as to serve no purpose whatsoever; and the protection of prior rights under Article XIV is most surprising within a framework treaty supposed to introduce flexibility in water allocation as suggested by the wording of Article VIII, 2 & 3.

The Bellagio Draft Treaty has nevertheless the merit of addressing such matters as Enforcement and Oversight Responsibilities, Comprehensive Management Plans, Planned Depletion and Inquiry in the Public Interest which constitute appreciable novelties.

When looking at the conventional law regime applicable to ESCWA Member States, and leaving aside those general international conventions and colonial treaties which may or may not have been extended by the colonial powers to their territories and possessions, it appears that, until the Peace Treaty of 1994 between Israel and Jordan, not less than 59 bilateral and multilateral treaties and conventions have applied since 1840 and/or still apply to Basin States in the Middle East.<sup>30</sup>

Besides the numerous conventions providing for the delimitation of frontiers or establishing the freedom of navigation on major watercourses of the region, it is interesting to note that, as early as 1913, customary water rights were protected along the watercourses of the Shatt-al-Arab basin; a dispute over water diversion was resolved in 1914 and water apportioned in 1921 in that same basin; natural resources development in the Orontes, Shatt-al-Arab and Jordan basins was provided for in 1922; the protection of existing water rights, the use of spring waters and flood control measures, animal watering, fishing, urban water supply and irrigation in respect of the Jordan, Litani and frontier wadis were agreed in 1923, as was the regime of Yarmuk water utilization in 1953 and the construction of the Maraqui dam in 1977; Nile irrigation in the Sudan was regulated in 1925 and 1936, hydropower uses in 1929, water apportionment between Egypt and the Sudan in 1952, Lake Victoria storage and hydropower production in 1953, to finally culminate in the water apportionment treaty of 1959; customary water rights were recognized in favour of riparian populations along the Jordan and Wadi Araba in 1926 and along the Bahr Koweik, Orontes and Shatt-al-Arab in 1929 with the mention, in the latter case, of ‘equitable rights’; the water regime of the Yarmuk and its tributaries between Jordan and Syria was re-affirmed in 1931; the construction of water conservation works on

the Euphrates and Tigris was agreed between Iraq and Turkey in 1946; the construction of the Owen Falls dam on the Nile in Uganda was approved by Egypt, the Sudan and Uganda in 1949, followed by an agreement on the exchange of meteorological and hydrological information among the same countries in 1950 and the 1959 Nile Waters Treaty between Egypt and the Sudan,<sup>31</sup> itself followed in 1993 by an agreement between Egypt and Ethiopia on the conservation and protection of Nile waters in accordance with international law and on the development of an effective co-operation among Nile Basin States based on the community interest; an agreement on the supply of fresh water to Kuwait was signed in 1964 with Iraq; flood control and pollution control measures in, as well as optimum use and division of the waters of, the Shatt-al-Arab were approved by Iraq and Iran in 1975 while Euphrates water releases after Syria impounded Al-Tawah Dam in 1975 were finally agreed to the satisfaction of Syria in 1982 and Euphrates water apportionment between Iraq and Syria was agreed to the satisfaction of Turkey in 1989,<sup>32</sup> the apportionment of the Orontes waters was agreed to in 1994 between Lebanon and Syria; and, finally, following the adoption in 1993 of the so-called Oslo Declaration of Principles between Israel and the PLO establishing the principle of equitable utilization of their shared water resources, the Gaza Strip and Jericho agreements of 1994, followed by the Peace Treaty between Israel and Jordan, sanctioned the concept of integrated water resources management and provided for the regulation of sewerage and groundwater exploitation, cost sharing and – unfortunately though – water apportionment, including that of the underground waters in the Arava Valley and Eastern Mountain Aquifer Basins, to culminate with the 1996 Framework Agreement between Israel, Jordan and Palestine, the first regional agreement for sharing water resources ever adopted in the Region.<sup>33</sup>

Of relevance, however, are a number of recent regional conventions such as the 1968 African Convention on the Conservation of Nature and Natural Resources which, although applicable only to Egypt as far as ESCWA Member countries are concerned, has formally adopted the ‘drainage basin’ concept; the 1970 Convention Establishing the Arab Center for Studies of Dry Areas and Arid Lands which is applicable, among others, to Iraq, Jordan, Kuwait, Lebanon, Saudi Arabia, Syria and Yemen in the ESCWA Region and which promotes the investigation of both surface and underground water resources and the irrigation of arid lands; the 1976 Convention for the Protection of the Mediterranean Sea Against Pollution and the 1980 Protocol for the Protection of the Mediterranean Sea Against Pollution from Land-Based Sources applicable, among others, to Egypt, Israel, Lebanon and Syria (for the Convention but only Israel and Lebanon for the Protocol); the 1978 Regional Convention between Bahrain, Iran, Iraq, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates for Co-operation in the Protection of the Marine Environment from Pollution which regulates the prevention and abatement of marine pollution in the Persian Gulf from land-based sources and establishes the principle of civil liability and of compensation for damages; and the 1982 Regional Convention between Jordan, Saudi Arabia, Somalia, Sudan, the Arab Republic of Yemen and the People’s Republic of Yemen for the Conservation of the Red Sea and of the Gulf of Aden Environment which enjoins contracting states to take all reasonable measures to prevent

pollution originating from land-based sources, all regional conventions which, whether formally or informally, recognize the 'drainage basin' concept as well as that of the inter-connection of surface and underground water resources.

Notwithstanding the terminology however, all these arrangements have but reduced the principle of equitable utilization to an effective quantitative apportionment of the waters shared among their contracting basin states.

In addition, these arrangements have almost all created some sort of international institution, be it a Frontier Delimitation Commission or a Boundary Commission, a Navigation Commission, an Irrigation Commission, a Joint-Commission, Committee or Co-ordinating Bureau, a Mixed-Commission, a Permanent Commission, a Water Regulation Committee, a Joint Permanent Technical Commission, a Joint-Committee for Economic Co-operation, Inter-State Commissions, a Regional Organization, a Commission of Mediation, Conciliation and Arbitration or a Judicial Commission, with or without dispute settlement powers. Most of these have appeared chronologically, replacing or duplicating each other; some never functioned, few are still operational in some sectoral aspects of water resources administration but none was structured for integrated water resources management under the principle of equitable utilization.

As has been recommended elsewhere, each international drainage basin should be equipped with an international institution responsible, initially, for inventory purposes, then for planning and, subsequently for plan implementation control, water rights administration and for the prevention and settlement of water disputes.

#### 4.2 National Water Resources Laws

If domestic law offers a comprehensive legal system structured on legislative, executive and judiciary powers giving both authority to the rule of law and ensuring its enforcement, international law has been shown to rest almost exclusively at the mercy of the strongest party. As has also been evidenced, however, international water resources law has developed faster than domestic water resources laws.

A majority of states, including a number of ESCWA Member States, confronted with water resources problems have by and large accepted the concepts of the drainage basin, of the conjunctive use of surface and underground waters and of the necessity to eradicate the water ownership privilege in order to effectively manage water use rights.<sup>34</sup>

Although national laws have now to be revised in order to institutionalize these new concepts, the mass of existing sectoral laws and regulations needs consolidation. But more important, as will be seen later on, is the absolute necessity to reorganize the water resources management function and to find a solution to the plague of inter-departmental duplication of functions and powers from the central government down to the water users' level.

To use contemporary examples in the Islamic World, such countries as Algeria, Libya and Tunisia which share international groundwater resources have recently embarked in a successful exercise of revamping their national legislation with the help of the 'Observatoire du Shara et du Sahel' (OSS) and of the Food and Agriculture Organization of the United Nations (FAO).<sup>35</sup> It is noteworthy in this connection that, with the exception of Tunisia, both Algeria and Libya have dispensed with the heritage of colonial law and have re-affirmed the principle that Islamic Law constitutes the basis of the national legislation. And if Tunisia has maintained the French system of the 'Public Hydraulic Domain', it had long ago integrated its well developed customary water rights administration into its legislative and institutional framework.

At the same time, Tunisia is the only one of these three Islamic States which has achieved the full integration of its water resources management institutional framework, vertically at the national, intermediate and local levels as well as horizontally by institutionalizing the required water resources management co-ordination at the inter-ministerial, inter-departmental and at the local water users' associations levels while ensuring the effective collaboration of all sectoral institutions depending from the other ministerial units at those same levels.<sup>36</sup>

This type of experiences are undoubtedly useful and may indeed serve as appropriate examples for countries wishing to modernize their water legislation. Two words of caution though. Firstly, each country having its proper hydrologic setting, legal and institutional traditions and historical heritage, there can be no such thing as a 'model water law'. While taking inspiration from adequate foreign experience, each State must make the effort to imagine its own legal framework based on its own realities. Secondly, if harmonization of the national legislations of States sharing international water resources<sup>37</sup> is desirable, copying from one another will only lead to confusion and misunderstanding on the part of the respective local populations. If there must be harmonization, it should not be of the laws and institutions, but of the fundamental principles of water resources management which are to be translated into an appropriate language in the particular legislation and institutional framework of each individual State.

Furthermore, the most ideal water law will remain academic unless its provisions are effectively enforced. To be enforceable, such provisions must be understandable by the water users communities and must be enforced by competent officers and/or administrators at all levels of government. Contrary to the views prevailing among the 'modernists', traditional societies are extremely well equipped in this respect as traditional water users communities have for ages managed their scarce water resources in accordance with those so-called, in fact re-discovered, 'modern' principles ! In many instances, rather than trying to impose a new institutional framework from the top down, governments would be well advised to take stock of their grassroot traditional institutional frameworks and to project them up to the national level.

#### 4.3 A Particular Issue : Water Pricing

A most vexing problem in water resources management has been, and continues to be, that of 'water pricing'.<sup>38</sup> Indeed, if it is unanimously recognized that investment in water resources development must be productive, Islamic water law and that of most traditional communities around the World do regard water as a sacred, not an economic, commodity escaping the mercantile realm. Water, as such, cannot be traded nor sold.<sup>39</sup>

Here again, there have been and still are exceptions, even in the Islamic system in which certain schools of law do recognize the trading of appropriated water (water contained in one's cup, receptacle, pond or shallow well) and of water rights. It nevertheless remains that flowing water, surface or underground, cannot be sold.<sup>40</sup>

Moslem customary water law has always recognized the principle that, if water may not be sold, the service of making water available has a cost that must be assumed by he who benefits from the water so made available. The whole traditional irrigation water management system by local water users' associations is based on the contribution in cash or in kind which the developers receive from those who benefit from their work.<sup>41</sup> Such a contribution has of course to be proportional to the benefit enjoyed and has one way or another to be measured in proportion with the amount of water supplied. As long as it is not the water that is so sold but the service of conveyance that is remunerated, there can be no objection.

The same principle applies to municipal water supply and although the water is metered, metering is only a way to compute a water conveyance charge that is proportional to the service provided.

