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First report on the law of the non-navigational uses of international watercourses by Mr. Richard D. Kearney, Special Rapporteur

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Quid prohibetis acquis,
Usus communis acquarum est.
(OVID, *Metamorphoses*, VI, 349)

1. As a first step in undertaking its study of the law of the non-navigational uses of international watercourses, the International Law Commission decided that the views of States should be sought on a number of basic issues relating to the scope and content of the study.[1] General Assembly resolution 3315 (XXIX) of 14 December 1974 confirmed this decision by recommending that the Commission continue its study, taking into account "... comments received from Member States on the questions referred to in the annex to chapter V of the Commission's report."

2. The replies of Member States[2] to the Commission's questionnaire are scanty.[3] This should not be taken as evidence of a general lack of interest in the topic. The Commission's report on the work of its twenty-seventh session contained only a paragraph to the effect that the subject of international watercourses was not taken up at the session pending receipt of governmental comments.[4] Nonetheless, many delegations commented on the subject in the course of the Sixth Committee debate on the report at the thirtieth session of the General Assembly.

3. All of these delegations, with two exceptions, urged that work on the subject proceed without delay. They stressed the importance of developing principles to govern the non-navigational uses of international watercourses. Many urged that this task be taken up at the twenty-eighth session of the Commission, in 1976, or that work be commenced as a matter of priority, or without delay.

4. In paragraph 4 of its resolution 3495 (XXX) of 15 December 1975 concerning the report of the International Law Commission on the work of its twenty-seventh session, the General Assembly recommended that the Commission continue its work on the topic. This first report will discuss the decisions which should be made by the Commission in order to provide a basis for commencing the substantive work on international watercourses.

5. Judge Taslim O. Elias in 1974 inquired whether the imposing polysyllables in the title meant much more than "economic uses of international rivers". Similar questions by other members of the Commission led to Member States being asked to indicate the meaning which should be given to "international watercourse". More specific views were solicited on whether "the geographical concept of an international drainage basin" is an "appropriate basis for a study of the legal aspects", on the one hand "of non-navigational uses of international watercourses"[5] and on the other "of the pollution of international watercourses".[6]

6. A small majority of replies to this question supported the view that it would be desirable to begin the work on the basis of a less general term than "international drainage basin".

7. Canada, in recommending that the basic definition should encompass a body of fresh water which crosses or forms an international boundary, pointed out that use of a geographically narrow definition would not preclude consideration of a natural drainage basin or other functional unit where the circumstances of the case so require.[7]

8. Hungary stated that there is no general geographic term that could be applied to all of the legal relations relating to waters that are on the territory of more than one State. Consequently the question to study is not the meaning of terms but what term is suitable to the regulation of certain legal relations.[8]

9. Considerable support was expressed for traditional definitions such as "international river" in the sense of the Final Act of the Congress of Vienna of 1815.[9] Colombia, for example, while considering that the definition of an international drainage basin as contained in the Helsinki Rules[10] is appropriate in itself[11] would consider it more appropriate to refer to a river which traverses or separates

[1] *Yearbook ... 1974*, vol. II (Part One), pp. 301–304, document A/9610/Rev.1, chap. V and annex.

[2] See above, p. 147, document A/CN.4/294 and Add.1.

[3] *Ibid.*, para. 6.

[4] *Yearbook ... 1975*, vol. II, p. 183, document A/10010/Rev.1, para. 138.

[5] See above, p. 161, document A/CN.4/294 and Add.1, para. 6, question B.

[6] *Ibid.*, question C.

[7] *Ibid.*, p. 153, sect. II, question A, Canada, and p. 162, question B, Canada.

[8] *Ibid.*, p. 155, sect. II, question A, Hungary.

[9] See para. 21 below. For the text of the Final Act, see A. Oakes and R. B. Mowat, eds., *The Great European Treaties of the Nineteenth Century* (Oxford, Clarendon Press, 1918), p. 37.

[10] The Helsinki Rules on the Uses of the Waters of International Rivers, adopted by the International Law Association at its fifty-second Conference, held at Helsinki in 1966. For text, see *Yearbook ... 1974*, vol. II (Part Two), p. 357, document A/CN.4/274, part four, sect. C,1.

[11] See above, p. 162, document A/CN.4/294 and Add.1, sect. II, question B, Colombia.

the territories of two or more States.[12] Brazil[13] and Ecuador[14] both refer to the recognition this latter concept has received in the Inter-American juridical system in expressing support for its use in carrying out the Commission's study. Spain,[15] Poland[16] and Austria[17] also support this approach.

