

# THE DEVELOPMENT OF INTERNATIONAL WATER RESOURCES: THE "DRAINAGE BASIN APPROACH"

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## I

With the growth of modern technology, states sharing a drainage basin could affect each other far more seriously than ever before by the utilization of its waters in their territories. This fact has inevitably influenced the evolution of legal rules for solving international water conflicts. As the interdependence of co-basin states became clearer, the inadequacy of the old theories, particularly the theory of territorial sovereignty that a state may do as it pleases with the water in its territory without any legal responsibility for the injury it may inflict on neighbouring states, was recognized. A new theory that would take account of this interdependence was therefore sought, and soon the notions of community and of good neighbourship were being advocated as the proper foundation for the rules of international water law.

An early manifestation of this new theory was an emphasis on the drainage basin. Before long the basin was being spoken of as a unit which should form the basis for planning the development of international water resources. This emphasis is understandable. For the effects of a work on an international river in one state are usually more noticeable in co-basin states within the drainage basin than outside it, even though its effects outside the basin may in fact be serious.

It is one thing, however, to assert that international law, recognizing the interdependence of co-basin states, imposes an obligation on them to take heed of the injury their utilizations of water may inflict on each other; it is another to claim that inter-

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national law requires co-basin states to plan the development of a basin as a unit, taking into account all relevant factors within the territorial limits of the basin and ignoring everything pertaining to areas outside of those limits. But this is the claim that some have made. Does international law sanction it?

## II

As long ago as 1815, Wilhelm von Humbolt of Prussia had argued at the Congress of Vienna that a river must be envisaged "as a unity".<sup>1</sup> His thesis was reiterated nearly a century later by President Theodore Roosevelt in these words: "Each river system, from its headwaters in the forest to its mouth on the coast, is a single unit and should be treated as such".<sup>2</sup> Since then, this idea has been repeatedly voiced.<sup>3</sup> Two statements of H. A. Smith illustrate its modern version well: "We must begin by recognizing that every river system forms a single and indivisible physical unit, however much it may be intersected by political frontiers", and that "political interference, although it may seriously disguise, can never abolish the permanent unity which rests upon physical facts".<sup>4</sup> Thus, the physical features of a drainage basin, its geography, were to be the foundation of the legal rules applicable to its development.

Mr. Smith, it is true, did not claim that this "first principle", as he called it, was a positive rule of international law; he merely put it forth as his view of what the law ought to be, saying that it was a reasonable inference supported by "the general trend of practice". On the other hand, some authors did regard it as a rule of law. For example, Professor Brierly included in a list of "principles of law" the proposition that "each state has the right to

<sup>1</sup> Referred to in Berber, *Rivers in International Law* (1959), p. 38.

<sup>2</sup> S. Doc. No. 325, 60th Cong., 1st Sess. iv (1908).

<sup>3</sup> For examples, see Smith, *The Economic Uses of International Rivers* (London, 1931), pp. 21, 71; Brierly, *The Law of Nations* (6th ed. Waldock, 1963), p. 231; Kaufmann, *Règles générales de la paix* (1936), p. 82 (quoted in Berber, *op. cit.*, footnote 1, pp. 37-38); Sevette, *Legal Aspects of Hydroelectric Development of Rivers and Lakes of Common Interest* (1952), U.N. Doc. No. E/ECE/136, at p. 210; Cano, *The Juridical Status of International (Non-Maritime) Waters in the Western Hemisphere*, published in *Principles of Law Governing the Uses of International Rivers and Lakes. Resolution Adopted by the Inter-American Bar Association at its Tenth Conference Held in November, 1957, at Buenos Aires, Argentina, together with Papers Submitted to the Association*, p. 103 (Washington, D.C., April 1958, Library of Congress Catalog Card Number 58-12112); Principle (1) in *Report of the Indus (Rau) Commission* (1942), Vol. I, p. 10 (Superintendent, Government Printing, Punjab, 1950). For a recent detailed study, see Teclaff, *The River Basin in History and Law* (1967).

<sup>4</sup> Smith, *op. cit.*, footnote 1, pp. 21 and 71.

have [a] river system considered as a whole and to have its own interests taken together with those of other states".<sup>5</sup>

The concept of the unity of drainage basins has influenced the statements of principles that have been adopted by learned associations and by conferences of states. This was especially so in the case of the 1911 Madrid Declaration of the Institute of International Law; as its preamble makes clear, its principles of law were deduced from the "permanent physical dependence" of co-basin states.<sup>6</sup> The Convention on the development of hydraulic power adopted by the Conference on Communications and Transit at Geneva in 1923, the Declaration of the Seventh Pan-American Conference on the Industrial and Agricultural Use of International Rivers adopted at Montevideo in 1933, and the Resolution adopted by the Inter-American Bar Association at Buenos Aires in 1957 were similarly inspired. Though not expressly invoking the concept, all three are based on a firm view of the interdependence of co-basin states. In its first draft, the Geneva Convention would have made obligatory the prior agreement of all co-basin states to any new development that would alter the territory in a neighbouring state or threaten to do serious injury there; in its final draft, however, this was changed to the lesser obligation to negotiate.<sup>7</sup> The Declaration of Montevideo<sup>8</sup> and the Buenos Aires Resolution,<sup>9</sup> on the other hand, require either the consent of a State that would be injured by a proposed development of a river or the approval of a board of arbitration before that development may be undertaken; by thus denying unilateral action, they lead states to take a drainage basin approach to the development of their common rivers.

It is in the recent work of the International Law Association, however, that the idea of the unity of a drainage basin has had its greatest impact. The Association's committee on "The Uses

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<sup>5</sup> Brierly, *op. cit.*, footnote 3, p. 231. The statement is not a reflection of the post-World War II developments; it appeared in almost identical words at p. 159 of the 3rd edition in 1942.

<sup>6</sup> See (1911), 24 *Annuaire de l'Institut de Droit International* 365-367.

<sup>7</sup> Convention Relating to the Development of Hydraulic Power Affecting More Than One State, Geneva, December 9th, 1923, arts 3 and 4. (1925), 36 L.N.T.S. 77; Legislative Texts and Treaty Provisions Concerning the Utilization of International Rivers for Other Purposes than Navigation, U.N. Doc. ST/LEG/SER.B/12, p. 91 (hereinafter referred to as U.N. Doc. ST/LEG/SER.B/12).

