



# **International Water Resources Association**

Association Internationale des Ressources en Eau

Asociacion Internacional de Recursos Hidricos

Expert Consultation on  
***“Policy and Institutions for Integrated Water Resources Management”***  
Salvador, Bahia, Brazil, September – 03 - 06, 2000

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*“We are all upstream riparians”*  
The Minister of Irrigation  
of Egypt, June 2000

## ***Transboundary Drainage Basins a New Vision***

Working Paper  
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August 2000

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## FOREWORD

As is very well stated in IWRA's Invitation Letter to this Expert Consultation, "The issue of Integrated Water Resources Management has been extensively discussed in many forums for a long time. Basically, the idea of integrated management is to bring together all sectors related to and which impact the water resources sector in an interdisciplinary way. The managing of water resources in an integrated fashion requires the consideration of technical, as well as, social, political and institutional issues. In recent years, the majority of countries regardless of their degree of development have experienced significant changes in their governance arrangements including: privatization of the water supply and hydropower generation systems, new legal instruments to include stakeholders in the decision process, mixed private and public agencies for water management, use of economic as well as regulatory instruments for environmental restoration and enhancement, etc. As a result of all these new ideas and of the needs of society to develop in a sustainable basis there is an urgency for deepening the discussion on these new concepts and methods and how they can be applied in different regions around the World."

It is therefore not the purpose of this working paper to repeat what has already been stated elsewhere in a most competent manner. Its aim, however, will be to briefly review some specific concepts such as those of the hydrologic cycle, the drainage basin, the legal regime of shared water resources and of water management institutions at the international level, integrated water resources management, water resources management planning, 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.

A brief review of the unprecedented evolution of such concepts in the 20<sup>th</sup> Century which culminated with the advent of the now famous Helsinki Rules on the Law of the International Drainage Basin and a critical, thought provoking, analysis of some of these moral driven concepts as have been sanctioned over time more by virtue of mental laziness than as a result of a strict, objective reasoning process, will aim at presenting what could be labelled as a New Vision in Shared Water Resources Management.<sup>1</sup>

### **1. Some Basic Concepts**

#### **1.1 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 the 'thing' or 'object'. Since, to the legal scholar however, everything requires a legal definition in order to become a subject of 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 motion. 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 that of 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 revived 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>2</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'.

## 1.2 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 the 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 surface 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>3</sup>

Expressed in practical terms, by adopting the principle of ‘equitable utilization’ 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>4</sup>

To be equitable, the allocation of the waters is to be expressed not in cubic meters per second, but 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, purely qualitative, system of allocating to the Basin States an equitable share in the beneficial use thereof.<sup>5</sup>

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.

### 1.3 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 apportionment’ 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, disbursements, 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 to 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 !

#### 1.4 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 allowing 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 available water resources, the quantitative and qualitative inventory of existing water uses, and 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, not the water itself, but corresponding water use rights.<sup>11</sup>

## **2. International and Domestic 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.

### 2.1 International Water Resources Law<sup>12</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>13</sup>

This, however, does not mean 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>14</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., measures of retorsion such as embargo, or war.<sup>15</sup>

As to the fourth source, judicial decisions and the teaching of the most highly qualified publicists, and although labelled '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 real 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>16</sup> the Bellagio Draft Treaty<sup>17</sup> or, to a certain extent, the Draft Convention prepared by the International Law Commission (ILC) of the United Nations<sup>18</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 labelled '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’, sometimes also 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 general Convention intended to be submitted to United Nations Member Nations for ratification. This fact in itself evidences ILC’s implied position that, in the absence of such 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 just to try and attract support to the recognition of the Helsinki Rules as, in fact, the contents of its Draft Convention adds little or nothing thereto. 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’.<sup>19</sup>

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 data ‘. . . 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, at least, has 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.

## 2.2 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.

Following the example of the Plata Basin within which, on 19 March 1970, under the impulse of Ambassador Guillermo J. Cano, the father of modern water law, Argentina has been the first Basin State ever to adopt the Helsinki Rules<sup>20</sup>, a significant number of States worldwide confronted with water resources problems have now 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.

While most 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 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.

Emerging nations are however privileged in this respect to the extent that, away from metropolitan areas, customary water law has largely survived until today. Although officially ignored or considered obsolete, it is usually tolerated because it is understood by local water users and their associations from which they emanate since time immemorial.

Almost without fail, customary water law contains all the most modern concepts of integrated water resources management, including the required administrative and judicial structure offered by various forms of peoples' councils and their array of elected Water Masters, helpers and criers.<sup>21</sup>

### 2.3 The International Water Resources Administration

By the time the historical use-oriented management of water resources was abandoned by States in favour of the integrated management concept, the vexing question of which institution was to be made into the national water resources manager soon cropped up. For practical purposes, the major water user institution was chosen such as the Ministry of Agriculture or of Irrigation in Common Law countries, and the Ministry of Public Works in Civil Law countries. As was legitimately to be expected, the corresponding major water use became privileged and 'water power' then became the pry of empire building politicians and competing ministers. Some attempts at vesting this new power into neutral institutions such as the Ministry of Planning, a usually powerless ministry, or the Presidency yielded no better results.