A last remark needs to be made in respect of a recent tendency by authors and international organizations to promote the privatization of water distribution alleging that the private sector is more efficient than the public sector.<sup>42</sup> While it would indeed be wishful to contradict such a fact, but privatization being profit-oriented however, the concept of making a profit on water would definitely be seen as a hurting proposition within traditional environments. Access to water being considered one of man's sacred rights and knowing that the needy in all countries of the world will never afford the means to pay the full price of the water conveyance service, the supply of water for domestic purposes has always been, and will continue to have to be, subsidized. The generally applied system by which economically strong water users pay more in order to allow less privileged classes of water users to have access to the water they need is ethically correct and there is no reason to dispense with it.

One way to solve this apparent impasse could be to promote private supply and conveyance corporations operating under free economy criteria, but to subject these to the public concession regime in such a way that their profit making tendencies may be monitored and controlled by the state in the interest of the well being of the community.<sup>43</sup>

## 5. A New Vision

Again, the Member States of ESCWA, may be thanks to the political tensions in the Middle East, have gone a long way in taking stock of their water resources situation and have reached an unprecedented level of knowledge of their water resources and of their national and international legal and institutional requirements. Further studies are needed of course and will, as a matter of course, continue to be required on an ongoing basis. Rather than waiting for a never attainable perfection of knowledge, time has now come for the perusal of existing realizations and for the initiation of new, more far reaching ones, however no longer in isolation, but on a concerted and agreed basis.

The task is enormous, as are the required financial resources which the World Bank has estimated at some US\$ 45 to 60 Billion over ten years in the Plan of Action for the Middle East and Africa of which 70% should be financed by the Governments, 25% by donors and 5% by the private sector.<sup>44</sup> Some of the ESCWA Member countries enjoy substantial financial reserves; others do not.<sup>45</sup> But the World community and, in particular the European Community<sup>46</sup> and individual donor countries under the leadership of the World Bank,<sup>47</sup> are ready to inject whatever monetary resources are required to finance integrated water resources conservation, development and utilization provided that such an effort will lead to peace and stability in the Region.

Indeed, money is not at stake; money is available and will be made available. However not until donors will be satisfied that their investment will be productive and safeguarded by peace.

### 5.1 The National Framework

To be productive means that the end-users will have available and will be able to use water for their legitimate needs. And such a situation will not arise until national water resources legislation and institutions are such as to offer the required guarantees.

It is therefore suggested that ESCWA Member States proceed forthwith with the needed reform of their water legislation and corresponding institutional framework. To this effect, the FAO has long developed a methodology framed as a checklist of all subjects on which there should be appropriate legal provisions, including on the required institutional framework, elaborated in a logical sequence and ensuring comprehensiveness.<sup>48</sup> Monographs on most countries of the world have been published on this basis and can serve as useful illustrations. Again, these are not to be blindly copied but can offer useful examples on how different countries in different environments, be it hydrological, legal or historical, have addressed the same problems.

## 5.2 The International Framework

To be safeguarded by peace means that ESCWA Member States will have reached agreement on how they are to use their water resources, i.e., in such a way that their populations will be able to dispose of the water they are entitled to in order to satisfy their legitimate needs. And such a situation will not arise until the international water resources law recognized by those states and the ensuing institutional framework are such as to offer the required guarantees.

It is therefore suggested that those States elaborate a common water resources management denominator as the conceptual framework on which they can eventually agree. Here again, there are no miracle solutions : individual concordant declarations, bilateral or multilateral agreements or a regional water treaty ? Let those sovereign states devise the solution that they will find convenient, hoping again that, rather than merely copying from any so-called model, they will undergo the pain of formulating their own.

## 5.3 A New Conceptual Framework

As this working paper has attempted to demonstrate, rather than indulging into premature legal drafting, it is suggested that ESCWA Member States first reach agreement on a basic conceptual framework exempt from political bias.<sup>49</sup> Temporarily setting aside national territories, each water resources basin, whether national or international, should be apprehended on its own merits and the framing of an initial integrated water sources management plan elaborated or, where already in existence, actively pursued.

The factual situation, not the political desiderata, should come first. It is not to pretend that political exigencies will be ignored; only that, in front of a technically and economically formulated integrated water resources management plan, political argument will to a considerable extent be reduced to manageable dimensions.<sup>50</sup>

As has been seen, today, the Helsinki Rules constitute the best available conceptual framework at international law. It is suggested that ESCWA Member States adopt those Rules, not in their actual wording, but for the basic concepts which they contain:

- the basic concept of 'Community in the Waters' by opposition to those of Absolute Territorial Sovereignty and Integrity;<sup>51</sup>
- the 'Drainage Basin' as the basic hydrologic management unit;<sup>52</sup>
- the principle of 'Equitable Utilization' by opposition to those of 'Appropriation' and 'Apportionment';<sup>53</sup>
- the institutionalization of an 'International Water Resources Administration' or 'Administrations';<sup>54</sup> and
- the institutionalization of the 'exchange of information, consultation, negotiation, conciliation and arbitration procedure'.<sup>55</sup>

As the ESCWA Secretariat has been instrumental in fostering the co-operation of its Member States into those hydrologic, hydrogeologic and legal studies and in promoting the interest of the world community in the development of the water resources of the region, it is suggested that it pursue its efforts in obtaining from Member States that they either issue, individually, a 'Declaration of Principles on Integrated Water Resources Management' or sign, collectively, a Regional Convention on Integrated Water Resources Management' incorporating those principles.

It is further suggested that, as the Economic and Social Commission of the United Nations for Asia and the Pacific (ESCAP – formerly the Economic Commission of the United Nations for Asia – ECAFE) has done since 1957 for the Secretariat of the Committee for the Development of the Lower Mekong Basin, the ESCWA Secretariat, assisted by UNDP, the World Bank and international donors, provide support to the creation of Drainage Basin Commissions, Committees or Authorities for the various international basins in the Region.

Of particular interest in this connection is the device used by the United Nations in order to circumvent exacerbated political relationships among Mekong Committee Member States, namely, making available and funding the position of Executive Agent of the Committee in the person of an expatriate and flanking the Committee with an Advisory Board manned by a staff of seven internationally reputed experts covering the main disciplines constituting the Lower Mekong Basin Plan.

It is believed that proceeding along such lines can definitely confront purely political exigencies with a neutral, technical, economic and socially acceptable set of requirements and so effectively assist the Basin States concerned in reaching balanced heads of agreement.<sup>56</sup>

Finally, if the ESCWA Member States were to formally adhere to the same water resources management principles, most of their internal political problems with respect to water could possibly be resolved; at the same time, such a united front would undoubtedly reinforce considerably their negotiating powers both, individually, among themselves and, collectively, with their non-member neighbouring states.<sup>57</sup>

## Notes

1. See in particular : ***Transboundary Water Resources in the ESCWA Region – Utilization, Management and Cooperation***, E/ESCWA/ENR/1997/7, 10 September 1997, United Nations, New York, 1998 (Current situation; Trans-boundary surface-water resources & Major Regional aquifers; regional cooperation; with case studies on Egypt, Iraq, Jordan, Syria and the Gulf States); ***Updating the Assessment of Water Resources in ESCWA Member Countries***, E/ESCWA/ENR/1999/13, 12 October 1999, United Nations, New York, 1999 (Surface and underground water resources availability; water demand; national water legislations and institutions); ***From Scarcity to Security – Averting a Water Crisis in the Middle East and North Africa***, IBRD, Washington D.C., 1996 (MENA water crisis; Options and opportunities, including costing; The MENA Water Partnership Plan of Action).
2. For a detailed study of Islamic water law and Moslem customary water resources management and institutions, see : ***Water Laws in Moslem Countries***, Vol. 1, by Dante A. Caponera, FAO Irrigation and Drainage Papers Nos. 20/1, FAO Rome, Italy, 1973, pp. 1-35; and ***Principles of Water Law and Administration, National and International***, by Dante A. Caponera, A.A. Balkema, Rotterdam, Brookfield, 1992, pp. 66-74.
3. For a comprehensive discussion on the 1966 Helsinki Rules and subsequent Rules until 1996, see : ***International Law Association Rules on International Water Resources***, edited by Slavko Bogdanovic, Yugoslav Association for Water Law, Yugoslav Branch of the International Law Association in Novi Sad, and the European Centre for Peace and Development (ECPD) in Belgrade, Prometej, Novi Sad, Yugoslavia, 1999 (includes a consolidation of the 1966-1996 Helsinki Rules, with commentary).
4. ‘*Thus international river and aquifer systems are the most evident example of the general contradiction between historically grown political boundaries of sovereign states and natural borders of eco-geographical regions.*’, quoted from ***Water Disputes in the Jordan Basin Region and their Role in the Resolution of the Arab-Israeli Conflict***, Environment and Conflicts Project (ENCOP) Occasional Paper No. 13, by Stephan Libiszewski, Center for Security Studies and Conflict Research, Swiss Federal Institute of Technology, Zürich, Switzerland and Swiss Peace Foundation, Bern, Switzerland, August 1995, p. 69.
5. ‘*A changing climate would furthermore pose great challenges to international agreements on water distribution which may be concluded among the riparians of international water bodies. Traditionally, such treaties stipulate water amounts or quotas to be allocated to the parties involved. This is done on the assumption that the climate will remain stationary – i.e. variable in the short term but unchanging over time. Indeed, hydrologists and lawyers have few tools with which they can incorporate future changes of uncertain magnitude. A decrease in flow could make achieved agreements obsolete and revive old conflicts.*’, quoted from ***Water Disputes in the Jordan Basin Region and their Role in the Resolution of the Arab-Israeli Conflict***, op. cit., p. 23.

6. For an interesting study of the origin and meaning of the ‘sustained development’ concept, see : ***Le Partenariat euro-méditerranéen et la Tunisie***, by Slim Laghmani, in : ***Sustainable Development and Management of Water Resources: a Legal Framework for the Mediterranean***, edited by Sergio Marchisio, Gianfranco Tambourelli and Liana Peccoraro, Institute for Legal Studies on the International Community – CNR, Mediterranean Sustainable Development Law – MESDEL, Rome, Italy, 1999, pp. 25-29.
7. *‘The concept of the integrated approach to water resource management focuses on giving due consideration to technical, economic, social and engineering requirements during the planning of water resources development programs, as well as implementing inter-related activities in an efficient, integrated and comprehensive manner. It also calls for setting priorities that meet social expectations and the availability of financial resources. This, integrated water resources management implies an approach that is interactive, flexible and dynamic in the areas of policy planning, analysis and strategy implementation.’*, quoted from ***Updating the Assessment of Water Resources in ESCWA Member Countries***, op. cit., p.55; and *‘The fragmented, supply-oriented approach to water development must give way to integrated water management with emphasis on a partnership of water suppliers and eater users and on the conservation both of quantity and quality.’*, quoted from: ***From Scarcity to Security – Averting a Water Crisis in the Middle East and North Africa***, op. cit., pp. 4-5 .
8. *‘An integrated approach calls for planning to be carried out at the basin and national levels’*, quoted from ***Updating the Assessment of Water Resources in ESCWA Member Countries***, op. cit., p. 56. See in particular a methodological approach to water resources planning in : ***Transboundary Water Resources in the ESCWA Region – Utilization, Management and Cooperation***, op. cit., B. Methodology for Water Sector Planning, pp. 8-12.
9. *‘Although the theory of “equitable share” overcomes the two extreme doctrines of absolute territorial sovereignty and integrity, it does not provide a patent remedy to all water disputes. The mentioned factors to be considered in defining ‘equity’ remain in part conflicting, and the agreements do not state relative weights or priorities among them.’*, quoted from ***Water Disputes in the Jordan Basin Region and their Role in the Resolution of the Arab-Israeli Conflict***, op. cit., p. 70.
10. *‘In the current Middle East peace process Israel negotiates with each of its immediate neighbours separately. It is true that this was a pre-condition of the Jewish State to consenting to the Madrid opening conference, since it did not want to find itself alone against several opponents. But it also corresponds to the differing interests manifest in each track of the conflict. This holds true for both the political core issues and water-related disputes. It is a central issue of this paper that, although all bilateral trials of the conflict deal in principle with distribution of shared resources, the relative weight of water disputes and their interconnections with traditional concerns – political and territorial – are quite different within each.’*, quoted from ***Water Disputes in the Jordan Basin Region and their Role in the Resolution of the Arab-Israeli Conflict***, op. cit., p. 36.