10. Some of the States which submitted comments would accept the drainage basin concept as a basis for the consideration of pollution problems but not for uses. Thus Nicaragua remarked 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,"[18] and that "in the specific instance of pollution, it would be advisable to take into account the geographical concept of a drainage basin ... The damage which the pollution of the waters forming the drainage basin can cause in the principal river makes it imperative to extend the scope of the study on the legal aspects of pollution."[19] France expressed similar views.[20] The Federal Republic of Germany, on the other hand, stated that a study of the pollution of international watercourses should not be based on the drainage basin concept. "Only transboundary pollution, as distinct from pollution confined to some point in the river basin, is of relevance ..."[21] The same position is advanced in a number of other replies.

11. The States which supported using the concept of the drainage basin for all purposes generally stressed the unity of a water system. Sweden pointed out the need to include both surface water and ground water.[22] Both Finland[23] and the United States of America[24] accepted the hydrographic coherence of the basin. Argentina pointed out 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."[25] Argentina points out, however, that "In view of the current acceleration in the development and progress of knowledge and of scientific and technological advances, the specification and limitation of definitions is unnecessary and even inappropriate. It is felt that this could give rise to prolonged academic discussions whose conclusions might be overtaken by events.[26] There is much merit in this observation. It is rooted in the same considerations that underlie many of the comments. As the Canadian memorandum states: "A legal definition should be a workable starting point and not a limiting factor that would preclude consideration of any appropriate geographic unit when specific concrete problems are considered."[27] The Federal Republic of Germany, another State that strongly prefers the international watercourse concept, points out:

> It should not be overlooked, however, that the supply of water to countries below stream may depend just as much on water withdrawals from a national tributary as from the international watercourse concerned. It may therefore be useful to extend a legal study of questions of quantity to aspects of the river basin as a whole, taking duly into account the sovereign rights of the riparian States.[28]

12. Almost all the States responding recognized, either expressly or implicitly, that the purpose of a definition of international watercourses should be to provide a context for examination of the legal problems that arise when two or more States are present in the same fresh water system and that a definition should not ineluctably bring with it corollary requirements as to the manner in which those legal problems should be solved. Thus some States objected to use of the drainage basin concept because they considered that its use implied the existence of certain principles, especially in the field of river management. Other States considered that traditional concepts such as contiguous and successive waterways would be too restricted a basis on which to carry out the study in view of the need to take account of the hydrologic unity of a water system.

13. Consequently, it would seem wise for the Commission to follow the advice proffered by a number of the commenting States that the work on international watercourses should not be held up by disputes over definitions. This approach is, of course, in line with the customary practice of the Commission in deferring the adoption of definitions, or at the most adopting them on a provisional basis, pending the development of substantive provisions regarding the legal subject under review.

14. To the extent that a definition of international watercourses is needed, it is required in connexion with non-navigational uses of the water concerned. What these uses encompass must be considered. In question D of its questionnaire, the Commission set forth an outline of fresh water uses under three headings: agricultural uses, economic and commercial uses and domestic and social uses. The individual uses listed under each heading, ranging from irrigation to energy production to fishing and boating, are illustrative of the range of human activities for which water is required. Water is viewed as a resource necessary to the particular use.

15. In order to determine whether its compilation of the resource uses of water was reasonably complete, the Commission asked States whether any other uses should be included. A number of additional uses have been suggested, such as use for stock-raising and for cooling. Some of the replies expressed in general terms the view that such a catalogue of specific uses has value mainly as a checklist, and that the development of legal rules and principles could comprise broader issues than those raised by the list of specific uses. The Commission had, in fact, indicated its awareness of this aspect by asking States, in question F,

[12] *Ibid.*, p. 154, question A, Colombia.
[13] *Ibid.*, p. 152, Brazil.
[14] *Ibid.*, p. 154, Ecuador.
[15] *Ibid.*, p. 159, Spain.
[16] *Ibid.*, p. 158, Poland.
[17] *Ibid.*, p. 152, Austria.
[18] *Ibid.*, p. 164, question B, Nicaragua, para. 3.
[19] *Ibid.*, p. 167, question C, Nicaragua.
[20] *Ibid.*, p. 155, question A, France.
[21] *Ibid.*, p. 163, question B, Federal Republic of Germany, para. 3.
[22] *Ibid.*, p. 160, question A, Sweden.
[23] *Ibid.*, p. 154, Finland.
[24] *Ibid.*, p. 160, United States of America.
[25] *Ibid.*, p. 152, Argentina, para. 5.
[26] *Ibid.*, p. 152, Argentina, para. 1.
[27] *Ibid.*, p. 153, Canada, para. 2(*a*).
[28] *Ibid.*, p. 163, question B, Federal Republic of Germany.

whether flood control and erosion problems should be included in its study. Neither flood control nor erosion is a direct use of water as a resource. Either can be the consequence of a use or of uses. Simple examples would be erosion caused downstream by the operation of a dam for hydroelectric production or a flood caused by operation of a dam for hydroelectric production without regard to downstream high water effects. On the other hand, downstream floods or downstream erosion may be caused not by upstream water uses but by certain land uses—runoffs resulting from the conversion of land from agricultural to residential use, or lumbering which has reduced the water-retention capability of land.