<sup>8</sup> Declaration of the Seventh Pan-American Conference on the Industrial and Agricultural Use of International Rivers adopted at Montevideo on December 24th, 1933, para. 2, in (1934), 28 *Am. J. Int'l L., Supp.*, 59-60.

<sup>9</sup> (1957), 10 *Inter-American Bar Association, Proceedings* 82.

of the Waters of International Rivers", starting from the proposition that, in face of a rapid population increase and of water scarcity, water resources should be used to produce the greatest economic benefit, adopted the view that co-operative development of a basin was essential. For the interdependence of all parts of a basin is such that a scheme of development based on a study of all possible uses of the waters of the entire basin will almost invariably produce greater benefits than a scheme based on a study of only one part, or of one use, of the waters.<sup>10</sup>

The effort to give effect to this view can be traced in the reports of the committee and in the debates and resolutions adopted in plenary sessions of the Association. At its Dubrovnik meeting in 1956, the Association adopted as a basis for further study a statement of principles, the eighth of which was as follows:<sup>11</sup>

So far as possible, riparian States should join with each other to make full utilization of the waters of a river both from the viewpoint of the river basin as an integrated whole, and from the viewpoint of the widest variety of uses of the water, so as to assure the greatest benefit to all.

Two years later, at the New York Conference, the Association gave this proposition legal status. In a resolution then unanimously adopted, it set forth four principles of international law which were agreed to be *lex lata*; the first was that "A system of rivers and lakes in a drainage basin should be treated as an integrated whole (and not piece-meal)".<sup>12</sup> In discussion in the plenary session enthusiasm for this principle of co-operative development of a drainage basin "treated as an integrated whole" was universal. Professor Myres McDougal's statement is a fair sample of the opinion expressed on that occasion:<sup>13</sup>

The lesson to be derived from the experience of the United States in the development of its own internal water law is that of the imperative necessity of the unified administration of drainage basins and drainage basins systems. . . . A full examination of the relevant facts might, I believe, demonstrate that international rivers, like the oceans, both admit of shared use and require shared use for the fullest production and widest distribution of common values. . . . The mere settlement of occasional disputes is not, further, adequate to effect integrated river

<sup>10</sup> Report of the Forty-Eighth Conference of the International Law Association Held at New York, September 1st to 7th, 1958 (1959), pp. 75, 77.

<sup>11</sup> Report of the Forty-Seventh Conference of the International Law Association Held at Dubrovnik, August 26th to September 1st, 1956 (1957), p. 242.

<sup>12</sup> *Op. cit.*, footnote 10, pp. viii, 99.

<sup>13</sup> *Ibid.*, pp. 41-43.

basin development across State lines. The need, in Professor Maxwell Cohen's eloquent words, is not for mere "connection" across lines, but for an organic, comprehensive, and rational integration. The official who thinks he can regulate one side or one end of a stream without affecting the other side or end, or who thinks that he can regulate streams without considering inter-relations with surface or ground waters, or who thinks he can concentrate upon "water systems" without calculating policies in terms of effects upon land activities, but deludes himself.

The only hint of criticism of the principle in the discussion is found in two following statements. The first, made by the present writer, is:<sup>14</sup>

It is confined to natural drainage basins. I would suggest that, in view of present engineering skill which makes it possible to transfer the waters of one river basin to another, one has to consider the use of waters of an *area* rather than of a particular natural drainage basin. In determining what is an equitable share in the waters of a river, a most relevant factor is the use that can be made of it by the riparian States, and so diversions to or from a river system ought to be embraced in this definition.

The second, made by A. M. Hirsch, is:<sup>15</sup>

There may be situations in which both the basin of a river and adjoining basins can profit more from a trans-basin diversion than from development confined to the basin alone. . . . It would certainly be a pity if anyone who reads the principles which I hope will be adopted today, would understand them as indicating that we mean to see in the watershed line an artificial legal barrier in the same manner as in the past some would have seen the boundary as a line which waters were not to cross.

My point refers primarily to arid areas in which there may be considerable areas which, though lying outside a basin, require for development waters from a basin. If technology makes it possible to bring waters from one basin to another, such diversion should, of course, be subject to *all* the principles which are contained in the Committee's report. However, to my view, while we should designate the basin as the normal unit of hydro-economic development and organization, we should not recommend away all reasonable possibilities of trans-basin development.

This criticism, however, was not of the principle of co-operative development itself, but of the limitation on the area of the application of the principle. It accepted the proposition that the maximum benefits from the use of the waters of a drainage basin are likely to be attained only by taking an overall view of its development; but then it went further, asserting, in effect, that

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<sup>14</sup> *Ibid.*, p. 57.

<sup>15</sup> *Ibid.*, pp. 66-67.

what was true of a drainage basin was also true of a region or, by implication, even of a continent.

The 1958 New York Resolution formed the basis of the future work of the Association's committee and its essence is incorporated in the Association's final resolution on this subject, namely, the Helsinki Rules on the Uses of Waters of International Rivers, adopted at the Helsinki Conference in August 1966. In the process of transmuting the sparse statement of Principles and Recommendations of New York into the code of thirty-seven articles of the Helsinki Rules, however, the concept of the "integrated whole" treatment of a drainage basin ceased to be an explicit principle of law.

The course of this evolution is obscure. In May, 1959, Professor Arnold W. Knauth, then chairman of the committee, commented on the New York principle as follows:<sup>16</sup>

The Principle used the word "should". It does not use the words "shall" or "must". Thus it is not a rigid command, but rather a serious, unanimous legal exhortation . . . the idea of the river basin as an "integrated whole" is both proper and best suited to express what we do believe the *lex lata* to be.

After this equivocal statement, which seems to say that what is not a command but only an exhortation is nevertheless a law, the principle was not discussed again either in plenary sessions at the biennial conferences of the Association<sup>17</sup> or by the committee. It was not even mentioned in the draft articles of chapters 1 and 2 of the Helsinki Rules, dealing with introductory matters and "equitable utilization" respectively, which were placed before the committee by its chairman at its meeting at Harvard in September 1965 and were then approved in their final form.

The only remaining vestige of the principle is found in a comment on article II of the Helsinki Rules which defines an "international drainage basin"; it is there stated that a "drainage basin is an indivisible hydrologic unit which requires comprehensive consideration in order to effect maximum utilization and develop-

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<sup>16</sup> Professor Arnold W. Knauth in Chairman's Working Paper, May, 1959, pp. 8-9.