11. For an interesting practical experience in basin planning see : *Water Resources Management in Spain*, by Antonio Fanlo Loras, published in : *Sustainable Development and Management of Water Resources: a Legal Framework for the Mediterranean*, op. cit., pp. 148-167.
12. For a review of customary water law in traditional societies, including Moslem customary water law, see : *Principles of Water Law and Administration, National and International*, op. cit., Chapter 2, Earliest Water Regulations and Management, pp. 11-25, Chapter 3, Section 3.1, First Period (fifth century AD-1158), pp. 43-46, chapter 4, Section 7, Customary Law, Chapter 5, Sections 3, Customary water law : Its importance, pp. 66-67 & Section 4, Water law principles in the Islamic system, pp. 68-74.
13. Ibidem, pp. 69.
14. See : *Water Laws in Moslem Countries*, op. cit., pp. 24-26.
15. For a brief overview of biblical precepts in water resources management, see : *Sustainable Water Development under Conditions of Scarcity: Israel as a Case Study*, by Hillel Shuval, published in : *Sustainable Development and Management of Water Resources: a Legal Framework for the Mediterranean*, op. cit., pp. 196-223.
16. See : *Principles of Water Law and Administration, National and International*, op. cit., pp.18-23 & 89-95.
17. 'This indigenous knowledge, the Bedouins' use of natural resources, how they view water and how they undertake decisions about it is an element that should be enshrined in a modern water culture for the urban populace.', quoted from *Water Demand as a Guide to Management*, by Fatma Bassiouni, published in : *Sustainable Development and Management of Water Resources: a Legal Framework for the Mediterranean*, op. cit., pp. 129-132.
18. See : *Water Laws in Moslem Countries*, op. cit., pp. 10-24.
19. For a description of intermittent streams within the ESCWA Region, see : *Transboundary Water Resources in the ESCWA Region – Utilization, Management and Cooperation*, op. cit., C. Trends in Development and Management of Water Resources in the ESCWA Region, p. 12.
20. See in particular : *Principles of Water Law and Administration, National and International*, op. cit., Chapter 4, Section 4.4, Groundwater law, p. 70
21. For an exemple of the integration of traditional water management practices in Western modern water law, see : *Water Resources Management in Spain*, by Antonio Fanlo Loras, published in : *Sustainable Development and Management of Water Resources: a Legal Framework for the Mediterranean*, op. cit., pp. 148-167.

22. See : the *African Convention on the Conservation of Nature and Natural Resources signed in Algiers on 15 September 1968* (Annex : A Selection of Annotated International Treaties, No. 42) and the *Joint Declaration of Principles for Utilization of the Waters of the Lower Mekong Basin adopted in Vientiane, Laos, on 31 January 1975 by the Committee for Coordination of Investigations of the Lower Mekong Basin (Cambodia, Laos, Thailand and Viet-Nam)* (ESCAP, Bangkok, Thailand, Mekong Committee Doc. E/CN.11/WRD/MKG/L.405, p. 19).
23. The analysis which follows is at substantial variance with the traditional approach to international water resources law as faithfully expounded, for instance, in : *Application of International Water Law to Transboundary Groundwater Resources, and the Slovak-Hungarian Dispute over Gabčíkovo-Nagymaros*, by Gabriel Ekstein, 19 Suffolk Transnat'l L.R. 67 (1995), Part I, pp. 1-10.
24. 'Agreements that restrict the sovereignty of a state are indications of the reciprocity of interests of the contracting parties.', quoted from : *Water Management in the Nile Basin: Opportunities and Constraints*, by Aziza Fahmi, published in : *Sustainable Development and Management of Water Resources: a Legal Framework for the Mediterranean*, op. cit., pp. 133-147.
25. On the importance of international conventional law and the protection of prior rights, see for example : *Water Management in the Nile Basin: Opportunities and Constraints*, by Aziza Fahmi, published in : *Sustainable Development and Management of Water Resources: a Legal Framework for the Mediterranean*, op. cit., pp. 133-147.
26. See : **Selected Annotated Bibliography**, 2 & 17.
27. See ; *Ibidem*, 9.
28. See : *Ibidem*, 14.
29. In fact, 'The ILC draft articles deal only with groundwater that is part of a river system. Groundwater not associated with rivers is not included.', quoted from *Transboundary Water Resources in the ESCWA Region – Utilization, Management and Cooperation*, op. cit., p. 66.
30. See : **Annex 1 : Selected Annotated Treaties and Conventions by States and by Basins.**
31. 'The legal and institutional arrangements that presently exist within the Nile basin reflect the disparity in use between the downstream and upstream riparians, The two downstream countries have allocated the main annual flow of the Nile (as measured at Aswan) between themselves, disregarding the needs and development targets of the upstream riparians.' and 'Various international forums have set out to encourage meaningful cooperation among Nile riparians in its utilization and management. Although these efforts constitute a step forward, basin-wide cooperation has not yet been achieved. All parties understand

and accept the need for cooperation but have failed to reach an agreement on the modalities, including the legal framework, for such a cooperation. Other factors contributing to this situation are the lack of political will and distrust among watercourse States; feelings of vulnerability and uncertainty in the two downstream States, particularly in Egypt, with the impact of upstream water resources projects; the absence of political stability in certain watercourse States; and the lack of adequate financial resources and technical expertise, especially in the upstream States.’, quoted from **Transboundary Water Resources in the ESCWA Region – Utilization, Management and Cooperation**, op. cit., pp. 26 & 27. In the same vein in respect of current Israelo-Palestinian relationships, see : **Legal and Institutional Problems of Water Resources Management in Palestine**, by Abdel Rahman Tamimi, in **Sustainable Development and Management of Water Resources: a Legal Framework for the Mediterranean**, op. cit., p. 236. For a dissenting opinion in respect of the Nile Basin, see in the same publication : **Water Management in the Nile Basin: Opportunities and Constraints**, by Aziza Fahmi, p. 133.

32. ‘The exploitation of the Euphrates river waters can be divided into two phases : during the first phase, from 1946-1960, no far-reaching water projects were undertaken with the exception of a project related to the collection of rainfall returns and the acquisition of hydroelectric-meteorological information. The second phase, from 1960 until now, has been marked by the construction of a series of water projects which were all exemplified by an almost complete lack of cooperation among the three riparian States.’, and ‘The main dispute over the Euphrates-Tigris waters stems from the different attitudes of the riparian States in regard to the international river or transboundary river. The Syrian Arab Republic and Iraq consider the Euphrates and Tigris to be international rivers, and consequently claim a share of their waters. Although Turkey recognizes the international character of these two rivers, , it only speaks of rational and optimal utilization of the single and unique cross-river basin, the transboundary waters or cross-border waters. Moreover, Turkey sees the unlimited use of these waters according to its needs as its most natural right. For transboundary watercourses, or rivers crossing borders, Turkey merely holds that the waters should be used in a fair, reasonable and optimum manner.’, quoted from **Transboundary Water Resources in the ESCWA Region – Utilization, Management and Cooperation**, op. cit., pp. 28-29.
33. ‘According to the Norwegian Foreign Ministry spokesman, the agreement, which will have to be approved by the three Governments, is intended to outline principles for cooperation on existing supplies as well as new sources, such as desalination, but does not include detailed plans for water management.’, quoted from **Transboundary Water Resources in the ESCWA Region – Utilization, Management and Cooperation**, op. cit., p. 36
34. For a review of the state of national water legislation and institutions in ESCWA Member countries, see : **Updating the Assessment of Water Resources in ESCWA Member Countries**, op. cit., pp. 70-75.

35. See : ***Législation et institutions des eaux souterraines en Algérie, en Libye et en Tunisie, Etude de droit comparé***, Etude réalisée pour l'Observatoire du Sahara et du Sahel (OSS) et pour l'Organisation des Nations Unies pour l'Alimentation et l'Agriculture (FAO), par Bernard J. Wohlwend, Consultant, Document OSS No. 2074, Tunis, avril 1997, 21 pp. (English version available at OSS, Tunis).
36. For an interesting overview, see : ***Water Management Legislation and Administration in Selected Mediterranean Countries***, by Stefano Burchi, in : ***Sustainable Development and Management of Water Resources: a Legal Framework for the Mediterranean***, op. cit., pp. 119-128.
37. *As regards the legal regime of international groundwater resources shared by these countries, and apart from two colonial treaties dealing with surface water resources and, in particular, water rights in the Oases of El Barkat and Febout between Algeria and Libya, the only international conventions applicable to Algeria, Libya and Tunisia are the 1968 African Convention on the Protection of Nature and Natural Resources, the 1970 Convention Establishing the Arab Centre for Studies of Dry Areas and Arid Lands and the 1976 Barcelona Convention on the Protection of the Mediterranean Sea against Pollution, the latter not being applicable to Algeria. See : ***Aspects de droit international liés à la gestion des eaux souterraines du Bassin du Sahara septentrional partagé par l'Algérie, la Libye et la Tunisie***, Etude réalisée pour l'Observatoire du Sahara et du Sahel (OSS) et pour l'Organisation des Nations Unies pour l'Alimentation et l'Agriculture (FAO), par Bernard J. Wohlwend, Consultant, Document OSS No. 2075, Paris, avril 1997, 12 pp. (English version available at OSS, Tunis).*
38. For a general discussion on water pricing, see : ***Updating the Assessment of Water Resources in ESCWA Member Countries***, op. cit., pp. 60-67 and, in particular, the quotation 'In most of the ESCWA countries, the perception of water as an economic good is met with scepticism by decision-makers and by the public because of socio-economic hardship in some countries, and by the knowledge that water has been traditionally provided free of charge or at prices substantially below production costs through different forms of subsidies.', at p. 61.
39. In this sense, see : ***Water Resources Management in Spain***, by Antonio Fanlo Loras, published in : ***Sustainable Development and Management of Water Resources: a Legal Framework for the Mediterranean***, op. cit., pp. 148-167 and pp. 236-243.
40. For an extremely interesting discussion on 'water ownership', 'water rights', and 'water pricing', see : ***Legal and Institutional Problems of Water Resources Management in Palestine***, by Abdel Rahman Tamimi, published in : ***Sustainable Development and Management of Water Resources: a Legal Framework for the Mediterranean***, op.cit., pp. 236-243.