16. States replying to this question supported the inclusion of flood control and erosion problems in the study to be carried out by the Commission, although the Government of Ecuador expressed doubt whether legal rules on these issues should be developed at this time except as to responsibility for loss due to floods or erosion resulting from improper use of international watercourses.[29] Several States suggested that sedimentation problems should also be dealt with.

17. In supporting inclusion of flood and erosion problems, a number of States expressed the view that inclusion was required because of the need to protect the watercourse and the uses to be made of the water. On the other hand, a few States linked the inclusion of floods or erosion to whether these problems are, as Brazil put it, "occasioned by any form of use of the watercourses".[30] Brazil also referred to cases "in which there are really international repercussions as a result of significant harm to other States."[31] This qualification raises issues that are not definitional in nature and should be discussed in connexion with the substantive proposals relating to erosion and floods as well as the responsibility issue mentioned in the comment of Ecuador referred to above.

18. The issue that should be dealt with at the present time is whether the Commission's task is limited to the effects or consequences of non-navigational uses of international watercourses. In most of the situations that might be envisaged the Commission undoubtedly will be examining the effects upon the uses of an international watercourse in one State of the uses of that watercourse in another State. The discussion of flood and erosion problems, however, illustrates that flooding or erosion can be caused in one State by activities in another that do not involve direct use of the international watercourse. The watercourse serves as the means or conduit through which the non-fluvial use in one State produces fluvial consequences in the other State.

19. A substantial number of illustrations of this type of problem could be given. The area of pollution provides many examples. One that has recently been occurring in various parts of the world is that of the factory producing herbicides and fungicides which contain compounds of arsenic and mercury. Over the years these poisons build up in the soil surrounding the factory through the loss of minute quantities in the course of transportation and manufacture. Surface water and underground seepage carry off a proportion of these chemicals into a watercourse in diluted form. The build-up in the soil eventually reaches a stage at which the concentrations carried off by water can destroy acquatic life in the watercourse. The contaminated water, if it flows into another State, can affect a variety of uses of the watercourse in that State, including domestic uses, fishing, and various recreational activities. The contamination may prohibit other uses in the realms of consumption or manufacturing unless measures are taken to eliminate or dilute the residues.

20. The example given differs from the customary pollution problem in that the watercourse is not intended to be used for the purpose of waste disposal. Nonetheless the relationship of the contamination of the watercourse to its character as an international watercourse is such that the consequences of the activity upon the watercourse should be studied by the Commission even though they do not result from a use of the watercourse. Similarly, the study should include the problems of floods and erosion, as well as sedimentation, if there are consequences to the watercourse as an international watercourse without regard to whether the flood or erosion results from the use of a river or not. As Colombia stated ". . . the study of such problems should be included, since it forms part of the planning that is needed in order to begin analysing the best ways of preventing the harm caused by both erosion and floods to the various uses of water."[32] These examples illustrate that, while a full definition of the term "international watercourse" may be deferred until the content of the subject has been clarified by further study, it would be desirable to agree upon the minimum elements that the Commission should study in order to codify and progressively develop the international law of the use of fresh water.

21. The traditional description of an international watercourse as suggested in a number of the replies is any river, canal or lake forming the frontier or traversing the territories of two or more States. This definition is substantially that which has been used for making provision for river navigation. The Final Act of the Congress of Vienna of 1815 contains a rule for the free navigation of rivers. Its article 108 provides as follows:

> The Powers whose States are separated or crossed by the same navigable river engage to regulate, by common consent, all that regards its navigation. For this purpose they will name Commissioners, who shall assemble, at latest, sixth months after the termination of the Congress, and who shall adopt, as the bases of their proceedings, the principles established by the following articles.[33]

A definition devised for purposes of navigation is not necessarily the best choice for the requirements of the wide range of uses other than navigation.

22. The 1815 definition, however, by distinguishing waters that form a boundary from waters that cross a boundary, concentrates attention on the relationship that the physical properties of water have to the metaphysical aspects of a boundary writ in water. A boundary, although it is

[29] *Ibid.*, p. 174, question F, Ecuador.

[30] *Ibid.*, p. 174, Brazil.

[31] *Ibid.*

[32] *Ibid.*, p. 174, Colombia.

[33] For reference, see foot-note 9 above.

determined by reference to physical phenomena—the crest of a mountain range, the thalweg of a river, or is physically marked by a wall or a row of granite markers—remains an abstraction. At this point on the mountain the authority of State A ends. It is replaced by the power of State B. On this side of the granite marker it is legal to make beer. On the other side it is illegal. On this side of the lake it is a crime to dump oil into the water. On the other side it is not. On State A's side of the river, reduction of the water level is prohibited. On State B's side, withdrawals not in excess of a one-foot reduction are permitted.