Then came the reign of the Ministries of Water Resources or of Natural Resources and the Environment, themselves flanked by some kind of parliamentary or inter-ministerial commission the members of which, too busy with other things and in any way not listen to by the '*primus inter pares*' Ministry, soon versed into consistent absenteeism.

This situation is further exacerbated by the administrative structure of government which is merely replicating the national problem at the intermediate, provincial or state, and local levels. In federal States, however, inter-provincial or inter-state agreements – the Inter-State Compacts in the United States – were usefully devised to partially erase the non-correspondence of water resources with administrative boundaries.

It may be stated that the experience of federal states proved extremely useful at the time States reached the objective of multi-purpose and, subsequently, of integrated management of their shared water resources. The fairly simple, single purpose, Boundary, Navigation or Electric Power Joint Commissions, Committees or Boards initially vested with limited inventory, negotiating, planning or police powers became called upon to apprehend the joint investigation, conservation and development of international water resources for their multi-purpose use, an originally purely technical mandate soon to be marred with essentially political considerations.

Looking at state practice, it would seem that international water resources treaties have largely been over-ambitious in attempting, from the outset, to establish the perfect international water resources administration at the expense of a progressive institutionalisation of the various components of the management exercise which should normally result in the framing of a joint water resources management plan. With this as the central objective, joint investigations, centralization and exchange of data may progressively move to joint planning, joint plan implementation and, then, to national harmonization and international monitoring.

Of major significance, however, is the fact that integrated water resources management is not a static but an eminently dynamic exercise: the plan is never complete but continuously develops as conservation and development activities progress.

Here, again, the Helsinki Rules do provide framework rules for the conventional establishment of the required institutional structure<sup>22</sup> which, in addition to integrated water resources management proper, should be vested with water rights administration prerogatives<sup>23</sup> and with a conciliation and arbitration function.<sup>24</sup>

### **3. A New Vision**

#### **3.1 The National Framework**

While States sharing the waters of an international drainage basin will eventually agree on the principles under which they will allocate water use rights among themselves and institutionalise their water rights administration, it nevertheless remains that such principles will have to be enforced through their respective national legislation.

It is therefore paramount that, in parallel with their efforts at the international level, Basin States aim at harmonizing their national water legislation in order to ensure consistency in the treatment of their national water users with the legal regime established by those agreed international principles. Basin States should however not make an attempt at any law unification process which would be doomed to failure. Each State should essentially, in line with its own constitutional framework and legislative traditions, adjust its current legislation in order to ascertain that its provisions will not impede the implementation, at the national level, of the said internationally agreed principles.

Such a legislative harmonization process can be considerably eased if all Basin States would make use of the methodology framed by FAO 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>25</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.<sup>26</sup>

#### **3.2 The International Framework**

With the advent of the drainage basin concept, States are no longer mere riparians to an international watercourse or to a surface watershed or river system incorporating just the mainstream and its tributaries. The drainage basin is now offering Basin States an integrated hydrologic unit allowing them to manage the conjunct of atmospheric, surface and underground waters within a defined territorial area.

As a matter of fact, the drainage basin can be apprehended as one ecological unit in which water constitutes the link among all natural resources, including human resources. If the concept of ‘environmental management’ is to acquire any degree of reality, it will indeed only if comprised within the physical limits of ecological units such as the drainage basin for instance.

The immediate consequence of such an approach is for the Basin States to realize that there is no room left for them to appropriate part or whole of the water resources of the Basin or to behave like landlords at private law. Any interference with the water resources – and, in effect, with any natural resource or human settlement - at any point in the Basin is bound to have an incidence on the hydrologic and ecologic balance of the whole Basin.

The water resources of the Drainage Basin have become an asset of the community of Basin States as a whole who have no choice but to survey, plan, protect and develop their common natural resources for the benefit of their entire populations.

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, copying from existing international agreements is no solution : it is the prerogative of the Basin States, as sovereign States, to devise the solution that they will find mutually convenient, hoping again that, rather than using any so-called ‘model’, they will undergo the pain of formulating their own.

### 3.3 A New Conceptual Framework

As this working paper has attempted to demonstrate, rather than indulging into premature legal drafting, it is suggested that Basin States first reach agreement on a basic conceptual framework exempt from political bias. Temporarily setting aside national boundaries, 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 on this basis.

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.