<sup>17</sup> Professor Andrassy at the Hamburg Conference in 1960 and Dr. Murko at the Brussels Conference in 1962 voiced opposition to the concept of the juridical unity of a river basin embodied in the New York principles, but discussion of the 1958 New York Resolution was ruled out of order: see Report of the Forty-Ninth Conference of the International Law Association held at Hamburg, August 8th to 12th, 1960 (1961), p. 38, and Report of the Fiftieth Conference of the International Law Association held at Brussels, August 19th to 26th, 1962 (1963), p. 425.

ment of any portion of its waters . . . the drainage basin approach has become a necessity".<sup>18</sup> This is certainly not an assertion of a principle of law; even if it were, its strength would be doubtful, for the commentary on the articles of the Helsinki Rules set forth in the report of the committee to the Helsinki Conference was not discussed, far less approved, either by the committee itself or by the Conference. In any case, the author of the comment on article II must have used the words "drainage basin approach" loosely with a meaning wide enough to include consideration of extra-basin factors; otherwise he would have been contradicted by the express words of article V which provide that, in determining what is a state's reasonable and equitable share in the beneficial uses of the waters of an international drainage basin, the following factors, *inter alia*, are to be considered:<sup>19</sup>

- (e) the economic and social needs of each basin State;
- (f) the population dependent on the waters of the basin in each basin State;
- (g) the comparative costs of alternative means of satisfying the economic and social needs of each basin State;
- (h) the availability of other resources;
- (k) the degree to which the needs of a basin State may be satisfied, without causing substantial injury to a co-basin State. . . .

Article V clearly does not contemplate narrow geographical limits on states approaching the development of an international drainage basin.

The statement of the committee's chairman in the working paper of 1959, the absence of discussion of the theory in the committee and in plenary sessions, and especially the provisions of article V of the Helsinki Rules, all lead to the conclusion that the Association retreated from its 1958 position and now regards the "integrated whole" approach as something less than a legal imperative. This does not mean, however, that the Association has repudiated the idea that the waters of a drainage basin are likely to be utilized most beneficially when states co-operate in an overall plan for their utilization. On the contrary, that idea was undoubtedly a major premiss of the Helsinki Rules; evidence of this is found throughout the articles, particularly those recommending an exchange of information, notice of any proposed development,

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<sup>18</sup> Helsinki Rules on the Uses of the Waters of International Rivers. Adopted by the International Law Association at the 52nd Conference held in Helsinki on 20th August, 1966. (Published by The International Law Association, 1967), p. 8.

<sup>19</sup> *Ibid.*, p. 11.

the creation of joint agencies, and the settlement of disputes by negotiation.<sup>20</sup> But it was not accorded the status of a legal rule.

In his first report to The Institute of International Law, whose studies of the utilization of international waters proceeded contemporaneously with those of the International Law Association, Professor Andrassy, the rapporteur of the Institute's committee considering the subject, referred to the 1958 New York Resolution of the Association and categorically rejected its first principle, saying:<sup>21</sup>

Au contraire, l'idée d'une prétendue unité juridique d'un cours d'eau ou d'un système fluvial n'est pas reconnue en droit international. . . .

On peut conclure que le premier principe de la Résolution de New York ne peut pas être considéré comme un principe du droit international actuellement en vigueur. On peut le concevoir *de lege ferenda*. Il est indéniable que les frontières d'Etats sont très souvent un obstacle au meilleur aménagement et à l'utilisation la plus complète des richesses en eau que la nature a mises à la disposition de l'humanité en un point donné. Dans beaucoup de cas, les meilleures solutions d'aménagement et d'utilisation peuvent être obtenues par un plan d'ensemble englobant le système fluvial entier.

Professor Andrassy never wavered in this view that international law does not require the unified development of an international drainage basin. He stoutly defended his position when it was under attack in the plenary sessions of the Institute, insisting that in the present state of international law the idea of community of utilization does not exist.<sup>22</sup> And he tried to open an attack on the New York principle at the Hamburg Conference of the International Law Association, but his intervention was ruled out of order.<sup>23</sup>

Some members of the Institute in plenary session voiced their disapproval of the emphasis on state sovereignty in Professor Andrassy's report and of the lack of emphasis on the "idea of community" in his draft statement of rules of international law; they asked, in the words of Dr. C. W. Jenks, for a formula recognizing that the physical and economic unity of drainage basins is reflected

<sup>20</sup> See articles 29, 30 and 31, *ibid.*, pp. 41-50.

<sup>21</sup> (1959), 48 *Annuaire de l'Institut de Droit International*, Tome I, 166-167. For the entire text of Professor Andrassy's discussion of the New York principle, see *ibid.*, at pp. 164-168.

<sup>22</sup> (1961), 49 *Annuaire de l'Institut de Droit International*, Tome II, 110. See also *ibid.*, at pp. 162-164. Professor Andrassy has repeated the same thought in *L'utilisation des eaux des bassins fluviaux internationaux* (1960), 16 *Revue Egyptienne de Droit International* 23, at pp. 27-28, and *Cinquantième Session de l'Institut de Droit International* (Salzburg 1961) (1961), 17 *Revue Egyptienne de Droit International* 54, at pp. 65-66.

<sup>23</sup> See *supra*, footnote 17.



in the juridical regime applicable to them.<sup>24</sup> They did not, however, succeed in eliminating the offending emphasis on state sovereignty in draft article 2,<sup>25</sup> or in lessening the effect of that article by placing it nearer the end rather than at the front of the articles. Nevertheless, they did persuade the Institute to meet their complaints to some extent by adding to the preamble the clause "Considering that the maximum utilization of available material resources is a matter of common interest",<sup>26</sup> thus giving some emphasis to the idea of community.

The record of the debate in the Institute shows that the point at issue was not whether unified development was desirable but whether it was required by international law. A majority held that it was not legally required, but nothing said then denied the wisdom of "the drainage basin approach"; in fact, the evidence is the other way. Professor Andrassy even went so far as to say that he could conceive of the rule of unified development as *de lege ferenda*.<sup>27</sup> In the last analysis, then, the "integrated whole" concept was influential in the formulation of the rules adopted by the Institute in its Salzburg Resolution of 1961, as it was in the case of the Helsinki Rules. The similarity of the substantive and procedural rules of these two statements of law bears testimony to their common philosophical basis.