23. There is a real difference when the authority of the State ends at a point on land and when it ends at a point in the water. The difference is not in the concept of authority but in its applicability to physical phenomena. State A can require that beer not be manufactured on its territory by the exercise of its own authority and this is not affected by whether or not beer is brewed in State B. However, the prohibition against the introduction of oil into waters of a lake that lies partly on one side of a boundary cannot be effective if the State on the other side does not prevent such discharges into the lake. The physical properties of liquids, and the normal movements of the water will result in some oil crossing the border. The prohibition against reducing the water level in the river on State A's side is ineffective if water users in State B act under the authorization to withdraw water up to a one-foot reduction in the level as measured on B's side. The principle of sovereignty will not keep water on one side of the river up when water on the other side goes down.

24. This leads to consideration of the question whether the relationship of sovereignty to water is such that the uses of a boundary water have to be governed by a different set of rules from the uses of water that is crossed rather than divided by a boundary. The issue is whether the concept of the boundary with an equal and opposing sovereignty on each side is the starting point or whether it is the physical characteristics of water over which different sovereignties are exercised at different times that must be taken into account.

25. From the standpoint of the physical characteristics of water, what is the difference if the intangible boundary line is drawn across the watercourse instead of lengthwise—if it segments a watercourse rather than bisects it? The river flows through the territory of riparian States successively rather than simultaneously. But, if an upstream State takes water out of a river flowing through its territory and does not replace it, the quantity of water that crosses the boundary will be less and the level of the river in the downstream State will be lower. The end result is a loss of water and is the same as the end result of diversion from a boundary river. If a factory in an upstream State dumps oil into a stream, which is not removed or disposed of before the oil reaches the boundary, the oil will be carried into the downstream State even as it is carried across the frontier in a boundary lake.

26. As far as fundamental effects upon quantity and quality of water are concerned, there appears to be no basic difference in whether the act or inaction producing the effect occurs in an upstream State or in a boundary-water State. Differences that exist relate principally to timing, certainty and quantum of result. Organic wastes dumped into a transboundary river far enough up from the boundary may be transformed by bacterial action before reaching the boundary. The same result would be possible in a large and quiet boundary lake but unlikely in a boundary river. These variations in probability and result, however, do not change the basic physical consequences which result from fresh water being mobile, movable and the most universal of solvents, to list only three of its qualities that give rise to legal consequences.

27. Is there any fundamental difference in these interrelationships if it is not riparian States adjacent to each other on an international watercourse which are involved in a water problem but States riparian on the same stream which have no common boundaries? The headwaters of the Niger are in the Loma Mountains near the border between Sierra Leone and Guinea and flow through Mali and Niger as well as boundary areas of Benin in reaching Nigeria and emptying into the Gulf of Guinea. If Mali were to make a substantial diversion of water from the Niger to the Senegal river system there would be less water not only for Mali's neighbour, Niger, but also for Benin and Nigeria. To revert to the original theme, the political boundaries are irrelevant to the physical unity of a river system. Like the ripples which spread out from a stone cast into a pond, the physical effects of a man-made diversion, or pollution, or change in rate of flow, will move through and with the water until the physical characteristics of water eliminate the change.

28. The Niger basin is an excellent illustration that the legal aspects of the uses of an international watercourse raise issues beyond the boundary-water or boundary-crossing aspects. At Lokoja in Nigeria the Niger is joined by a major tributary, the Benue River which flows from the United Republic of Cameroon and has substantial tributaries rising in Chad. Farther west the Sirba rises in Upper Volta and empties into the Niger River at Hooussa in Niger. Obviously each of these rivers could be treated as an international watercourse in itself—and possibly should be for certain purposes. But also obviously a diversion of the Sirba in Upper Volta could have effects in Nigeria and some types of pollution in Chad could be carried by the Benue into Nigeria. It is also obvious that a persistent effect upon the Benue produced in Chad could combine with a persistent effect produced upon the Sirba in Upper Volta to create a compound result at Onitisha, Nigeria, which is downstream from the junction of the Niger and the Benue.

29. Problems of this character are not uncommon and the ever greater demands upon the available supply of fresh water occasioned by vast increases in population, continually growing industrial requirements and the pressures of urbanization make the likelihood of occurrence in any multistate river basin a mathematical certainty.

30. A set of legal principles regarding the use of international watercourses that limits itself to dealing with fresh water when it crosses a specific international boundary and to rivers, lakes and canals that constitute a particular national boundary would not be broad enough to deal with the complex problems of a multistate river system. Where river systems are wholly within the territory of two States, as is the case in those dealt with in the Treaty of 1909 relating to boundary waters between Canada and the

United States,[34] variations of the 1815 formula such as the one used in that treaty may be applied with a reasonable measure of utility. Even in a two-State situation, however, whenever issues engendered by modern technology are involved, such as benefit-sharing from co-ordinated river regulation for hydroelectric production, the river has to be dealt with as a whole. The Canadian-United States Columbia River Treaty[35] illustrates this requirement.