41. *'Community-based associations that take responsibility for water delivery and system maintenance can improve services and help recover costs. In Tunisia, such associations have been functioning effectively since colonial times, and today control practically all tubewell irrigation schemes.'*, quoted from : ***From Scarcity to Security – Averting a Water Crisis in the Middle East and North Africa***, op. cit., p. 6.
42. Ibidem, p. 7-9.
43. For a discussion of the privatisation issue, see : ***Updating the Assessment of Water Resources in ESCWA Member Countries***, op. cit., pp. 75-79 and, in particular, the quotations *'Alternative arrangements such as management, sub-contracting, and contract concessions can be used to combine private administration with and public ownership.'* . . *'In many ESCWA countries, private administration and/or management may prove to be more appropriate than total privatization, from the security point of view, and would be an initial step in the direction of total privatization in the future.'*, at p. 77, and *'There is a strong belief that water is too important, to life and from the security standpoint of the region, to be given up to free market forces'*, at p. 79.
44. See : ***From Scarcity to Security – Averting a Water Crisis in the Middle East and North Africa***, op. cit., p. 17.
45. For a review of investments in water resources development in the ECWAS Region, see : ***Updating the Assessment of Water Resources in ESCWA Member Countries***, op. cit., pp. 8-9.
46. For an overview of the European Community's involvement in the development of water resources in the Region, see : ***The Management of Water Resources : A Priority Issue in the Framework of the Euro-Mediterranean Partnership***, by Ezio Martuscelli, published in : ***Sustainable Development and Management of Water Resources: a Legal Framework for the Mediterranean***, op. cit., pp. 252-256.
47. See : ***From Scarcity to Security – Averting a Water Crisis in the Middle East and North Africa***, op. cit., p. 14-17.
48. See : **Annex 2 : Guidelines for the Inventory and Drafting of National Water Legislation**
49. *'Water policy is more likely to be influenced by a country's upstream or downstream position within a basin than by international law. For most riparians the only constraints imposed on national water policy are the fear of setting unfavourable precedents in further dealing with neighbouring countries and the disapproval of the international community.'*, quoted from ***Transboundary Water Resources in the ESCWA Region – Utilization, Management and Cooperation***, op. cit., pp. 64-65.
50. *'Palestinian authors often point out the contradiction between Israel's insistence on its downstream riparian rights to the West Bank groundwaters on the one hand, and its*

*practice of making the best use of its upstream position in the case of the Gaza Strip aquifer on the other.*’, quoted from ***Water Disputes in the Jordan Basin Region and their Role in the Resolution of the Arab-Israeli Conflict***, op. cit., p. 49.

51. As discussed in Section 2.2 above.
52. As discussed in Section 2.1 above.
53. As discussed in Section 2.2 above.
54. As discussed in Section 4.1, in fine. See also : the 1966 Helsinki Rules, Chapter VIII, ‘***Administration of International Water Resources***’ and Annex A, ‘***Guidelines for the Establishment of an International Water Resources Administration***’.
55. See : **Annex 3 : ‘Procedures for the the Prevention and Settlement of International Water Disputes’** and Annex B, ‘**Model Rules for the Constitution of the Conciliation Commission for the Settlement of Disputes**’, as reproduced from the 1966-1990 Consolidated Helsinki Rules, Chapter X.
56. *‘Israel is living in a shared geographic and hydrological area with Jordan, the Palestinians, Syria, Lebanon. In order to live together in peace we will undoubtedly be called upon to find ways of sharing our resources. It is in Israel’s interest to live in peace with its neighbours and some sharing of water resources to help meet essential and urgent requirements for domestic and urban water demand may be part of the price of peace. Israel’ first Prime Minister, David Ben Gourion said in May 1956 during the height of the water conflict with Syria over the use of the Jordan River that “It is better for Israel to give up some of its valuable water resources, if by doing so it can achieve peace with her neighbours.”*’, quoted from : ***Sustainable Water Development under Conditions of Scarcity: Israel as a Case Study***, by Hillel Shuval, published in : ***Sustainable Development and Management of Water Resources: a Legal Framework for the Mediterranean***, op. cit., pp. 196-223.
57. In this sense : *‘International law cannot decide the allocation of waters of the Euphrates and Tigris. Nonetheless, law provides a basis for negotiation. Equitable utilization is inherently flexible. It will not produce definitive solutions and allocations, but will serve as a foundation for negotiation and cooperation. An international watercourse agreement should lay down rights and obligations of riparians more precisely. In addition to the agreement, a joint watercourse institution is necessary to realize cooperation among watercourse states. To reach such an agreement, inventory studies of water and land resources of all the parties must be completed. This will enable them to base their needs on objective criteria, rather than subjective political ambitions.’*’, quoted from ***The Euphrates-Tigris basin : An overview and opportunities for cooperation under international law***, by Ibrahim Kaya, op. cit., p.8.

## Selected Annotated Bibliography

1. *Rivers in International Law*, by F.J. Berber, Stevens-Oceania, London & New York, 1959.

A pre-1966 Helsinki Rules review of international law applicable to international rivers. Prof. Berber has been one of the leading scholars who developed the Helsinki Rules. The ILA Water Resources Committee is in particular indebted to him for his contribution of the Rules on Flood Control and on the Protection of Water Resources and Water Installations in Times of Armed Conflicts.

2. *The Law of International Drainage Basins*, edited by A.H. Garretson, R.D. Hayton & C.J. Olmstaed, published for the Institute of International Law, New York University School of Law, Oceana Publications, Inc., Dobbs Ferry, New York, 1967, 916 pp.

A specialized doctrinal treaties on international law as applicable to the drainage basin with case studies on the Columbia, Nile, Plata, Indus and Colorado Drainage Basins.

3. *International Groundwater Law*, by Ludwik A. Taclaff & Albert E. Utton, Oceana Publications Inc., London, Rome, New York, 1981, 490 pp.

A compendium of doctrinal articles addressing the origin and development of domestic and international law to the management of underground water resources contributed by such leading scholars, among others, as Dante A. Caponera, Robert Emmet Clark, Robert D. Hayton, Ludwik A. Teclaff and Albert E. Utton.

4. *Water Laws in Moslem Countries*, Vols. 1 & 2, by Dante A. Caponera, FAO Irrigation and Drainage Papers Nos. 20/1 and 20/2, FAO Rome, Italy, 1973 & 1980, 223 & 312 pp.

A fundamental treaties on Islamic Water Law with comprehensive country studies in respect of Afghanistan, Bahrain, Brunei, Chad, Gambia, Indonesia, Iran, Iraq, Jordan, Kuwait, Libya, Malaysia, Mali, Mauritania, Morocco, Niger, Oman, Qatar, Saudi Arabia, Senegal, Somalia, Sudan, Syria, Tunisia, The People's Democratic Republic of Yemen, The Yemen Arab Republic and The United Arab Emirates.

5. For compendia on national water legislation, see FAO Legislative Studies on *Water Legislation in Central America, The Caribbean and Mexico* (No. 8), 196 pp., *in Selected European Countries*, Vol. I (No. 10), 257 pp., & Vol. II (No. 30), 155 pp., *in Selected African Countries* (No. 17), 267 pp., and *in South American Countries* (No. 19), 171 pp., published between 1975 and 1983. Comprise monographs on El Salvador, The Dominican Republic, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama (in Spanish only); on Belgium, Cyprus, England & Wales, Finland, France, Israel, Italy, The Netherlands, Spain, Turkey, The USSR, and Yugoslavia; and on Benin, Burundi, Ethiopia, Gabon,

Kenya, Mauritius, Sierra Leone, Swaziland, Upper Volta (Burkina Fasso) and Zambia (including a comprehensive historical study of African customary and colonial water resources laws and their subsequent codification and a comparative study of current water legislation in those countries).

6. ***Systematic Index of International Water Resources Treaties, Declarations, Acts and Cases By Basin***, Vol. I & II, Legislative Studies Nos. 15 & 34, FAO, Rome, Italy, 1978, 481 pp., and 1984, 332 pp.

A chronological compilation of some 3700 legal instruments governing international water resources from the early IX<sup>th</sup> century until 1983, with Tables classifying water resources by country and countries by basin.

For subsequent treaties, see <http://www.fao.org> selecting “Legal Office” - “FAOLEX” - “International Treaties”, FAO’s electronic legislative data base.

7. Other FAO Legislative Studies related to water resources law subjects include ***A Legal and Institutional Framework for Natural Resources Management*** (No. 9), ***Legal and Institutional Responses to Growing Water Demand*** (No. 14), ***The Law of International Water Resources*** (No. 23), ***Irrigation Users’ Organizations in the Legislation and Administration of Certain Latin American Countries*** (No. 24), ***International Groundwater Resources Law*** (No. 40), ***The Freshwater-Maritime Interface : Legal and Institutional Aspects*** (No. 46), ***Treaties Concerning the Non-Navigational Uses of International Watercourses – Europe*** (No. 50) and ***Preparing National Regulations for Water Resources Management*** (No. 52) published between 1975 and 1994.

A set of studies contributed by such authors, among others, as Julio A. Barberis, Guillermo J. Cano, Dante A. Caponera and Ludwik Teclaff. Of particular significance is Legislative Study No. 52 which reproduces and analyses existing national procedures and forms used for the administration of water resources, including groundwater exploration, exploitation and use permits, pollution abatement and control and municipal water supply as well as water pricing regulations.

8. ***Principles of Water Law and Administration, National and International***, by Dante A. Caponera, A.A. Balkema, Rotterdam, Brookfield, 1992, 260 pp.

The bible of the national and international water lawyer. A comprehensive treaties on water law, including a historical and comparative law review of the major customary and codified legal and institutional systems of the World as relate to water resources, and proposing a methodology for the drafting of both national legislation and international treaties together with their respective institutional frameworks and water rights administration procedures.

9. ***Transboundary Groundwaters : The Bellagio Draft Treaty***, by Robert D. Hayton and Albert E. Utton, International Transboundary Resources Center, School of Law, University of New Mexico, Albuquerque, NM, USA, November 1992, a bilingual publication, 414 pp.

Originally conceived by two eminent members of the ILA Water Resources Committee, and as subsequently revised by different political fora, the Draft Treaty presents the reader with an extensively annotated international framework agreement for the management of international aquifers based on the recent principles of international water law as applied to the US-Mexico border region.

10. ***Water Disputes in the Jordan Basin Region and their Role in the Resolution of the Arab-Israeli Conflict***, Environment and Conflicts Project (ENCOP) Occasional Paper No. 13, by Stephan Libiszewski, Center for Security Studies and Conflict Research, Swiss Federal Institute of Technology, Zürich, Switzerland and Swiss Peace Foundation, Bern, Switzerland, August 1995, 108 pp., available at :  
<http://www.fsk.ethz.ch/fsk/encop/encop.html>

A comprehensive analysis of the water resources situation in the Middle East, including both surface and underground, and of the role of water in the historical conflicts within the Region using the Jordan Basin as a case study, together with a detailed review of the peace negotiations since the early 1990s and until the 1994 Jordano-Israeli Peace Treaty. Carries a plea for the integration of diplomacy and water management. Contains a very rich specialized bibliography.