The fate of the theory of the juridical unity of drainage basins at the hands of the International Law Association and the Institute of International Law makes it difficult to argue convincingly that it is now a rule of international law. Nevertheless, the theory is

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<sup>24</sup> See (1961), 49 *Annuaire de l'Institut de Droit International*, Tome II, at pp. 95-99, 166 (Jenks), 100-102 (Ago), 103-104 (de la Pradelle), 105, 165 (Jessup), 106 (Morelli and Q. Wright), 119 (Paul De Visscher). For those who defended the draft, see *ibid.*, at pp. 104 (Rolin), 107 (Fitzmaurice), 109 (Charles De Visscher), 110-112, 164 (Andrassy), 164 (de Luna).

<sup>25</sup> For the text of article 2, see *ibid.*, at p. 382. As finally presented to the Institute by Professor Andrassy and adopted by a vote of 37 for, 13 abstentions, and none against, it is as follows:

"Every State has the right to utilize waters which traverse or border its territory, subject to the limits imposed by international law and, in particular, those resulting from the provisions which follow.

This right is limited by the right of utilization of other States interested in the same watercourse or hydrographic basin."

Professor Jessup proposed an alternative article 2, not much different from the adopted text in substance but muting state sovereignty in the utilization of international river waters in its territory: see *ibid.*, at p. 165. It was rejected by a vote of 19 for, 28 against, and 5 abstentions: see *ibid.*, at p. 166.

<sup>26</sup> For the text, see *ibid.*, at p. 381. For the unanimous adoption of this clause, see *ibid.*, at pp. 189-191.

<sup>27</sup> *Supra*, footnote 21, at p. 167.

still a vital force in legal thought. It has, after all, attracted the support of some eminent international lawyers<sup>28</sup> and was even spoken of *de lege ferenda* by its strongest opponent, Professor Andrassy.<sup>29</sup> Moreover, it springs from a fertile concept, that of "a community of interests", which is, according to the judgment of the Permanent Court of International Justice in the *Oder Commission* case, "the basis of a common legal right" of co-basin states and the foundation of international water resources law.<sup>30</sup> It is therefore worthy of closer study.

### III

The dominant influence on the minds of those who support the theory of the juridical unity of an international drainage basin seems to be geography. Drainage basins are, it is said, "indivisible . . . geographical units",<sup>31</sup> and have a "permanent unity which rests upon physical facts";<sup>32</sup> and co-riparian states are in a state of "permanent physical interdependence".<sup>33</sup>

A drainage basin in its natural state undoubtedly has a physical unity, but to assert its permanent physical unity is to deny reality. Although the natural features of the landscape at any given moment may seem immutable, changes do occur. Earthquakes, volcanic eruptions, landslides, or other works of nature, perhaps nothing more dramatic than a slow process of erosion, can send the waters of a river coursing in new channels, perhaps starting or ending its flow across international boundaries. Examples of this are not lacking: three will be mentioned. The Great Lakes drainage flowed southward first via the Mississippi River during the Pleistocene period and later via the Rome outlet into the Hudson River, and then changed again to flow eastward in what is now the St. Lawrence River. The Columbia River at one time flowed to the sea via the Grand Coulee but it no longer does so. And, as a result of the partial blockage by silt of the San Juan River, which formed the boundary between Nicaragua and Costa

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<sup>28</sup> Examples are the members of the Institute of International Law who complained that Professor Andrassy's draft rules emphasized state sovereignty: see *supra*, footnote 24.

<sup>29</sup> See *supra*, footnote 21, at p. 167.

<sup>30</sup> *Case Relating to the Territorial Jurisdiction of the International Commission of the River Oder*, [1929] P.C.I.J., Ser. A, No. 23, at p. 27.

<sup>31</sup> Cano, *op. cit.*, footnote 3, pp. 73, 103. To the same effect, see Smith, *op. cit.*, footnote 1, pp. 21 and 71, and Sevette, *op. cit.*, footnote 3, p. 210.

<sup>32</sup> Smith, *op. cit.*, *ibid.*

<sup>33</sup> Engelhardt (1911), 24 *Annuaire de l'Institut de Droit International* 197. See also *ibid.*, at pp. 180, 184 and 365.

Rica, the bulk of the large volume of water that used to flow in that river changed its course and flowed instead into the Colorado River in Costa Rica.<sup>34</sup>

Furthermore, quite apart from changes brought about by acts of God, man himself now has the capacity to alter the geography of drainage basins far more drastically than any convulsion of nature is likely to do. Modern technology has made him master of his environment to an unprecedented degree. By building great dams on rivers and, more pertinent to this discussion, by the diversion of waters for use outside of their drainage basins, he can destroy the old natural unity and create a new artificial unity.

There are many examples of these diversions, both of national and international rivers, and plans for others are always being considered. In the United States, the litigation on inter-state water problems is evidence of the practice of inter-basin transfers of water. Recently, there have been such notable schemes as the Feather River Project to transfer water some 750 miles from northern to southern California over elevations of 3,167 feet, and the Fryngpan-Arkansas Project to take water from the Colorado River across a mountain to the Arkansas River.<sup>35</sup> Other vast diversion projects are under constant discussion there, such as the Pacific Southwest Water Plan and proposals to divert the Columbia River waters to California.<sup>36</sup> The grandest scheme of all, called NAWAPA, an abbreviation of North America Water and Power Alliance, has been advocated by a firm of engineers in California; it would take initially one hundred and ten million acre feet of water from Alaska, the Yukon and British Columbia to the Great Lakes in the East and to the United States and Mexico in the South; it would provide water to seven Canadian provinces, thirty-

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<sup>34</sup> See Foreign Relations of the United States (1866), Vol. 2, pp. 441-443, 541-543, for an account of the international incident that arose when in 1866 an American company started works to restore the water to the San Juan river. On the Costa Rican government's protest to the United States, the company agreed to discontinue the works. For other examples showing that a river basin "is by no means always a stable or well-delineated area", see Teclaff, *op. cit.*, footnote 3, pp. 10-11.

<sup>35</sup> For a reference to these and other such projects, see Bourne, *The Right to Utilize the Waters of International Rivers* (1965), 3 Canadian Yearbook of International Law 187, at pp. 196-198. See also Teclaff, *op. cit.*, *ibid.*, pp. 184-192.

