CHAPTER 11

A SELECT SURVEY OF TREATIES

The question whether international law governs the non-navigational uses of international rivers continues to be hotly debated within the United Nations system and outside of it. The existence of water resources law is both asserted and rejected. The present inquiry holds the proposition that a state is free to utilize the water resources of an international river within its territorial jurisdiction provided its actions do not conflict with what is inadmissible under international law. It is submitted that once the fact of a river being international is recognized then it follows that there must be some general principles governing such a stream or river.

To establish the existence or otherwise of international fluvial rules of law, the classical sources of international law as enumerated in Article 38(1) of the Statute of the International Court of Justice offer a convenient reference framework. These sources include treaties as evidence of state practice; international custom; general principles of law recognized by civilized nations; judicial decisions and opinions of jurists.

In the field of international rivers, hundreds of
treaties, bilateral and multilateral\textsuperscript{1}, have been concluded all over the world. Provisions contained in these conventions raise a variety of interesting and difficult legal questions. Treaties, it is well recognized, express the law for the parties. But do they, by virtue of numbers, their spread over time, and geographical distribution, offer a persuasive evidence demonstrating the emergence of recognized customary rules of international law? Do these treaties support the contention, put forward here, that a general principle of international customary law exists which requires states to abstain from such acts that are prohibited under international law? So far as treaties are concerned it is clear that multilateral treaties are the ones from which general principles are most likely to be derived. If a principle has been recognized in a number of multilateral treaties, to the extent that it is regarded as an obligatory practice by the majority of the states, it could be argued that this principle has crystallised into a customary rule of international law. However, the majority of the river treaties are bilateral. Where multilateral treaties exist, the cases are either too few, or cover portions of a river, or are

\textsuperscript{1} See for example, FAO, \textit{Systematic Index of International Water Resources Treaties, Declarations, Acts and Cases by Basin} (Rome, 1978), Legislative Study no.15.
addressed to a particular use. Selected treaties are surveyed and examined below on a regional basis: Africa, Asia, the Americas and Europe. Common features of these treaties are summarised and then evaluated with a view to discovering any general principles on the subject.

1. AFRICAN TREATIES

The Berlin Conference of 1884-85 marks a turning point in the evolution of a conventional system regulating African watercourses. By the Treaty of Berlin, European powers formulated for themselves a colonial *modus operandi* which defined the role of rivers in the establishment of control over the African Continent. Primarily, African rivers served three specific functions, *viz*:

(a) limitation of spheres of colonial influence;
(b) logistic channels for continental penetration and pacification campaigns, and;
(c) commercial activities.

At that time, the latter was the predominant consideration and determined to a very large extent the nature of the

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treaty regime that was outlined in the Berlin Treaty.
Among the African rivers, the Congo, Niger, Nile and
Zambezi stand out as focal points of colonial rivalry.
Fashioned in the spirit of Articles 108 to 116 of the Final
Act of the Congress of Vienna, 1815, the Treaty of Berlin
went a step farther. The final outcome of the Berlin
Conference internationalized the Congo and established a
conventional economic zone which extended beyond the
watersheds of the basin. Similar provisions applied to
the Niger.

After 1885, several treaties, essentially a geopoliti
cal nature, were concluded on various important river
systems in Africa. For obvious reasons, the Nile River
takes the lead with agreements concluded in April 1891.

3 Ibid., pp. 57-59. The provisions of the Act of Vienna
on the free navigation of rivers are characterized by
the tendency to reconcile the principle of free naviga­tion
with the maintenance of the jurisdiction of states
over their river system. Articles 108-116 laid down
general principles on international regime of navigable
waterways as well as their administration. Thus ripar­
rian states were vested with the power to establish, by
common consent, detailed rules for the navigation of
various rivers.

4 Ibid., Articles 3, 13, 15, 16, pp. 143, 148, 149.

5 See Infra, Chapter V.
May 1902, May 1906, and December 1906. All these treaties concerned demarcation of territorial spheres of influence, but each did contain a provision enjoining the upstream states to maintain the natural flow of the Nile. In essence, these were not treaties addressed to utilization of water as such. The 1929 Nile Waters Agreement between Egypt and Great Britain (Sudan) was the first major instrument on the Nile which specifically dealt with consumptive uses of the river's waters. There was no other major agreement on the Nile for thirty years when, in 1959, Egypt and the Sudan signed the first ever agreement between two independent Nile basin states with a supporting Protocol of 1960. Nearly two decades were to pass before another agreement, this time by the upper riparians, was concluded on the Nile in 1977. In 1969, however, an ad hoc agreement was concluded for Hydrometeorological Survey of the Catchment of Lakes Victoria, Kyoga and Albert with the technical support of UNDP and UNRO.

6 Ibid.
7 Ibid.
8 Ibid.
9 Ibid.
10 Ibid.
The Nile agreements are surveyed and analysed in Part II of this inquiry. In the following sections attention is focussed on the other African river systems, namely, the West African rivers and the Zambezi. Here, too, the survey will be restricted to post-independence treaties.

Since early 1960s, all the important watercourses of West Africa, with the exception of the Congo, have been subject to basin-wide conventions of one kind or the other. The convention relating to the Development of the Senegal River was concluded in Bamako, Mali, by Mauritania, Senegal, Guinea and Mali on 26 June 1963.\(^\text{11}\) It was followed by a convention relating to the Statute of the Senegal signed at Daka, Senegal, on 7 February 1964,\(^\text{12}\) and a Statute creating the Organization of the Senegal River states signed at Labe, Guinea on 24 March 1964. These agreements, however, were beset with political squabbles which led to a new agreement in 1972 between Senegal, Mali and Mauritania. It is this agreement that is the object of the present section.


\(^{12}\) Ibid., pp.1019-1031.
A. Convention of the Status of River Senegal,
11 March 1972

Following the demise of the Bamako Convention, Mali, Mauritania and Senegal signed a new instrument in 1972 and a second convention also dated 11 March 1972 establishing Organisation Pour La Mise En Valeur Du Fleuve Senegal (ORUS), and it was amended in 1975.

Excluding the whereas section, the first convention is divided into five chapters. Article 1 of Chapter 1 defines the status of the Senegal River which, inter alia, declares to be international those portions or sections of the river and its tributaries on the national territories of the signatory states. The next article states the intention of the parties "to develop close cooperation to allow rational exploitation of the Senegal River resources and to guarantee free navigation and equal treatment of the users."

Part 11 entitled Agricultural and Industrial Exploitation, sets forth general principles regulating the

13 Official Text obtained from Senegal Embassy in New Delhi.
14 Ibid.
15 Ibid., p.3.
16 Ibid.
17 Ibid., p.4.
uses of the river's resources. The Member states are prohibited from undertaking any projects likely to modify in a noticeable way the characteristics of the river regime ... without the prior approval by the contracting states ... 18 The agreement imposes a responsibility over a proposing state to indicate all the effects of project(s) on the river including its navigability, agricultural or industrial exploitation, sanitary quality of the water, the biological characteristics of its fauna and flora, as well as the water requirements of the project and its effects on the water level of the river. 19 In the case of works common to the Members, condition of their operation, construction and status would be defined in a special instrument. 20

The third chapter deals with navigation and transport. 21 Article 6 declares freedom of navigation to the contracting Parties on the usual basis of equality. Where there are roads, lakes, railways or lateral channels which

18 Ibid.
19 Ibid.
20 Ibid., Art.5.
21 Ibid., pp.4-6.
are complimentary or compensatory to the non-navigability of the watercourse these might be considered subsidiary portions to the river navigation and, thus, open to international traffic (Art.9). Articles, 7, 8, and 10 covered matters relating to costs, taxes and tolls applicable to merchant ships and boats, and provide for establishment of uniform regulations.

The two articles (11 and 12)\textsuperscript{22} of Chapter IV establish the Organisation Pour La Mise En Valeur Du Fleuve Senegal whose status, powers, structure and operation were a subject of a special convention. Two other provisions, articles 17 and 18 of the last chapter are of special relevance. In the original convention, Article 17 provided that "the present convention may be terminated by any Party after the expiration of ten years from the date of its entry into force.... Termination will become effective after a period of six months...." By a resolution adopted in 1975,\textsuperscript{23} Article 17 was amended so that the convention may be terminated only after the expiry of ninety-nine years. Article 18 is addressed to dispute settlement mechanism. Should the Member states fail to reach an agreement

\textsuperscript{22} Ibid., pp.4-6.
\textsuperscript{23} Ibid., p.8.
on any differences either with respect to interpretation or application of the agreement, the matter shall be resolved through conciliation or mediation. In case this method fails, the Parties shall refer the dispute to the A.U. Conciliation and Arbitration Commission. As a last resort the matter may be taken to the International Court of Justice. But where an emergency exists, the convention empowers the Organisation Pour La Mise En Valeur Du Fleuve Sénégal "to take all conservative measures intended in particular to safeguard the principles adopted in the convention until the difference is settled".

1.1 Organisation Pour La Mise En Valeur Du Fleuve Sénégal (OMVS), 11 March 1972

To ensure the implementation of the 1972 Convention and to promote the coordination of studies and projects for the multipurpose utilization of the basin resources, the OMVS was created and is vested with wide powers. These powers are evident in the juridical personality of the organisation. Before 1973, the OMVS had no legal person-

lity. In April 1973, the first amendment to the Convention empowered the Organisation to receive gifts, contract loans and apply for technical assistance. Diplomatic immunities and privileges were extended to the Secretariat. Since then, the OMVS began to gain a legal personality with the capacity to acquire property, contract debts, hire staff, sue and be sued both in national Courts and in international tribunals (Art.113). As a legal person, the headquarters and property of the OMVS enjoy extraterritoriality and its executive staff enjoy diplomatic immunity. Similarly, the staff and property of OMVS are exempt from customs duties and enjoy freedom of access and transit within its territorial area.

The OMVS has basically four levels of authority consisting of the:-

(a) Heads of state or Government (Art.3);
(b) Council of Ministers (Art.8);
(c) High Commissioner, backed by the Secretary-General, and;
(d) Permanent Water Commission.

Before the structural reorganization of December 1975,26

25 Ibid., pp.144-145.
26 Nguyen, n.24, p.145.
the President of the Council of Ministers played a very important role. He represented the OMVS between the sessions of the Council of Ministers and he also represented the Member States in their relations with international aid agencies. In that capacity he was empowered to negotiate, within the perimeters of the powers delegated to him by the Council of Ministers, on behalf of all the Member states of the Organization (Art.15 and 16).

As to the role of the Secretariat with regard to the utilization of the river, it was limited to:

(a) collection of basic data;
(b) preparing and submitting to the Council of Ministers joint research and works programmes;
(c) conducting research, seeking financial assistance and supervision of work in connection with the utilization of the river;
(d) examining projects prepared by states for the use of the river and submitting them, together with a detailed commentary to the Council of Ministers, (Art.1(2)).

In May 1974,27 in a meeting between the OMVS and donors, a view emerged to reorganize the institutional structure of

27 Ibid., p.145.
the organization. This was effected the following year, on 17 December. From then onwards, the executive functions of the organization were vested on a High Commissioner assisted by a general Secretariat. The High Commissioner took charge of the functions of the President of the Council of Ministers as representative of the organization. Thus, he is empowered to negotiate on behalf of the OMVS Member states.

Several functions were explicitly attributed to the Secretariat by the 1975 amendment of the Convention, especially research and works for the utilization of the river resources. At the same time a Standing Commission (Art. 7 and 20) on the River Senegal Waters was set up, comprising of representatives of the Member states. Its function is to define the principles and procedures for equitable sharing of the water resources of the river among the states and between use sectors. It meets after being convened by the High Commissioner.

To complete the structure of the organization, another body - the Inter-state Committee for Research and Agricultural Development - was set up in 1976. It plays

28 Ibid.
29 See also Ibid., p.146.
30 Ibid.
an advisory role with the purpose of harmonizing agricultural research and development programmes of the Member States.

The amended Convention, however, appeared to have posed certain problems. Consequently, the contracting Parties made further modifications. By an amendment of 21 December 1973, the IOMS was conferred with a full blown legal personality with the power to enter into contracts; to acquire the movable and immovable property; to receive donations, subsidies, legacies and other gifts; to borrow funds; to apply for technical assistance; and to sue.32

In legal matters, the Council of Ministers is the agency's legal representative33 which can then delegate to the High Commissioner the power to engage in the legal activities stated above. On the other hand, the High Commissioner continues to represent the IOMS between the sessions of the Council of Ministers (Art.11). Regarding international assistance organizations or bilateral cooperation agencies, the High Commissioner no longer repre-

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31 Ibid.
32 Ibid.
33 Ibid.
sents the Member States, but only the OMVS (Art.15 and 16). He is, thus, empowered to negotiate and sign on behalf of the organization agreements and conventions on financial and technical assistance needed to implement the regional infrastructure programme.

The OMVS has jurisdiction over the basin as defined in Article 1 of the Convention. This means that there are no stretches of the river exclusively within national jurisdiction.

The powers of the organization are extensive and cover a wide range of fields. Some of these include development policy as laid down in Article 8 of the Convention; planning programming of works (Art.13) which includes defining joint projects and priority areas. Other functions relate to carrying out of research and projects in connection with regional infrastructure. This falls within the purview of the High Commissioner who is also responsible for obtaining requisite funds. Furthermore, the OMVS has the power to manage regional infrastructure. This responsibility is spelt out in Article 15 of the Convention which deals with joint projects and the establishment of agencies for their management (Art.20).

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54 See also *Ibid.* for the amendment.

The history of the Act of Niamey, as it came to be known, and its organ, the Niger Commission, dates back to 196036 when the newly independent states of Nigeria and Mali held a meeting to discuss the development of the Niger River. In the following year, Niger and Dahomey (now Benin) joined the other riparian states and sought the assistance of the United Nations to carry out a study on the consequences of planned projects on the natural regime of the river. In August 1963, the UN submitted its report entitled "Study on the Consequences which the Major Projects Planned by the Riparians may have on the Regime of River Niger."37

Between 15-16 February 1963,38 an all riparian conference was held at Niamey, Niger, to work out a new legal basis for the development of the Niger. Consequently, a draft Convention and Statute were prepared. At the second

36 Ibid., Sohn, p.992.
37 Ibid., p.993.
38 Ibid.
conference held in October 1963, \(^{39}\) the Niger Act was signed in Niamey.

The first task of the Act of Niamey was to abrogate the General Act of Berlin, 1885, the General Act and Declaration of Brussels, 1890, and the Convention of Saint Germain-en-Laye, 1919 (Art.1). These instruments \(^{40}\) had internationalized the Niger and Congo and dealt with navigation and commercial accessibility. Article 2 of the Act provides that each state is at liberty to utilise that portion of the Niger Basin within its territory and "without prejudice to its sovereign rights." It is further stipulated that the use of the Niger is to be taken "in a wider context to refer in particular to navigation, agricultural and industrial uses and collection of the products of its fauna and flora." \(^{41}\)

Article 5 establishes an Intergovernmental Organisation entrusted with the responsibility of encouraging, promoting and coordinating studies and programmes regarding the exploitation of the resources of the Niger River. The other substantive provision is found in Article \(^{42}\) and

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39 Ibid.

40 Keeckenbeek, n.2.

41 Sohn, n.11, p.1033.

42 Ibid., p.1034.
deals with the question of dispute settlement procedures. In case of a dispute, the concerned parties are required to settle it amicably through direct agreement or through the agency referred to in Article 5. If this fails to resolve the problem, the dispute is to be decided by arbitration by the O.A.U. Commission of Mediation, Conciliation and Arbitration. Should this medium of dispute settlement also fail then the Contracting Parties accept to submit the dispute to the I.C.J.

As already said, Article 5 of the Niamey Act stipulated for the creation of an organ with the functions of carrying out the objectives of the treaty. By Article 1, the said Intergovernmental Organisation was named River Niver Commission. Article 2 spelled out the functions of the Commission, namely, to prepare general regulations to facilitate full application of principles set forth in the Act of Niamey; to maintain liaison between the basin states; to collect, evaluate and disseminate data on the whole basin to examine projects proposed by riparians and make recommendations to the basin states of plans for common studies concerning navigation on the river; to examine complaints and thereby promote settlement of disputes and differences as they arise and to supervise the implementation of the provisions of the Act of Niamey.

Structurally, the Commission is similar to the
OMVS\textsuperscript{43} in that it has many organs and levels of authority. The Niger Commission is made up of nine Commissioners, one from each Member State (Art.3).\textsuperscript{44} The Commission meets in ordinary sessions annually, but may meet in extraordinary sessions at the request of at least three riparian states (Art.5).\textsuperscript{45} The Commission has permanent secretariat headquartered in Niamey (Art.5) and it has an Administrative Secretary with supporting staff. The Administrative Secretary is appointed by the Commission by a two-thirds majority vote (Article 6).\textsuperscript{46}

The juridical personality of the Commission is defined in Article 11\textsuperscript{47} which confers upon the Commission, the status of an international organisation. Consequently, the Commissioners and the Administrative Secretary are accorded diplomatic privileges and immunities by the riparian states. As for the rest of the staff, they "shall be accorded such privileges and immunities as are accorded to officials of the O.A.U. of equivalent status."\textsuperscript{48}

\begin{itemize}
    \item \textsuperscript{43} See Supra.
    \item \textsuperscript{44} Sohn, n.11, p.1036
    \item \textsuperscript{45} Ibid.
    \item \textsuperscript{46} Ibid., p.1037.
    \item \textsuperscript{47} Ibid.
    \item \textsuperscript{48} Ibid.
\end{itemize}
ctedly, the territorial jurisdiction of the Commission extends to all the Niger Basin. This view is strengthened by Article 12, read together with Article 4, which makes it obligatory for Member States contemplating hydro-agricultural and industrial projects to inform the Commission of their plans before executing them. 49

Articles 13 and 15 or Chapter III, 50 contains provisions relating to navigation and transport. Article 13 stipulates that taxes and duties are to be proportionate to the services rendered for navigation and should be non-discriminatory. The next clause (Article 14), incorporates roads, railways and lateral canals as parts of the waterways in so far as they serve the special purpose of avoiding the non-navigable portions of the river.

Chapter IV, 51 the last chapter, contains general provisions, the most important of which is Article 17 relating to conditions and mode of terminating or withdrawing from the treaty. A contracting Party desirous of denouncing the Act of Niamey and its supporting Protocol, can only do so after the expiry of ten years. The act of denunciation becomes effective one year from the date of

49 Ibid., pp.1033, 1038.
50 Ibid., p.1038.
51 Ibid., p.1039.
acknowledgement of its receipt. Another important provision concerns the procedure for making amendments or revisions. This can be done on the written application of one-third of the Member States, if it is to amend any clause. In the case of revision, two-thirds of riparians are required to approve it and shall take effect six months after the date of its adoption.

By 1980, the Niger Commission was also undergoing major revisions. A special summit conference of the Basin States was held on 26 January 1979 in Lagos, Nigeria. The conference reaffirmed its faith on the Niger Commission, but recognized the need to restructure it. As a follow-up, the sixth Ministerial Council of the River Commission was held on 12 and 13 March 1980, in Conakry, Guinea, and drew up guidelines to refurbish the Commission. As a result of these measures, the institutional and legal character of the Niger Commission underwent modifications. The River Niger Commission was transformed into the Niger Basin Authority. As a successor of the Niger Commission, it inherits the assets and liabilities of its predecessor.

53 Ibid.
54 Ibid.
55 Ibid.
Similarly, the signatories of the Act of Niamey of 1963 and to its Protocol of 1964, automatically became de jure members of the Authority. However, and this is a significant point which was absent in the former instrument, non-riparian states situated in the zones of influence of the basin can accede to the protocol of agreement and thus became members of the Authority.\footnote{Ibid., p.192.} But this is on the condition that such non-riparian states participate in the objectives of the Niger Agreement.

The Niger Protocol of November 1980, formulated the functions of the Authority, its territorial jurisdiction and powers to include:

(a) Harmonization and coordination of policies, projects and programmes of the states;

(b) Centralization of hydrometeorological and related data and their dissemination to Member States;

(c) Formulation of general policy for the development, compatible with the international character of the basin; preparation and implementation of the plan for integrated, multipurpose

56 \textit{Ibid.}, p.192.
development of the basin; implementation and monitoring of an orderly and judicious policy for the utilization of the surface and subterranean waters of the basin;

(d) Conception and implementation of studies, research and surveys, formulation of plans, construction, exploitation and maintenance of works and projects set up within the framework of the general objective of the integrated development of the basin.

In order to carry out such wide ranging activities, the Niger Authority was restructured exactly like the OMVS - that is on four levels of authority, namely, the summit conference of Heads of states; Council of Ministers; the Executive Secretariat; and the technical committee of Experts. 57 The convention and statute relating to the Chad Basin contains similar principles.