11. ***Application of International Water Law to Transboundary Groundwater Resources, and the Slovak-Hungarian Dispute over Gabčíkovo-Nagymaros***, by Gabriel Ekstein, 19 Suffolk Transnat'l L.R. 67 (1995), 44 pp.

A thorough examination of international water law as applicable to the physical nexus between surface and underground waters, and of the Slovak-Hungarian Dispute over Gabčíkovo-Nagymaros as a case study.

Slovakia submitted the dispute to the International Court of Justice in May 1994. In October 1997, the Court pronounced its judgment as follows :

*The Court found both states in breach of their legal obligations, as established in the treaty of 1977, which concerned the construction of dam structures in Slovakia and Hungary for the production of electric power , flood control and improvement of navigation on the Danube. As may be recalled, in 1989 Hungary suspended and subsequently abandoned completion of the project alleging that it entailed grave risks to the Hungarian environment and the water supply of Budapest. Slovakia denied these allegations and insisted that Hungary carry out its treaty obligations. In addition, it carried out an alternative project on its territory, whose operation had adverse effects on Hungary's access to Danube waters.*

*In its judgment, the Court found:*

*that Hungary was not entitled to suspend and subsequently abandon, in 1989, its part of the works in the dam project, as laid down in the 1977 Treaty between Hungary and Czechoslovakia and related instruments;*

*that Czechoslovakia was entitled to start, in November 1991, preparation of an alternative provisional solution (called "Variant C"), but not to put that solution into operation in October 1992 as a unilateral measure;*

*that Hungary's notification of termination of the 1977 Treaty and related instruments on 19 May 1992 did not legally terminate them (and that they are consequently still in force and govern the relationship between the parties);*

*and that Slovakia, as successor to Czechoslovakia, became party to the 1977 Treaty.*

*As to the future conduct, the Court stated that the two parties must negotiate in good faith as to the achievement of the objectives of the 1977 Treaty, and establish a joint operational regime for the dam in Slovak territory, unless they agree otherwise. It further determined that the parties must compensate each other for the damage caused, and that the accounts for the construction and operations of the works must be settled in accordance with the provisions of the Treaty. Finally, the Court held that in order to reconcile development with environment protection, the parties "should look afresh at the effects on the environment of the operation of the Gabčíkovo power plant. In particular, they must find a satisfactory solution for the volume of water to be released into the old bed of the Danube and into the side-arms of the river." (Court's Web Site: <http://www.icj.cij.org>)*

In spite of the numerous questions this case raised in respect of transboundary groundwaters, the Court simply stated that the amount of water to be released should be reconsidered.

(Courtesy communication of Ms Marcella Nanni, Water Law Expert and Alternate Member for Italy, ILA/WRC, Rome, Italy)

12. ***From Scarcity to Security – Averting a Water Crisis in the Middle East and North Africa***, IBRD, Washington D.C., 1996, 23 pp., available at : <http://www.worldbank.org/html/extdr/offrep/mena/Focus/BOOKLET.ARA.html>

A follow-up on the 1964 World Bank report 'A Strategy for Managing Water in the Middle East and North Africa'. This booklet reviews the current water crisis and promotes the concept of a partnership between water suppliers and water users at the local, national and regional levels, centralized policy-making and decentralized management, the privatization of the water supply function and a more efficient water pricing. The Bank's 10 year estimate of related development costs reaches between US\$ 45 and 60 Billion which it is ready to mobilize with the participation of donors under a proposed Action Plan

requiring the countries of the Middle East and North Africa (MENA) to improve water allocation and use efficiency and to make the water sector self-financing in order to ensure consistent water supply to the largest possible number of consumers.

13. ***Transboundary Water Resources in the ESCWA Region – Utilization, Management and Cooperation***, E/ESCWA/ENR/1997/7, 10 September 1997, United Nations, New York, 1998, 100 pp.

A comprehensive review of the hydrology and hydrogeology of the Region and of related international agreements in the major surface water basins and selected underground aquifers, of development strategies and policies in selected Member countries, of various development approaches and methodologies (economic, political and institutional, legal) and suggesting a new approach based on the combination of international law principles and decision theory, with two case studies involving one a surface and the other an underground water basin.

14. ***Convention on the Law of the Non-Navigational Uses of International Watercourses***, as drafted by the International Law Commission of the United Nations (ILC), text in :United Nations (1997b) Report of the Sixth Committee convening as the Working Group of the Whole (A/51/869), 11 April 1997.

The Convention was adopted on 21 May 1997 by General Assembly Resolution 51/229 with 106 affirmative votes, 26 abstentions and 3 negative votes (Burundi, China and Turkey), United Nations, 1997a, pp. 7-8. The Convention is subject to ratification.

15. ***The Euphrates-Tigris basin : An overview and opportunities for cooperation under international law***, by Ibrahim Kaya, ARIDLANDS No. 44, Fall/Winter 1998, Conflict Resolution and Transboundary Water Resources, 10 pp., available at : <http://ag.arizona.edu/OALS/ALN/aln44/kaya.html>

A most interesting article reviewing the hydrology, development and disputes in the Euphrates-Tigris Basin, followed by an analysis of recent international water law conceptual proposals and concluding on the necessity of a legal and institutional framework regulating basin planning so as to enable basin states to base their needs on objective criteria rather than subjective political ambitions.

16. ***Updating the Assessment of Water Resources in ESCWA Member Countries***, E/ESCWA/ENR/1999/13, 12 October 1999, United Nations, New York, 1999, 112 pp.

A comprehensive up-date of prior literature on the hydrology, hydrogeology, water demand and water resources management practices in the Region, including a discussion of prevailing national legal and institutional frameworks and the need to strengthen the same in order to provide for longer-term integrated water resources policy-making, planning and management, including privatization and active local participation.

17. *International Law Association Rules on International Water Resources*, edited by Slavko Bogdanovic, Yugoslav Association for Water Law, Yugoslav Branch of the International Law Association in Novi Sad, and the European Centre for Peace and Development (ECPD) in Belgrade, Prometej, Novi Sad, Yugoslavia, 1999, a bilingual publication, 277 pp.

The most up-to-date and trustful publication of the consolidated 1966 Helsinki Rules and Other Rules on International Water Resources Subsequently Adopted by the ILA up to 1996, together with the original commentary.

18. *Sustainable Development and Management of Water Resources: a Legal Framework for the Mediterranean*, edited by Sergio Marchisio, Gianfranco Tambourelli and Liana Peccoraro, Institute for Legal Studies on the International Community – CNR, Mediterranean Sustainable Development Law – MESDEL, Rome, Italy, 1999, 256 pp.

A compendium of several articles of which the most relevant to the subject of this working paper are (i) **'Le Partenariat euro-méditerranéen et la Tunisie'**, by Slim Laghmani, p. 25; (ii) **Water Management Legislation and Administration in Selected Mediterranean Countries**, by Stefano Burchi, p. 119; (iii) **Water Demand as a Guide to Management**, by Fatma Bassiouni, p. 129; (iv) **Water Management in the Nile Basin: Opportunities and Constraints**, by Aziza Fahmi, p. 133; (v) **Water Resources Management in Spain**, by Antonio Fanlo Loras, p. 148; **Sustainable Water Development under Conditions of Scarcity: Israel as a Case Study**, by Hillel Shuval, p. 196; **Legal and Institutional Problems of Water Resources Management in Palestine**, by Abdel Rahman Tamimi, p. 236; and **The Management of Water Resources : A Priority Issue in the Framework of the Euro-Mediterranean Partnership**, by Ezio Martuscelli, p. 252.

**SELECTED ANNOTATED TREATIES AND CONVENTIONS**  
**by**  
**STATES and by BASINS**

<b><u>ECOWAS Member States</u></b>	<b><u>Shared International Basins</u></b> (Surface & Underground)
<b>Bahrain</b>	East Arab Peninsula Groundwater Basin
<b>Egypt</b>	Nile; Nubian Sandstone Groundwater Basin
<b>Iraq</b>	Shatt-al-Arab, Wadi El Audja; East Arab Peninsula Groundwater Basin, Upper Gezira Groundwater Basin
<b>Jordan</b>	Jordan, Wadi Araba; Arava Valley Aquifer, East Arab Peninsula Groundwater Basin, East Mediterranean Groundwater Basin, Southern Jordan Captured Aquifer
<b>Kuwait</b>	East Arab Peninsula Groundwater Basin
<b>Lebanon</b>	Jordan, Orontes; East Mediterranean Groundwater Basin
<b>Oman</b>	East Arab Peninsula Groundwater Basin
<b>Palestine</b>	Jordan, Orontes; Coastal Aquifer, East Mediterranean Groundwater Basin, Mountain Aquifer of the West Bank
<b>Qatar</b>	East Arab Peninsula Groundwater Basin
<b>Saudi Arabia</b>	Wadi El Audja; East Arab Peninsula Groundwater Basin, Horan and Arab Mountain Basin, Southern Jordan Captured Aquifer
<b>Syria</b>	Bahr Koweik, Jordan, Orontes, Shatt-al-Arab; East Arab Peninsula Groundwater Basin, East Mediterranean Groundwater Basin, Horan and Arab Mountain Basin, Upper Gezira Groundwater Basin

**The United Arab Emirates**

East Arab Peninsula Groundwater Basin

**Yemen**

East Arab Peninsula Groundwater Basin

**Basin** (& Tributaries)

**Basin States**

**International Treaties**

**Bahr Koweik**

Syria, Turkey

6, 16, 20, 22, 44, 52

**Jordan** (Hesbani, Lake Huleh, Lake Tiberias, Nahr Banias, Wadi El Zatir, Wadi Es Simadi, Wadi Fajir, Wadi Hamarlulu, Wadi Sheikh, Yarmuk)

Israel (& National Water Carrier), Jordan (& King Abdullah Canal+Litani), Lebanon, Palestine, Syria

1, 5, 7, 8, 9, 11, 15, 18, 23, 28, 30, 37, 44, 49, 51, 52, 55, 56, 58

**Nile** (Blue Nile, Bahr El Jebel, Bahr, El Zeraf, Bahr el Ghazal, Sobal, Lake Victoria)

Burundi, Egypt, Ethiopia, Kenya, Rwanda, Sudan, Tanzania, Uganda, Zaire

12, 13, 19, 25, 29, 31, 32, 34, 35, 36, 38, 39, 40, 42, 43, 44, 54

**Orontes**

Lebanon, Palestine, Syria, Turkey

6, 8, 16, 20, 22, 44, 52, 57

**Shatt-al-Arab** (Euphrates, Tigris and Gunjan Cham)

Iran, Iraq, Syria, Turkey

2, 3, 4, 6, 8, 10, 14, 16, 17, 20, 21, 22, 26, 27, 33, 44, 45, 46, 47, 48, 50, 51, 52, 53