<sup>36</sup> See Hearings on H. R. 4671 and Similar Bills Before the Subcommittee on Irrigation and Reclamation of the House Committee on Interior and Insular Affairs (1965), 89th Cong., 1st Sess., Serial No. 17 and (1966), 2nd Sess., Serial No. 89-17, Part II. Also see Hearings on S. 1685 Before the Subcommittee on Irrigation and Reclamation of the Senate Committee on Interior and Insular Affairs (1963 and 1964), 88th Cong., 1st and 2nd Sess.

three states of the United States, and three northern states of Mexico; it would take from twenty to thirty years to build and would cost about one hundred thousand million dollars.<sup>37</sup> In Canada, too, large schemes are being studied; the most ambitious is the GRAND Canal Plan, proposed by T. W. Kierans, which would divert surplus water, perhaps more than seventy-five thousand cubic feet per second, from rivers now flowing into James Bay to the Great Lakes at a cost of nearly two thousand million dollars.<sup>38</sup>

Some inter-basin diversions of international rivers have been provided for by agreement, as in article 3 of the 1945 treaty between Austria and Yugoslavia dealing with the Drava River,<sup>39</sup> in article 1 of the 1957 treaty between Switzerland and Italy concerning the Spöl River,<sup>40</sup> and in article 6 of the Boundary Waters Treaty of 1909 between Great Britain (on behalf of Canada) and the United States concerning the St. Mary and Milk Rivers.<sup>41</sup>

<sup>37</sup> For a description of the NAWAPA scheme, see U.S. Senate, Committee on Public Works, Special Sub-committee on Western Water Development, *Western Water Development* (1964), 88th Cong., 2nd Sess. For some of its legal implications, see Bourne, *Energy and a Continental Concept*, in Sixth Seminar on Canadian-American Relations, University of Windsor, Ontario, December 2nd to 5th, 1964, p. 157; also in (1965), 8 Can. Bar J. 158.

<sup>38</sup> For a description of the GRAND Canal scheme, see Minutes of Proceedings and Evidence before the Standing Committee on Mines, Forests and Waters, House of Commons (Canada), 2nd Sess., 26th Parl., 1964-1965, pp. 273-281. The committee recommended that the federal government should invite Ontario and Quebec to study such a scheme: see *ibid.*, p. 326. On August 5th, 1965, the governments of Canada and Ontario announced that they were undertaking this study. If this scheme were implemented, it would not be the first Canadian example of a transfer of water from a national to an international drainage basin: with the approval of the United States, Canada has diverted 5,000 cubic feet per second of water from the Albany River, which flows into the Hudson Bay, by the Long Lac-Ogoke works into Lake Superior: see Exchange of Notes between the United States and Canada regarding the development of certain portions of the Great Lakes St. Lawrence Basin Project, Washington, October 14th and 31st, and November 7th, 1940. 54 Stat. 2426; E.A.S. 1871; 203 L.N.T.S. 267.

<sup>39</sup> Convention between Yugoslavia and Austria concerning water economy questions relating to the Drava, signed at Geneva on May 25th, 1954. 227 U.N.T.S. 128; U.N. Doc. ST/LEG/SER.B/12, pp. 513, 514.

<sup>40</sup> Convention between Switzerland and Italy concerning the use of the water power of the Spöl, and an additional Protocol signed at Berne on May 27th, 1957. (1959), *Recueil officiel des lois et ordonnances de la Confédération suisse* 432; U.N. Doc. ST/LEG/SER.B/12, p. 859.

<sup>41</sup> Treaty Relating to Boundary Waters and Questions Arising Along the Boundary Between the United States and Canada, signed at Washington, January 11th, 1909. 35 Stat. 2448; T.S. No. 548; III Redmond 2607; (1908-1909), 102 British and Foreign State Papers 137. Article 2 of this treaty contains the general reservation by the parties of "the exclusive jurisdiction and control over the use and diversion . . . of all waters on its own side of the line which in their natural channels would flow across

Others have been undertaken unilaterally. As long ago as the 1860's the United States had completely reversed the waters of the Allagash River in Maine so that, instead of flowing naturally into the St. John River and thus into Canada, it flowed into the Penobscot River and on through Maine to the sea.<sup>42</sup> And since 1900, varying amounts of water, now thirty-two hundred cubic feet per second, have been taken from the Great Lakes drainage basin to the Mississippi River by the "Chicago diversion" in spite of Canada's protests.<sup>43</sup> Recent examples of this sort of diversion are the Israeli-Negev Project to take water from Lake Tiberias by canal and pipeline to the Negev Desert,<sup>44</sup> and Chile's diverting some of the waters of the Lauca River, which flows from Chile into Bolivia, into a national drainage basin.<sup>45</sup>

Of course, states engaged in negotiations about the development of international rivers will argue for the sanctity of the drainage basin rule when it suits their interest to do so. This has been the experience in discussions of Canada-United States water problems. The Columbia River story will illustrate this. By a reference in 1944, the Canadian and United States governments asked the International Joint Commission to investigate and make recommendations for the greater use of that river. The Commission thereupon established the International Columbia River Engineering Board to study and report on the matter. In the 1950's, Canada conceived the idea that a diversion of water from the Kootenay River to the Columbia River, which would be an *intra*-basin diversion, and an additional diversion of 15,000,000 acre feet of Columbia River water to the Thompson and Fraser Rivers, which

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the boundary . . .", a provision that was the subject of controversy when development of the Columbia River was being discussed in the 1950's. For an account of this controversy and the legal arguments then made, see Bourne, *The Columbia River Controversy* (1959), 37 *Can. Bar Rev.* 444, esp. at pp. 450-461, and Ralph W. Johnson, *The Canada-United States Controversy over the Columbia River* (1966), 41 *Wash. L. Rev.* 676, esp. at pp. 716-726.

<sup>42</sup> See Bloomfield and FitzGerald, *Boundary Waters Problems: Canada and the United States* (1958), p. 43.

<sup>43</sup> For a short statement of the facts of the Chicago diversion, see Paul L. Adams, *Diversion of Lake Michigan Waters* (1959), 37 *U. Detroit L.J.* 149. See also Austin, *Canadian-United States Practice and Theory respecting the International Law of International Rivers: A Study of the History and Influence of the Harmon Doctrine* (1959), 37 *Can. Bar Rev.* 393, at p. 416.

<sup>44</sup> See Bloomfield, *The Jordan-Negev Project of Israel* (1964), 2 *Canadian Yearbook of International Law* 184.