As has been seen, the Helsinki Rules constitute today the best available conceptual framework at international law. It is suggested that, where not already done so, Basin 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>27</sup>
- the ‘Drainage Basin’ as the basic hydrologic management unit;<sup>28</sup>
- the principle of ‘Equitable Utilization’ by opposition to those of ‘Appropriation’ and ‘Apportionment’;<sup>29</sup>

- the institutionalization of an ‘International Water Resources Administration’ or ‘Administrations’;<sup>30</sup> and
- the institutionalization of the ‘exchange of information, consultation, negotiation, conciliation and arbitration procedure’.<sup>31</sup>

When adding thereto the implementation vehicle constituted by the integrated basin water resources management 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 the objective of the integrated management of their shared water resources.<sup>32</sup>

## Notes

1. This working paper reproduces to a large extent the views presented by the author before the Expert Group Meeting on Legal Aspects of the Management of Shared Water Resources organized by the Economic Commission of the United Nations for Western Asia and held in Sharm El-Sheikh, Egypt, 8-11 June 2000. See : **Integrated Water Resources Management, National and International Legal and Institutional Requirements – A New Vision**, by Bernard J. Wohlwend, Consultant, Economic Commission for Western Asia, Expert Group Meeting on Legal Aspects of the Management of Shared Water Resources, Sharm El-Sheikh, Egypt, 8-11 June 2000, Doc. E/ESCWA/ENR/2000/WG.1/6, 39 pp.
2. 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).
3. *'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.
4. *'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.
5. Worth noting is the statement made by the Minister of Irrigation of Egypt before the Expert Group Meeting held in Sharm El-Sheikh in June 2000 under the auspices of the United Nations Economic and Social Commission for Western Asia (ESCWA) namely, when announcing that the so far bilateral Nile Commission was now opening to the remaining nine upstream Basin States, that *"When considering that common terminus, we realize that we are all upper riparians" !*

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**, E/ESCWA/ENR/1999/13, 12 October 1999, United Nations, New York, 1999, 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 water 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**, IBRD, Washington D.C., 1996., 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**, E/ESCWA/ENR/1997/7, 10 September 1997, United Nations, New York, 1998, 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. 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 Gabcikovo-Nagymaros**, by Gabriel Ekstein, 19 Suffolk Transnat’l L.R. 67 (1995), Part I, pp. 1-10.
13. *‘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.
14. 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, op. cit., pp. 133-147.
15. Notwithstanding World protests and several U.N. Resolutions, Israel acted unilaterally to seize the headwaters of the Jordan in 1967, a situation which still prevails today. See: **Water Disputes in the Jordan Basin Region and their Role in the Resolution of the Arab-Israeli Conflict**, op. cit., at Note 3, supra. See also : Selected Annotated Bibliography, 10., **Application of International Water Law to Transboundary Groundwater Resources, and the Slovak-Hungarian Dispute over Gabcikovo-Nagymaros**, op. cit., which demonstrates that, still today and notwithstanding general expectations, conventional law remains for the International Court of Justice the quasi sole source of international law.
16. See : **Selected Annotated Bibliography**, 2 & 12.
17. See : *Ibidem*, 8.
18. See : *Ibidem*, 11.

19. See : **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, Foreword, p. 666.
20. Information supplied by courtesy of Dr. Lilian C. del Castillo de Laborde, Alternate Member for Argentina, ILA Committee on Water Resources.
21. 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. For an example of the integration of traditional water management practices in Western modern water law, See : **Water Management Legislation and Administration in Selected Mediterranean Countries**, by Stefano Burchi, ibidem, pp. 119-128. For a detailed description of a comprehensive customary water resources management system, see : **Hindu Water Law and Administration in Bali**, by Bernard J. Wohlwend, in : *Report on the Conference on Global Water Law Systems*, Valencia, Spain, September 1975, published by Colorado State University, Fort Collins, Colorado, U.S.A., 1976, 26 pp., plus Annexes.
22. See : **Administration of International Water Resources in : International Law Association Rules on International Water Resources**, op. cit, at Note 2., supra, pp. 236-238.
23. Ibidem, **Administration of International Water Resources**, Chapter VIII, pp. 168-170.
24. Ibidem, **Procedures for the Prevention and Settlement of Disputes**, Chapter 6, pp. 214-219.
25. See Annex 1 : **Guidelines for the Inventory and Drafting of National Water Legislation**
26. For compendia on national water legislation, see among others : 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.
27. As discussed in Section 1.2 above. It is surmised here that the only general principles of international law applicable to States as subjects of international law are those of ‘State Sovereignty’ and its corollary of ‘State Responsibility’ according to which States enjoy absolute sovereign rights over their territory but are liable for the consequences of their acts causing harm to rights and interests in third States. The so-called ‘principle of territorial integrity’ constitutes no doubt a moral precept but not a legal one as any

claim to territorial integrity matures only provided a ‘substantial harm’ has been sustained and demonstrated. As to the so-called ‘principle of the community of interest’ (or of ‘community in the waters’) it refers to a situation of facts, not of law, and acquires a legal connotation only by conventional law under the principle of ‘reciprocity’.