**The Arava Valley Aquifer**

Israel, Jordan

44, 51, 58

**The Coastal Aquifer** (extension of sub-aquifers into the Gaza Strip)

Israel, Palestine

55, 56

**The East Arab Peninsula Groundwater Basin**

Barhain, Iraq, Jordan, Kuwait, Oman, Qatar, Saudi Arabia, Syria, The U.A.E., Yemen

44, 50, 51, 52

**The East Mediterranean Groundwater Basin** (feeds, the Orontes & Jordan)

Jordan, Lebanon, Palestine, Syria

44, 51

**The Horan and Arab Mountain Basin** (from Golan Springs feeds the Yarmuk)

Jordan, Saudi Arabia, Syria

44, 50, 51

<b>The Mountain Aquifer of the West Bank</b> (Western & North-Eastern Aquifers)	Israel (Eastern Aquifer), Palestine	50, 55, 56
<b>The Nubian Sandstone Groundwater Basin</b>	Chad, Egypt, Libya, Sudan	44
<b>The Southern Jordan Captured Aquifer</b> (fossil waters)	Jordan, Saudi Arabia	44, 50, 51
<b>The Upper Gezira Groundwater Basin</b>	Iraq, Syria, Turkey	44, 52
<b>Wadi Araba</b>	Israel, Jordan, Palestine	7, 15, 44, 51, 55, 56, 58
<b>Wadi El Audja</b>	Iraq, Saudi Arabia	24, 33, 44, 50, 51
<b>Trans-Basin Water Conveyance</b>	Iraq, Kuwait	41, 44, 50

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### **A Selection of Annotated International Treaties** <sup>\*/</sup>

(Without reference to such universal treaties as the 1921 Barcelona Convention establishing the freedom of navigation for all riparian states or the 1923 Geneva Convention on the production of hydro-electric power, nor to the numerous Treaties of Friendship, Commerce and Navigation entered into by the Great Powers before the independence of ESCWA Member States).

1. **Separate Act Annexed to the Convention for the Pacification of the Levant between the British, the Austrian Empires, Russia and the Ottoman Empire signed at London on 15 July 1840** concerning the **Jordan** and **Lake Tiberias** (frontier demarcation at the **left bank**), in 1, MARTENS N.R.G., 156.
2. **Treaty between Persia (Iran) and the Ottoman Empire (Iraq) signed in Erzerum on 20 May 1847** (establishing the **boundary** on the **right bed** of the **Shatt-al-Arab** and instituting the **freedom of navigation** for **Persian vessels**), in 2, NORADOUNGHIAN, 383.
3. **Protocol between the United Kingdom (Iraq), Persia (Iran), Turkey and Russia Relating to the Delimitation of the Turco-Persian Boundary signed in Constantinople on 4 November 1913** (the boundary follows the **left bank** of the **Shatt-al-Arab**, and recognition of **customary water use rights** of the Persian populations, Art. 1), in 33 AITCHISON, 126.

4. *Proceedings of the 1914 Turco (Iraq) - Persian Boundary Delimitation Commission* concerning the Gunjan Cham, a tributary of the **Tigris** (the **boundary** follows the **Thalweg** in navigable channels and the **median line** in non-navigable channels; **dispute on surplus water and diversions** to the Persian city of Zurbatyia), not published but deposited with the Secretariat of the League of Nations.
5. *Franco-British Convention on Certain Points Connected with the Mandates for Syria and Lebanon, Palestine and Mesopotamia between the United Kingdom (for Israel, Iraq and Jordan (for Lebanon and Syria) signed at Paris on 23 December 1920* concerning the **Tigris**, **Euphrates** and **Yarmuk** (**irrigation**, Art. 3; **hydropower** development and forestry management, Art. 8; port construction, Art. 1; **frontier delimitation commission**, Art. 2; special railways and pipelines commission, Art. 3; common experts, Art. 8), in 22, LNTS, 355.
6. *Peace Treaty between France (for Syria) and Turkey signed at Angora on 20 October 1921* concerning the **Shatt-al-Arab** (Tigris), **Bahr Koweik** and **Orontes** Basins (water **apportionment** and **supply** for the City of Aleppo, Art. 12), in 54, LNTS, 178.
7. *League of Nations Mandate to the British Government for Palestine and Memorandum of the British Government Relating to its Application to Trans-Jordan signed at London on 24 July 1922*, as Approved by the Council of the League of Nations on 16 September 1922, concerning the **Jordan**, **Yarmuk**, **Dead Sea** and **Wadi Araba** (**frontier demarcation** on the **median line**, Memorandum, Art. 25; freedom of transit under equitable conditions across the Territories and **natural resources** development, Art. 18; jurisdiction of the P.C. I.J., Art. 16), in U.N. Doc. A/70.
8. *League of Nations Mandate to the French Government for Syria and Lebanon signed at London on 24 July 1922* concerning the **Orontes**, **Shatt-al-Arab** and **Jordan** (freedom of transit under equitable conditions across the Territories and **natural resources** development, Art. 11; jurisdiction of the P.C.I.J., Art. 20), in U.N. Doc. A/70.
9. *Exchange of Notes between the British and French High Commissioners Constituting an Agreement Respecting the Boundary Line between Syria and Palestine from the Mediterranean Sea to El Hamme signed in Paris on 7 March 1923 (together with the Final Report on the Frontier Demarcation between the Great Lebanon and Syria, and Palestine Pursuant to the December 23, 1920 Paris Convention* (in 113, BFSP, 355) concerning the **Litani**, the **Jordan** and its tributaries (**Hesbani**, **Lake Huleh**, **Nahr Baniyas**, **Lake Tiberias**, **Wadi El Zatir**, **Wadi Fajir**, **Wadi Hamarlulu** and **Wadi Sheikh**) (**frontier demarcation** in the **Thalweg**; navigation, fishing, protection of existing **water use rights**, **spring water** use; **flood control**, construction of a **dam** south of Lake Tiberias to control Lake Huleh and Lake Tiberias waters; compensation to flooded land owners; **frontier demarcation commission** and jurisdiction of a four member commission), in 22, LNTS, 364.

10. *Treaty between the United Kingdom (Iran) and Iraq signed in Baghdad on 10 October 1922 with Protocol of 30 April 1923* (concerning the freedom of commerce and navigation on the Shatt-al-Arab for any Member of the League of Nations, Art. 11), in U.N. Doc. A/70.
11. *Agreement of Good Neighbourship between Palestine, Lebanon and Syria signed at Helsingfors on 31 December 1923*, as amended on 2 February 1926, concerning the Jordan, Lake Huleh and Lake Tiberias (navigation, fishing, water supply, animal watering, irrigation, Art. 3; commission, Art. 12), amended version in 56, LNTS, 79.
12. *British Ultimatum of 22 November 1924* (declaring that the British Sudan Government will increase the area to be irrigated in the Gezira ‘to an unlimited figure as need may arise’), quoted in BERBER, F.J., *Rivers in International Law*, Stevens-Oceania, London & New York, 1959 (see : Annotated Bibliography, 1.).
13. *Exchange of Notes between the British Sudan and Egypt signed in Cairo on 26 January 1925* (establishing a Commission to examine the basin on which irrigation of the Sudan can be carried-out), in 130, BFSP, 135.
14. *Decision of the Council of the League of Nations Relating to the Turco-Iraq Frontier issued in Geneva on 16 December 1925* (midstream of the Tigris and tributaries, Art. 1), in 122, BFSP, 930.
15. *Agreement of Good Neighbourly Relations between Great Britain (Israel) and France (Syria/Lebanon) for the Territories of Palestine, on the One Part and for The Great Lebanon on the Other Part, signed in Jerusalem on 2 February 1926, as amended by Exchange of Notes dated 14-21 March 1926*, concerning the Jordan, Lake Huleh and Lake Tiberias and Wadi Araba (customary water rights, water supply, river-crossings, fishing and navigation, Art. 3; Commission, Art. 11), in 56, LNTS, 81 and 63, LNTS, 426.
16. *Convention of Friendship and Neighbourship with Protocol of Signature, Annexed Protocol and Note between France (Syria) and Turkey signed in Angora on 30 May 1926* concerning the Shatt-al-Arab (Euphrates), Bahr Koweik and Orontes Basins (frontier demarcation, Thalweg in the Euphrates; water supply for the City of Aleppo; irrigation, Art. 13; establishment of a Franco-Turkish Commission, Art. 2, with arbitration powers, Art. 14), in 54, LNTS, 195 and Note of 31 May 1926 (on the Statute of the Commission), in 125, BFSP, 665.
17. *Treaty between the United Kingdom, Iraq and Turkey Regarding the Settlement of the Frontier between Turkey and Ira ) signed in Angora on 5 June 1926, with Exchange of Notes of the Same Date (on Art. 14) and of 28 April 1927 (Rectifying the Annex to Art. I)* (Thalweg or median line on the Tigris, Euphrates and their tributaries; establishment of a Boundary Commission, Art. 3), in 64, LNTS, 374.

18. *Agreement between Trans-Jordan (Jordan) and the United Kingdom (Palestine) dated 20 February 1928 concerning the delimitation of the frontier* (Thalweg or median line on the **Jordan, Wadi Araba** and their tributaries), quoted in 50 A.J.I.L., 86 (1956).
19. *Exchange of Notes between the British Sudan and Egypt in Regard to the Use of the Waters of the River Nile for Irrigation Purposes signed in Cairo on 7 May 1929*, with in Annex, the 1925 Report of the Nile Commission, (irrigation and power uses for the **Sudan** subject to the prior agreement of the Egyptian Government; arbitration, Art. 4), in 93, LNTS, 44.
20. *Protocol between France (Syria) and Turkey Relating to the Control of the Boundary, of the Regime of the Frontier, of the Fiscal Regime Applicable to the Livestock Crossing the Border and of the Nomad, in Application of the Convention of 30 May 1926, and Protocol of the Franco-Turkish Commission signed in Ankara on 29 June 1929* (water rights of frontier and nomadic populations to the **Bahr Koweik, Orontes and Shatt-al-Arab**, Art. 6) in, ST/LEG/SER.B/12, 289 (in French).
21. *Convention of Commerce and Navigation with Protocol of signature between France (for Syria) and Turkey signed at Angora on 29 August 1929* (freedom of navigation, Art. 15; and arbitration, Art. 27), in 123, LNTS, 193.
22. *Final Protocol of the Boundary Commission between France (for Syria) and Turkey Acting in Conformity with the Treaty of 20 October 1921, the Convention of 30 May 1926 and the Protocol of 29 June 1929 signed in Aleppo on 3 May 1930* (Equitable utilization of the waters of the **Bahr Koweik, Orontes and Shatt-al-Arab Basins** for navigation, fishing, industrial and agricultural uses) in, ST/LEG/SER.B/12, 290 (in French).
23. *Franco-British Protocol Relative to the Settlement of the Frontier between Syria and Jebel Druze on the One Side and Trans-Jordan on the Other Side signed on 21 October 1931* (reaffirms the water regime of the **Yarmuk** and tributaries), see : Report by the British Government to the League of Nations on the Administration of Palestine and Trans-Jordan, Appendix V, I. 1 (c), 1932.
24. *Boundary Protocol between Iraq and Saudi Arabia signed in Uqair on 2 December 1932* (determination of the boundary line in **Wadi El Audja**), in 133, BFSP, 648.
25. *Letter Attached to the Treaty of Alliance between the British Sudan and Egypt signed in London on 26 August 1936* (Inspector-General of the Egyptian Irrigation Service in the **Sudan** to attend the Governor General's Council), in ST/LEG/SER.B/12, 107.
26. *Boundary Treaty and Protocol between Iraq and Iran signed in Teheran on 4 July 1937* (Thalweg, Art. 2; navigation of warships on the **Shatt-al-Arab**, Art. 11) in, 190, UNTS, 241.