31. A guideline of substantial significance for the development of international law is that the newly-independent States, the developing States, have recognized that the problems arising in multistate river basins cannot be dealt with by using a theory adopted by the Holy Alliance in 1815. In the Act of 1963 regarding navigation and economic co-operation between the States of the Niger Basin,[36] the States signatories recognized that the complex physical characteristics of the basin required "close co-operation" of all riparian States on the river, its tributaries and sub-tributaries "... for the judicious exploitation of the resources of the River Niger basin."[37] The operative provisions of the Act include the following articles:

Article 2

The utilisation of the River Niger, its tributaries and sub-tributaries, is open to each riparian State in respect of the portion of the River Niger basin lying in its territory and without prejudice to its sovereign rights in accordance with the principles defined in the present Act and in the manner that may be set forth in subsequent special agreements.

The utilisation of the said River, its tributaries and sub-tributaries, shall be taken in a wide sense, to refer in particular to navigation, agricultural and industrial uses, and collection of the products of its fauna and flora.

Article 3

Navigation on the River Niger, its tributaries and sub-tributaries, shall be entirely free for merchant vessels and pleasure craft and for the transportation of goods and passengers. The ships and boats of all nations shall be treated in all respects on a basis of complete equality.

Article 4

The riparian States undertake to establish close co-operation with regard to the study and the execution of any project likely to have an appreciable effect on certain features of the regime of the River, its tributaries and sub-tributaries, their conditions of navigability, agricultural and industrial exploitation, the sanitary conditions of their waters, and the biological characteristics of their fauna and flora.[38]

32. The Niger River Act was supplemented in November 1964 by the Agreement concerning the Niger River Commission and the navigation and transport on the River Niger,[39] article 2 of which states the Commission's functions as follows:

(*a*) to prepare General Regulations which will permit the full application of the principles set forth in the Act of Niamey, and to ensure their effective application.

The General Regulations and the other decisions of the Commission shall, after approval by the riparian States and after a time-limit fixed by the Commission, have binding force as regards relations among the States as well as their internal regulation.

(*b*) to maintain liaison between the riparian States in order to ensure the most effective use of the waters and resources of the River Niger basin.

(*c*) to collect, evaluate and disseminate basic data on the whole of the basin, to examine the projects prepared by the riparian States, and to recommend to the Governments of the riparian States plans for common studies and works for the judicious utilization and development of the resources of the basin.

(*d*) to follow the progress of the execution of studies and works in the basin and to keep the riparian States informed, at least once a year thereon, through systematic and periodic reports which each State shall submit to it.

(*e*) to draw up General Regulations regarding all forms of navigation on the river.

(*f*) to draw up staff regulations and to ensure their application.

(*g*) to examine the complaints and to promote the settlement of disputes and the resolution of differences.

(*h*) generally, to supervise the implementation of the provisions of the Act of Niamey and the present Agreement.[40]

33. The enlightened spirit which animates these two agreements is recognition that all the riparians in a river basin have an interest in what happens in the basin as a whole. The same spirit shown by the nine Niger River States led the four African States of the Senegal basin to adopt in 1963 a Convention relating to the general development of the Senegal River Basin.[41] The preamble notes that the co-ordinated development of the Senegal River basin for the rational exploitation of its varied resources offers prospects of a fruitful economic co-operation. This was followed in 1964 by the Convention relating to the status of the Senegal River,[42] article 8 of which provides that the waters flowing into the Senegal will be subject in every respect to the same régime as the rivers or lakes of which they are the tributaries. Article 11 provides as follows:

Art. 11. In addition to the provisions of Title I of the Convention of 26 July 1963 relating to the general development of the Senegal River basin, the Inter-State Committee shall have, *inter alia*, the following tasks:

(*a*) The preparation of joint regulations permitting the full application of the principles affirmed by the present Convention.

The joint regulations and other decisions adopted by the Committee shall have binding force, after approval by the States concerned, in the relations between those States and in regard to their internal regulations.

(*b*) The Committee shall be responsible for ensuring observance of the regulations referred to above.

(*c*) It shall assemble basic data relating to the river basin as a whole, and prepare and submit to the Governments of the riparian States co-ordinated programmes for studies and works for the development and rational utilization of the resources of the Senegal River.

(*d*) It shall examine projects prepared by the States for the development of the river, as defined in article 3 of the present statute.

(*e*) It may be instructed by one or more riparian States to study and execute projects for development of the river.