28. As discussed in Section 2.1 above.

29. As discussed in Section 2.2 above.

30. As discussed in Section 2.3, in fine. See also : the 1966 Helsinki Rules, Chapter VIII, ‘**Administration of International Water Resources**’ and Annex 1, ‘**Guidelines for the Establishment of an International Water Resources Administration**’ in : *International Law Association Rules on International Water Resources*, op. cit., at Note 2., supra.

31. See : Annex 2 : ‘**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 1966-1996 Consolidated Helsinki Rules, Chapter X, *International Law Association Rules on International Water Resources*, op. cit., at Note 2., supra..

32. 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, ARIDLANDS No. 44, Fall/Winter 1998, Conflict Resolution and Transboundary Water Resources, p.8.

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## 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. 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).*

5. **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.*

6. 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.*

7. **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.*

8. **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.*

9. **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.*

10. **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)

11. **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.*

12. **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.*

13. **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.*

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**Guidelines for the Inventory and Drafting of National Water Legislation\***

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- I. INTRODUCTION**
- II. LEGISLATION IN FORCE**
- III. OWNERSHIP OR OTHER JURIDICAL STATUS OF WATER RESOURCES**
  - a) Surface water resources
  - b) Groundwater resources
  - c) Other water resources
- IV. THE RIGHT TO USE WATER OR WATER RIGHTS**
  - a) Mode of acquisition
  - b) Water use authorizations, permits or concessions
- V. ORDER OF PRIORITIES**
  - a) Between different uses
  - b) Between different existing rights
  - c) Between different areas
- VI. LEGISLATION ON THE BENEFICIAL USES OF WATER**
  - a) Domestic and household uses
  - b) Municipal uses
  - c) Agricultural uses
  - d) Fishing
  - e) Hydropower
  - f) Industrial and mining uses
  - g) Transport
  - h) Medicinal and thermal uses
  - i) Recreational uses
  - j) Other beneficial uses

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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.

**VII. LEGISLATION ON HARMFUL EFFECTS OF WATER**

- a) Flood control, overflow and bank protection
- b) Soil erosion and siltation
- c) Drainage and sewerage
- d) Salinization
- e) Other harmful effects of water

**VIII. LEGISLATION ON WATER USE, QUALITY AND POLLUTION CONTROL**

- a) Waster and misuse of water
- b) Recycling and re-use of water
- c) Health preservation
- d) Pollution
- e) Environmental protection
- f) Other control measures

**IX. LEGISLATION ON GROUNDWATER RESOURCES USE**

- a) The licensing of drillers
- b) Exploration and exploitation licenses
- c) Groundwater resources protection measures
- d) Other control measures

**X. LEGISLATION ON THE CONTROL AND PROTECTON OF WATERWORKS AND STRUCTURES**

- a) Waterworks construction
- b) Waterworks operation and maintenance
- c) Waterworks protection measures

**XI. LEGISLATION ON THE DECLARATION OF PROTECTED ZONES OR AREAS**

- a) In the case of beneficial uses of water
- b) In the case of harmful effects of water
- c) In the case of water quality and pollution control
- d) Zoning
- e) Other cases

**XII. GOVERNMENT WATER RESOURCES INSTITUTIONS AND ADMINISTRATION**

- a) At the national level
- b) At the intermediate level

- i) At the inter-state, inter-regional or inter-provincial level
  - ii) At the state, regional or provincial level
  - iii) At the inter-basin level
  - iv) At the basin or sub-basin level
- c) At the local level
- i) Local water rights institutions and administration
  - ii) Water users' associations
- d) At the international level
- i) international treaty provisions
  - ii) International basin or river commissions or boards

### **XIII. SPECIAL AND AUTONOMOUS WATER RESOURCES AGENCIES**

- a) At the national level
- b) At the regional or basin level
- c) At the project level
- d) At the water users' level

### **XIV. LEGISLATION ON WATER RESOURCES DEVELOPMENT FINANCING**

- a) Government financial participation and reimbursement policies
- b) Water rates and charges

### **XV. WATER LAW IMPLEMENTATION**

- a) Judicial protection of existing water rights
- b) Modification, termination and re-allocation of water rights
- c) Water tribunals, courts or other judiciary water authorities
- d) Penalties
- e) Other water law implementation matters

### **XVI. CUSTOMARY WATER LAW AND INSTITUTIONS**

- a) The legal regime of water resources and water rights
- b) Water resources management and administration
- c) Water rates and charges
- d) The settlement of disputes
- 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.
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.

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

[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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