27. *Treaty of Friendship and Neighbourly Relations and Six Annexed Protocols between Iraq and Turkey signed in Ankara on 29 March 1946* (Exchange of information on construction and conservation works on the Shatt-al-Arab, Protocol No. 1; establishment of a Joint Economic Commission and of a **Committee for the regulation of the waters of the Tigris and Euphrates**, Protocol No. 5; **Iraqi-Turkish Frontier Commission**) in, 37, UNTS, 226.
28. *Armistice Agreement between Israel and Jordan signed in Rhodes on 3 April 1949* concerning the **Dead Sea** (divided along a line which leaves only the western part of the **southern half of the Dead Sea to Israel**, as under the 1947 Partition Plan, while under the Mandate for Palestine the whole of the Dead Sea formed part of Palestine), in 226 UNTS, 274.
29. *Exchange of Notes between the British Sudan/Uganda and Egypt Constituting an Agreement Regarding the Construction of the Owen Falls Dam in Uganda signed in Cairo on 30-31 May 1949* (hydroelectric power and **control of the Nile waters** in accordance with the spirit of the Nile Waters Agreement of 1929), in 226, UNTS, 274.
30. *General Armistice Agreement between Israel and Syria signed in Hill 232 near Mahanayim on 20 July 1949* concerning the **Jordan** (delimitation of the **frontier**, Annex I; inclusion of the whole of the **Lake Huleh Basin** and of **Lake Tiberias within Israel**), in 42, UNTS, 329.
31. *Exchange of Notes between the British Sudan/Uganda and Egypt Constituting an Agreement Regarding the Construction of the Owen Falls Dam in Uganda signed in Cairo on 5 December 1949* (construction of the **dam and hydropower station**), in 226 UNTS, 280.
32. *Exchange of Notes between the British Sudan/Uganda and Egypt Constituting an Agreement Regarding Cooperation in Meteorological and Hydrological Surveys in Certain areas of the Nile Basin signed in Cairo on 19 January, 28 February and 20 March 1950* (joint cooperation and financial participation of Egypt), in 226, UNTS, 288.
33. *Exchange of Notes Constituting an Agreement between the U.S.A. and Iraq Relating to a Technical Co-operation Program of Water Resources Development signed in Baghdad on 11 December 1951, 28 April and 21 May 1952* (Irrigation, drainage and **groundwater exploration** in the **Shatt-al-Arab** and **Wadi El Audja Basins**) in, 212, UNTS, 183.
34. *Agreement between Egypt and the Sudan signed in 1952* (water **apportionment** for Nile irrigation), in Bulletin No. 973, Feature No. 130, Pro/14009, Public Relations Branch, Khartoum, The Sudan, 18 October 1952.
35. *Exchange of Notes (with Enclosures) between the British Sudan/Uganda and Egypt Constituting an Agreement Regarding the Construction of the Owen Falls Dam in Uganda signed in Cairo on 16 July 1952 and 5 January 1953* (Raising the level and use of the waters of **Lake Victoria** for storage and **hydropower production**), in 207, UNTS, 278.

36. *Agricultural, Forestry and Fisheries Program Agreement between the United States of America and Egypt signed in Cairo on 21 May 1953* (studies and projects in fisheries, forestry and industrial development, **water quality and use** improvement; **Egypto-American Joint Committee**), in 204, UNTS, 29.
37. *Agreement between Syria and Jordan Concerning the Utilization of the Yarmuk Waters signed in Damascus on 4 June 1953* (right to use water, **irrigation**, **hydropower**, Art. 8; **Joint Syro-Jordanian Commission**, Art. 11), in 184, UNTS, 15.
38. *Agreement between the U.S.S.R. and Egypt Concerning the Provision by the U.S.S.R. of Economic and Technical Assistance to the United Arab Republic in the First Stage Construction of the High Dam at Aswan signed in Cairo on 27 December 1958* (dam construction, **basin conversion** and irrigation system; Special U.A.R. Organization, Art. 3), in, 163, BFSP, 954.
39. *Agreement between Egypt and the Sudan for the Full Utilization of the Nile Waters, with Annexes, signed in Cairo on 8 November 1959* (water loss prevention works in the **swamps** of Bahr El Jebel, Bahr El Zeraf, Bahr el Ghazal and in the Sobal River; **cost and benefit sharing**; establishment of a **Permanent Joint Technical Commission**; construction of the **Sudd el Aali (Aswan) Dam** in Egypt and of the **Roseires Dam** on the Blue Nile in the Sudan), in 453, UNTS, 51.
40. *Protocol between Egypt and the Sudan Concerning the Establishment of the Permanent Joint Technical Committee signed in Cairo on 17 January 1960*, concerning the Nile, in ST/LEG/SER.B/12, 148.
41. *Agreement between Iraq and Kuwait Concerning the Supply of Kuwait with Fresh Water signed in Baghdad on 11 February 1964* (construction of a **pipeline and water supply** installations; national delegations, Art. 11; arbitration, Art. 13), in Iraq, the Weekly Gazette No. 45, 4 November 1964, p. 3.
42. *African Convention on the Conservation of Nature and Natural Resources signed in Algiers on 15 September 1968* (surface and underground water conservation, development and utilization by **drainage basin**, Art. V; fishing and protection of the aquatic environment, Art. VIII; prevention and control of water pollution, Art. V; establishment of **inter-state commissions**, Art. V; jurisdiction of the **Commission of Mediation, Conciliation and Arbitration** of the Organization of African Unity, Art. XVIII), available at the General Secretariat of the Organization of African Unity, Addis Ababa.
43. *Development Credit Agreement between the World Bank and Egypt on the Nile Delta Project (With Annexed General Conditions Applicable to Development Credit Agreements) signed in Washington on 17 April 1970* (financing of **drainage** works), in 767, UNTS, 163.

44. *Convention Establishing the Arab Center for Studies of Dry Areas and Arid Lands signed in Cairo on 9 September 1970* (regional studies relating to water resources, **geological and geomorphological** characteristics, economics of exploiting arid lands, **irrigation and drainage**), in The Weekly Gazette of the Republic of Iraq, No. 36, 8 September 1971, p. 3.
45. *Treaty of Delimitation and Good Neighbourliness between Iran and Iraq signed in Baghdad on 13 June 1975* (Thalweg, Protocol, Art. 2; freedom of navigation on the Shatt-al-Arab, Protocol, Arts. 7 & 9; **Mixed Commission** to prepare **navigation regulations**, Protocol, Art. 8; third-party good offices & arbitral tribunal, art. 6) in, 14, I.L.M. (1975), 1133.
46. *Agreement between Iran and Iraq Concerning Frontier Commissioners signed in Baghdad on 26 December 1975* (powers of Commissioners; **flood warning**, Art. 6, V; **pollution control**, Art. 6, VIII; **Permanent Commission**, Art. 19), registered under No. 14904 with the United Nations Secretariat.
47. *Agreement between Iran and Iraq Concerning the Rules Governing Navigation on the Shatt-al-Arab signed in Baghdad on 26 December 1975* (navigation maintenance and improvements; prevention of **pollution**, Arts. 3-6; **Joint Co-ordinating Bureau**, Art. 2; **settlement of disputes**, Art. 6), registered under No. 14905 with the United Nations Secretariat.
48. *Agreement between Iran and Iraq Concerning the Use of Frontier Watercourses signed in Baghdad on 26 December 1975* (optimum use and division of the waters, Art. 2; Joint Technical Commission; procedures for the settlement of disputes, Art. 6), registered under No. 14907 with the United Nations Secretariat.
49. *Agreement between Jordan and Syria dated June 1977* concerning the construction of the of the **Maqarin Dam** on the Yarmuk River, quoted in 21, M.E.Ec.Dig., 39.
50. *Regional Convention between Bahrain, Iran, Iraq, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates for Co-operation in the Protection of the Marine Environment from Pollution signed in Kuwait on 24 April 1978* (prevention and abatement of marine **pollution from land-based sources**, Art. 6; civil **liability and compensation** for damages, Art. 13; **Regional Organization** for the Protection of the Marine Environment; **Judicial Commission**), in 17, I.L.M., 511 (1978).
51. *Regional Convention between Jordan, Saudi Arabia, Somalia, Sudan, the Arab Republic of Yemen and the People's Republic of Yemen for the Conservation of the Red Sea and of the Gulf of Aden Environment signed in Jeddah on 14 February 1982* (appropriate measures to be taken for the prevention of marine **pollution from land-based sources**), in International Environmental Law, 982:13.

52. *Agreement between Iraq and Turkey Establishing the Joint Technical Committee for Regional Waters dated 1982* (Euphrates water releases after Syria impounded **Al-Tawah Dam** in 1975; participation of Syria since September 1983), quoted by Ibrahim Kaya in *The Euphrates-Tigris basin : An overview and opportunities for cooperation under international law*, in *ARIDLANDS*, No. 44, Fall/Winter 1998 (see : Annotated Bibliography, 14.).
53. *Joint Minutes Concerning the Provisional Division of the Euphrates Waters between Iraq and Syria dated 17 April 1989* (Intensification of consultations with a view to reaching a trilateral agreement with Turkey; **water apportionment** between Iraq and Syria of Euphrates **frontier waters with Turkey**), quoted in FAOLEX, irql5920.pdf irql5920.doc.
54. *Agreement Establishing the Framework for General Co-operation between Egypt and Ethiopia dated 1 July 1993* (Conservation and protection of **Nile** waters in accordance with international law; development of a framework for effective **co-operation among Nile Basin States** based on the **community interest**), quoted in FAOLEX, bi-16754pdf bi-16754.doc.
55. *Declaration of Principles on Interim Self-Government Arrangements between Israel and the Palestinian Liberation Organization signed in Oslo on 13 September 1993* (recognition of the parties' **water rights**; **equitable utilization**; establishment of a **Joint Committee for Economic Cooperation**), quoted in LIBISZEWSKI, S., Occasional Paper No. 13, August 1995, p. 78 (see : Annotated Bibliography, 10.).
56. *Agreement between Israel and the Palestinian Organization on the Gaza Strip and the Jericho Area signed in Cairo on 4 May 1994* (conservation, development and **use of water resources**, including **drilling**; water supply and **sewerage** systems operations; reservation of **Israeli water rights** and **PLO payment for water** supplied), quoted in LIBISZEWSKI, S., Occasional Paper No. 13, August 1995, p. 78 (see : Annotated Bibliography, 10.).
57. *Agreement between Syria and Lebanon Concerning the Division of the Waters of the Orontes River dated 20 September 1994* (water **apportionment**, Arts. 1-4; establishment of a **Joint Technical Committee**, Art. 5; Syria to maintain waterworks, Art. 6), quoted in FAOLEX, LEX-FAOC017698.
58. *Treaty of Peace between Israel and Jordan dated 26 October 1994* (application of the principles of international law and boundary delimitation, Annex I (a); recognition of **Israeli private ownership rights in certain areas under Jordanian sovereignty**, Annex I (b) & (c); **Jordan and Arava Valley groundwater** water apportionment, Annex II; arbitration, Art. 29), quoted in FAOLEX, LEX-FAOC017463.