(*f*) It shall inform the riparian States of all projects or problems relating to the development of the river basin, co-ordinate relations between States in this field and help to settle disputes.

[34] Treaty between Great Britain and the United States relating to boundary waters, and questions arising between the United States and Canada, signed at Washington on 11 January 1909: text in United Nations, *Legislative texts and treaty provisions concerning the utilization of international rivers for other purposes than navigation* (United Nations publication, Sales No. 63.V.4), p. 260.

[35] Treaty relating to co-operative development of the water resources of the Columbia River Basin, signed at Washington on 17 January 1961: text in United Nations, *Treaty Series*, vol. 542, p. 244.

[36] *Ibid.*, vol. 587, p. 9.

[37] *Ibid.*, p. 11.

[38] *Ibid.*, p. 13.

[39] *Ibid.*, p. 19.

[40] *Ibid.*, p. 23.

[41] For the French text of the Convention, see *Journal officiel de la République du Sénégal*, 20 February 1965. year 110, No. 3727, p. 171.

[42] For French text see *Revue juridique et politique, indépendance et coopération*, vol. 19, No. 2 (April–June 1965), p. 302.

(*g*) The Committee may, on behalf of the riparian States, draw up requests for bilateral or multilateral financial and technical assistance in carrying out studies and works for the development of the river. Management of the technical and financial assistance so obtained may be entrusted to the Committee.[43]

34. The Convention and Statutes relating to the Development of the Chad Basin of 1964[44] also take as their starting point the necessity for treating a fresh water system as a unit. Article 4 of the Statutes provides:

Art. 4. The exploitation of the Chad Basin and 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 products.[45]

35. Article 5 provides basic principles for use of the waters:

Art. 5. The Member States undertake to refrain from adopting, without referring to the Commission beforehand, any measures likely to exert a marked influence either upon the extent of water losses, or upon the form of the annual hydrograph and limnograph and certain other characteristics of the Lake, upon the conditions of their exploitation by other bordering States, upon the sanitary condition of the water resources or upon the biological characteristics of the fauna and the flora of the Basin.

In particular, the Member States agree not to undertake in that part of the Basin falling within their jurisidiction any work in connexion with the development of water resources or the soil likely to have a marked influence upon the system of the water courses and levels of the Basin without adequate notice and prior consultation with the Commission, provided always that the Member States shall retain the liberty of completing any plans and schemes in the course of execution or such plans and schemes as may be initiated over a period of three years to run from the signature of the present Convention.[46]

36. While the Chad, Niger and Senegal river treaties are the outstanding examples of international recognition of the interdependence of the various parts of a river basin, they are not the only such examples. In article 1 of the Treaty on the River Plate Basin of 1969[47] the five South American riparian States undertake to combine their efforts to promote the harmonious development and physical integration of the basin and of its areas of influence which are immediate and identifiable. Specific areas of promotion are identified as:

(*a*) Advancement and assistance in navigation matters;

(*b*) Reasonable utilization of water resources, particularly through regulation of water courses and their multiple and equitable uses;

(*c*) Conservation and development of animal and vegetable life;

(*d*) Perfection of highway, rail, river, air, electrical and telecommunication interconnexions;

(*e*) Regional complementation through the promotion and installation of industries of interest to the Basin development;

(*f*) Economic complementation in frontier areas;

(*g*) Reciprocal co-operation in matters of education, health and combating of disease;

(*h*) Promotion of other projects of common interest, particularly those related to inventory, assessment and utilization of the area's natural resources; and

(*i*) Total familiarity with the River Plate Basin.[48]

37. The Declaration of Asunción on the use of international rivers, issued as resolution No. 25 annexed to the Act of Asunción which was adopted at the fourth meeting of Foreign Ministers of the countries of the River Plate Basin,[49] states that its object is to "... record the fundamental points on which agreement has already been reached."[50] As the Brazilian comment points out,[51] the Declaration maintains a distinction between boundary waters and "successive international rivers." The pertinent paragraphs are:

1. In contiguous international rivers, which are under dual sovereignty, there must be a prior bilateral agreement between the riparian States before any use is made of the waters.

2. In successive international rivers, where there is no dual sovereignty, each State may use the waters in accordance with its needs provided that it causes no appreciable damage to any other State of the Basin.[52]

38. The distinction made in the two paragraphs is not contrary to the thesis that in formulating rules for an international river it is necessary to take into account the unity of the river. At this stage it would be premature to discuss the content of the legal principles contained in the two paragraphs. However, the fact that one rule is made applicable to boundary waters and another made applicable to successive international rivers is merely a recognition of what has been pointed out above. While anything affecting quantity, quality or rate of flow of water produces the same type of result across vertical boundaries as across lateral ones, there are differences in the certainty, quantity and timing of the result. Differences may well justify a more restrictive set of legal requirements for boundary waters than for successive rivers. This question is clearly one of the most important and difficult that the Commission must deal with.