<sup>45</sup> See Lecaros, *International Rivers: The Lauca Case* (1963), 3 *Indian J. Int'l L.* 133; Republica de Chile, Ministerio de Relaciones Exteriores, *La Cuestion del Rio Lauca* (Santiago, Chile, 1963); Chinel, *La Desviacion del Rio Lauca por Chile* (LaPaz, Bolivia, 1963).

would be an *extra*-basin diversion from an international river to national rivers, might be to her great economic advantage; she therefore argued that the Engineering Board should consider these diversion schemes in determining its recommendations for the best use of the waters of the Columbia River. Although the United States is perhaps more experienced in inter-basin water transfers and more aware of their advantages than any other nation, the Canadian proposal was strongly opposed on the ground that a state does not have the legal right to divert the waters of an international river outside of its basin.<sup>46</sup> Consequently, in 1957 the Engineering Board was instructed to include in its studies only the Kootenay-Columbia diversion and not the Columbia-Fraser one.<sup>47</sup>

This does not mean, however, that extra-basin factors were forgotten and unimportant in the course of events that finally led to the Columbia River Treaty; they were in fact taken into account. The Canadian government made its own studies of the Columbia-Fraser diversion scheme and, finding it insufficiently attractive economically to offset the political and legal difficulties,<sup>48</sup> quickly put it aside. And the British Columbia government was not interested in the scheme after it formulated plans for the development of the vast hydro-electric resources of the Peace River, a project that threatened to make Columbia River power a surplus item in Canada for some years. These Canadian activities concerning matters outside of the Columbia River basin but directly affecting its future development, influenced United States' policy on Canada's claims about the Columbia River.<sup>49</sup> In other words, the Columbia River settlement was not worked out on the assumption that a drainage basin is a watertight unit.

The legality of the growing practice of utilizing the waters of a river outside of its basin is supported by the adjudications of international and interstate water disputes. Most notable is the *Lake Lanoux* case between France and Spain.<sup>50</sup> France had proposed to divert some water from the Carol River for use in another river basin and then to return it, or an equal amount of

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<sup>46</sup> See the articles by Bourne and Johnson, *ops cit.*, footnote 41.

<sup>47</sup> Bloomfield and FitzGerald, *op. cit.*, footnote 42, pp. 166-167.

<sup>48</sup> See The Columbia River Treaty and Protocol: A Presentation, issued by the Departments of External Affairs and Northern Affairs and National Resources (April 1964), p. 51.

<sup>49</sup> See Johnson, *op. cit.*, footnote 41, at pp. 726-727, 759.

<sup>50</sup> *Lake Lanoux* Case (France- Spain), Award of November 16th, 1957, (1957), 24 I.L.R. 101; (1957), 53 Am. J. Int'l L. 156.

water, to the Carol before that river entered Spain. Spain strongly objected to the project, arguing that the diversion would modify the "natural character" of the hydrographic basin of Lake Lanoux even though the water would be restored to it, and that it could not therefore be undertaken without her consent under the Treaty of Bayonne of May 26th, 1866, and the Additional Act of the same date. The arbitral tribunal rejected this argument, and held that a diversion followed by a restitution such as France proposed was not contrary to the treaty provisions.

Since the Treaty of Bayonne and the Additional Act were silent about diversions out of the drainage basin, the tribunal could have reached this conclusion only by accepting the principle of compensation between two drainage basins, that is, the legality of diversion followed by restitution. Moreover, the tribunal went further than this, indicating that a diversion not followed by restitution may be lawful in some circumstances. Its thoughts on this appear in the following passage from its award.<sup>51</sup>

The prohibition of compensation between the two basins, in spite of equivalence between the water diverted and the water restored, unless the withdrawal of water is agreed to by the other Party, would lead to the prevention in a general way of a withdrawal from a watercourse belonging to River Basin A for the benefit of River Basin B, even if this withdrawal is compensated for by a strictly equivalent restitution effected from a watercourse of River Basin B for the benefit of River Basin A. *The Tribunal does not overlook the reality, from the point of view of physical geography, of each river basin, which constitutes, as the Spanish Memorial . . . maintains, "a unit". But this observation does not authorize the absolute consequences that the Spanish argument would draw from it. The unity of a basin is sanctioned at the juridical level only to the extent that it corresponds to human realities.*

The state of modern technology leads to more and more frequent justifications of the fact that waters used for the production of electric energy should not be returned to their natural course. Water is taken higher and higher up and it is carried ever farther, and in so doing it is sometimes diverted to another river basin, in the same State or in another country within the same federation, or even in a third State.

Even when one discounts as *obiter dicta* the parts of this statement dealing with diversion without restitution, there remains the firm opinion that the use of waters is not confined by law to the geographical limits of its drainage basin; that a geographical unity does not automatically mean a legal unity, because the law is determined not by geography but by "human realities". In short, a state may in some circumstances lawfully use water outside of

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<sup>51</sup> *Ibid.*, at pp. 124-125 (I.L.R.), (Italics mine).

its drainage basin; it is therefore entitled to consider the possibility of doing so in planning the development of its water resources and to have this possibility taken into account in any consideration of the development of its international water resources.

The Lake Lanoux arbitral tribunal found support for this opinion in the law of federal States, referring in particular to the decision of the United States Supreme Court in *Wyoming v. Colorado*.<sup>52</sup> In that case Wyoming sought to prevent two Colorado corporations from diverting water from the Laramie River which rose in Colorado and flowed into Wyoming; the diversion would have taken a substantial part of the waters of that river for use in another drainage basin in Colorado and thus would have damaged prior users downstream in Wyoming. The court dealt with one of Wyoming's arguments as follows:<sup>53</sup>

The objection of Wyoming to the proposed diversion on the ground that it is to another watershed, from which she can receive no benefit, is also untenable. The fact that the diversion is to such a watershed . . . does not in itself constitute a ground for condemning it. In neither State does the right of appropriation depend on the place of use being within the same watershed. Diversions from one watershed to another are commonly made in both States and the practice is recognized by the decisions of their courts.

In subsequent litigation between these two states about the same river, the Supreme Court stressed the irrelevancy of geography in these disputes, saying:<sup>54</sup>

We perceive no reason for thinking that it is in any wise material to Wyoming and her water claimants whether the water in question is diverted and conveyed to the place of use through the Skyline ditch, the Wilson Supply ditch or the ditches of the Laramie-Poudre Tunnel Project. All are trans-mountain ditches and deliver the water in the Cache La Poudre Valley, which is in another watershed.