C. The Kunene River Agreement, 1 July 1926 58

The Portuguese Government and the Government of the Union of South Africa signed an agreement in 1926 in Cape

57 Ibid.
58 Text in ST/LEG/SER.8/12, p.132.
Town, South Africa, for a hydroelectric dam at Rua Cane Falls on the Angolan territory. Besides hydroelectric power, the agreement also covered inundation and irrigation aspects.

By Article 1 of the agreement, South Africa was permitted to construct works on Angolan territory and to divert one half of the flood waters for inundation purposes (Article 6 and 6(a)). Article 2 provides that the said Dam may be constructed either jointly or by one of the Parties. 59 A Party desirous of constructing the Dam is required to give a two-years' notice to the other Government, (Article 2). Where the Dam is jointly constructed the costs shall be equally divided between the two Governments. In case it is not jointly constructed, the Party undertaking the works bears all the costs of construction. The other contracting Party, by giving a ten-year notice and paying half the costs, is entitled to acquire a right in the scheme. Although either signatory is entitled to half of the share of the water, the Government that constructs the Dam is entitled to the use of all the water till the other Party shares in the scheme. However, the Party entitled to use all the water, may under a contract give a share of the power to the other Government. 60

59 Ibid., pp.133-134.
60 Ibid., p.134.
The next important feature of the treaty is the one in Article 12. Article 6 has conceded to South Africa the right to use up to half of the flood water of the Kunene River for the purposes of irrigation and inundation in the Mandated Territory. Under Article 12, it is stipulated that "No charge shall be made for the water diverted from the Kunene River for the purposes of providing means of subsistence for the Native Tribes in the Mandated Territory." But should a case arise where the said waters is to be applied for gainful purposes, the agreement imposed an obligation on the Southern African Government to recompense Portugal a mutually determined sum of money for the use of the water.

As far as the status of works located on a foreign territory are concerned, these are covered in Article 16 and 17. Article 16 expressly reserves the territorial integrity of the Angolan territory over those portions affected by works granted in the agreement. Consequently, "the design, construction, maintenance and operation of the works contemplated in this agreement shall be sub-

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ject to the laws obtaining in the Province of Angola. 64

Furthermore, in Article 18:

No hydraulic works on the Kunene or Okavango (Cuba­
ngo) Rivers, except those at Rua Cana Falls, may, where
those rivers form the boundary between the
mandated Territory and Angola, be constructed by
the Government of the Union of South Africa or by
that of the Republic of Portugal without the pre­
vious consent of the other Government having been
obtained. 65

The contracting Parties expressly preferred arbitra­
tion as a means of dispute settlement (Art.19).

Despite these provisions, one needs to go back to
a clause of the preamble to the agreement. It is there
declared (Para.9) that the diversions of the rivers are
granted "for reasons of humanity" and "under certain
conditions" 66 which leave the sovereign rights of the
Portuguese Government intact.

To summarise the agreement, the following principles
may be abstracted.

1. The first is the principle of upstream-downstream
benefits in which states share the benefits in-
duced downstream by storage works upstream.

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64 Ibid., p.133.
65 Ibid.
66 Ibid., p.133.
2. Cost-sharing ratio is based on equality.

3. A State is permitted, through an agreement, to construct works on a foreign territory, but this right does not impair the sovereign rights of the host state.

4. Each riparian is permitted to divert water for basic needs such as subsistence. This right, however, is restrictively conceived in the agreement (Art.12).

5. Consent was required only in the case of boundary waters. The agreement is silent on the question of successive waters.

D. General Principles Underlying Shared Water Resources in Africa

The three agreements surveyed in the preceding section are representative enough from a geographical, political, juridical and economic standpoints. This is particularly so because the treaties include countries with fairly varying levels of economic and social development, different political systems and resource endowments. Despite the diversity of circumstances and motives behind the signing of each of the said agreements, and the danger of generalization, some basic principles and trends can be
identified. Those rules by which the participating parties are constructually bound, constitute the legal basis for the utilization of their shared water resources and cannot be overlooked. Without prejudging the international legal status of these rules, a trend is detectable toward adoption of the following legal principles:

1. All the three conventions contain the obligation to exchange information and data, including physical, economic, social and legal.

2. This principle leads to the second principle. The principle of prior consultation before carrying out water resources development in international rivers is recognized. The very conclusion of these treaties implies prior consultation.

3. The Basin States tend to accept the principle that a state shall not cause substantial injury to another state in using its water resources, together with the principle that the existence of such injury is not a matter for unilateral decision.

4. The principle of reasonable and equitable utilization among all the basin states as opposed to
the doctrine of absolute territorial sovereignty of each basin state, is being accepted.

5. Institutional machinery for prevention and settlement of dispute runs across all the three agreements surveyed.

6. Concern for environmental protection and for the protection and conservation of natural resources other than water is expressed.

7. A basin or system-oriented approach, including tributaries, as opposed to watercourse-oriented approach is the basic feature of the agreements.

8. Another practice is of joint ownership of works such as hydro-electric dams.

9. The one important principle relates to the establishment of river basin agencies with planning, consultative and operational powers.

10. Lastly, the most significant feature found in the agreements reviewed is the deliberate, and the conscious movement towards elaboration of a cooperative law among nations.
Having reviewed sample agreements on African international inland waters systems, attention will now be turned to a survey of treaties on selected important Asian rivers amongst which the Ganges, Indus, Jordan are notable examples.

River treaties of Asia share, in a broad sense, common historical background with the African ones. Politically, international character of these rivers is relatively of recent origin, though this is far from saying that until the nineteenth and even twentieth centuries Asian rivers were national waters.

The state system that emerged, primarily during colonial occupation and as a result of European imperialism, has made the inter-territorial nature of inland waters of Asia quite complex. In West Asia or the Middle East, after the First World War, political entities created from the debris of the Ottoman Empire were: Syria, Lebanon, Palestine and Transjordan, all of which became class "A" League of Nations Mandates. Only Iraq, in 1932, became independent during the inter-war years,
while Syria and Lebanon attained formal independence in 1943, and full independent status in 1946. Trans-
Jordan (now the Hashemite Kingdom of Jordan) also be-
came an independent state in the same year, 1946. Down
to South Asia, the Indian subcontinent was partitioned in 1947 to form the new states of Pakistan and the
Union of India. In 1971, Bangladesh until then East Pakistan, became an independent state. Back in 1956,
the state of Israel was created. The creation of these
sovereignties had far-reaching, international repercus-
sions on the utilization of water resources in the region since it fragmented the areas irrigated by these rivers.

The second preliminary point to be emphasized is
the hydro-demographic factor. All these rivers support
dense populations, leading to evolution, at the very ear-
liest times, of large-scale canal irrigation systems.
Thus, competition for water resources is quite acute here.
The population factor interacts with a third aspect.
Some of these countries, notably India, Pakistan and

67 For details, see Abraham M. Hirsch "Utilization of
International Rivers in the Middle East: A Study of
Conventional International Law", AJIL, Vol.50 (1956),
pp.81-100. H. A. Smith, "The Waters of the Jordan:
A Problem of International Water Control", Interna-
tional Affairs, Vol.125 (1949), pp.415-425; J. F.
Hostie, "Problems of International Law concerning
Irrigation of Arid Lands", Ibid. Vol.31 (1955),
pp.61 ff.
Israel, are at a relatively higher level of industrial and technological development with the capacity to effect extensive water works on shared rivers to meet internal demands. Others, i.e., the West Asian countries, though on a lower technological plane, possess sufficient financial resources to purchase necessary technology for diversion and storage of water. The interplay of these factors, one on the other, explains the genesis and complexity of the Asian water treaties. The main provisions of some of the agreements are outlined and later their merits analysed in a consolidated commentary below.

A. The Ganges - Brahmaputra

The Union Government of India and the Himalayan Kingdom of Nepal signed two agreements known as the Gandak and Kosi Projects in 1954 and 1959 respectively.

1. Agreement on the Kosi Project

The Kosi River, a tributary of the Ganges - Brahmaputra descends in Nepal where it has a large catchment area. On crossing to India, it runs for eighty miles in the State of Bihar before joining the Ganga. The Kosi


69 Ibid., at p.295, p.113 respectively.
has an average flow of 80 m.a.f. 70

On 25 December 1954, the Union Government of India and His Majesty's Government of Nepal signed an agreement in Katmandu, Nepal, regarding the Kosi Project, a multi-purpose dam. By 1954 agreement, Nepal accepted construction of a barrage, canals and related works within Nepalese territory at a place about three miles upstream of Hanuman-Nagar town on the Kosi River for the purposes of flood control, irrigation, generation of hydroelectricity and prevention of erosion. 71

The substantive provisions of the agreement set forth in detail the terms and conditions under which the Royal Government of Nepal granted facilities to India for the said Project. Among the important clauses are those covering the status of lands acquired by India, the sharing of benefits accruing from the project and settlement of disputes or differences should any arise in due course. Article 3(ii) stipulates that land required for the Project "shall be acquired by the Government (Nepal). The barrage was however, to be located eight miles upstream of Hanuman Nagar town (Art.1(i)), and compensation there-

71 ST/LEG/SER.8/12, p.291.
fore shall be paid by the Union (India) in accordance with clause b."

The requisite land was leased to India for a period of ninety-nine years "provided that the sovereignty rights and territorial jurisdiction of the Government in respect of such land shall continue unimpaired by such transfer," (Article 4(iii)). Article 8 referred to above, dealt with the problem of compensation for land and property affected by the Project. It was agreed that compensation shall be provided on the following:

(a) submerged lands,
(b) cultivable lands,
(c) forest lands,
(d) village lands and houses and other immovable property,
(e) waste land.

The Union Government of India agreed to "pay compensation to Nepal for loss (a) of land revenue as at the time of acquisition... (b) to whomssoever it may be due...." 75

72 Ibid., p.292.
73 Ibid.
74 Ibid., p.293.
75 Ibid.
How much compensation India was to pay would be mutually determined (Art. 8(ii)).

Of particular significance is the Parties' recognition of Nepal's right to share in the downstream benefits for facilities upstream. In this connection "His Majesty's Government shall be entitled to obtain for use in Nepal any portion up to fifty per cent of the hydro-electric power generated by any Power House, situated within 10 miles radius from the barrage side and constructed by or on behalf of the Union (India) as His Majesty's Government shall from time to time determine" (Art. 4(ii)).76 Moreover, if power required by Nepal "is generated in a Power House located in Indian Territory," India undertook to construct "the necessary transmission lines to such points at the India-Nepal border as shall be mutually agreed upon" (Art. 4). Furthermore, "the tariff rates to be supplied to Nepal... shall be fixed by mutual agreement." In addition "the Government (Nepal) will receive royalty in respect of power generated and utilized in the Indian Union at rates to be settled by agreement hereafter,"77 (Art. 6(i)).

Other provisions included the establishment of Coo-
rdinating Committee for the Kosi Project. The Committee was to comprise of six members, three from either side, but chaired by a Minister from the Nepalese Government with the Administrator (India) of the Kosi Project as its Secretary. Travelling expenses and other related matters of the Committee rest on Government of India. Should need arise for further control (Art.16) of the Kosi, Nepal consented to grant similar facilities. Lastly, the agreement includes an arbitration clause (Art.17) for dispute settlement. It was agreed that "Each of the two Parties shall nominate an arbitrator for jointly determining such disputes or difference and the award of the arbitrators shall be binding on the Parties." Where the arbitrators fail "the Parties hereto may consult each other and appoint an Umpire whose award shall be final and binding on them." 79

2. The Gandak Irrigation and Power Project 80

River Gandak, like the Kosi, is a tributary of the Ganges and has its headwaters in Nepal. It enters Indian territory near the old Tribeni regulator a Canal cons-

78 Ibid., p.295.
79 Ibid., p.294.
80 The agreement was signed on 4 December 1959 in Katmandu. see n.80.
81 Gulati, n.90.
constructed in 1903-10 as a famine relief project, and it is an inundation canal taking off the left bank of the Gandak and irrigated approximately 110,000 acres \(^{82}\) per year until the extension scheme in 1950. The canal was later incorporated into the Gandak Project. From there it courses for some distance along Bihar – U.P. border before falling into the Ganga near Patna. Measured at the Indo-Nepalese border, the Gandak has an annual flow of roughly 24 M.A.F. \(^{83}\) with a drainage area of 15,000 square miles and a minimum discharge during the winter of 10,000 cusecs. \(^{84}\)

The Project whose agreement is under review commenced in 1960. It is composed of a barrage across the Gandak River, about 2,500 \(^{85}\) feet below the Tribeni sluice and canals on both banks. Half the length of the barrage lies in Nepalese territory and the other half in the Indian state of Bihar. The right bank canal runs in Nepal for almost thirteen miles and then in U.P. for nearly seventy miles, before it enters Bihar. The Project provides irrigation to about 120,000 acres in Nepal and 2.8 million

\(^{82}\) Ibid.

\(^{83}\) Ibid.

\(^{84}\) Ibid.

\(^{85}\) Ibid.
acres in Bihar State, and 660,000 in U.P. In addition, it includes hydroelectric power generation both to India and Nepal.

As far as the provisions of the agreement are concerned, it would be an unnecessary repetition to restate the clauses. This is so because the basic contents are similar to those of the Kosi Project, already summarised.

3. The Indus Waters Treaty, 1961

Concluded after long, tedious negotiations lasting over a decade (1948-1960), with the good offices of International Bank for Reconstruction and Development, the Indus waters Treaty is, perhaps, the hardest river treaty concluded since the Second World War representing one of the most passionate exercises in diplomacy. Although it existed as an inter-state controversy between Punjab, Sind, Bahawalpur and Bikaner prior to 1947, the dispute over the Indus waters assumed a delicate international character


87 Ibid.
from 15 August 1947 onwards, the date on which the then British India was partitioned into two sovereign states, India and Pakistan. The new boundary which was dictated by religious (Hindu-Muslim) consideration, cut across the Indus Basin, giving to India an upstream position and Pakistan the downstream basin state on all but one of the six main rivers of the Indus. These included a network of irrigation canals that had been developed over a period of several decades.

The crux of the dispute lay in the following facts. By the time of partition, 26 million acres were under canal irrigation in the Indus annually. The act of partition placed 21 million acres in West Punjab (Pakistan) and only 5 million acres in East Punjab (India). Thus, the lion's share of the granary of Punjab went to Pakistan. According to the 1941 census, 46 million people depended on the Indus system of waters out of which 25 million were cut-off to Pakistan and the other 21 million to India. Thus irrigation canal system was more developed in West Punjab (Pakistan) than on the Indian side of Indus plains. While 5.9 million acres of the Indian Indus plain depended on canal irrigation, 28 million acres on the Pakistan side

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88 Ibid., p.6.
89 Ibid., p.59.
had been provided with irrigation canal system. Again, canals in India used 8.3 Million Acre-Feet (M.A.F.) compared with 64.4 M.A.F. in Pakistan.

The most sensitive aspect of the whole dispute relates to the fact that although Pakistan received the largest share of irrigation canals, the headworks of some of the key feeder canals, such as the Upper Bari Doab Canal with its headworks at Madhopur, and Dipalpur Canal which had its headworks at Ferozepore, were under the East Punjab (India) jurisdiction. Given the explosive political climate generated as a result of partition, Pakistan feared that India might withhold or divert water that had traditionally irrigated West Punjab. Soon, however, a dispute over the canal waters between East and West Punjab erupted. The Partition Tribunal set up to settle various issues between the Punjabs, offered no permanent solution to the delicate question of canal waters.

Under it, however, a standstill Agreement on water supplies was signed on 18 December 1947. Its purpose was

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90 For a full narration and discussion of the dispute see generally, Gulnali, n.100, Chaudri Muhammed Ali, The Emergence of Pakistan (New York, 1967); Mohammed Ayub Khan, Friends Not Masters (New York, 1967); The dispute was more dramatically highlighted by David E. Lilienthal, "Another 'Korea' in the Making?" Colliers 4 August 1951.

91 Text in Government of India, Ministry of Irrigation and Power, The Indus Water Dispute (New Delhi, 1954), Appendix.
to maintain the *status quo ante*, but it expired on 31 March 1948. The Arbitral Tribunal established to resolve unsettled disputes consequent to partition, had been given 31 December 1947 as the last date to receive disputes. Up to that date no water dispute had been submitted to it. On 1 April 1948, East Punjab discontinued water supplies to canals in West Punjab. Pakistan interpreted this act as provocative, if not aggression, and the possibility of an armed conflict between the two newly independent subcontinental neighbours became more real than probable.

On 15 April 1948, in an effort to resolve the dispute, representatives of the two Punjabs met in Simla and concluded two agreements on 18 April. Of the two agreements, one sought to restore the *status quo* in water deliveries to the Central Bari Doab Canal (C.J.O.C.) until 30 September 1948. The other related to the Dipalpur Canal with headworks at Ferozepore. It was agreed that supplies to be delivered from Ferozepore would be in proportion of the flow of the Jhelum River, and excluding the


93 n.110.
upper Sutlej. Besides these, a provision was inserted to bind Pakistan to pay seigniorage (royalty) charges, proportionate to maintenance costs and interest or proportionate capital.

The Central Government of Pakistan rejected the terms of the Simla Agreements since, according to the Prime Minister of Pakistan in a telegram to Prime Minister Nehru, they "have farreaching consequences and", therefore, "it will be necessary to hold an inter-Dominion Conference to discuss them...."94 Prime Minister Nehru consented to holding the proposed conference on 3 May 1948 in New Delhi. What came out of the conference was the controversial Delhi Agreement of 4 May 1948. In the opening clause the agreement referred to the basic position of East and West Punjab. East Punjab held that "... the proprietary rights in the waters of the rivers in East Punjab rest wholly in the East Punjab Government and that West Punjab Government cannot claim any share of these waters as a right...."95 On the other hand, West Punjab disputed "this contention, its view being that the point has conclusively been decided in its favour by the Arbitral Award and that in accordance with international law

94 Quoted in Gulhali, n.106, p.65.
95 Article 1., n.110.
and equity, West Punjab has a right to the waters of the East Punjab rivers." 96 The other point in the Simla agreements disputed by Pakistan related to payment of seigniorage and capital costs. On this question, Pakistan agreed to deposit with the Reserve Bank of India "such ad hoc sum as may be specified by the Prime Minister of India". 97 Payments other than those about which there was no dispute were to be transferred to the East Punjab Government. Another provision of central importance related to the principle of replacement. This was spelt out in clauses three and four wherein it was provided that due to East Punjab's water requirements, West Punjab should "tap alternative sources" for its own requirements. To this end, East Punjab would progressively diminish water deliveries to West Punjab, but would not suddenly withhold water supplies.

The 4 May 1948 Agreement became a contentious instrument. Pakistan refused to accept the 1948 Agreement as an agreement arguing that they signed it under "duress"

96 Ibid.
97 Article 5.
and by its note of 23 August 1950, Pakistan terminated it, insisting that the dispute be referred to the International Court of Justice. India, on its part, maintained that the 1948 Delhi Agreement was a valid instrument which could not be terminated unilaterally. And further, that the issue before the two countries was a bilateral matter best resolved through discussion rather than adjudication. However, India on 18 April 1951, conceded Pakistan's termination of the 1948 Agreement, but offered to accept a judicial settlement only on the validity of the said agreement. By this time, the Indus waters dispute had reached a dangerous level and would have exploded but for the World Bank's intervention to mediate.

4. The World Bank Proposals

David E. Lilienthal, former Chairman of Tennessee

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98 In a Note dated 23 August 1950, Pakistan in reference to the validity of 1948 Agreement, contended that: "... with millions of people facing the loss of their herds, the ruin of their crops and eventual starvation from lack of water, Pakistan was under compulsion to accept whatever India proposed...." The so-called Delhi Agreement, if ever it was binding upon Pakistan, has since long expired. The Government of Pakistan have on numerous occasions given to the Government of India notice to this effect. If, however, in the view of Government of India any further action or notice is needed to render the so-called Agreement of 4 May 1948, without present effect, it will be appreciated if this communication will be accepted as such action or such notice," Quoted in Gulhali, n.106, p.79-80.