39. Paragraph 2 of the Declaration of Asunción, nonetheless, in authorizing use of water by a State in accordance with its needs "provided that it causes no appreciable damage to any other State of the Basin" makes it crystal clear that this principle applies throughout the whole Plate basin without reference to the particular location of any State within the basin, whether the use of the water involves a tributary or sub-tributary, and whether the "appreciable damage" is caused by an adjacent or a non-adjacent State. The principles set forth in paragraphs 1 and 2 of the Declaration are in accord with recognition of the hydrologic unity of the basin.

40. This is confirmed by the requirements of paragraphs 3 and 4:

3. As to the exchange of hydrological and meteorological data:

(*a*) Processed data shall be disseminated and exchanged systematically through publications;

[43] *Ibid.*, p. 304.

[44] For the English and French texts of the Convention and Statutes, see *Journal officiel de la République fédérale du Cameroun*, Yaoundé, 15 September 1964, 4th year, No. 18, pp. 1003 *et seq.*

[45] *Ibid.*, p. 1005.

[46] *Ibid.*

[47] United Nations, *Treaty Series*, vol. 875, No. 12550. For the Spanish text, see Organization of American States, *Rios y Lagos Internacionales (utilizacion para fines agricolas e industriales)*, 4th ed., revised (OEA/Ser.1/VI, CIJ-75, rev. 2) (Washington, D.C., American Society of International Law, 1971), pp. 167–170.

[48] *Ibid.*, pp. 167–168.

[49] For the text of the Act and of the Declaration, see *Yearbook ... 1974*, vol. II (Part Two), pp. 322–324, document A/CN.4/274, para. 326.

[50] *Ibid.*, p. 324, Act of Asunción, resolution No. 25.

[51] See above, p. 152, document A/CN.4/294 and Add.1, sect. II, question A, Brazil.

[52] *Yearbook ... 1974*, vol. II (Part Two), p. 324, document A/CN.4/274, para. 326, Act of Asunción, resolution No. 25.

(*b*) Unprocessed data, whether in the form of observations, instrument measurements or graphs, shall be exchanged or furnished at the discretion of the countries concerned.

4. The States shall try as far as possible gradually to exchange the cartographic and hydrographic results of their measurements in the River Plate Basin in order to facilitate the task of determining the characteristics of the flow system.[53]

41. In May 1968, the Committee of Ministers of the Council of Europe proclaimed the European Water Charter, adopted in May 1967,[54] which contains 12 principles. This set of principles is well thought out and provides an excellent basis for making a body of rules on the uses of fresh water. For present purposes the most important of the principles are Nos. I, II, VI, VII, VIII, XI and XII, which read as follows:

I. *There is no life without water. It is a treasure indispensable to all human activity*

Water falls from the atmosphere to the earth mainly in the form of rain and snow. Streams, rivers, glaciers and lakes are the principal channels of drainage towards the oceans. During its cycle, water is retained by the soil, vegetation and animals. It returns to the atmosphere principally by means of evaporation and plant transpiration. Water is the first need of man, animals and plants.

Water constitutes nearly two-thirds of man's weight and about nine-tenths of that of plants.

Man depends on it for drinking, food supplies and washing, as a source of energy, as an essential material for production, as a medium for transport, and as an outlet for recreation which modern life increasingly demands.

II. *Fresh water resources are not inexhaustible. It is essential to conserve, control, and wherever possible, to increase them*

The population explosion and the rapidly expanding needs of modern industry and agriculture are making increasing demands on water resources. It will be impossible to meet these demands and to achieve rising standards of living, unless each one of us regards water as a precious commodity to be preserved and used wisely.

VI. *The maintenance of an adequate vegetation cover, preferably forest land, is imperative for the conservation of water resources*

It is necessary to conserve vegetation cover, preferably forests, and whenever it has disappeared to reconstitute it as quickly as possible.

The conservation of forests is a factor of major importance for the stabilization of drainage basins and their water régime. As well as their economic value, forests provide opportunities for recreation.

VII. *Water resources must be assessed*

Fresh water that can be put to good use represents less than one per cent of the water on our planet and it is distributed in very unequal fashion.

It is essential to know surface and underground water resources, bearing in mind the water cycle, the quality of water and its utilization.

Assessment, in this context, involves the survey, recording and appraisal of water resources.

VIII. *The wise husbandry of water resources must be planned by the appropriate authorities*

Water is a precious resource requiring planning which combines short- and long-term needs.

A viable water policy is needed, which should include various measures for the conservation, flow-control and distribution of water resources. Furthermore, maintenance of quality and quantity calls for development and improvement of utilization, recycling and purification techniques.