Colorado, therefore, could lawfully use its share of the waters of the Laramie River not only in the drainage basin of that river but wherever it pleased.

This conclusion was confirmed later by the Supreme Court in *Nebraska v. Wyoming*,<sup>55</sup> the decree issued in that case sanctioning not only the export of water out of the drainage basin but also the importation of water into it. Indeed, it is a conclusion consistently maintained by the Supreme Court<sup>56</sup> and it is best summed

<sup>52</sup> (1922), 259 U.S. 419. <sup>53</sup> *Ibid.*, at p. 466.

<sup>54</sup> *Wyoming v. Colorado* (1936), 298 U.S. 573, at p. 584.

<sup>55</sup> (1945), 325 U.S. 589, at pp. 665 and 671.

<sup>56</sup> See *Connecticut v. Massachusetts* (1931), 282 U.S. 660, and *New Jersey v. New York* (1931), 283 U.S. 336, where the court refused to



up in these words of Mr. Justice Holmes, speaking for the court in *New Jersey v. New York*:<sup>57</sup> "The removal of water to a different watershed obviously must be allowed at times unless States are to be deprived of the most beneficial use on formal grounds."

Neither state practice nor the cases, then, justify the deduction of a principle of the juridical unity of a drainage basin from its physical geography. In the final third of the twentieth century, it is mere fancy to think of a drainage basin as having a permanent physical unity. An argument based on geography alone does not carry conviction.

#### IV

A drainage basin is obviously not a political unit when one or more international boundaries divide it. Nevertheless, according to some theorists, it has a unity that overrides its political disunity. This is illustrated by Mr. Smith's statement, already quoted, that a river system forms a single and indivisible physical unit "however much it may be intersected by political frontiers" and that "political interference, although it may seriously disguise, can never abolish" its permanent unity.<sup>58</sup>

A more telling example of this view is found in the first of six "principles of law" propounded in the *Report of the Indus (Rau) Commission* and accepted unanimously by the disputants and other states and provinces that appeared before that Commission, namely, that "the most satisfactory settlement of disputes of this kind is by agreement, the parties adopting the same technical solution of each problem, as if they were a single community undivided by political or administrative frontiers".<sup>59</sup>

enjoin diversions from interstate rivers to rivers in other drainage basins. In *Wisconsin v. Illinois* (1929), 278 U.S. 367, and (1965), 352 U.S. 945, at p. 983, the court had to regulate the volume of water taken by the Chicago Diversion Canal from Lake Michigan, which is part of the Great Lakes, a vast international drainage basin shared by Canada and the United States; it restrained only that part of the diversion in excess of the limits authorized by Congress, without any suggestion that a diversion from an international drainage basin is contrary to international law.

<sup>57</sup> *Supra*, footnote 56, at p. 343.

<sup>58</sup> See *op. cit.*, footnote 3, at pp. 21 and 71.

<sup>59</sup> This statement from the Report of the Indus (Rau) Commission (1942), Vol. I, p. 52 is taken from Principles of Law and Recommendations on the Uses of International Rivers. Statement of Principles of Law and Recommendations with a Commentary and Supporting Authorities Submitted to the International Committee of the International Law Association by the Committee on the Uses of Waters of International Rivers of the American Branch (Washington, May 1958), p. 97. It can also be found in Laylin, Principles of Law Governing the Uses of International Rivers. Contributions from the Indus Basin (1957), 51 Am. Soc. Int'l L., Proceedings 20, at p. 25 (Italics mine).

This thought had been first expressed in 1865 by the British Secretary of State for India in an order providing that ". . . the only project which should be entertained by the Government of India is the best that can be devised irrespective of the territorial boundaries of the British and foreign States . . .".<sup>60</sup> It was repeated in 1918 in a statement of principle suggested by Sir Claude Hill, the representative of the government of India, and accepted by the representatives of the British Indian Province of Punjab and of the Indian States of Bahawalpur and Bikaner at a conference to allocate the waters of the Sutlej River; his statement was that "these waters should be distributed in the best interest of the public at large, irrespective of Provincial or State boundaries . . .".<sup>61</sup> And it was a guiding principle of the Indus (Anderson) Committee, established in 1935, that "in allocating water, the greatest good to the greatest number must be sought without reference to political boundaries".<sup>62</sup>

The context of these statements must, however, be remembered. Having sovereignty over the Indian Provinces and, by treaty, handling the foreign affairs of the independent Indian States, the British government at the relevant times provided a measure of political unity to the India Sub-Continent. The statements cannot therefore be taken to have expressed more than a policy that seemed wise to the British authorities responsible for Indian affairs. The first "principle of law" of the Rau Commission did purport to do more than that, but it can hardly be called a principle of "law" in any true sense of that word, for in essence it merely urged states, in their own best interests, to forget their political division and to settle their international river disputes by agreement.

Incidentally, these statements and the first principle of the Rau Commission were echoed in a letter written on November 8th, 1951 by Mr. Eugene Black, the President of the World Bank, whose intervention played so large a part in the settlement of the Indus River dispute between India and Pakistan, to the Prime Ministers of those two states suggesting a number of principles for solving that dispute. Mr. Black took his principles from a proposal of Mr. David Lilienthal, a former chairman of the Tennessee Valley Authority, that "The whole Indus system must be developed as a unit—designed, built and operated as a unit, as in the seven-state TVA system back in the U.S."; for "This objective . . . cannot be achieved by the countries working separately; the river pays no

<sup>60</sup> Laylin, *op. cit.*, *ibid.*, at p. 25.

<sup>61</sup> *Ibid.*, at p. 23.

<sup>62</sup> *Ibid.*

attention to partition—the Indus, she ‘just keeps rolling along’, through Kashmir and India and Pakistan”.<sup>63</sup>

The drafters of the Geneva Convention of 1923 had a similar thought in mind. Even in the watered-down final text of the Convention, which prescribed prior negotiation before one state could undertake a project that would seriously affect co-basin states, it was provided that the states concerned should work out a scheme for the development of hydraulic power “without reference to any political frontier”.<sup>64</sup> The Convention, however, did not place states under any legal obligation to ignore political frontiers; it merely obliged them to negotiate. Even so, it was not widely accepted.