99 Ibid., p.89.
Valley Authority and the Atomic Energy Commission of U.S.A., in a paper he published in 1951, put forward a proposal "that India and Pakistan work out a program jointly to develop and jointly operate the Indus Basin river system, upon which both nations were dependent for irrigation. With new dams and irrigation canals, the Indus and its tributaries could be made to yield the additional water each country needed for increased food production...." The then President of the World Bank, Eugene R. Black, took up the idea with enthusiasm and in September 1951 wrote to the Prime Ministers of India and Pakistan offering the Bank's good offices to resolve the Indus water dispute. Both the Governments accepted the Bank's conciliatory role. After a series of negotiations and appraisal of technical data, the World Bank placed its proposal to the two negotiating teams on 5 February 1954. The essence of the Bank formula is summarized in the Bank's own statement:

The Bank proposal is that there be taken as a basis for agreement between India and Pakistan a plan

100 David E. Lilienthal, n.109, Details in Ibid. The Journals of David E. Lilienthal: Venturesome Years 1930-55 (New York, N.Y., 1966), Vol.III, p.199. By this time Pakistan had retained the legal services of Covington and Burling, a New York firm of which John Laylin played the role of leading counsel.

101 Gulhati, n.106, pp.95-96.
under which the waters of the Western rivers would be reserved to Pakistan and the waters of the Eastern rivers would, subject to a relatively short transition period, be reserved to India. The plan may be summarized as follows:

The entire flow of the Western rivers (India, Jhelum and Chenab) would be available for the exclusive use and benefit of Pakistan, except for the insignificant volume of Jhelum flow presently used in Kashmir.

The entire flow of the Eastern rivers (Ravi, Beas and Sutlej) would be available for the exclusive use and benefit of India, and for the development by India, except that for a specified transition period India would continue to supply from these rivers, in accordance with an agreed schedule, the historic withdrawals from these rivers in Pakistan. The transition period would be calculated on the basis of the time estimated to be required to complete the link canals needed in Pakistan to make transfers for the purpose of replacing supplies from India. A temporary cooperative administration would be needed to supervise the carrying out of the transitional arrangements.

Each country would construct the works located on its territory which are planned for the development of the supplies. The costs of such works would be borne by the country to be benefited thereby. Although no works are planned for joint construction by the two countries, certain link canals in Pakistan will, as stated above, be needed to replace supplies from India. India would bear the costs of such works to the extent of the benefits to be received by her therefrom. An appropriate procedure would be established for adjudicating or arbitrating disputes concerning the allocation of costs under this principle.102

With some modifications and variations, the Bank plan or proposal as set forth, formed the plank of the Indus Treaty concluded six years later. The main provisions of the treaty are outlined in the following pages.

102 Ibid., pp.134-137.
The Treaty Provisions

Article 1 of the treaty deals with definition of terms and expressions as used therein.\textsuperscript{103} The waters of the Indus river system were divided geographically or territorially between India and Pakistan.\textsuperscript{104} Thus, while Pakistan was allotted the water supplies of the Western Rivers (Indus, Jhelum and Chenab), the flow of the Eastern Rivers (Beas, Ravi and Sutlej) were reserved to India. This was, however, subject to certain specified conditions. Firstly, India undertook to continue water deliveries to Pakistan from the Eastern Rivers during the transition period to enable Pakistan to effect necessary replacement works.\textsuperscript{105} Secondly, India was put under the obligation not to interfere with the waters of the Western Rivers except for domestic use, non-consumptive use, agricultural use, as set out in Annexure C and generation of hydroelectric power. Similarly Pakistan, assumed reciprocal obli-

\textsuperscript{103} For example the Treaty defines "Tributary" to mean any surface channel, whether in continuous or intermittent flow and by whatever name called, whose waters in the natural course would fall into that river. It also includes artificial drainage and subtributaries.

\textsuperscript{104} Article 111, especially clause (2) for India and Article 111 for Pakistan, see also Article 1IV(1).

\textsuperscript{105} Article 11 (5-9 and Annexure H).
gations. After the waters of the Sutlej Main and Ravi Main and their tributaries cross into Pakistan territory, she is free to utilize these waters, provided however, that this provision shall not be construed as giving Pakistan any claim or right to any releases by India in any such Tributary. 106 But, as an exception, Pakistan was allowed to draw water for domestic use, non-consumptive use, and for limited irrigation purposes. These stipulations, nevertheless, left either Party free to undertake "schemes of drainage, river training, conservation of soil against erosion and dredging," 107 but on condition that such schemes would not cause material damage to the other party.

To enable Pakistan to complete necessary replacement, a Transition Period was provided. During this period India was to limit its withdrawals for agricultural use or abstractions for storage and continue water deliveries to Pakistan from the Eastern Rivers. This period could be extended for three years in accordance with the provisions of Part 8 of Annexure IV. At any event, "the Transition Period shall end not later than 31st March 1973." Conditions for water deliveries during this period were regulated by

106 Article 11(4).
107 Article 14(3).
detailed provisions in Annexure H., with appendices. India was to deliver water from the Ravi for the Central Doab Canals (till 14 August 1947 they formed part of the Upper Bari Doab Canal system). Similarly, India was to limit its water withdrawals from the Sutlej Main and the Beas Component at Ferozepore for Kharif between 1960 and 1965. Henceforth, until the expiry of the Transition Period India was to furnish specified volumes of water during Kharif. For Rabi, India undertook to provide at Ferozepore water from the Sutlej and Beas in amounts stated in the treaty for use in the Sutlej valley canals of Pakistan.

Tied to these water supplies to India was the provision requiring Pakistan to pay to India proportionate working expenses on the Madhopur headworks and the feeder channels and for the Ferozepore headworks and other incidental payments.

As a result of the division of the Indus system between India and Pakistan, the latter was required by Article IV(1) to carry out replacement works and to develop its own independent irrigation canal system. Clearly, the cost of works of such a magnitude estimated at $894 million, were beyond Pakistan's ability. This fact had been recognized in the course of negotiations. In order to push through the negotiations, the Bank decided to approach friendly countries to aid Pakistan. Subsequently,
an Indus Development Fund under the management of the Bank was established. These arrangements were outside the Indus Treaty but the provisions of Article V(1) placed a duty on India to contribute a fixed sum of £175 million towards the costs of the works Pakistan would undertake. However, this amount of money was taken as representing India's proportionate benefits from the irrigation canals on the Eastern rivers which Pakistan depended on till partition on 15 August 1947.

The other important provisions relate to procedural and institutional arrangements with a purpose to foster cooperation and to avoid, as much as possible, differences and disputes, and if any dispute arises to resolve it timely. By Article VI the two Parties accepted to exchange the following technical data monthly:

(a) Daily (or as observed or estimated least frequently) gauge and discharge data relating to

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108 Indus Basin Development Fund Agreement, 19 September 1960, UNTS, Vol.419, Art.11 in which six countries contributed to the fund the following sums: Australia £15.54M, Canada £22.19M, Federal Republic of Germany £30.21M, New Zealand £2.78M, United Kingdom £58.48M, United States £280.00M, and in addition £235.00 in local currency. The World Bank gave a loan of £90.00M, see also Loan Agreement between Pakistan and World Bank, Article I.

109 Indus Waters Treaty, ¶107, Article V.
flow of the Rivers at all observation sites.

(b) Daily extractions for or releases from reservoirs.

(c) Daily withdrawals at the heads of all canals operated by government or by a government agency..., including link canals.

In case either of the Parties requests relevant additional data not mentioned in Vl(1), the requested Party, to the extent such data is available, shall supply it.\textsuperscript{110}

Through an agreement, either Party may set up hydrologic observation stations provided the requesting Party meets the expenses.\textsuperscript{111} An important provision of the treaty is Article Vll(2) which stipulates, \textit{inter alia:--}

If either Party plans to construct any engineering works which would cause interference with the waters of any of the Rivers and which, in its opinion, would affect the other Party materially, it shall notify the other Party of its plans and shall supply such data relating to the work as may enable the other Party to inform itself of the nature, magnitude and effect of the work. If a work would cause interference with the waters of any of the Rivers but would not, in the opinion of the Party planning it, affect the other Party materially, nevertheless the Party planning the work shall, on request, supply the other Party with such data regarding the nature, magnitude and effect, if any, of the work as may be available.

\textsuperscript{110} Article Vl.

\textsuperscript{111} Article Vlll(1(a)).
Besides mutual data sharing, a Permanent Indus Commission was constituted, comprising of two Commissioners one appointed by each Party. Its purpose and functions were to establish and maintain cooperative arrangements for the implementation of the Treaty, to report on problems to be referred to it, to strive to settle promptly any matters that might arise in respect of application or interpretation of the treaty, to inspect and during the transition period, to implement the arrangements to deliver water to Pakistan from the Eastern Rivers.

To settle differences and disputes arising from the treaty, an elaborate mechanism was established. All questions of dispute would first be addressed to the Permanent Indus Commission who would examine it with a view to resolve it by agreement. Should the Commission fail to resolve the question, "then a difference will be deemed to have arisen" in which case if the difference according to the Commission, was of a technical nature, would be decided by a Neutral Expert. Any other differ-

112 Article VIII.
113 Article IX.
114 Article IX(1).
115 Article IX(2).
rence would be treated as a dispute to be settled by negotiation between the two Parties, and as a last resort, by a Court of Arbitration. This Arbitral Court, should the need arise, is to consist of seven members, two to be appointed by each Party and the other three (Umpires) to be selected by agreement. The three Umpires are to be capable of being the Chairman of the Arbitration Court, an engineer and an international lawyer. The constitution and procedure of the Court are detailed in Annexure F of the treaty. 116

Finally, there remain general clauses which are of great significance in international law. Among them is the provision found in Article X(2) where it is declared:

Nothing in this Treaty shall be construed by the Parties as in any way establishing any general principle of law or precedent.

In the last provision it is stated that the Treaty may from time to time be modified by a duly ratified instrument entered into for that purpose by the two Governments.

To conclude a survey of the Indus Waters Treaty, the following tentative observations may be noted:—

1. Pakistan had based its arguments on two inter-

116 Article 1X(2(a)), Article 1X(3) and Article 1X(4).
related premises: It advanced the natural flow theory and the sanctity of existing uses or historic rights. India, on the other hand, had relied on the upstream doctrine of territorial sovereignty and invoked the principle of future uses and redressal of historic injustices. The Bank approach, however, and the final settlement was based on a clean-slate formula which erased the existing rights and obligations of the two contending Parties. This, however, was possible because of the availability of surplus water.

2. By dividing the waters of the Indus geographically the treaty is an expression of the principle of equitable apportionment.

3. The treaty also brings out the role and status of third Party mediation. Although the World Bank claimed its role as being one of "good offices," it effectively played a much more influential function beyond normal "good offices."

The contribution of Indus Waters Treaty to customary international law on the subject will be evaluated in an appropriate section of this text. For the time being the agreement between India and Bangladesh on the Ganges Waters will
now be surveyed.

5. **Indo-Bangladesh Agreement on sharing of the Ganges at Farakka and on Augmenting its Flow, 5 November 1977**

The dispute between Bangladesh and India over the Ganges waters, like the Indus waters dispute, is equally of a long duration and politically sensitive. Moreover, both the Indus and Ganges water disputes share a common historical genesis: both are offsprings of the same partition of 1947. It continues to sour relations between the two neighbouring states. It is beyond the scope of this work to go into any background details. In 1971, Bangladesh ceded from Pakistan. By this time, however, the dispute over the Ganges waters had been going on since 1951 when it became known that India planned to construct a barrage across the Ganges at Farakka. The Farakka Barrage had the aim of diverting the Ganges waters into the Bhagirathi-Hooghly river with the purpose of improving


navigation at the Culcutta Port. Pakistan protested against India's proposal on the grounds that it would be detrimental to East Bengal's interests. Negotiations with Pakistan yielded no solution. After Bangladesh became an independent state in 1971, the problem became more urgent and the dialogue with India was continued. Bangladesh complained of India's massive water withdrawals during the low season and of flushing out water during the high season, thus, causing heavy flooding in Bangladesh. Subsequently an agreement was concluded on 4 November 1975 for a period of five years.

The essential provisions of the agreement relate to sharing of water during the period from 1 January to 31 May annually at Farakka with specified monthly schedules. For this purpose, the average flow of the Ganges at Farakka for twenty-five years (1948)-(1973) was accepted as 55,000 cusecs with an expected availability of seventy-five percent. Bangladesh was apportioned 34,500 cusecs. On this basis, it was then agreed that "if during a particular

119 Bangladesh, however, considers that the purpose of the Farakka Barrage is not to mitigate silting of Culcutta Port, but "the real purpose of the Barrage is to control the river for supplying Ganges water to... Uttar Pradesh and Bihar" and to provide communication link across the river, Ibid., pp.13-14.

120 Article 11(i). See also Schedule to the Agreement.
10-day period, the Ganges flows at Farakka came down to such a level that the share of Bangladesh is lower than 80 per cent of the value shown... the release of waters to Bangladesh... shall not fall below 80 per cent...."121 The agreement imposes an obligation on India to maintain the quantity of water released to Bangladesh "except for reasonable uses... not exceeding 200 cusecs, by India are between Farakka and the point on the Ganges where both its banks are in Bangladesh."122

By Article 11 a joint Committee123 consisting of members to be designated by the two Governments was established. The function of the Committee is to implement the provisions of the Agreement and to examine any difficulty incidental to the agreed arrangements. Should a difference or dispute arise, and on the failure of the Joint Committee to resolve it, it shall be referred to a panel of an equal representatives nominated by the two parties. If the difference or dispute persists, "it shall be referred to the two Governments which shall meet urgently at the appropriate level to resolve it by mutual discussion and failing that by such other arrangements as

121 Article 11(ii).
122 Article 111.
123 Article Vll.
they may mutually agree upon.\textsuperscript{124}

A problem of much dispute between India and Bangladesh hinges on what is known in the Ganges Waters Agreement as "augmentation." It is related to a long-term solution based on equitable apportionment. Bangladesh is of the view that it should be resolved by associating Nepal, the uppermost riparian, with any plan to be worked out. India, on the other hand, maintains that the issues involved are bilateral. In this regard, India has proposed Brahmaputra-Ganges Link Canal above Farakka to augment the dry season flow of the latter, whose control words will be located in Indian territory. For various reasons, this plan is not acceptable to Bangladesh. Thus, the 1977 Agreement left it unresolved. Instead, the Indo-Bangladesh Joint Rivers Commission, constituted in 1972, was entrusted with the responsibility to study augmentation proposals by either Government "with a view to finding a solution which is economical and feasible."

The Agreement was signed for a duration of five years, but to be reviewed at the expiry of three years.

and six months before the expiry date. A declaration similar to Article X1(2), of the Indus Waters Treaty appears in the preamble to the Agreement. It is stated there that, notwithstanding the desire to finding an equitable solution to the problem, this should not be inferred as affecting the rights and entitlements of either country other than those covered by the Agreement, or establishing any general principles of law.

Apart from the fact that the Agreement recognizes Bangladesh's right to the Ganges waters, there is not much that can be deduced from it. It was a temporary arrangement which left many central issues pending. These issues surfaced even before the expiry of the agreement. Intense negotiations have been going on, but it appears that a long-term solution is quite far off.

The treaties outlined above pertain to the South Asian region. To complete a coverage of the Asian region, it would be appropriate at this stage to make a reference to the West Asian or Middle East water treaties.

C. WEST ASIAN OR MIDDLE EAST WATER TREATIES

The conventional system in the Middle East places

125 Article XI1, and Article XV.
126 See supra., n.87.
emphasis on irrigation, and these treaties, like the South Asian treaties, are binational despite there being more than two basin states. In addition, the regimes established regulate particular portions of a stream.

The earliest treaty regulation on contiguous rivers in West Asia is the Goldsmid Arbitral Award of 1872 between Persia and Afghanistan. It was stipulated in the Award that neither of the riparians would carry out works "calculated to interfere with requisite supply of water for irrigation on the banks of the Helman." Sometime later, 1885-88, Russia and Britain established a commission which imposed a restriction on Afghanistan not to utilize water from the Kushka, a boundary river. On the 13 July 1946, the Soviet-Afghanistan Frontier Agreement lifted this obligation on Afghanistan, provided "the Afghan party shall not increase the quantity of water taken from the Kushka in this area and shall observe the status quo in this respect."


Earlier, on 26 February 1921, Persia (Iran) and the Russian S.F.S.R. concluded a Treaty of Friendship in which there was inserted a clause that the two states "shall have equal rights of usage over the Atrak River and the frontier rivers and waterways." The following year, 20 February 1922, Persia and the U.S.S.R. entered into another Treaty which spelt out the rights of the Parties to boundary rivers and streams in between the Atrak and Tedjen River systems. Here one finds an instance of quantitative and geographical division of water. For example, the Tedjen River was divided between the riparians with three-tenths of the discharge to Persia and seven-tenths to the U.S.S.R. In other cases, some streams were allocated entirely to Persia. The majority of the rivers, covered in the 1926 treaty were divided equally between the two Parties. The treaty affected some fourteen rivers. An ad hoc Commission was constituted.

The Russian-Turkish Treaty of 8 January 1927 on the Use of Frontier Waters regulated various boundary

130 L.I.N.T., Vol.9, p.401.
131 ST/LEG/3/12, p.371.
132 Ibid., Article 3.
133 ST/LEG/3/12, p.394.
streams common to the two countries. The treaty in Article 1 apportioned to each Party half the waters of streams falling within its provisions. Besides irrigation, water supply and domestic uses, the agreement also covered hydroelectric power and fishing. At the same time a Mixed Commission was established. This agreement, however, was to last for five years with tacit extension. It was not until 1953 that a settlement on the utilization of the Aras between the U.S.S.R. and Turkey was concluded upon signing three protocols. Other details aside, Turkey was permitted to receive one half of the Oklemberyan (Serderabad) Dam's annual water storage. For this benefit Turkey accepted to pay approximately half a million dollars to the Soviet Union towards construction costs of the dam.

On 3 May 1930, the Franco (Syria)-Turkish Delimitation Commission, in its final protocol stated that:

Whereas their neighbourhood on the Tigris imposes on the riparians special obligations, it becomes necessary to establish rules concerning the rights of each sovereign state in its relations with the other. All questions, such as navigation, fishing, industrial and agricultural utilization of the waters,

134 Ibid., Article 8.
135 Ibid., Article 11.
136 Ibid., Article 4.
and the policing of the river, shall be solved on the basis of complete equality; they shall further be dealt with in uniform conventions prepared by the Permanent Boundary Commission. 138

The Franco-British Convention of 23 December 1920, 139 relating to certain points connected with the Mandates for Syria and Lebanon, Palestine and Mesopotamia invoked the downstream principle of natural flow inter alia that the upstream state should allow the river flow downstream in its natural state. To the extent that any French proposals for irrigation in Syria would "be of a nature to diminish in any considerable degree the waters of the Tigris and Euphrates at the point where they enter" British Mesopotamia, it was agreed to appoint an expert Commission to study such a plan. In the same convention, separate body nominated by the Mandatory Governments of Syria and Palestine was to "examine in common... the employment for the purposes of irrigation and the production of hydroelectric power, of the waters of the Upper Jordan and the Yarmuk and of their tributaries, after satisfaction of the needs of the territories under French mandate." With this in view, France was to give its representatives "the most liberal instructions for the employment of the surplus of these waters for the benefit of Palestine."

138 Ibid.

139 ST/LEG/SER.3/12, p.286.
In an Exchange of Notes dated 7 March 1923 between Great Britain (Israel) and France (Syria) an agreement was concluded on the basis of the 1920 convention in respect of Lakes Huleh and Tiberias. The convention partly provided that:

The Government of Palestine or persons authorised by the said Government shall have the right to build a dam to raise the level of the waters of Lakes Huleh and Tiberias above their normal level, on condition that they pay fair compensation to the owners and occupiers of the lands which will thus be flooded.140

It was also agreed that disputes arising shall be "settled by a Commission consisting of four members" two to be designated by the mandatory power. Further, the convention provides for protection of existing water use rights. The Protocol of 21 October 1931141 between France and the United Kingdom relative to the Yarmuk boundary settlement between Syria and Jebel Druze on the one side and Trans-Jordan on the other, reaffirms the regime provided for in the 1920 convention.