59. **Framework Agreement on the Sharing of Water Resources between Israel, Jordan and Palestine signed in Oslo on 13 February 1996** (According to the Norwegian Foreign Ministry spokesman, the agreement, which will have to be approved by the three Governments, is intended to outline principles for cooperation on existing supplies as well as new sources, such as desalination, but does not include detailed plans for water management. However, this framework is considered to be very significant because it is the first regional agreement for sharing water that has been accepted), quoted in ***Transboundary Water Resources in the ESCWA Region – Utilization, Management and Cooperation***, E/ESCWA/ENR/1997/7, 10 September 1997, United Nations, New York, 1998, p. 36.

<sup>\*/</sup> To be found in : Systematic Index of International Water Resources Treaties, Declarations, Acts and Cases by Basin, Vols. I & II, Legislative Studies No. 15 & 34, FAO, Rome, Italy, 1978 & 1984; FAOLEX, available at : <http://www.fao.org>; and as referenced in the following treaty series and collections (or as referred to in the quoted sources) :

- A.J.I.L. : AMERICAN JOURNAL OF INTERNATIONAL LAW, American Society of International Law, Washington, 1977-1982
- AITCHISON : AITCHISON C.U., A collection of treaties, engagements and sanads relating to India and neighbouring countries. Revised and continued up to 1929 by the authority of the Foreign and Political Department, Calcutta, Government of India Central Publication Branch, 1929-1933, 14 Vols.
- BFSP : British and Foreign State Papers, 1812 – Compiled by the Librarian and Keeper of the papers, Foreign Office, London, James Ridgway & Sons, Piccadilly, 1841, about 160 vols.
- FAOLEX : Food and Agriculture Organization of the United Nations, Legal Office, Legislative Series, available at : <http://www.fao.org>, Legal Office, FAOLEX
- I.L.M. : International Legal Materials, Current Documents, American Society of International Law, Washington D.C.
- LNTS : LEAGUE OF NATIONS, Treaty Series, Publication of Treaties and International Engagements registered with the Secretariat of the League of Nations, 1920-1943, 205 vols.
- MARTENS N.R.G. : MARTENS, Gorges Frédéric De, Nouveau Recueil Général de Traités, conventions et autres transactions remarquables, servant à la connaissance des relations étrangères des puissances et états dans leurs rapports mutuels, Gottingue, Dietrich, 1843-1875, 20 vols.
- M.E.Ec.Dig. : MIDDLE EAST ECONOMIC DIGEST, London, (weekly).

- NORADOUNGHIAN : NORADOUNGHIAN, Gabriel Efendi, Recueil d'actes internationaux de l'Empire Ottoman. Traités, conventions, arrangements, bérats, lettres patentes et autres documents relatifs au droit extérieur de la Turquie, Paris, Librairie Cotillon, F. Pichon, successeur, 1897-1903, 4 tomes.
- ST/LEG/SER. B/12 : United Nations Legislative Series, Legislative Texts and Treaty Provisions concerning the utilization of international rivers for other purposes than navigation (United Nations Publication, Sales No. 63 V. 4), New York, 1963.
- U.N. Doc. A/70 : Terms of League of Nations Mandates, Lake Success, New York, October 1946.
- UNTS : UNITED NATIONS, Treaty Series, Treaties and international agreements registered with the Secretariat of the United Nations, 1946, 873 vols.
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**Guidelines for the Inventory and Drafting of National Water Legislation\***

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  - b) Soil erosion and siltation
  - c) Drainage and sewerage
  - d) Salinization
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\* Reproduced from : *Outline for the Preparation of a National Water Resources Law Inventory*, by Dante A, Caponera, FAO Background Paper No. 7, FAO, Rome, 1975.

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- e) Customary water law implementation

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**Procedures for the Prevention and Settlement of International Water Disputes\***

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[Article 53]

This Chapter relates to the procedures for the prevention and settlement of international disputes as to the legal rights or other interests of basin States and of other States in the states of an international drainage basin.

[Article 54]

Consistently with the Charter of the United Nations, States are under an obligation to settle international disputes as to their legal rights or other interests by peaceful means in such a manner that international peace and security, and justice are not endangered.

[Article 55]

1. States are under a primary obligation to resort to means of prevention and settlement of disputes stipulated in the applicable treaties binding upon them.
2. States are limited to the means of prevention and settlement of disputes stipulated in treaties binding upon them only to the extent provided by the applicable treaties.

[Article 56]

In using the waters of an international drainage basin, States individually or jointly as appropriate shall ensure prior assessment of the impact of programmes or projects that may have a significant transboundary effect on the environment or on the sustainable use of the waters.

[Article 57]

1. With a view to preventing disputes from arising between basin States as to their legal rights or other interests, each basin State shall furnish relevant and reasonably available information to the other basin States concerning the waters of a drainage basin within its territory and its use of and activities with respect to these waters.

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\* Reproduced from : *International Law Association Rules on International Water Resources*, edited by Slavko Bogdanovic, op. cit., pp. 174-192

2. Expenses for the collection and exchange of information, including the preparation of surveys, investigations and studies, and for establishing a regular information service shall be borne jointly by the basin States co-operating in these matters.

[Article 58]

1. When a basin State, regardless of its location in an international drainage basin, proposes to undertake, or to permit the undertaking of. A project that may substantially affect the interests of any co-basin State, it shall give that State notice of the project. The notice shall include information, data and specifications adequate for assessment of the effects of the project.
2. After having received the notice required by paragraph 1, a basin State shall have a reasonable period of time, which shall be not less than six months, to evaluate the project and to communicate its reasoned objections to the proposing State. During that period the proposing State shall not proceed with the project.
3. If a basin State does not object to the project within the time permitted under paragraph 2, the proposing State may proceed with the project in accordance with the notice.
4. If a basin State objects to the project, the States concerned shall make every effort expeditiously to settle the matter consistent with the procedures set forth in this Chapter. The proposing State shall not proceed with the project while these efforts are continuing, provided that they are not unduly protracted. If these efforts are unduly protracted, or an objecting State has refused to have resort to third party procedures for settlement of the remaining differences, the proposing State may, on its own responsibility, proceed with the project in accordance with the notice.
5. If a State has failed to give the notice referred to in paragraph 1 of this Article, the alteration by the State in the regime of the drainage basin shall not be given the weight normally accorded to temporal priority in use in the event of a determination of what is a reasonable and equitable use of the waters of the basin.
6. The notice and other communications referred to in this Article shall be transmitted through appropriate official channels unless otherwise agreed.

[Article 59]

Basin States shall consult one another on actual or potential problems concerning the waters of the drainage basin so as to reach by methods of their own choice a solution consistent with their rights and duties under international law. This consultation, however, shall not unreasonably delay the implementation of plans that are the subject of the consultation.

[Article 60]

In case of a dispute between States as to their legal rights or other interests, as defined in Article 53 above, they shall promptly enter into negotiations with a view to reaching a solution that is reasonable and equitable under the circumstances.

[Article 61]

1. If a question or dispute arises which relates to the present or future utilization of the waters of an international drainage basin, the basin States should refer the question or dispute to a joint agency and request the agency to survey the international drainage basin and to formulate plans or recommendations for the most efficient use thereof in the interests of all the States concerned.
2. The joint agency should be instructed to submit reports on all matters within its competence to the appropriate authorities of the States concerned.
3. The member States of the joint agency in appropriate cases should invite non-basin States that by treaty enjoy a right in the use of the waters of the basin, to associate themselves to with the work of the joint agency, or permit them to appear before the agency.

[Article 62]

If a question or as dispute is one which is considered by the States concerned to be incapable of resolution in the manner set forth in Article 61, they should jointly seek the good offices or request the mediation of a third State, of a qualified international organization, or of a qualified person.

[Article 63]

1. If the States concerned have not been able to resolve their dispute through negotiation or have been unable to agree on the measures described in Articles 61 and 62, they should form a commission of inquiry or an ad hoc conciliation commission, which shall endeavor to find a solution, likely to be adopted by the States concerned, of any dispute as to their legal rights.
2. The conciliation commission should be constituted in the manner set forth in Annex B to these Rules.

[Article 64]

The States concerned should agree to submit their legal disputes to an ad hoc arbitral tribunal, to a permanent arbitral tribunal, or to the International Court of Justice if :

- a) a commission has not been formed as provided in Article 63; or
- b) a commission has not been able to recommend a solution; or
- c) a solution recommended by a commission has not been accepted by the States concerned; or
- d) an agreement has not been otherwise arrived at.

[Article 65]

In the event of arbitration, the States concerned should have recourse to the Model Rules on Arbitral Procedure proposed by the International Law Commission of the United Nations at its tenth session in 1958.

[Article 66]

Recourse to arbitration implies the undertaking by the States concerned to consider the award to be given as final and to submit in good faith to its execution.

[Article 67]

The means of settlement referred to in this Chapter are without prejudice to the utilization of means of settlement of disputes recommended to, or required of, members of regional arrangements or agencies and of other international organizations.

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## **Annex B**

### **Model Rules for the Constitution of the Conciliation Commission for the Settlement of a Dispute** (in implementation of Article 63, paragraph 2)

#### Article 1

The members of the Commission, including the president, shall be appointed by the States concerned.

#### Article 2

If the States concerned cannot agree on these, each State shall appoint two members. The members thus appointed shall choose one member who shall be the President of the Commission. If the appointed members do not agree, the member-president shall be appointed, at the request of any State concerned, by the President of the International Court of Justice or, if he does not make the appointment, by the Secretary-General of the United Nations.

### Article 3

The membership of the Commission should include persons who, by reason of their special competence, are qualified to deal with disputes concerning international drainage basins.

### Article 4

If a member of the Commission abstains from performing his office or is unable to discharge his responsibilities, he shall be replaced by the procedure set out in Article 1 or 2 of this Annex, according to the manner in which he was originally appointed. If, in the case of –

1. a member originally appointed under Article 1, the States fail to agree as to replacement; or
2. a member originally appointed under Article 2, the State involved fails to replace the member; a replacement shall be chosen, at the request of the State concerned, by the President of the International Court of Justice or, if he does not choose the replacement, by the Secretary-General of the United Nations.

### Article 5

In the absence of agreement to the contrary between the parties, the Conciliation Commission shall determine the place of its meetings and shall lay down its own procedure.

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