XI. *The management of water resources should be based on their natural basins rather than on political and administrative boundaries*

Surface waters flow away down the steepest slopes, converging to form watercourses. A river and its tributaries are like a many-branched tree, and they serve an area known as a watershed or drainage basin.

Within a drainage basin, all uses of surface and underground waters are interdependent and should be managed bearing in mind their interrelationship.

XII. *Water knows no frontiers; as a common resource it demands international co-operation*

International problems arising from the use of water should be settled by mutual agreement between the States concerned, to conserve the quality and quantity of water.[55]

This is a brief but cogent summing up of inevitable requirements that the very nature of fresh water imposes upon States and their management of international river basins.

42. It is a fact of international life that States are more willing to support a course of conduct in a charter that is considered a statement of political intent rather than in a treaty which imposes a legal burden to take action instead of positions. The Commission's task is to draw up a set of draft articles which may be adopted in treaty form. Consequently, it should take into account the probable reaction of States to its proposals. If a substantial number of States balk at the idea of using the drainage basin concept as the starting point for constructing a set of rules on the non-navigational uses of international watercourses because it is too sweeping a concept, then this is a dubious starting place. If a substantial number of States indicate that the Treaty of Vienna limitations with respect to boundary and trans-boundary waters are unacceptable because those concepts do not recognize the hydrographic unity of fresh water, the traditional formula is a doubtful choice for working out the basis of the Commission's studies.

43. The fact that relatively few States replied to the Commission's questionnaire adds to the difficulties in determining the scope of the study that the differences of position give rise to. The situation is not clarified by reference to the Sixth Committee debate, which, in general, did not include analysis of the different aspects of the questionnaire.

44. It seems appropriate to turn to the modern State practice that is available in order to find a solution. As has been pointed out, the major multilateral conventions that deal with the uses of the Niger, the Plate and the Senegal Rivers, as well as subsequent instruments implementing these Conventions, express their scope of application in terms of the river basin. The term, in these treaties, includes not only the main stem of the river but also all the streams, watercourses and other bodies that carry water which finds its way to the main stem of the river. As the Niger River treaty provides, the basin includes tributaries and sub-tributaries of the river.[56] The concept of a river basin is not as broad as that of a drainage basin, at least in the sense in which that term is used in the Helsinki Rules, which refer to a "system of waters, including surface and underground waters, flowing into a common terminus."[57] However, "international river basin" is a concept that recognizes the hydrological unity of the water, that permits taking account

[53] *Ibid.*

[54] For the text of the Charter, *ibid.*, pp. 342–343, document A/CN.4/274, para. 373.

[55] *Ibid.*

[56] United Nations, *Treaty Series*, vol. 587, pp. 11 and 13.

[57] *Yearbook ... 1974*, vol. II (Part Two), p. 357, document A/CN.4/274, para. 405.

of the physical characteristics of water, and that accepts the possibility of interrelationships of cause and effect throughout the entire river system.

45. The other questions posed by the questionnaire do not give rise to decided divergencies in response. As was previously noted, there were a number of suggestions for additions to the outline of fresh water uses suggested in the questionnaire and substantial agreement that flood and erosion control should be included as well as sedimentation problems. There was a consensus that the Commission had to provide the interface between navigation and other uses of fresh water.

46. The replies to the question whether pollution should be taken up as the first stage of the Commission's study in general either favoured dealing first with uses or with uses and pollution problems together. As Poland stated:

> ... Thus it seems that the separation of water protection against pollution from non-navigational use of waters which in fact result in pollution would be an artificial structure. That is why the problem of water pollution should be considered simultaneously with its cause, i.e. domestic, agricultural and commercial uses.[58]

Poland, like a number of other States, was in favour of the Commission's beginning its work by concentrating on pollution aspects, if that appeared to be the best work plan. In view, however, of the majority opinion, it would seem appropriate for the Commission to concentrate upon uses at the outset and to consider particular aspects of pollution in the context of specific uses, such as the heating of water in connexion with atomic energy production, or the effects of chemical fertilizers upon aquatic life.

47. The final question (question I) was whether a Committee of Experts should be established to assist the Commission in its work. While the general view was in favour of the establishment of such a Committee if it were essential, a number of States considered it premature to reach any final position on the point at the opening stage of the Commission's work. As an interim measure, the Special Rapporteur has been in communication with some twelve of the United Nations family of agencies and organizations which are involved in one or another aspect of river development. They were asked whether they would participate in assisting the Commission with the technical expertise without which it will not be possible to achieve a sound and workable set of legal rules. The response has been very favourable.

48. There is then but one major question which, at this stage, requires decision by the Commission in order to permit the work to go forward—the scope of that work.

49. On this point, it is recommended that the Commission adopt the principle that its task is to formulate legal principles and rules concerning the non-navigational uses of international river basins.

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[58] See above, p. 180, document A/CN.4/294 and Add.1, sect. II, question H, Poland, para. 1.