The same trend is to be found in the Franco-Turkish

140 ST/LEG/SER.B/12, p.287.

accord of 21 October 1921. Article 12 of the agreement apportions "waters of Kouveik... between the town of Aleppo and the region to the north remaining Turkish in a manner giving equitable satisfaction to both sides." So as to meet water requirements in all the region, the agreement permits Aleppo town to undertake at its own cost necessary diversions from the Euphrates in Turkish territory. The Lausanne Treaty of 24 July 1923, 142 which essentially dealt with matters of state succession, contains a provision on water uses wherein it is stated:

In default of any provisions to the contrary, when as a result of the fixing of a new frontier the hydraulic system (canalisation, inundation, irrigation, drainage or similar matters) in a state is dependent on works executed within the territory of another state, or when use is made of the territory of a state, in virtue of pre-war usage, of water or hydraulic power, the source of which is on the territory of another state, an agreement shall be made between the states concerned to safeguard the interests and rights acquired by each of them... 143

Five years later, 30 May 1926, 144 the Kouveik featured again in the Franco-Turkish convention of Friendship and Good Neighbourly Relations. Here as in the earlier agreement (1921) the question of water supply to the town

142 ST/LEG/SER.B/12, p.414.

143 Ibid., Article 109.

144 ST/LEG/SER.B/12, p.289.
of Alepo and for irrigation received further attention (Article 13).\(^{145}\)

After the Second World War, the conventional system of the Middle East rivers continued to develop along bina
tional lines, but a marked movement towards closer collabora
tion. This was brought out more clearly in the Treaty of Friendship and Neighbourly Relations, 29 March 1946,\(^{146}\) between Turkey and Iraq. Amongst other matters, the need for conservation was recognized, together with the problem of flood control, regulation and maintenance of a regular water supply. In this connection the two riparian states recognized that Turkish territory offered the most ideal sites for the construction of the requisite works or installations. Therefore, to give seriousness of purpose to these principles, the accord allowed Iraqi technical personnel to carry out in Turkish territory surveys, collect relevant data, and select suitable sites for proposed works.\(^{147}\) However, Iraq was to bear all the costs of such studies. Turkey for its part took the responsibility to erect gauging stations on the rivers - costs to be shared between the countries - to observe during the flood period

\(^{145}\) Ibid., Article 13.

\(^{146}\) ST/LEG/SER.8/12, p.76.

\(^{147}\) Ibid., Protocol No.1.
the level of the river every morning at 8.00 a.m., and
to convey the gauge readings telegraphically to the compe-
tent Iraqi authorities. The construction of any works
referred to were accepted in principle by the Turkish
Government. Excluding the hydrometeorological stations, each
planned installation was subject to a separate agreement
giving details relative to its execution. Another impor-
tant provision is the one that required Turkey to inform
Iraq of its plans to construct conservation works on the
Tigris-Euphrates systems "so that these works may as far
as possible, be adapted, by common agreement, to the inte-
rests of both Iraq and Turkey." Lastly, Protocol No.5
established a Joint Economic Commission for the regulation
of the waters of the Tigris and Euphrates.

Jordan and Syria signed an agreement on 4 June
1953,\textsuperscript{148} in Damascus concerning the utilization of the
Yarmuk waters for hydroelectric power, irrigation and
water use rights thereon. A prominent feature of the
agreement is the institution of a Mixed Syro-Jordanian
Commission\textsuperscript{149} charged with planning, supervisory, and
operational responsibilities. In pursuance of these
Objectives and functions, the Commission was conferred

\footnotesize{\textsuperscript{148} ST/LEG/SER.8/12, p.378.}
\footnotesize{\textsuperscript{149} Ibid., Articles 10, 11.}
rights to establish and maintain a power station in the
Yarmuk Valley, including a reservoir and two channels.
Restrictions were imposed on Syria (the upstream state)
in its use of the headquarters of the Yarmuk. Power from
the main hydroelectric plant was to be divided in the
ratio of 75% to Syria and 25% to Jordan so long as "Syria's
share shall not be less than 3,000 kilowatts in the period
15 April to 15 October of each year." Either Party is
permitted to sell its surplus share of power to the other,
but prohibited to "sell surplus power at its disposal to
any third state or to any person, corporation or institu-
tion alien to both contracting states, except with the
agreement of the other." An interesting aspect of the
agreement is the provision relating to sharing of costs.
After indicating the contribution of each state (95% by
Jordan and the remaining 5% by Syria) towards construction
costs, the proportion of labour force to be deployed was
equally set: Eighty per cent from Jordan and twenty per
cent from Syria, but not applicable to specialized cate-
gory. Finally the agreement imposed an obligation on the
Parties to accord the Yarmuk priority over national plans.

Despite lack of uniformity of the West Asian water
treaties, the following principles may be derived:

1. The treaties cover both successive and conti-
guous or boundary waters. An attempt, though
not widespread, is made to protect both upstream and downstream rights;

2. All the treaties reviewed are bilateral. There is yet no instance of a multilateral convention in the region that covers an entire basin. The idea of a unified plan for the development of the Jordan Basin has not been acceptable to the states concerned due to political reasons.

3. Although irrigation is predominant in arid regions, such as the Middle East, treaties do not lay down any priority of uses. These are matters left to the discretion of each state.

4. As to tributaries and sub-tributaries, the West Asian conventional system presents marked inconsistencies. While in some instances, relatively small streams have been incorporated into a treaty regulating a watercourse into which they drain, other major tributaries are excluded from regulation.

5. On the institutional level, various treaties provide for creation of Commissions but their functions are generally limited to technical studies. The Joint Jordanian-Syrian Commission
stands out on its own in as much as it is an international binational "authority."

6. Cost-sharing, as reflected in the treaties, is undoubtedly linked with benefits. A state which stands to benefit from works, surveys etc. in another state's territory meets the costs related to such works. Where projects are jointly executed, costs are determined in proportion to benefits.

11. WATER TREATIES IN THE WESTERN HEMISPHERE

In order to simplify survey, the present review of the water treaties in the Western Hemisphere is subdivided into two regions:

(a) South and Central America; and
(b) North America.

A. SOUTH AND CENTRAL AMERICA

A recurrent theme found in the water conventions of this region in general is the territorial and frontier problems which have been going on ever since the disintegration of the Spanish Empire. Several treaties in this respect have thus been concluded. Expectedly, each of these conventions contains a provision relevant to utili-
zation of the shared waters of boundary rivers. It is not the purpose here to go into the historical details of these earlier treaties; but it can only be pointed out that over the years, treaties specifically addressed to utilization of boundary and successive rivers have been entered into either bilaterally or multilaterally by the interested basin states. Even in this case, it is not proposed to touch on each and every one of these conventions. 150 The same pattern of sampling out some of the treaties is adopted.

Of importance, among the earliest treaties, is the convention signed between France (French Guyana) and the Netherlands on 30 September 1915 151 concerning their colonial territories of Cayenne and Surinam. Article 3 of the said treaty imposed an obligation on the Parties to concur in respect of any installations the effect of which causes "an obstacle for navigation or change the nature of the river."

On 20 February 1929, 152 the Dominican Republic and


152 In CT/LEG/SER.9/12, p.225.
Haiti concluded Traite de Paix d'Amitie et d'Arbitrage which provided in Article 10 for equitable utilization of their shared inland waters. Article 10 of the same treaty stipulated specifically that "the two High Contracting Parties undertake not to carry out or be a party to any constructional work calculated to change their natural course or to affect the water devided from their sources."

By an Exchange of Notes, 15 March 1940, approving the General Report of the Special Commissioners charged with the task of demarcating the border line between the British Guyana end Brazil, the contracting Parties agreed not to initiate any works that would alter the existing course of the river "except with the mutual consent of the Governments of both states..." Works, for example, "canalisation, irrigation or development of electricity..." were likewise "subject to the mutual consent of both riparians." Other treaties, including the Bolivian-Peru convention of 17 July 1935 on Lake Titicaca, the Chilean-Peru treaty of 3 June 1929 to cite but a few, contained more or less similar restrictions on the riparian states.

154 ST/LEG/SER.B/12, p.164.
1. The Salto Grande Treaty, 30 December 1946

New treaties, though not comprehensive in scope, have been concluded to regulate the two important river basins in Latin America; the Amazon and the Plata Basins. By far the most substantive of these conventions is the 30 December 1946\textsuperscript{156} Salto Grande Treaty along with an Additional Protocol between Argentina and Uruguay. However, the Treaty was ratified only in 1958. The purpose of this Agreement is to set forth rights and obligations for joint construction of a multipurpose dam\textsuperscript{157} at Salto Grande, a site where the Uruguay subsystem forms a boundary between Argentina and Paraguay, but down-stream from Argentina-Brazilian border.


\textsuperscript{157} The power station at Salto Grande Dam when completed would be equipped with fourteen 135,000-KW turbines with a total installed capacity of 1,890,000-KW and an average annual output of 6,300 KWh. This capacity is equal to a quarter of total installed capacity of Argentina and more than two time that on the Eastern Republic of Uruguay, *Ibid.*, Salto Grande Commission n.24, p.221.
The aims of the agreement are spelt out in the preface where it is stated that the objective of the project is "to obtain from the natural advantages of the rapids of the Uruguay River in the Salto Grande area the greatest possible benefits for the economic, industrial and social development of the two countries and... to improve the river's navigability, utilizing its waters for the production of electric power, facilitating land communication... and achieving any other purpose which may, without prejudice to the foregoing aims, contribute to such common benefits."

The aforesaid declaration of intent was substantiated in the provisions that follow. Article 1 provides for the common use of the waters of the Uruguay River system in equal parts. The treaty establishes the following order of uses: domestic and sanitation occupy the first priority; this is followed by navigation; hydro-power generation takes the third position and; lastly, irrigation. Article 2 of the treaty established a Mixed Technical Commission charged to deal with "all matters relating to the utilization, damming, and diversion of waters" in accordance with priority of uses set in Article 1. Furthermore, Article 7, provides for the creation of
an Inter-State Agency. The Commission is endowed with a juridical personality of an international agency which performs its functions *jure imperie*, that is in a manner consonant with the specific objectives for which it was created as a subject of international law. Similarly, it also acts *jure gestionis*. It may acquire and dispose of property and enter into contracts. The Commission is composed of an equal number of members from each country. It arrives at its decisions by an absolute majority, but where a tie occurs, either side presents a separate report. Under Article 3, the Commission is authorized to draw its own procedural rules.

Turning to the cost of joint works and installations, the treaty provides for equal proration. These works and installations are to be jointly owned in equal shares. Navigation works are not included in the above formula of cost-sharing. Rather it is governed by a different regime which lays down that "for the purposes of navigation upstream of the dam" costs "shall be borne by each country in proportion to its use..." As to the sharing of benefits from joint works, the same formula of equal sharing

was adopted. Presumably, to take account of immediate needs, the treaty permitted Argentina to utilize 83.34%\(^{159}\) of the installed power capacity in the first four years of operation, on condition that operations commenced in 1979-1980.

The treaty recognize the right of each state to carry out diversions and any other uses of the Uruguay system "within their respective jurisdiction," but on the "prior report" of the Mixed Technical Commission.

To complete the Treaty, the two contracting states agreed, prsuant to Article 11, to extend an invitation to Brazil (an upstream riparian) to a conference convened for the purpose of "considering changes affecting navigation on the Uruguay River and the river management system under provisions of existing conventions which may occur as a result of the conclusion of the Agreement."\(^{160}\) The conference was convened on 23 September 1960 and a Tripartite Joint Declaration was issued in which the principle of notification and consultation was reciprocally accepted. Brazil however, reserved the right to: ask and obtain, at any time, fair compensation for any damage that

\(^{159}\) Details are contained in Article 13 of the Implementing Agreement, November, 1972, Ibi\textsuperscript{u}, p.243.

\(^{160}\) Cano, n.175, p.x.
may be caused in Brazilian territory during the construction or operation of the works; express its views if, in the course of the surveys, the participating countries wish to introduce any change in the plans that modifies the conditions currently envisaged. In Article 4 of the Declaration, however, Brazil undertook that "if hydraulic works are carried out that may alter the current management system of the Uruguay River, it will hold prior consultations with the other riparian states in accordance with international legal theory and practice." 161

The Declaration concluded with a statement of intent to evolve a formula for regional cooperation.

2. Tratado de la Cuenca del Plata, 23 April 1969 162

On 23 April 1969, Argentina, Bolivia, Brazil, Paraguay and Uruguay signed the River Plata Basin Treaty in Brazilia. The five co-basin states, while accepting the

161 Art. 4 of the Tripartite Declaration, Cano, n. 175.

concept of physical unity of a river basin, also recognized the inherent peculiarities in the River Plata. These factors, which sometimes appear to contradict the Principle of basin unity, demand specific treatment. Necessarily, therefore, the River Plate Treaty was formulated as a framework agreement. Thus, it stipulates that the treaty "shall not inhibit the contracting Parties from entering into specific or partial agreements, bilateral or multilateral," so long as these arrangements are directed to the achievement of the integrated development of the River Plate system. These objectives are outlined in Article 1 to include: improvement of navigation; reasonable and equitable utilization of water resources; conservation measures; regional economic complementations; data-sharing and joint technical surveys.

The treaty establishes an Inter-Governmental Coordinating Committee to put into practice its stated objectives or aspirations. In order to carry out responsibilities conferred on it, the Committee's jurisdiction stretches throughout the basin. It has the authority to promote and coordinate and to monitor various activities in the basin. Furthermore, the Committee is empowered to

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163 Art. VI.
164 Art. III.
seek technical and financial aid with international organizations. While national bodies or agencies have the freedom to initiate operations within their national jurisdiction, the treaty requires that the Committee be kept informed of those measures or activities. 165

Lastly, Article VII(3) provides that in case a party wishes to denounce the treaty, it has to communicate this intention ninety days prior to the formal act of denunciation. A year from the date of official denouncement, the denouncing party shall then be relieved of its treaty obligations.

3. Treaty for Amazonian Cooperation, 3 July 1978 166

Almost nine years later, eight Amazon Basin states, concluded the Treaty for Amazonian Cooperation. Like the River Plate Treaty the Amazon convention is an umbrella pact containing general provisions to facilitate harmonious

165 Art.IV.

exploitation of the Basin's resources.

The treaty is long, containing twenty-eight articles, excluding the preface. Stated in an abridged form, the treaty may be divided in two main parts. Part one consisting of Articles I to VII are a statement of the substantive provisions of the treaty. From the eighth article down to the twenty-third article are found the procedural provisions. In the first part, the Parties attempt to identify areas of mutual cooperation, but at the same time emphasizing each one's sovereign rights. Thus, Article I expresses the consent of each Party to jointly develop their respective Amazonian resources "in such a way that these joint actions produce equitable and mutually beneficial results" including environmental protection. In this respect, the signatories agree to share information and to enter into sub-agreements on specific matters. Article IV, however, reiterates the sovereign right of each contracting state "to exclusive use and utilization of natural resources within their respective territories" and that "the exercise of this right shall not be subject to any restrictions other than those arising from International Law."

As pointed out already, the last part of the Treaty creates an institutional framework within which to carry out the provisions of the treaty. Details aside, these
include: Periodic meetings of Foreign Ministers; Amazonian Cooperation Council comprising of top-level diplomats; and Permanent National Commissions. In accordance with Article XX, the meeting of the Foreign Ministers was mandated within two years. The task of the Foreign Ministers is to formulate and evaluate main regional policy. On the other hand, the Amazonian Council, required to meet annually, though subordinate to the Ministers, is entrusted with wide-ranging tasks. Besides convening Ministerial meetings, it is given the mandate to execute ministerial policy, evaluate activities of the Parties, carry out studies for regional projects, and assess implementation of relevant regional plans. Lower down on the institutional chain, the Permanent National Commissions, are called upon to carry out both Ministerial policy and ACC plans within respective territories.

With this brief survey of the Latin American treaty regime, attention shall now turn on to the North American conventional model.

B. NORTH AMERICAN WATER TREATIES

International water relations in the North American

167 Art.XXXI.
168 Art.XXIII.
sub-region affect three states: the United States of America, Mexico and Canada. To the South, the Colorado and the Rio Grande (Bravo) form a boundary approximately sixty per cent of the border between the United States and Mexico. Although the Rio Grande has its headwaters in the states of Colorado and Wyoming, the bulk of its volume originates in Mexico. Northwards, 2198 miles of the Canadian - U.S. border which runs for about 3,987 miles is an inland water boundary. Necessarily, therefore, the long water boundaries between the United States and Mexico on the one hand, and Canada and the United States on the other, have generated controversies both regarding boundaries and over the utilization of these resources. These disputes assumed increasing intensity as reflected by treaties stretching from the beginning of the nineteenth century onwards. That then marked the point in the evolution of a conventional system regulating relations between the respective riparian states.

Chronologically, three landmarks may be identified in the development of the North American treaty regime. The first stage covers the period up to 1909-1910 characterized by the Mexico-US Treaty of 21 May 1906 over the Rio Grande, and a parallel Canadian-US Boundary Waters Treaty of 11 January 1909. From 1910 up to the end of the Second World War, the United States and her two neigh-
bours concluded several bilateral treaties of which the 1925-1930 Canadian-US Treaties over the St. Lawrence system and 1944 Mexican-US Treaty are notable. The final stage spans from 1945 to the present times with the 1961 Canadian-US Treaty over the Columbia features out prominently. The main contents of these agreements are summarised in the following sections.

1. **Mexico-US Water Treaty of 21 May 1906**

   In 1895, the Mexican Government joined issue over the legality of the United States undertaking diversion of the Rio Grande within the United States Territory to the detriment of the Mexican agriculture. Mexico lodged a protest to the state department that the waters of the Rio Grande had been diminished to an extent substantially causing damage to the Mexican population. It put forward the argument that since the river was a shared one, international law imposed restrictions on the United States to make such diversions as would not appreciably diminish the

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quantity of the water. Beyond reasonable limits, a prior agreement with Mexico was an essential requirement. In any case, so ran the Mexican protest:

... international law would form a sufficient basis for the rights of the Mexican inhabitants.... Their claim to the use of the water of that river is incontestable, being prior to that of the inhabitants (of the United States) by hundreds of years, and, according to the principles of civil law, a prior claim takes precedence in case of dispute.170

The State Department referred the matter to the Attorney General, Judson Harmon, for an opinion as to whether the diversions made were contrary to the principles of international law, and therefore, making the United States liable for injuries suffered by Mexico. Attorney General Harmon found no contradiction of international law in the United States' diversions in that:

The fundamental principle of international law is the absolute sovereignty of every nation, as against all others, within its own territory. Of the nature and scope of sovereignty with respect to judicial jurisdiction, which is one of the elements, Chief Justice Marshall said (Schooner Exchange v. McFaddo): "The jurisdiction of the nation within its own territory is necessarily exclusive and absolute." It is susceptible of no limitations, not imposed by itself. Any restriction upon it, deriving validity from an external source, would imply a diminution of its sovereignty to the extent of the restriction, and an investment of that sovereignty to the same extent in that power which could impose such restric-

170 Quoted in Ibid., Austin, p.406.
tion. All exceptions, therefore, to the full and complete power of a nation within its own territory must be traced up to the consent of the nation itself. They can flow from no other legitimate source.\textsuperscript{171}

The passage quoted above which came to be called the controversial Harmon doctrine may be restated as follows:

International law imposes no obligation on riparian states to restrict their use of the waters of a river while in their respective territories. This is because jurisdiction of a state over the waters of a shared river in its territory is exclusive. Therefore, to depart from this principle in preference to any other, would be inconsistent with a state's sovereignty over its domestic domain.

While the opinion expressed by Attorney General Harmon had no binding effect on anyone and could have left, unheeded it assumed legal importance in that the United States ardently adhered to it as a statement of existing international law. This position was officially proclaimed in the provisions of the treaty under review and in later compacts.

Controversy over the Rio Grande waters continued unresolved. A draft treaty calling for recognition of Mexican claims to an amount of the Rio Grande waters was submitted by Mexico to the United States in 1897. Negotiations went

\textsuperscript{171} Opinions of Attorney-General, Vol.21 (1895), p.281.
on intermittently till 21 May 1906 when finally Secretary of State Elihu Root and the Mexican Government signed a convention, provisions of which are set out below.

The two Governments declared in the preface that the convention was an outcome of a desire "to provide for the equitable distribution of the waters of the Rio Grande ... and being moved by considerations of international comity...." The first two Articles provided for the con­struction of a storage and distribution of the Rio Grande waters above Fort Quitman in the United States. By the provisions of these clauses, Mexico's share was fixed at 60,000 acre-feet annually in perpetuity and to be delivered in accordance with an attached schedule. It was fur­ther provided that in case of extraordinary draught or serious accident to the irrigation system in the United States, the amount delivered to Mexico shall be reduced in the same proportion as the water delivered under said irrigation system.

Of legal importance are provisions found in Articles 4 and 5 which state the applicable law. Article 4 sets out that while the United States agreed to deliver water to Mexico, this should in no way be interpreted as "recognition by the United States of any claim on the part of Mexico to the said waters." To dispel any ambiguities that could arise from Article 4, the Treaty then goes to
an elaboration of the Harmon doctrine, in part declaring that:

The United States, in entering into this treaty, does not thereby concede, expressly or by implication, any legal basis for any claims heretofore asserted or which may be hereafter asserted by reason of any losses incurred by the owners of land in Mexico due or alleged to be due to the diversions of the waters of the Rio Grande within the United States; nor does the United States in any way concede the establishment of any general principles or precedent by the concluding of this treaty. 172

Thus, the Harmon doctrine revived its formal consecration in international law since the convention was founded on it. Read thus, Mexico was granted water on basis of international comity or good neighbourliness.

Within the same period a dispute over the Colorado River was going on between Mexico and the United States. The United States had in 1898 embarked on large scale irrigation project. Mexico objected to these plans fearing that they would diminish the volume of the water, thereby interfering with navigation. A treaty could not be concluded and the controversy dragged on till 1944 when a compact was finally signed. This will be considered at a late stage, but for the moment it is proposed to dispose of parallel relations during the period under review between Canada and the United States.

172 Article 5.
2. **United States-Canada : The Boundary Waters Treaty of 11 January 1909**

While negotiations were going on between Mexico and the United States, discussions were underway between Canada and the United States to settle disputes over their various shared water resources: a dispute over the Lake of Woods remained unresolved since 1888; a controversy concerning utilization of the St. Mary waters for hydropower at the Soo River was still pending; and the use of St. Mary and the Milk River waters for irrigation on either side of the border required a settlement. An exhaustive discussion of these matters has been done elsewhere and need not be repeated here. It would be sufficient to recall, however, that on 6 April 1906, George Gibbons, a Canadian member

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of the International Waterways Commission, proposed to his counter-part, George Clinton of the United States a suggestion that a treaty be concluded to settle differences between the two co-riparians concerning all shared rivers. In pursuance of these proposals, protracted negotiations were conducted in London from 1907 to 1908 between the British Ambassador in Washington and Elihu Root. The Gibbons-Clinton draft treaty prepared in 1907 was rejected by the United States. In the following year Gibbons and Anderson, leading Counsel of the State Department were instructed to prepare a final draft. On the basis of this draft, a settlement was reached and a treaty signed in Washington on 11 January 1909.

The treaty covers several water systems of common interest between Canada and the United States. As already pointed out, this treaty has been a subject of wide commentary and it is not within the scope of this inquiry to go into a detailed examination of the various aspects. What is of primary concern here are those general provisions which have a bearing on international legal principles. In this context, Article 11 of the treaty is of greatest interest. Before going into the substance of Article 11, it may be noted that the Preamble of the convention sets out the purposes of the treaty to include: prevention of disputes regarding the use of boundary waters;
to settle all questions pending between Canada and the United States involving the rights, obligations, or interests of either party relative to the other or to the inhabitants of the other along their common frontier; and, to make a provision for the adjustment and settlement of all such questions as may hereafter arise.

Considerable difficulties had arisen in formulating Article 11. In a report concerning an application by the Minnesota Canal and Power Company (1904) to divert waters of the Birch Lake, a boundary water, the International Waterways Commission favored the principles prohibiting diversions of successive waters injurious to the public or private interests of one or the other of the riparians. The United States rejected this proposition. Canada accepted Article 11, as insisted upon by Elihu Root, endorsing the Harmon doctrine in the most unmistakable terms. It states:

Each of the High Contracting Parties reserves to itself... the exclusive jurisdiction and control over the use and diversions, whether temporary or permanent, of all waters on its own side of the line which in their natural channels would flow across the boundary or into boundary waters; but it is agreed that any interference with or diver-

176 Ibid., Bloomfield, etc., p.13.

177 Ibid.
sion from their natural channel of such waters on either side of the boundary, resulting in any injury on the other side of the boundary shall give rise to same rights and entitle the injured Parties to same legal remedies as if such injury took place in the country where such diversions or interference occurs.

Part two of the clause would appear to negate the Harmon doctrine, but it is only a variation dependent on existing national laws. It did in fact cause some difficulties since the domestic law of British Columbia did not impose obligations on upstream licensed users to respect downstream unlicensed users, unless these rights were explicitly safeguarded in the license. This Article shall be considered further in another section. In the meanwhile, the treaties summarised shall be reviewed below.

Two principles emerge clearly from these conventions, the most obvious being the Harmon doctrine or the principle of territorial sovereignty. In both the cases, it was the United States, which happened to be the upper riparian in the waters discussed, refused to move away from Attorney General Harmon's doctrine. The second important principle that is evident from the treaties is the concept of continuous negotiations evidenced by the institution of International Waters Boundary Commissions. These two principles

178 For a lively debate see supra, n.194, Austin and Infra. n.198.
have played significant roles in the North American water relations. Opinion is, of course divided on their impact upon the problems they deal with. There is the view that the United States has abandoned the Harmon doctrine while others say it has not. On the joint Commissions, a section of authors attach wider powers to these bodies, but the other prevailing opinion, though acknowledging the central role of these organs, would restrict their status to that of consultative agencies. Whatever the positions taken may be, the immediate concern here is that the Joint Commissions as incorporated in the treaties constitute a principle of great significance to the whole subject of water relations. With these observations in mind, the discussion shall now switch over to the next state of the survey of North American treaties.

The treaties of 1906 and 1909 between the United States and Mexico and United States and Canada respectively left several matters unsettled and, in any case, these settlements could not claim a final solution. In the last section, it was noted that Mexico and the United States failed to reach an agreement over the Colorado River waters.

179 For these differing points of view see generally, W. L. Griffin, "The Use of Waters of International Drainage Basins Under Customary International Law," AJIL, Vol.53 Austin, n.188.
Similarly, the Canadian-US Treaty of 1909 did not cover all the important issue-areas such as the Chicago diversion. Moreover, the Harmon doctrine written in the Treaty upon the insistence of the United States soon proved problematic when the Treaty was put into operation.

3. **Mexico-United States : The Treaty 3 February 1944**

It took more than sixty years of on and off negotiations before Mexico and the United States reached an agreement concerning the Colorado River. By the early 1920s the exploitation of the water resources of the Colorado River by the United States had reached such scale that it led to serious inter-state disputes which culminated into the Colorado River Compact or the 1929 Boulder Canyon Project Act. Though the Act was purely a domestic affair, Section 20 of this Act, contained a provision which took account of Mexico's rights. It said,

> Nothing in this Act shall be construed as a denial of recognition of rights, if any, in Mexico to the

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use of the waters of the Colorado River system. 182

Earlier in 1922, Herbert Hoover, Secretary of Commerce sought an opinion from the State Department in respect of Mexico's legal rights. 183 The reply from Charles Evans Hughes, then Secretary of State, reiterated the Harmon doctrine as the applicable international law, and said that any delivery of water to Mexico appeared to him to emanate from "considerations of equity and comity" which required "that the interests of Mexico in the matter should be taken fully into consideration." 184

Subsequently, the United States offered to deliver annually, 750,000 acre-feet out of a total flow of 20,000,000 acre-feet to Mexico being the maximum which Mexico had ever used in any single year. These proposals were not acceptable to Mexico which put its minimum requirements at 2,000,000 acre-feet. Finally, on 3 January 1944, a treaty allotting the Colorado River Waters was signed in Washington.


184 Ibid.
The Treaty which contains twenty-eight articles is couched in highly technical terms. Opening the Treaty, the preamble speaks of the intentions of the Co-riparians "to fix and delimit the right of the two countries" with respect to "their shared river systems with a purpose to obtain the most complete and satisfactory utilization thereof." Article 1 defines the terminology used in the treaty, while Article 2 renames the International Boundary Commission to International Boundary and Water Commission. Article 2 further elaborates the status of the International Boundary and Waters Commission as an international organisation, and its jurisdiction and powers.

Under Article 3, the Treaty sets a priority of uses to be followed by the Commission in case of joint uses. However, the Treaty mentions only one use: hydroelectric power generation. In the same Article, the signatories undertake the obligation to jointly tackle sanitation problems at the common border.

Farther down, Article 10 effects the division of water between the two Governments. It guarantees Mexico an annual quantity of 1,500,000 acre-feet (1,850,234,000 cubic metres) "from any and all sources" to be released according to Article 15 of the Treaty. Article 10(b) further permits Mexico to receive additional 200,000 acre-feet per year, provided there is surplus water as deter-
mined by the United States. The additional water so delivered would not entitle Mexico to acquire a vested right beyond the 1,500,000 acre-feet quantity stipulated. Should there occur an "extraordinary draught or serious accident to the irrigation system in the United States... the water allotted to Mexico will be reduced in the same proportion as consumptive uses in the United States are reduced." To put into operation the provisions of Article 10, Article 15 gives a schedule regulating water releases to Mexico at specified points (Article 11).

4. Canada-United States (1910-1945)

During the period under review, the Canadian-U.S. water controversy deepened and correspondingly the tenor of negotiations intensified. Among the most pressing

185 The details of these negotiations have been narrated and explored in several works. See, for example, J. Simsarian, "The Diversion of Waters Affecting the United States and Canada, AJIL, Vol.32, (1938), p.488, Chacko, n.194; Bloomfield and Fitzgerald, n.194, pp.2-14; Austin, n.188; Conen, "The Regime of Boundary Waters: The Canadian-U.S. Experience," Recueil Des Cours, Vol.146, Part III (1975), pp.250-51; more comprehensive details in Dreisiger, "The Canadian-American Irrigation Frontier Revisited: The International Origins of Irrigation in Southern Alberta 1885-1908" (being Paper submitted to the Canadian Historical Association, Edmonton, June 1975), Ibid., The International Joint Commission of the United States and Canada, 2 Vols. (P.hD. Thesis, Royal Military College, Kingston, Ontario, unpublished). These latter works are cited in, Ibid.,
areas of discord, the Chicago diversion\textsuperscript{186} featured out quite prominently. In 1906, the International Waterways Commission allotted 10,000 cubic feet per second to the

\textsuperscript{186} On 29 May 1889, the Sanitary District of Chicago (hereafter the Sanitary District) was created under the Illinois State Legislature Act to provide for sewage discharge. See, W. C. Jones and K.H. Addington eds., \textit{Annotated Statutes of Illinois} (1913), Vol.3, ch.42, para.4284 quoted in Simsarian, n.188, p.496. It may be recalled that Lake Michigan, or the Chicago Diversion, had remained outside the scope of the 1909 Treaty except for navigation rights (Art.1). In addition, Art.3 which required the approval of the Commission was not intended to "limit or interfere with... existing rights nor are such provisions intended to interfere with the ordinary use of such waters for domestic and sanitary purposes." These provisions read together with Art.2, so it has been contended, gave the United States exclusive jurisdiction in the matter. A counter argument is that Article 2, para.2 conferred on Canada the right to object to any diversions or interferences of boundary and successive waters the effect of which would "be productive of material injury to the navigational interests on its own side of the boundary." See Austin, n.188, p.423; Cohen, n.192, pp.250-51; Bloomfield and Fitzgerald, n.192, pp.2-14, Secretary Elihu Root in his testimony before the Senate Committee on Foreign Relations where he stated that the terms of the 1909 Treaty were constructed so as not to prohibit diversions from Lake Michigan, See Hearing Before Subcommittee of Senate Committee on Foreign Relations on S.Res.278, 72nd Cong. 2nd Sess., pp.1005, 1006, 1008, 1009, 1010. G. Graham, "International Rivers and Lakes: The Canadian-American Regime" in R. Zacklin and others eds. The Legal Regime of International Rivers and Lakes (The Hague, 1981), pp.7, 8. Subsequently, however, studies by the International Joint Commission included the Great Lakes with a common basin concept, Cohen, Ioid., p.251, the Interim Report of IJC on Great Lakes Levels (1973, the IJC Report on the Great Lakes Waters Quality.
Chicago Sanitary District. Six years later (1912) the Canadian Counsel protested to the United State's Secretary of War against further diversions. Basing its arguments on international law, Canada contended that the United States could not vary the level of navigable contiguous waters without Canadian consent. Even otherwise, so went...  

187 To this effect, the Committee of the Privy Council of Canada authorized Counsel and other representatives to submit a brief and to appear before Stimson, then Secretary of War, to oppose any proposal which would result in lowering the level in the boundary waters and in the St. Lawrence Rivers. See, correspondence Relating to Diversion of the Water of the Great Lakes by Sanitary District of Chicago, 27 March 1912-17 October 1927, Canada, Sessional Papers, 1928, Sess. Paper No.227, p.3, Simsarian, n.188, p.507. At the time of the Canadian brief, Secretary Stimson was examining an application by the Sanitary District to the Secretary of War (1912) to obtain permission to increase diversions from 4,167 cubic feet per second to 10,000 cubic feet per second. In a decision rendered in 1913, Secretary of War denied the petition of the Sanitary District, Ibid., Canada, Sessional Papers, p.7, Simsarian. Accordingly, the Sanitary District was notified that it had exceeded the 4,167 c.f.s. granted to it by the permit of the Secretary of War under the Congressional Act of 1899 (Article 10). The Sanitary District in its reply stated that it was governed by the Illinois State Statute of 1889 which required that the Chicago channel should be of a size sufficient to take care of the sewage and drainage of Chicago by providing for a continuous flow of not less than 20,000 cubic feet per minute of water for every 100,000 of the population within the jurisdiction of the Sanitary District. This prompted the United States to file a case in equity on 6 October 1913, in the Federal District Court enjoining the Sanitary District from diverting more than 4,167 c.f.s. of water from Lake Michigan. Sanitary District of Chicago v. United States, 266 U.S. 405. Finally, Judge Landis delivered an oral opinion on 19 June 1920 in favour of the United States, but he did not enter a decree, Ibid., p.432.
on the Canadian reasoning, the diversion violated the 1871 and 1909 Treaties. The United States in its counter argument invoked the Harmon doctrine consecrated in Art. 2 of the 1909 Treaty and Art. 8 of the same Treaty which placed domestic and sanitary uses above navigation.

In the following year Canada, besides reference to the Ashburton-Webster Treaty of 1842, maintained the illegality of U.S. diversions under international law. By 1921, Canada added a further argument that international law prohibited a co-basin state from undertaking inter-basin transfers of water. The Chicago diversion which had also been an issue of inter-state dispute, was

For the Canadian protest see, correspondence of 22 April 1921, Canada, Sessional Papers, 1928, Sess. Paper No. 227, p. 21. See also Simsarian, n. 188, p. 510. On 3 March 1925, the Secretary of War authorized the Sanitary District to increase diversion from 4167 c.f.s. to 8,500 c.f.s. And this was the amount of water the Sanitary District had been diverting at the time of permit, until 31 December 1925, see Canada, Sessional Papers, n. 206, p. 48; Simsarian, n. 188, p. 511. But in the same year and in 1926, Wisconsin, Minnesota, Michigan, Ohio, Pennsylvania, and New York filed amended bills in the United States Supreme Court. See Wisconsin and others v. Illinois and the Sanitary District of Chicago, 278 U.S. 367. For comments, see also, J. W. Garner, "The Chicago Sanitary District Case," AJIL, Vol. 22 (1928), p. 837; J. G. Dealey, "The Chicago Drainage Canal and St. Lawrence Development," Ibid., Vol. 23, (1929), p. 307; H. A. Smith, "The Chicago Diversion," British Yearbook of International Law, Vol. 10 (1929), p. 144. The Supreme Court held that the Sanitary District and Illinois could not divert more than 6,500 c.f.s. from Lake Michigan until 31 December 1935 when the maximum would be reduced to 5000 c.f.s. Simsarian, n. 188, p. 514.
temporarily set to rest by the Supreme Court injunction issued in 1925\(^\text{189}\) against the Sanitary District of Chicago. On 18 July 1932, however, the United States and Canada signed a treaty for the completion of the Great Lakes - St. Lawrence Seaway. Provisions of Article VII of this Treaty are of interest. Article VII(a) endorsed the 1930 decision of the United States Supreme Court which had decreed that diversions from the Great Lakes system should be reduced by 31 December 1931 to 1,500 c.f.s. In case of any emergency needs by the United States to which there was Canadian objections, these would be submitted for final decision to an arbitral tribunal. In Article VII(b) it was provided that there would be no further diversion of water from the Great Lakes system or from the International Section to another watershed thereafter save with the authorization of the International Joint Commission. Under Article VII(a) it was agreed that compensatory works in the Niagara and the St. Clair Rivers,  

\(^{189}\) Note the statement made by James Grafton Rogers, Assistant Secretary of State in charge of negotiating the Treaty before the Senate Committee on Foreign Relations to explain Article VII. Rogers declared that there were practical considerations involved, and he "was not very much concerned with whether those were domestic law, international law, or something else, they might be called comity, they might be called the mere result of necessity of getting along with a neighbour nation, or neighbouring states." See, Hearing on S.Res.278, 72nd Cong., 1st Sess., pp.279, 297.
designed to restore the Lakes levels to their natural range, should be undertaken at the cost of the United States as compensation for the diversion through the Chicago diversion Canal, and at the cost of Canada for the diversion on the Canadian side for power purposes. The Treaty was not ratified, but there followed an exchange of notes and ad hoc arrangements till 1950 \(^\text{190}\) when the Niagara River Treaty was signed in Washington, D.C.

Throughout this period the United States asserted the Harmon doctrine, and Canada denied it. But in the Lake of Woods Treaty signed in 1925, \(^\text{191}\) Article 11 stipulated that:

No diversion shall henceforth be made of any waters from the Lake of the Woods watershed to any other watershed except by authority of the United States or the Dominion of Canada within their respective territories.

Article 11, far from repudiating the Harmon doctrine, was but only an expression of a practical policy. Up to this, the Article brought home the difficulties that would be encountered by the United States in its faithful adherence to the Harmon doctrine. This far, the United States had

\(^{190}\) UNTS, Vol.132, p.223.

\(^{191}\) Lake of Woods Treaty text may be found in AJIL, Vol. 19, supplement (1925), p.128.
argued from the upstream position. The United States was also the riparian whose use of the water resources had advanced rapidly. In due course, however, the development of the Columbia River system would reverse the legal position. Canada would bring into full play the law as insisted upon by Secretary Root and written in Article 2 of the 1909 Treaty. There could be no doubts about this because already in 1910, Prime Minister, Sir Wilfrid Laurier, had stated in the Canadian House of Commons that "the United States had taken the position that international law provides that, except in matters of navigation, the upper power has the right to use the water within its own territory as it thinks best."\textsuperscript{192} He concluded that if the United States insisted on the Harmon doctrine as the law, then Canada had a corresponding right "and the consequences will be the same on either side."\textsuperscript{193} It is to these developments that the following survey focuses on. Before proceeding, the main elements of the development of the United States-Canadian model from 1910-1945 are summarised below.

1. The Harmon doctrine maintained its position as the applicable law.

\textsuperscript{192} See generally, Austin, n.18d, p.422.

\textsuperscript{193} Ibid.
2. The concept of protection of existing uses is also noticeable as for example in the Chicago diversion.

3. A new principle which appears is that of inter-basin transfers.

5. The Columbia River Treaty, 17 January 1961

Before proceeding further it may be recalled that the Columbia River being a successive river, did not fall within the definition of the 1907 Boundary Waters Treaty. As such, Article 2 reserved to either riparian "the exclusive jurisdiction and control over the use and diversion ... of all waters..." within its own territory. In this respect it was further provided that any alterations or diversions resulting in injury to one or the other of the co-riparians would "entitle the injured parties to the same legal remedies as if injury took place in the country where such diversions or interference occurs...." Under Article 2 both Parties possessed the right to object to any changes that would affect normal navigation. Further-

194 Text in, UNTS, Vol.542, p.244.

more, Article 4 required the approval of the IJC in case of works the effect of which would raise the level of the River on either side of the boundary.

As a background, a few more facts are worth noting in order to understand the nature of the Columbia River controversy. The flow of the Columbia River, like most rivers, suffers from seasonal variations, with the ratio between its maximum and minimum mean flows being ten to one.¹⁹⁶ Cheap and reliable hydroelectric power generation depends on steady maximum flow. To raise the level to a continuous maximum flow and to even out fluctuations, requires construction of storage dams on upstream. Ideal sites for storage and control works were located upstream on the Canadian territory. Another central factor relates to unequal levels of developments between Canada and the United States. By 1945 power installations existed on the United States' section with a capacity to generate 5,400,000 kilowatts. At the same time there were plans and projects on the drawing boards which indicated the possibility of increasing power generation to 10,000,000 kilowatts. On the other hand, the Canadian section was still undeveloped. Again it may be stressed here that for the United States to carry out its expansion programme to an optimum level, the use of the Canadian territory was necessary provided Canada conse-

¹⁹⁶ Ibid., Bourne, p.445.
Towards the close of the Second World War, the Columbia River controversy touched its climax. On 4th March 1944, Canada and the United States, in accordance with Article 9 of the Boundary Waters Treaty, addressed a reference to the IJC asking it "to determine whether a greater use than is now being made of the waters of the Columbia River system would be feasible and advantageous" and the practicability of further harnessing of the river basin resources. For this purpose the IJC set up the Columbia River Engineering Board (hereafter, the Board). At the end of 1958 the Board completed its assignment and the report was placed before the two Governments sometime in 1959.


The period from 1944 to 1959 witnessed a series of negotiations, which, nevertheless, yielded no agreement. Meanwhile, the United States submitted a proposal to the IJC to construct the Libby Dam on the Kootenay River. The proposed dam, a hundred miles long, would have extended forty-two miles inside Canada, thus, flooding, 15,000 acres in British Columbia. The United States withdrew the application in 1953. An agreement could not be reached and there followed a stalemate as each riparian stuck to its position. While the United States based its argument on the natural flow theory, Canada invoked the downstream benefit theory, the essence of which is that since water is a natural resource, a commodity in itself, its uses by another state are subject to the same norms that govern the other resources such as copper, oil etc.


Initially, the United States refused to accept the principle of downstream benefits.

By the mid-1950s, the Columbia River dispute took yet another turn. General McNab, then Chairman of the Canadian Section of the IJC, put forward a plan to divert the Kootenay and the Columbia Rivers within Canadian territory. Canada argued that the proposed diversion did not violate the Boundary Waters Treaty because Article 2 of that Treaty gave the upstream state "exclusive" control, including the right of diversion. Henceforth, the discussions centred around the interpretation of Article 2 of the 1909 Treaty. It is interesting to note the emerging legal arguments.202 As already noted, Article 2 of the

201 Details in, Whiteman, n.216, pp.981-987; Austin, n.188, pp.436-437; Johnson, n.175, pp.199, 201, 202.

202 Ibid., Austin, where he quotes extracts of a statement by Prime Minister Wilfred Laurier in the Canadian House of Commons Debate. Replying to an attack by the Opposition Leader, R. Burden, Prime Minister Laurier said in part: "I may say that it was only after careful and exhaustive consideration on my part that I agreed to accept the treaty as it has been written..."... Whether we liked it or did not like it, the United States had taken the position that international law provides that, except in matters of navigation, the upper power has the right to use the water within its own territory as it thinks best. What were we to do? .... we shall have the same power on our side, and if we choose to divert a stream that flows into your territory you shall have no right to complain, you shall not call upon us not to do what you do yourselves... What wiser course could have been adopted?" p.422. Canada, House of Commons Debates, Sess.1910-11, pp.911-912.
said Treaty was a statement of the Harmon doctrine and was included in the Treaty at the insistence of Secretary Elihu Root. Canada at that time opposed this principle, but yielded eventually. However, it did serve notice to the applicable law,\textsuperscript{203} and that is how it interpreted Article 2.

To cut a long story short, the report of the Board submitted to the two Governments in 1959 was adopted as the basis of the 1961 Treaty. It enunciated and recommended certain principles for determining and apportioning benefits accruing from the cooperative use of storage of water and electric installations within the Columbia River system. The most significant part of the Board's report is its recognition of downstream benefit theory\textsuperscript{204} which Canada had enunciated and stuck to throughout the negotiations. Both sides accepted the IJC principles and on 17 January 1961, Prime Minister Diefenbaker and President Eisenhower signed the Columbia River Treaty, the provisions of which are summarised below.

\textsuperscript{203} \textit{Ibid.}

\textsuperscript{204} Report of the International Joint Commission, United States and Canada, on Principles for Determining and Apportioning Benefits from Cooperative Use of Storage of Waters and Electrical Interconnection within the Columbia River System, see, General Principles, pp.5, 7, 9, Power Principles (3) and (6) and Flood Control Principles (3) and (4), \textit{Ibid.}, pp.15, 20, 27.
In all, the Treaty contains twenty-one articles with a separate Protocol and covers in detail aspects for the cooperative development of the Columbia River system. The central theme of the Treaty is the principle of downstream benefits. All other provisions elaborate the application of this theory. Therefore, the purpose here is to focus on the relevant provisions.

The opening article defines various technical terms as applied in the Treaty. Having defined the terminology so used, the Treaty then moves on to substantive matters. Within the Treaty Scheme, Canada undertook the obligation to provide storage facilities amounting to 15.5 million acre-feet\textsuperscript{205} on the main Columbia River at Mica, at Arrow Lakes and on some of the tributaries of the Kootenay River. The purpose of these storages was to produce benefits essentially to the United States in terms of power generation, flood control and other incidental uses. Out of the stipulated 15.5 million acre-feet, nearly 8.5 million acre-feet\textsuperscript{206} would be operated for flood control purposes for a period of at least sixty years. In return, the United States paid Canada $64 million.\textsuperscript{207} If circumstances demand, it was

\begin{itemize}
  \item 205 Article 11.
  \item 206 Article IV, para.2.
  \item 207 Article VI, para.1.
\end{itemize}
agreed that Canada would provide additional storage "on call." For these "calls," the United States would pay $1.9 million for the first four "calls" to compensate any power losses incurred in Canada as a result of such "calls." This is in accord with principles (3) and (4) formulated by the IJC in its report to the two Governments. Principle (3) recommended that "The monetary value of the flood control benefit to be assigned to the upstream storage should be the estimated average annual value of the flood damage prevented by such storage." Principle (4) stated that "The upstream country should be paid one-half of the value of the flood damages prevented."

Apart from flood control benefits, the Treaty incorporates the IJC's power principles for determining and sharing power benefits accruing from upstream storages. Principles (3) and (6) are of particular interest. The IJC had recommended that power benefits to the downstream country should be determined in advance by calculating the difference between the amount of power that would be produced at the downstream plants with the storage regulation and the amount that would be produced without such regulation. The sixth principle suggested equal division of benefits to each country. These principles were adopted

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208 Article VI, para.3.
209 Article V.
and incorporated into the Treaty. An important aspect in this respect is the recognition of the fact that power benefits are bound to change as demand and resources change and hence, benefits are to be reviewed periodically. Accordingly, benefits are to be computed initially for a five-year period and thereafter each year for the sixth succeeding year. The United States paid to Canada $254.4 million\textsuperscript{210} for Canada's downstream power entitlement during the first thirty years of the Treaty.

With respect to diversions, the Parties agreed that after twenty years from the date the Treaty enters into force, Canada may divert from the Kootenay River up to a maximum of 1.5 million acre-feet\textsuperscript{211} water per year. The Treaty also restricts Canada from making inter-basin transfers from the Columbia River system to the Fraser basin.\textsuperscript{212} In spite of these provisions, Article 11 of the 1909 was kept alive. Article 17 of the Columbia River Treaty restores the pre-Treaty legal status by declaring:-

Nothing in this Treaty and no action taken or foregone pursuant to its provisions shall be deemed,

\textsuperscript{210}Article 8.
\textsuperscript{211}Article 13.
\textsuperscript{212}Article 8.
after its termination or expiration, to have abrogated or modified any of the rights or obligations of Canada or the United States of America under then existing international law, with respect to the uses of the water resources of the Columbia River basin.

This provision is a reminder and above all a warning that one has to be careful in drawing generalizations from the Columbia River Treaty beyond the Treaty's language.

The Treaty contains liability for damage provisions. Both the Parties are liable to the other for any breaches of this Treaty. Thus, if damages are incurred by either of the Parties as a result of breach of the Treaty, the Party that suffers such damage is entitled to appropriate compensation.

Procedure for preventing differences and disputes that may arise within the framework of the Treaty is contained in Article 14. For this purpose, the Treaty pro-
not resolved, and this includes any disputes that may directly arise between the countries, the matter is to be referred to the IJC which is given three months within which to settle the disputes. Should the Commission reach a deadlock within the given period of three months, the dispute may be submitted to arbitration.

The other provision relates to the life of the Treaty. Though the duration is not set, under Article XIX the Treaty is terminable upon written notification by the terminating Party to the other, giving ten years from the time termination is to take effect. However, the Treaty cannot be terminated before the expiry of sixty years from the date of ratification.

Before summarising the Columbia River Treaty, it may be noted that the United States and Canada have executed a number of agreements relating to their various shared inland waters, the main consideration being concern over water quality. On 27 February 1950, Canada and the United States signed a Treaty on the utilization of the waters of the Niagara River. Besides provisions relating to hydropower, Article 4 of that Treaty was addressed to protection of water quality. Shifting attention to trans-boundary pollution of rivers and their environmental effect

is witnessed by the 15 April 1972 U.S.-Canadian Agreement on the Great Lakes Water Quality Board and a Research Advisory Board were specifically established under the Agreement with an investigative and reporting role. As a corollary of these measures, the Agreement provides for data-sharing and joint data collection. The Agreement of 1972 was replaced by the 1978 U.S.-Canadian Great Lakes Water Quality Agreement. This agreement expanded its predecessor and attempts, in a comprehensive way, to improve the Great Lakes Water Quality. The Treaty reiterated the principle of an ongoing, permanent negotiating machinery and strengthened the regulatory, investigative, and surveillance responsibilities of the IJC.

In summary, the U.S.-Canadian water treaties commend the following principles:

1. Shared water resources are viewed within the geographical and political framework of boundary waters. Neither nation accepts joint, full-blown integrated, comprehensive water management and planning.

2. The second principle which came to be recognized

and which is of primary importance is that of downstream benefits. Here then was a treaty endorsement of the concept of water as a resource, a capital good, the sharing of which is governed by the same principles applicable to any other commodity, but subject to its own special circumstances.

3. Equally important is the explicit acceptance of the principle of continuous negotiations represented by an on-going, permanent joint commission (IJC) to which has been conferred regulatory, investigative and surveillance duties. But the IJC has not been granted the status of a supranational organisation.

4. Implicit in principle 3 is the concept of joint data-collection and data-sharing, an indispensible factor for policy purposes by the basin states.

The above principles represent the main features of the North American model as it has evolved over the years. Before turning over to the European treaties, however, it would be appropriate at this stage to close the Western Hemisphere with a summary of the Montevideo Declaration.
6. **Inter-American Declaration, 1933**

At the Seventh Conference of American States held in Montevideo, 1933, a Declaration on the Industrial and Agricultural Use of International Rivers was adopted. It contained the following elements:

1. The necessity for technical studies was recognized. For these purposes, the Declaration requires the riparians to "facilitate by all means the making of such studies on their territories by the other interested state..."

2. While each riparian possessed the sovereign right to use the waters of an international river within its territorial jurisdiction, this right is subject to the corresponding right of the other riparian or riparians. That is, a state is free to dispose of its water resources provided it does not exceed its legal right, thereby injuring the other co-riparians. Consequently, consent of the other riparian state is required in cases where diversions or alterations of the natural flow of the water course are likely to

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cause injury to the other riparian state.

3. Should damage occur, "an agreement of the parties shall always be necessary." Meanwhile, the proposed works shall have to be suspended until the question of damage is satisfactorily settled.

4. Articles 5 and 6 give precedence to navigation since "in no case... shall the works of industrial or agricultural exploitation" injure the free navigability of the water course.

5. A riparian proposing to utilize the waters of an international river, is required to announce its plans along with relevant technical data to the other riparians. If any riparian raises objections to the applicant's plans, the matter shall be referred to a Mixed Technical Commission. In case the Mixed Commission is unable to reach an agreement, recourse shall be had to other methods of pacific settlement of disputes including arbitration.

The Governments of the United States, Venezuela and Mexico made reservations\textsuperscript{218} to the Montevideo Convention.

\textsuperscript{218} See, Whiteman, Digest, Vol.3, p.937.
In its declaration, the United States felt that the Convention was "not sufficiently comprehensive in scope to be properly applicable to" the specific problem arising out of international rivers. Venezuela, in its part, refrained from approving the Declaration on the grounds that it had already entered into relevant treaties on the subject. The Mexican Government made a general reservation.

VI. WATER TREATIES OF EUROPE

By far Europe contains the earliest as well as the most extensive treaty system on the non-navigational uses of shared rivers and lakes. From the nineteenth century every European state with a direct interest in an international river began to sign one or more agreements with its co-riparian states. The agreements touched upon nearly all possible river vocations: domestic consumption, agricultural, industrial, hydroelectric power, fishing, and covered all European rivers. To illustrate the scope

of these regulatory instruments, selected agreements will be outlined below.

A. Treaties Up To 1900

Earliest among the European treaties was the Convention of 26 June 1816\textsuperscript{220} signed at Aix-la-Chapelle between Belgium and Prussia. It covered the Rhine and Meuse Basins. Article 27 of the convention prohibited either contracting Party from carrying out works or granting any concessions which might alter the course of their shared rivers without the consent of both the Parties.

The boundary Treaty of 7 October 1816\textsuperscript{221} between the Netherlands and Prussia was intended to regulate the Wildt from the Sommerdam at Klei-Netterdem to the Confluence at the Rhine. It stipulated that in contiguous rivers no work should be constructed in the bed of the river the effect of which would deflect the current and injure the opposite bank, except by mutual consent. Furthermore, the co-riparians should not apply fishing devices which would have the impact of slowing the current and thereby causing

\textsuperscript{220} Ibid., ST/LEG/SER.B/12, p.736. The Treaty came into force on 31 January 1817.

\textsuperscript{221} Ibid., ST/LEG/SER.B/12, p.700. Essentially, the Agreement was addressed to the waters of the Doubs, part of the Rhine system.
deposit of silt. For the purposes of the treaty, the appropriate agents of the Netherlands would have a right of inspection, provided due notice is served.

In the Franco-Swiss Boundary Delimitation Agreement of 4 November 1824, it was stipulated that "The liberty of using the waterways for works and for irrigation will not be subordinated to the limits of sovereignty. It will appertain to each bank to the extent of one-half of the quantity of water flowing in the lower states." Variation of this agreed sharing of water which could be made only out of absolute necessity must however receive the concurrence of the two governments. The Agreement covered hydro-power, transportation and irrigation uses.

The Convention of 7 August 1843 between Belgium and Luxembourg contained the principle that without the consent of the two Contracting Parties, no concession that might alter the course of the boundary rivers should be granted.

222 Ibid., Article 1.
223 Ibid., Article 5.
224 ST/LEG/SER.B/12, p.535. The Agreement regulates the use of the following waters: the Pull, Munsbach and Sierbach.
225 Ibid., Article 30. See also, Articles 9, 15, 21, which dealt with watering, diversion of water and mining respectively.
Under the Additional Act to the Treaty of Bayonne, 26 May 1866, France and Spain agreed that:

All water stagnant and running, under public or private domain, are under the sovereignty and legislation of the respective countries, except where there is modification agreed upon between the two governments. Running waters change jurisdiction when they cross the boundary; and in boundary rivers the jurisdiction of each state would be exercised up to the mid-channel.

It was also affirmed that the lower riparian had a right to receive from the upper riparian waters which naturally drain lower down, "together with what they carry along, apart from anything contributed by human agency." Likewise, the Treaty imposes a reciprocal obligation on the lower riparian not to carry out works likely to cause injury to the upper state. For the purposes of the Treaty, the Parties established an International Commission of Engineers charged with the responsibility of ascertaining various water needs, determining the amount of disposable water, and recommending precautionary steps to ensure proper implementation of the provisions of the Treaty.

Switzerland and Baden (German) declared in the Treaty...

226 ST/LEG/SER.B/12, p.672.
227 Ibid.
228 Ibid. Article 18.
of 10 May 1879\textsuperscript{229} a similar principle forbidding construction of works with an injurious affect on the interests of either riparian.

Relative to navigation of the Danube between the Iron Gates and Braila, the tripartite Agreement of 10 May 1883\textsuperscript{230} between Austria, Germany and Rumania, contained provisions relevant to uses other than navigation in so far as it subordinated these other uses to navigation. Article 9(1) laid down that: "No mill or other installation, no new structure, no intake of water may be established in such a manner as to interrupt passage on the present tow-paths, and these paths shall be kept in a state of passa-bility." The nineteenth century European treaties summarised above bring out, apart from others, one important principle: diversion of water an international river is subject to negotiations between the concerned states. Where proposed works are likely to affect the status quo of shared rivers, such works should not be carried out without the consent of the interested riparians. As shown in the sample twentieth century agreements surveyed below, this principle, requiring consent, forms a recurrent theme in the European conventional system.

\textsuperscript{229} ST/LEG/SER.3/12, p.776.

\textsuperscript{230} Berber, n.236, p.81.
8. Treaties from 1900 up to World War II

Coming to the twentieth century, one witnesses an intense activity to regulate the uses of European shared water resources. It is during this period that nearly all international rivers in Europe came to be placed under a conventional system of one kind or the other. The treaties covered nearly all conceivable applications or inland waters, ranging from quantity to quality, consumptive and non-consumptive uses. These developments are, of course, a reflection of two major factors. Europe at this point of time was passing through a period of political upheavals that led to the formation of new political entities and this process had a direct bearing on the status of nearly all rivers of Europe. Thus, associated with the twentieth century water treaties of Europe were/are questions of state succession. The second factor to note is the high level of industrialisation and technological innovations that occurred in Europe. Apart from sectoral competition for water, chemical pollution from industrial processes with trans-frontier effects emerged as an intractable problem in shared water resources. Select treaties described below are illustrative of these developments.

The convention of 26 October 1905,²³¹ concerning the

If, in the territory of either state, the question arise... of constructing works on a waterway, diverting its waters or taking any other action to alter its depth, its bed or its direction... the legislation of that state shall be applied with regard to the right to undertake the works, even if such might affect the waters situated in the other state. Nationals of this latter state shall have the same facilities for enforcing their rights as are enjoyed, in similar circumstances, by the nationals of the state where the works are being undertaken, and they shall also enjoy the same rights in all respects as the latter in regard to the conditions under which the said works are carried out.

In accordance with the general principles of international law it is understood that the works mentioned... cannot be carried out in either state except with the consent of the other, whether such works, by affecting the waters situated in the other state, might result... in substantially modifying the waters over a considerable area.232

This Article with variations from treaty to treaty became a standard clause in the European model.

France and Italy by the Treaty of 17 December 1914,233 relating to the Roya River system, recognized the equal rights of both Parties to the boundary waters of the Roya, and prohibited either riparian from using the water within its own territory in a manner as to encroach upon the equal right of the other state.

232 Ibid., Vol.180, Article 2.

233 Ibid., Vol.180, p.457. Article 1, Article 3.
The Soviet-Polish Peace Treaty of 18 March 1921 for the regulation of the Dvina River and other common inland waters forbade alterations of the level of the rivers and lakes if such measures modified their natural course at the frontier. Annex 5 to the Treaty required the "special consent of the other Party" to carry out works on the banks or within the basin area which would have an adverse effect on the waters in the other Party's territory. Thus, damming of boundary rivers was specifically made subject to an agreement between the co-riparians.

In part 1, Section of the Austro-Hungarian Protocol, 11 March 1927, the two Governments undertook "not to adopt any unilateral measure affecting the hydraulic system in" their borders. For this objective, they agreed to maintain in good condition all relevant works so as to preserve the existing hydraulic system. As a result "No fresh work which would involve a change... in the hydraulic system of the frontier areas... may be carried out without previous agreement between the two States."

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234 LNTS, Vol.6, p.51.

235 Ibid., Article 2.

Several treaties of this period each had clauses similar to those just described. The Convention of 15 July 1930\textsuperscript{237} between Czechoslovakia and Rumania for the delimitation of their frontier provided that in cases where hydraulic works create "permanent or considerable change" in either contiguous or successive watercourses, each Party must take due regard to the other's claims. The Convention stipulated that the lower riparian should not back up water into the upstream state to cause flooding. Should that happen, the upstream state would be liable to compensate the affected interests.

Besides defining water rights, the concept of anti-pollution began to appear explicitly in some treaties and impliedly in others. In the Agreement of 7 November 1929\textsuperscript{238} between Germany and Belgium, it was agreed that their common water resources (the Meuse Basin) should not be polluted by either municipal or industrial effluents, and it was resolved to reach a common agreement on the necessary preventive measures against pollution. Likewise, the Soviet-Polish Treaty of 10 April 1932\textsuperscript{239} forbade pollution of their common rivers.

Two other important provisions running through the

\textsuperscript{237} BFSP, Vol.137, p.873.
\textsuperscript{238} ST/LEG/3ER.B/12, p.529, Article 69.
\textsuperscript{239} LNTS, Vol.141, p.349, Articles 7(3), 13(2).
European conventional system pertain to procedural law. First is the provision on the establishment of joint agencies or commissions which are vested with the responsibility of applying the substantive law of the conventions, and; second, is the provision on the method of dispute settlement arising out of the application and interpretation of the agreements.

Representative of the first instance is an international commission constituted on 19 March 1924\textsuperscript{240} by Austria and Switzerland for the control of the Rhine from the confluence of the Ill to Lake Constance. The commission comprised of four members and four alternatives, one-half of them to be appointed by each state to supervise all related matters. Earlier, a permanent international commission was formed as a result of the Franco-Italian Agreement 17 December 1914.\textsuperscript{241} According to the Czechoslovak-Polish Treaty of 18 February 1928\textsuperscript{242} for the development of the Olsa and Petruvka, a Joint Technical Commission of one member and an alternate from each country, was to be established, each party meeting the maintenance expenses.

\textsuperscript{240} JFSP, Vol.142, p.401.

\textsuperscript{241} Ibid.

\textsuperscript{242} LNTS, Vol.100, p.273, Article 9.
of its staff. Germany and Lithuania on 29 February 1928\textsuperscript{243} agreed to set up a Joint Commission to inspect the frontier sections of their common rivers. The 20 July 1925\textsuperscript{244} Italo-Yugoslav Treaty provided for a six-member Mixed Technical Commission to supervise the necessary works and their operation on the Recina. The Norwegian-Swedish Treaty of 11 May 1929\textsuperscript{245} established a Mixed Commission to decide technical questions and compensation for the damage or nuisance caused by defective maintenance of works. Similarly, the 1927\textsuperscript{246} Portuguese-Spanish Treaty concerning the Douro Basin, set up a six-member Commission to regulate the exercise of rights of both states and decide judicial and technical problems. Its decisions were to be taken by a majority vote and expenses shared equally by the two Governments. Failing to make a decision, the members should report to their respective Governments.

As to the second matter the majority of the agreements have a provision setting forth the procedure for dispute settlement should one arise. Where negotiations fail, most of the treaties provide variously for judicial

\textsuperscript{243} Ibid., Vol.69, p.419.
\textsuperscript{244} Ibid., Vol.83, p.129, Article 2,
\textsuperscript{245} ST/LEG/SER.8/12, p.871.
\textsuperscript{246} Ibid., p.911, Article 14ff.
process, mixed commissions, or arbitration. The 14 February 1925\textsuperscript{247} Finnish-Norwegian Treaty and the 14 February 1932\textsuperscript{248} Rumano-Yugoslav Treaty provided for the judicial settlement by Permanent Court of International Justice. A special tribunal had been set up for that purpose by the League of Nations (Art.38) of the Danube Statute. The 1929\textsuperscript{249} Belgo-German Treaty called for a Joint Administrative Commission of four members, each signatory appointing two representatives from the Ministry of Foreign Affairs and competent departments respectively. Germany and Poland, under the Agreements of 16 February\textsuperscript{250} 1927\textsuperscript{250} granted authority to a mixed committee between the two states. A financial commission with an expert from either side was provided for the Rumano-Hungarian Treaty to settle financial matters, and the Permanent Technical Hydraulic Commission of the Danube to solve technical questions.

From the survey of the treaties that has preceded and keeping in view provisions in numerous other instru-

\textsuperscript{247} LNTS, Vol.49, p.390. Article 10.
\textsuperscript{248} Ibid., Vol.140, p.191. Article 66.
\textsuperscript{249} ST/LEG/SER.8/12, p.529. Article 94.
\textsuperscript{250} LNTS, Vol.71, p.369. Article 6, para.1.
ments that have not been mentioned an attempt will now be made to summarise some of the general principles that have evolved in the European treaty practice up to this point.

As has been noted, the European conventions of this period stressed both the industrial uses of rivers resources and their exploitation. Few agreements restricted their scope only to the question of legal rights to water. With a few exceptions, the majority of the treaties underlined the necessity of international cooperation by repeatedly emphasizing that any measures affecting the status quo of a shared river should not be undertaken except with the prior consent of the interested states. With regard to river regulation and development these treaties were innovative to the extent they embodied new concepts such as the following. Inter-watershed transfers of water should be effected only in situations where there is sufficient water, but subject to the approval of competent authorities. Cutting across the agreements is the principle of hydraulic unity on a river system which should be maintained and protected. A development of great significance to be observed in some of the treaties is the anti-pollution clauses. For effective river control and equitable utilization of common water resources, the concept of data-sharing and joint data-gathering is endorsed in many treaties. This is more clearly demonstrated by widespread
creation of joint agencies. On the level of dispute settlement, a tendency towards acceptance of compulsory adjudication is discernable in that a number of treaties accepted the PCIJ as the final arbiter in such disputes that could not be settled through negotiations. On the whole, these conventions reflected the new industrial epoch of Europe and paved the way in modern international water resources regulation and utilization.

C. Post-World War II European Treaties

The basic framework for the management of Europe's shared water resources had been set during the previous period. After the second World War, there have been no radically new concepts, but rather an elaboration of the principles already enshrined in the existing treaty regime. Progressively, the European treaties have tended to evolve in response to the challenges of technological civilization. Thus moving from the second World War, and especially from the 1970s, environmental law increasingly assumes a prominent place in treaty provisions to the extent that whole treaties exclusively dealing with anti-pollution measures have been drawn up. As in the previous sections, only an outline and a sample of agreements will be presented.

In 1946 Austria consented to the diversion of the
Semina waters, a tributary of the Ill River, by Liechtenstein for hydropower generation on condition that Liechtenstein paid reasonable compensation. 251

Austria is the upstream riparian, and Bavaria is the downstream co-riparian, of the Rissbach. When in 1947 Bavaria was proposing to divert the water of the Rissbach, Austria announced that it would withdraw the waters of the same river within its territory. Had the Austrian intention been executed, the Bavarian plan would have been frustrated due to the resulting inadequacy of water supply. However, the two states reached an agreement on 20 June 1948 by which Austria waived the right to divert the waters of the Rissbach system provided Bavaria recognized Austria's exclusive right to the waters of the Durrach, the Kasselbach, the Blasserbach, and the Dollmansbach. Austria would let these rivers flow into the Isar and would tolerate Bavaria's flooding part of its territory but on terms to be set by an agreement. In the course of sovereignty while Bavaria relied on the natural flow theory. Thus, the compromise agreement included the provision that "Austria and Bavaria retain the respective views relating to water rights advocated by them without prejudice to the foregoing arrangements." 252

251 Sevette, n.236, p.105.
252 Ibid., Berber, n.236, p.142.
On 4 April 1958, Bulgaria and Yugoslavia agreed to jointly examine and solve all matters of water economy, including quantity and quality. Each Party undertook to keep in good condition the beds of the rivers and their tributaries as well as all installations and, only by mutual consent, to alter existing works or start new ones for the improvement of their shared rivers. All costs of works would be prorated in proportion to the benefits derived and in accordance with mutual agreement. To this end a Bulgarian-Yugoslav Water Economy Commission was formed to draw up joint regulations but subject to the approval of the two Governments.

In 1964, Finland and the Soviet Union signed a framework Agreement covering various aspects of water resources management ranging from conservation to utilization. The chief provisions of the Agreement are laid down in Chapter 1 which contains principles and regulations on the alteration and degradation of common water resources. In this respect, the Agreement prohibits pollution of rivers and sets down measures for improving self-purification characteristics of watercourses and procedures for handling projects which cause injury or damage to the other

253 ST/LEG/SER.8/12, p.558.

Party. The Agreement attempts to outline water quality standards to be applied by the Parties. For this a Joint Commission for the utilization of frontier watercourses was set up with the responsibility to study and deal with questions in solving protection and use of the watercourses, as proposed by the Parties or on its own initiative. It was also vested with the obligation to monitor the implementation of the Agreement and the quality of the waters. All differences and disputes are to be settled either by the Joint Commission or Joint Board or through diplomatic channels.

To control the concessionary of the Chatelot power on the Doubs, France and Switzerland agreed on 28 January 1947, to adopt joint regulations aimed at protecting fishing interests, preserving scenic beauty and safeguarding the existing forests.

Italy, in accordance with Article 9 of the Peace Treaty of 10 February 1949, ceded Mont Cenis and the Tenda-Briga District to France, and France guaranteed, among other things, full and equitable utilization by the two states of the waters of the Roya system for hydroelectric power generation. It was thus provided:

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255 Sevete, n.236, p.172-173.
(a) France shall operate the hydroelectric plants on the Roya in French territory, taking into account as far as reasonably practicable the needs of the plants downstream. France shall inform Italy in advance of the water which it is expected will be available each day, and shall furnish any other information thereby;

(b) Through bilateral negotiations France and Italy shall develop a mutually agreeable, coordinated plan for the exploitation of the water resources of the Roya.

The two Governments would also institute an international agency to oversee the implementation of the guarantees.

For the utilization of the Upper Rhine portions between Basle and Strasbourg, the Franco-German Agreement on 27 October 1956\(^{257}\) established a Technical Committee with an equal number of members, and it was also agreed to settle future disputes by arbitration.

On 3 December, 1976,\(^{258}\) France, Federal Republic of Germany, Luxembourg, the Netherlands and Switzerland conc-

\(^{257}\) ST/LEG/SER.3/12, p.660.

cluded two anti-pollution conventions. One was concerned with the protection of the Rhine against chemical pollution and the other was addressed specifically to the protection of the Rhine against pollution by chlorides. These conventions were concluded response to the apparent weaknesses of the 1963 Berne Agreement which established the International Commission for the Protection of the Rhine Against Pollution. The Agreement did not encompass the whole Rhine, but only the main waterway up to Lake Constance. Secondly, the authority of the Commission was restricted to research activities and to making suggestions to the State Parties on what measures to take for the protection of the Rhine against pollution. In the 1963 Agreement, there were no provisions on notification, consultation or dispute settlement.

As a result of these procedural limitations, the International Rhine Commission could not come up with concrete measures to deal with increasing Rhine pollution.

259 Ibid.

which had assumed alarming proportions. At the instance of the Netherlands Government, a ministerial conference of the five states convened in The Hague on 25 and 26 October 1972. This conference directed the Commission to draft three conventions for the prevention of salinity, chemical pollution and thermal pollution. It took two more ministerial conferences before the first two conventions were finally accepted at the end of 1976.

The Convention on salinity provides for the reduction of chlorides discharged into the Rhine. With this objective in view, the convention provides for the injection into the French subsoil, initially of 20 Kg/sec. of chloride ions which would otherwise have been introduced into the Rhine. 261

Concluded separately on the same day is the Convention with Annexes relating to the pollution of the Rhine by chemical substances in general. 262 The principal feature of this Agreement is the framework it offers for setting future anti-pollution standards. Specified in the first two Annexes are the chemical substances to which the Convention applies. Annex 1 enumerates - "blacklist substances" - those substances which are considered most

261 ILM., n.276, Article 2(2).
262 Ibid.
dangerous to the environment, and their progressive elimination from being discharged into the Rhine. 263 To this end the convention envisages fixing of discharge standards taking into account the "best available technical means." 264 Covered in Annex 11 are "greylist substances" - those substances which are considered less dangerous to the environment. As in the first case, water degradation by these substances will be reduced according to reduction measures to be drawn up on the basis of the Rhine water "equality objectives." 265

Among the important provisions in this respect is Article 1(2) on chemical pollution which enumerates what it terms the "legitimate uses" of the Rhine. And these include:

(a) drinking water for human consumption;
(b) consumption by domestic and wild animals;
(c) conservation and development of natural species of flora and fauna and preservation of the self-purifying capacity of water;
(d) fishing;

263 Ibid., Article 1(a).
264 Ibid., Article 5(2).
265 Ibid., Article 1(b).
(e) recreational purposes, bearing in mind hygienic and aesthetic requirements;
(f) direct or indirect supply of fresh water to agricultural lands;
(g) industrial purposes; and
(h) the need to preserve an acceptable quality of sea water.

These aspects aside, the convention also attempts to correct some of the structural inadequacies of the 1963 Agreement. A case in point are the provisions concerning "black-list substances" which are, under the present Agreement, applicable to the whole Rhine system. In addition, there are provisions requiring prior information and consultation. Lastly, Annex B provides an elaborate arbitration mechanism for the resolution of disputes. In spite of these elaborate provisions, the chief weakness of the Rhine Commission, viz. lack of authority to function beyond advisory and recommendatory level, was unaltered. The essence of this weakness is that without the unanimous approval of the Parties any proposed standard would not be implemented or accepted.

While still on the Rhine, attention may be drawn to the 1974 European Draft Convention for the Protection of 266

266 See, n. 278, Lammers.
International Watercourses Against Pollution. This Convention was preceded by a Draft Convention by the European Community Assembly in mid-1969 to the Committee of Ministers. The Draft was rejected since it imposed unlimited liability on the riparian states for damage caused by water pollution. Furthermore, the Draft would have required the states to combat pollution only if it caused trans-frontier substantial damage.

As a follow-up step in 1970, the Committee of Ministers directed the Council of Europe to formulate a new preliminary draft. For this purpose an ad hoc Committee was set up to study the preliminary draft framed by the Secretariat and to draw up a Convention. In February 1974, the text of a "European Convention for the Protection of International Watercourses Against Pollution" was ready for signature. If adopted, it would have been the first general convention for the protection of shared inland water resources against pollution. But this was not to be the case.

The chief elements of this Draft Convention are essentially similar to the provisions of the 1976 Rhine Convention. It contains material obligations and cooperation provisions. It places responsibility on State Parties for damage caused by water pollution. Each state would have undertaken the obligation to take preventive measures
against water pollution and to reduce existing water pollution. If endeavours, in Appendix 1, to set minimum water quality standards, (Article 4(1(b)), and provides for the pacific settlement of disputes.

To conclude a survey of the European treaties since the Second World War, it would be noticed that with a few exceptions, all European inland water resources shared by more than two states are now regulated by one form of agreement or the other. The principal emphasis in these treaties is on water management with anti-pollution or environmental protection assuming ever increasing prominence. East of Europe, the Soviet Union has signed agreements relating to international rivers with each of its neighbouring states. Under these conventions, the signatories have made a commitment to protect their frontier waters against pollution. Of interest, however, and as is the case with most European water treaties, most of these conventions refer to settlement of frontier matters and institute agencies for their resolution. Similarly, the Balkan\(^{267}\) rivers are covered by water treaties with the exception of Romanian-Bulgarian and Albanian-Greek borders. In this respect the Convention of 1958\(^{268}\) concer-

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ning fishing in the waters of the Danube, signed by Bulgaria, Romania, the Soviet Union and Yugoslavia, is noteworthy. The Parties to this Convention undertook to "apply measures to prevent the contamination and pollution of the river Danube... by unclarified sewage and other waste from industrial and municipal undertakings harmful to first and other aquatic organisms".

An extensive treaty network is to be found in the Central and Western sub-region of Europe. Here are found some of the earliest river treaties as well as the most advanced treaty regime, especially in the Scandinavian states.

V. SUMMARY

To summarize the preceding survey of the conventional system, it may be observed that apart from the 1933 Montevideo Declaration, the Geneva Convention, 1923, relating to the Development of Hydraulic Power affecting more than one state there is so far no general convention on the subject of international rivers. The majority of the agreements are of a bilateral nature concluded to regulate parts of a water system or addressed to specific uses. These agreements cover a wide range of subjects the provisions of which contain several legal principles. They can be grouped into two broad categories: Those containing substantive law, such as planning, carrying out of works and pollution. The second category covers the procedural
law which includes establishment of joint river commissions and machinery for settlement of disputes.

1. Substantive Law:

(a) What runs almost through all the treaties is the principle that while each riparian state possesses the sovereign rights to make maximum use of part of water resources of an international watercourse within its territory, it may not exercise that right without taking into account the other co-riparian's rights and interests. In other words, each riparian state has equal competence of access to shared water resources. In the case of contiguous rivers, treaty practice confers each riparian an equal share of the water resources.

(b) From the above principle follows the second principle. A riparian state proposing to make or allow a change in the existing regime of an international river in a manner causing permanent and "substantial" injury to the other state(s), should not effect such plans except with the consent of the state(s) whose interests are affected. This is what is termed in the
present inquiry as "the consent clause" which is found in a cross-section of the existing agreements.

(c) The third observation to be made relates to the principle of data-sharing and joint data-collection, and therefore the obligation to plan the use of shared water resources management, without defining minimum principles to be translated into a binding obligation. It is out of this precaution that flows the principle of equitable apportionment, the contents of which is not spelt out in agreements. The only existing guide to this are the Helsinki Rules.

(d) Among the chief elements of the conventions, especially after World War II, are provisions on environmental protection. Though considered from a juridical point of view, a departure in the abstraction and elaboration of legal norms regulating the use of resources generally and water resources in particular, provisions on pollution remain rudimentary. Nevertheless, there is a broad consensus to avoid and prevent pollution of international rivers. Substantively, a number of treaties require
states "to endeavour" to protect rivers against pollution while others obligate states "to take measures" directed towards prevention of pollution or "to abstain from taking measures" with a polluting effect of international rivers. Most Treaties, however, do not set the required water quality standards.

2. **Procedural law:**

Turning to the question of procedural law, it is to be noted that various binational and multinational institutional organizations and dispute settlement procedures are provided for in nearly all the legal instruments.

(a) **International Institutions:** The nature and functions of these institutions vary from river to river. Even within a given river system, one may find more than one international agency. For example, such is the case with the Rhine Basin and the Nile. Thus various models have been adopted for cooperation in river basin management. Put in very broad terms the following four patterns can be summarised from the agreements:

(i) Commissions with authority to plan with a High
degree of authority to execute plans;

(ii) Commissions with authority to plan and to gather information but with no authority to implement them;

(iii) Commissions or technical committees designed to provide data gathering facilities for riparian states and with limited mandates to make plans, or at least recommendations; and,

(iv) Commissions or committees solely designed for data gathering and, where authorized, for monitoring or verifying data so collected. A vital element here is whether the data is supplied nationally or assembled by the agency internationally, i.e., by its own personnel, seconded or employed.

(b) Settlement of Disputes: Most of the agreements have provisions for dispute settlement instrumentalities arising out of the application and interpretation of the agreements. Some agreements provide for compulsory means of settlement of disputes and others provide a procedure either for creating arbitral tribunals or for resorting to the International Court of Justice
without such a procedure being vetoed by the reluctance of one of the parties to submit a dispute to an objective means of settlement. The overall observation to be made here is that treaty practice prefers arbitration as a means of dispute settlement.

Having given a sample survey of the conventional system on uses of shared water resources, the juridical content of these agreements will now be evaluated with a view to see whether they contain any customary rules of international law or whether one has emerged therefrom. This is done in the next Chapter. But before going to these aspects, it would be appropriate to conclude this section by touching upon the definitional and theoretical problems.

VI. THEORETICAL AND DEFINITIONAL QUESTIONS

Apart from the general principles noted above, the treaty regime brings out doctrinal and definitional questions underlying the non-navigational uses of international rivers. The function has always determined the character and, thus, the legal status of a watercourse. Obviously, this has influenced theoretical thinking on the subject. The purpose of this section is to highlight some
of the definitional problems and theoretical responses to the economic uses of shared rivers.

A. THE CHANGING NOTION OF THE TERM INTERNATIONAL RIVERS: A PROBLEM OF DEFINITION

The one basic problem created by international rivers is the fact that the definition of an international river remains a highly debatable matter. The term "international rivers," as commonly used in texts and conventions, denotes those rivers which either flow contiguously or successively between two or several political jurisdiction. Although its origin dates back to the later Middle Ages or the era of commercial revolution when waterborne economic activity assumed ever increasing importance.  

But despite several treaties, the term "international rivers" was not introduced and assimilated into the legal jargon until 1879, and it was used in conventions for


the first time in the Peace Treaties of 1920-21. Due to the predominantly navigational uses of rivers as channels of communication, this function has exerted considerable influence on the evolution of the notion "international rivers." And yet, in spite of the long usage of shared rivers for different purposes the legal definition of an international river remains controversial even in contemporary times.

The juridical content of the term "international rivers" is traceable to Roman law and the law of nature. The Roman system of law put rivers under the public domain, res publicae and, as such, their navigation was open to all the citizens.269 This legal idea derives from the conception that Nature has made available to all mankind certain things whose benefits cannot be denied to anyone.

Among jurists, Hugo Grotius270 was the first to focus attention to the legal regime of rivers, but from the standpoint of navigation. He put forward the idea that liquids which in themselves have no definite limits cannot become the subject of occupation unless they are confined into something, as for example, lakes, ponds and rivers.271 Taken

269 Ibid., Kaeckenbeeck, pp.2-7.


271 Ibid., Grotius.
in this form, peoples have been able to lay claim over the rivers within their territorial domain. Therefore, a river as such, is the property of the peoples within whose boundaries it flows. However, a river considered as running water, *acqua profluens*, remains common property.

Grotius, fully conscious of the nature of sovereignty, realized the difference between the legal position of rivers and that of the sea. Whereas inland waterways were subject to effective jurisdiction of states, the high seas were not. Thus Grotius admitted state sovereignty over those sections of the river within its territory. Having identified the ownership of rivers in the sense of sovereignty, Grotius reverts to law of nature to rationalize common usage of navigable rivers. He argued that the right of sovereign ownership did not destroy entirely the right of community ownership of property which he located in the law of nature. Accordingly, sovereignty over territory, rivers inclusive, was introduced on the condition that these rivers ought to be open to all who for legitimate reasons need to use them for commercial purposes. Grotius,

272 Ibid.
273 Ibid.
274 Ibid., Kaeckenbeeck, n.30, pp.6, 7.
therefore, saw sovereignty as subordinate to the law of nature. From this premise, Grotius arrived at the postulate of freedom of navigation as a perfect right, provided it was innocent. Consequently, a river flowing or crossing between two or more states, if navigation, was conceived as common property of the nations.

Vattel, on the other hand, while recognizing freedom of innocent passage and freedom of commerce as deriving from natural law, did not consider them perfect, but imperfect rights. Therefore, the acquisition of these rights depends on treaties and "belongs to that division of the Law of Nations called conventional." The difference in views between Grotius and Vattel illustrates the differing conceptions relative to the definition of an international river. Opinion remains divided between two main currents of thought: on the one hand are the advocates of declaratory thesis, represented in this case by Hugo Grotius, and on the other is the constitutive

275 Ibid.
276 Ibid.
277 Ibid.

school, represented by Vattel.

The protracted divergence of opinion over what constitutes an international river reached its climax on 9 June 1815,\(^\text{279}\) when the Final Act of the Congress of Vienna was signed. Article 108, which is considered to have codified the traditional definition of a river that flows through more than one territorial jurisdiction, provides that "the powers whose territories are separated or traversed by the same navigable river, engage to regulate, by common consent, everything regarding its navigation...."\(^\text{280}\)

For the High Contracting Parties assembled at Vienna in the summer of 1815, a waterway, in order to graduate to the status of an international river had, therefore, to fulfil two conditions. The first criterion refers to the physical or geographical attributes of a river, that it should be navigable. And the second requirement relates to the territorial or political aspects, that the river separates or crosses more than one territorial jurisdiction. Hence, a watercourse, even if it passes through more than one state, so long as it is not navigable, does

\(^{279}\) Ibid.

not fall under the provisions of the Act of Vienna. In short, the acid-test contained in the traditional definition of the Final Act of the Congress of Vienna is navigability or the functional aspect. Furthermore, it would seem plausible to infer from Article 108 that, besides the two criteria stated, consent of the states concerned was a necessary condition since the Parties had to agree by common consent to declare freedom of navigation of those rivers or portions crossing or bordering their territories. It is of interest to note that the Final Act of Vienna did not use the term "international rivers" when it laid down the principles regulating freedom of navigation, nor did subsequent conventions adopt the same methods of definition as used in the Vienna Congress.

After the First World War, attempts were made to renovate the traditional concept of an international river. To resolve this problem, the General Conference on Communications and Transit was convened by the League of Nations at Barcelona in 1921. The same cleavage of opinion emerged between those who favoured a narrower definition and the exponents of a liberal conception. The former preferred the 1815 approach, while the latter represented a tendency towards internationalization of navigable water-

281 For a different interpretation, see Kaeckenbeeck, n.287, pp.19, 172; Vitanyi, n.287, p.153. He regards the third factor as only a procedural question of execution.
ways, thus, giving the economic criteria or the functional approach more importance than the political element for the purpose of defining an international waterway. 282

The functionalists failed to impress the Conference to endorse their viewpoint, and instead Article 108 of the Act of Vienna prevailed. 283 Basically, Article 1, para.1 of the Barcelona Statute reproduced verbatim the Vienna definition, viz. an international river is one that is naturally navigable to and from the sea and separates or traverses different states. In 1945, a similar attitude was expressed at the Potsdam Conference. 284

Opinion of publicists on the subject is equally divided. Among the writers, Caratheodory is credited with having been the first to attempt a systematic and analytic treatment of the legal regime of rivers. In his pioneering work which appeared in 1861, 285 he assigned no specific terminology to rivers to which an international regime would be applicable. In 1887, Caratheodory defined an international river to include:


283 Art.1.


285 E. Caratheodory, De Droit International Concernant les Grands Cours d'Eau (Leipzig, 1961), For translation, see, Vitanyi, n.287, p.150.
Any navigable river which before running into the sea traverses or borders on two or more states and is subject to certain rules established by general agreement as required by the Congress of Vienna must be considered an international watercourse; a watercourse remaining within only one territory, on the other hand is a national river.\textsuperscript{286}

From this definition, for a watercourse to acquire the status of an "international" river, it must fulfil three conditions:

(i) it must be navigable;
(ii) it must be contiguous or successive between two or several sovereign jurisdictions; and
(iii) navigation on it must be governed by rules established by common consent between the riparians.

Caratheodory's formulation by laying emphasis on the third requirement, introduced an idea that exercised a great deal of influence on subsequent writings.\textsuperscript{287} For example, both Oppenheim\textsuperscript{288} and Schwarzenberger\textsuperscript{289} apply

\begin{itemize}
\item \textsuperscript{286} Ibid., "Das Strontgebierferisch und die Internationale Flusschiffahrt" in F. von Holtzendorff, Handbuch des Volkerrechts (Leipzig, 1887), p.302, quoted in Vitanyi, n.287, p.151.
\item \textsuperscript{287} See Vitanyi, n.287, pp.151.
\end{itemize}
the term "international rivers" to those rivers on which freedom of navigation is recognized by conventional international law.

At the Dubrovnik Conference of the International Law Association held in 1956, J. Zourek defended even more emphatically the third requirement by advancing the opinion that a "river which passes through the territories of several states cannot be considered as an international river unless the riparian states have concluded an agreement on it." Thus, he does not believe in any restrictions which bind jure gentium upon a riparian state's jurisdiction over a river system within its territorial boundaries, unless those restrictions are voluntarily consented to by the state.

In a recent monograph, B. Vitanyi disagrees with this constitutive position on the ground that "the establishment of a special agreement does not constitute but declares the international character of the river concerned." Vitanyi's conclusions seem to be grounded on the liberal interpretation by the Permanent Court of International Justice of Article 331 of the Treaty of the


Versailles and the associated Peace Acts enacted after the First World War. In this context, the Permanent Court of International Justice in the Case Relating to the Territorial Jurisdiction of the International Commission of the River Oder had stated:

The very terms of Article 331 (viz. of the Treaty of Versailles) prove that international status depends on two conditions: the river must be navigable and must naturally provide more than one state with access to the sea. These are... the two characteristics by which the so-called international rivers have long been distinguished from national rivers.292

Apart from individual scholars, the problem of defining an international river has for long drawn the attention of learned bodies. The Institute of International Law in 1887 adopted a resolution (Art.1) identical to Article 108 of the Final Act of the Congress of Vienna. In 1911 the Institute293 retained the same definition except that the words 'separates' and 'traverses' were substituted respectively by terms 'contiguous' and 'successive.'

At its Forty-Seventh Conference held in Dubrovnik in 1956, 292 P.C.I.J., Series A, No.23, p.25.

the International Law Association adopted the following definition: "An international river is one which flows through or between the territories of two or more states." The 1911 Madrid Declaration referred to above was a pace-setter. Henceforth, new thinking on what an international river ought to be began to appear mostly from private associations of lawyers.

This was in response to the twentieth-century developments. Due to technological advances and rapid economic development, it had already become apparent that accelerating demands for water supply for domestic, hydroelectric power generation, agricultural and industrial uses, had overtaken navigation which had for centuries influenced the concept of an international river. The impact of these new uses on the traditional legal definition of a river is self-evident. From the twentieth-century onwards, the expression "non-navigational uses of rivers" appeared in academic literature. Along with it the terms, "river system," "drainage basin," "hydrographic basin," "shared water resources," came to be increasingly used as the basic elements in abstracting the juridical content of what constitutes an international river. The point at issue is whether the legal notion of an international river,

ILA, no.312, p.241.
as had hitherto been conceptualized, adequately reflects the new economic uses of rivers. Although recognizing the notion of unity of a river as a point of departure in elaborating the legal character of a river in view of the changed circumstances, authorities are divided since they are not sure of the implications of a wider concept on the sovereign rights of the states. It is this fear of restrictions on a state's territorial sovereignty which Sauser-Hall expressed when he said: "The principle of the unity of river basin cannot be established; otherwise every state would find its dominion limited to a great part or even all its public waters." In spite of this ambivalence there is a trend, both in treaty provisions and recommendations by associations of international lawyers, to treat a river as an inseparable whole or a hydrographic entity.

The American Branch of International Law Association in 1957 suggested substitution of the term "international rivers" with "system of international waters." In 1958,


at the New York Conference, the I.L.A. adopted the concept of "drainage basin" which it defined as "an area within the territories of two or more states in which all the streams and flowing surface water, both natural and artificial, drain a common watershed terminating in a common outlet or common outlets either to sea or to a lake or some inland place from which there is no apparent outlet to the sea". Consequently, "a system of rivers and lakes in a drainage basin should be treated as an integrated basin." This initial notion of an international river was modified in subsequent conferences. During the fifty-second conference, held in 1966, the Helsinki Rules were adopted in which Article 2 gives the following definition:

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.

Whereas the New York definition did not include underground water, the 1966 one incorporated it. Furthermore,


the New York Resolution covered artificial waters, but at Helsinki, it was dropped out.

Earlier on in 1961, the Institute of International Law in Article 1 of its resolution stated: "The present rules and recommendation are applicable to the utilization of waters which form part of a watercourse or hydrographic basin which extends over the territory of two or more states." 299

The basin concept has already been applied in some modern treaties, particularly in West Africa. In the Preamble to the 1963 Act concerning Navigation and Economic Cooperation between the States of the River Niger the contracting parties recognized the need for "close co-operation of all basin states on the river, its tributaries and subtributaries..." 300 The same idea was affirmed in Article 2 of the Act in which the utilization of the Niger, its tributaries and subtributaries was stressed as the basic concept.

The 1964 Convention regarding the development of the Chad Basin adopts, in more radical terms, the drainage theory as the starting point. Article 4 provides:


The exploitation of the Chad Basin especially the utilization of surface and underground waters has the widest meaning and refers in particular to the needs of domestic and industrial and agricultural development and the collecting of its fauna and flora. 301

Significantly, this seems to be the only modern treaty that refers specifically to underground waters. This may be in response to the arid climatic conditions of the region. The idea of the unity of water resources appears to be the basic approach adopted in 1977 Agreement establishing the Kagera Basin Organisation as a "unit offering a valuable base for fruitful cooperation between the riparian countries." 302

Outside the African Continent, the Treaty on River Plate Basin of 1969303 between Argentina, Bolivia, Brazil, Paraguay and Uruguay also indicates a movement towards acceptance of the concept of an international river as a shared water resource. By this treaty the Parties agreed to develop the "hinterland" of the River Plate harmoniously. 304


302 Official text of the Agreement was obtained from Government of Uganda, Ministry of Regional Cooperation.


304 Article 1.
From this brief survey of treaties based on the notion of geographical unity of a river the portions of which are under different political jurisdictions, the following observation may be made. In all these treaties, concluded between newly independent states of Africa and Latin America, the overriding objective appears to be a desire to foster regional economic cooperation. From this it is clear that states are progressively moving towards endorsing the idea of an international watercourse and its waters as a shared resource.

This view is strongly articulated by the International Law Commission. On 8 December 1970, General Assembly passed Resolution 2669 (XX) which recommended that the International Law Commission should "take up the study of the non-navigational uses of international watercourses with a view to its progressive development and codification and, in the light of its scheduled programme of work, should consider the practicability of taking the necessary action as soon as the Commission deems it appropriate."

In 1974, pursuant to 1973 General Assembly Resolution 3071 (XXVIII) the Commission, at its twenty-sixth session, constituted the subcommittee on the law of the Non-Navigational uses of International Watercourses. The subcommittee submitted a report to the Commission in which it was proposed to submit a questionnaire to states seeking their views on
the scope that should be given to the term "international watercourses." 305

At the beginning of 1975, the Secretary-General circulated a note to Member States inviting their comments to the Commission's questionnaire. The relevant parts of this note to the present discussion are reproduced below: 306

(a) What would be the appropriate scope of the definition of an international watercourses in a study of the legal aspects of fresh water uses on the one hand, and of fresh water pollution on the other?

(b) Is the geographical concept of an international drainage basin the appropriate basis for a study of the legal aspects of the pollution of international watercourses?

(c) Is geographical concept of an international drainage basin the appropriate basis for a study of the legal aspects of non-navigational uses of international watercourses?

305 Yearbook... 1974, Vol.11 (Part One), Doc.A/9610/Rev 1, Chap.V, Annex. The subcommittee was composed of: Kearney (Chairman), Sahovic, Sette Camara and Tabibi.

In 1976 during the Commission's twenty-eighth session the then Special Rapporteur, Richard D. Kearney, submitted his report which essentially dealt with the reaction of Governments to the questionnaire. There were twenty-one replies that had been received by that time. What emerged from these replies was a cleavage of opinion between states preferring a declaratory definition on the one hand, and those in favour of a constitutive definition on the other. A majority of states expressed the view that the scope of the Commission's studies should be based on the traditional definition of an international river the classical statement of which is found in Article 108 of the Final Act of the Congress of Vienna. Austria, Brazil, Colombia, Ecuador, Poland and

309 Replies were received from the following states: Argentina, Austria, Barbados, Brazil, Canada, Colombia, Ecuador, Finland, France, Federal Republic of Germany, Hungary, Indonesia, the Netherlands, Nicaragua, Pakistan, Philippines, Poland, Spain, Sweden, United States of America and Venezuela, Yearbook... 1976, Vol.11 (Part One), p.147, Doc.A/CN.4/294 and Add.1. On July 1980, nine more states had submitted their replies. These were: Greece, Libya, Luxemburg, Niger, Sudan, Suezland, Syria, Yemen and Yugoslavia, Yearbook... 1980, Vol.11, (Part Two), Doc.A/CN.4/SER.A/1980/Add.1, (Part Two) p.108. See p.108.
310 Ibid., p.184.
311 n.300.
Spain supported the Vienna formulation without modification and for both uses of rivers and of their pollution. Brazil and Ecuador in preferring the traditional definition referred to the acceptance this concept has received in Latin America.

The Canadian Government too supported application of the traditional concept, but pointed out that a "legal definition should be a workable starting point and not a limiting factor that would preclude consideration of any appropriate geographical unit when specific, concrete problems are considered."312 Thus, to Canada, the use of the drainage basin concept should be left to depend on particular circumstances obtaining in each case. Similarly, the Federal Republic of Germany favoured a definition derived from the Vienna Act, particularly in relation to pollution.

The Government of Nicaragua made the comment that the drainage basin is "...a territorial concept which can constitute a single unit for certain development and integration projects only when particular local characteristics are present and through the conclusion of special treaties..."313 On the question of pollution,

312 A/CN.4/294, p.17.

313 Ibid., p.35.
Nicaragua recommended the drainage basin concept. Hungary held a similar point of view.

States supporting the drainage basin concept included the United States of America, Sweden, the Netherlands, Finland, and Argentina. Sweden stressed the necessity of including both surface and ground water. The United States of America and Finland proposed the principle of hydrographic conference of a river. Argentina believed that "... the principal and secondary tributaries of an international river must also be considered 'international', even when they lie entirely within a national territory since they form part of the river system of an international drainage basin." 314 While in support of a wider definition, the Government of the Netherlands advised against inclusion of groundwater since "there are geological situations in which the groundwater shows characteristics distinctly different which is not even connected with them." 315 In that event the term 'hydrographic basin' would seem to be a more appropriate one. 316

With this sample of state attitudes towards a defi-

nition of an international river, coupled with a similar cleavage of opinion in the Sixth Committee, the Commission decided to defer the matter indefinitely. However, in 1980, a provisional definition was drafted, which gave the following description of what the Commission understood the term "international watercourse system" to mean:

A watercourse system is formed of hydrographic components such as rivers, lakes, canals, glaciers and groundwater constituting by virtue of their physical relationship a unitary whole; thus, any use affecting waters in one part of the system may affect waters in another part.

An "international watercourse system" is a watercourse system, components of which are situated in two or more states.

To the extent that parts of the waters in one state are not affected by or do not affect uses of waters in another state, they shall not be treated as being included in the international watercourse system. Thus, to the extent that the uses of the waters of the system have an effect on one another, to that extent the system is international, but only to that extent; accordingly, there is not an absolute, but a relative, international character of the watercourse.

The underlying principle behind this definition is the idea of "shared water resources." While there is no disagreement about the economic value of rivers as natural resources, the controversy arises in regard to the notion of "sharing." Unlike other natural resources like land, mines and forests etc., which are divisible territorially, flowing water is not so divided. It defies political boundaries though the bed of a river is divisible. Problems
of sovereign control over divisible natural resources are fairly well-settled in international law, but not so in water resources. It is this physical interdependence of a watercourse that has led to the evolution of the concept of "shared natural resources" or "common amenities."

Gradually the concept of water as a shared natural resource has gained a large measure of acceptability, at least, within the United Nations system. It is in this light that the proposed Draft Convention by the International Law Commission has to be viewed. Draft 6 specifically refers to "The International watercourse system - a shared natural resource"... as a general principle. Certainly the concept of "shared natural resources" creates several theoretical problems. It could be argued that it is in conflict with the principle of "permanent sovereignty over natural resources." Understood on the traditional doctrine of absolute sovereignty, a perception based on exclusiveness, it would appear to encroach upon a state's territorial domain; but if looked at from a modern point of view and the belief that international community has

progressively moved a stage higher towards closer cooperation, and the recognition of the inevitable necessity of equitable and optimum utilization of resources, then in this sense the principle of "shared natural resources" finds its concrete expression.

It is this position that the present inquiry holds. Therefore, the term "international rivers," as generally used in this text, is to be understood as referring to those rivers as shared water resources in so far as they geographically and economically affect the interests of two or more states. And this explains the title of the topic.

B. THEORIES ON SHARED WATER RESOURCES

The theoretical response to the problem of international rivers has logically followed the idea of what constitutes an international river. Obviously there is an inherent conflict of competence over the use of shared water resources as indicated above. The problem arises out of the existence of equal territorial sovereign rights: a right lawful per se as an upper riparian perceives to utilize water resources within its territorial domain as the essential attribute of its sovereignty and a corresponding right claimed by a lower stream state to
exclusive jurisdiction. These two conflicting conceptions may be formulated under the Harmon doctrine which points that the jurisdiction of a state within its own territory is "necessarily exclusive and absolute." Classical doctrine can be elaborated into four principles:

(a) The principle of absolute territorial integrity;

(b) The principle of absolute territorial sovereignty;

(c) The principle of community of rights and;

(d) The principle of restricted absolute territorial integrity and restricted territorial sovereignty.

Known also as the downstream theory, the first principle contains the Common Law doctrine of private riparian water rights in which the lower riparian may demand the continued flow of the watercourse from upstream in its natural form without either reducing its quality or changing its


319 Ibid., Berber, p.12.
quantity. Opposed to the downstream theory is the upstream principle which holds that a state has the absolute freedom to utilize water resources of a river within its territory regardless of other interests in the same river system.

The third and fourth principles is an attempt at an alternative approach to reconcile the first two absolutistic doctrines. The principle of community of property or absolute natural rights in water posits that since a river system is a geographical unity it ought to be ideally developed jointly by the co-basin states. As such rights are vested either collectively to preclude monopoly or exclusive control of water resources by one riparian to the disadvantage of the others.

The theory of limited sovereignty expressed in the fourth principle is an endeavour to synthesise traditional doctrine. It rejects the rigid postures of the first two principles, but at the same time it is cautious in advocating an idealistic regime based on absolute solidarity of interests as the third principle presupposes. The principle argues that it is legally permissible for a state to use the water of those portions of an international river within its territory provided it is not detrimental to the interests of the other co-riparians. This limitation upon sovereignty is an enlightened principle to the extent that it recognizes equality of rights to the waters of a
shared watercourse and the imperative for international coordinations in the use of water resources.

Due to the limited sovereignty principle, doctrine on the subject has progressively developed the principle of equitable apportionment or utilization of shared water resources as the standard mark for determination of the rules on the subject. As a general principle the aim of which is to take account of both conflicting state interests and competing uses in any given water system and to protect the legal rights of each riparian, equitable apportionment offers a framework within which to satisfy the needs of each riparian to the greatest extent possible while minimizing the adverse effects to each resulting from such utilizations. It is upon this principle that the general premise of this inquiry is based.