National frontiers are regrettable barriers to the optimum economic utilization of the waters of international drainage basins, as they are barriers to all sorts of other beneficial human activities. Nevertheless, they are facts which cannot be made to disappear by wishful thinking and cannot be ignored. National interests do inevitably play an important, often the decisive, role in the utilization of international water resources. And, inevitably, the law has paid heed to these hard facts; there is simply no warrant for saying that international law requires an international drainage basin to be treated as a political unit. Such can be the law only when the international community achieves a wider political unity. Until then, statements like those of the Rau Commission will remain merely exhortations, reminding states of the great advantages of minimizing as far as possible the effects of political frontiers.

## V

In addition to the geographical and political unity of an international drainage basin, its economic unity has sometimes been postulated. Professor Cano, for instance, has recommended that “hydrographic basins should be considered indivisible economic and geographical units, to be under the joint-ownership of countries participating in them”.<sup>65</sup> This line of thought formed the basis of Mr. Eugene Black’s proposed principles for solving the Indus River dispute; one of them was that the river “should be co-operatively developed and used in such a manner as most effectively to promote *the economic development of the Indus basin viewed as a unit*”.<sup>66</sup> Mr. C. W. Jenks and some others made a similar argument

<sup>63</sup> See Berber, *The Indus Water Dispute* (1957), 6 *Indian Yearbook of International Affairs* 46, at pp. 56-57.

<sup>64</sup> *Supra*, footnote 7, Art. IV.

<sup>65</sup> Cano, *op. cit.*, footnote 3, p. 103.

<sup>66</sup> *Op. cit.*, footnote 63, at p. 57. Italics mine.

before the Institute of International Law, contending that it should base its resolution on "the utilization of non-maritime international waters" on the notion of the geographical and economic unity of river basins.<sup>67</sup> In the Institute's discussions, however, Professor Andrassy, the rapporteur, successfully argued against Mr. Jenks and his supporters. The record of his statement is as follows:<sup>68</sup>

En revanche le rapporteur nie l'unité économique de tout bassin fluvial. Il y a trop de différence entre le développement économique des Etats et l'aménagement de leurs territoires . . . contrairement à ce qui a été dit la pratique récente se soucie peu de l'unité économique d'un bassin. Il n'y a pas que des intérêts communs, il y a souvent des intérêts divergents. . . . Le Rapporteur serait disposé à reconnaître l'importance dans la société internationale des unions économiques. Mais unions économiques et unité d'un bassin sont choses fort différentes. Que se passerait-il dans le cas d'un bassin hydrographique revendiqué par deux unions économiques? Ne faudrait-il pas faire un compromis entre elles analogue à un compromis entre souverainetés étatiques?

Likewise, the United Nations experts who have strongly favoured the river basin approach in the development of international rivers, have avoided a hard and fast rule on the economic unity of a river basin. Their reservations were expressed in these terms: "In regions where economic development is already well advanced, a river basin may lose some of its cohesion as an economic entity because the boundaries of what may be considered an economic unit do not coincide with the physical limits of the basin area."<sup>69</sup>

The argument for the economic unity of a drainage basin might have made sense at a time when it was impossible to transport goods and persons easily from one basin to another; canals and railways, however, did make that possible and in the nineteenth century profoundly changed the economic patterns of states.<sup>70</sup> In the twentieth century, with its technological revolution extending to methods of transport, the argument is as untenable as that for its political unity. This becomes apparent if one examines the development of almost any drainage basin; the Columbia River basin is as good an example as any for this purpose. The economy of the Canadian portion of that basin is clearly part and parcel of the economy of British Columbia and of Canada, as the economy of the United States' portion of that basin is part and parcel of the

<sup>67</sup> See (1961), 49 *Annuaire de l'Institut de Droit International*, Tome II, 162-164.

<sup>68</sup> *Ibid.* And see Andrassy, *op. cit.*, footnote 22.

<sup>69</sup> U.N. Dept. of Economic and Social Affairs, *Integrated River Basin Development* (1958), U.N. Doc. No. E/3066, at p. 1.

<sup>70</sup> See Teclaff, *op. cit.*, footnote 3, pp. 71-74.

economy of the Northwest Pacific States and of the entire United States. The development of the Columbia River in Canada may affect, even seriously, the economy of the basin in the United States, and perhaps of the United States itself, but the development will certainly affect the British Columbian and the Canadian economy.

This interdependence of the economy of a drainage basin and of the economies of the states in which it is situated may be illustrated by the 1954 agreement between the government of British Columbia and the Kaiser Aluminum and Chemical Corporation, an American company.<sup>71</sup> Under this agreement the government of British Columbia was to allow the corporation to build a dam on the Columbia River at Castlegar, British Columbia, for Arrow Lakes storage in return for twenty percent of the additional power that would be furnished downstream as a result of the regulated flow made possible by the dam. This proposal was severely criticized in Canada; its critics contended that it would be economic folly for Canada to accept it, since the very cheap power generated downstream in the United States as a result of the Canadian storage would be used by the corporation to manufacture aluminum which, being produced within the protective tariff walls of the United States, would therefore be highly competitive with the Canadian aluminum manufactured at Kitimat, British Columbia. If one viewed the agreement solely in the context of the Columbia River basin, it might have seemed a good arrangement with economic benefits to both states; however, if one viewed it in the broader context of the economy of British Columbia and of Canada as a whole, it became clear that it would expose British Columbia's aluminum industry to damaging competition and would affect Canada's export trade. In this light the price offered by the Kaiser Corporation for the benefits that would be conferred downstream by Canadian storage seemed less than adequate. It was not therefore surprising that, shortly after this agreement was announced in 1954, the Parliament of Canada enacted the International River Improvements Act,<sup>72</sup> requiring a federal licence before work on international rivers could be undertaken. Thus was the agreement frustrated.

The lesson taught by this aborted British Columbia-Kaiser Corporation agreement is that, as long as national boundaries survive, the economy of an international drainage basin cannot be

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<sup>71</sup> See Bourne, *op. cit.*, footnote 41, at p. 448.

<sup>72</sup> S.C., 1955, c. 47.

treated as a unit in isolation from the national economies of which it is necessarily a part.

## VI

The heart of the matter is that science has removed the geographical limits upon the utilization of water resources; it has given man the capacity to transport water and the energy generated by water to wherever he needs them and can use them most economically and beneficially, even to places far outside of the drainage basin. Consequently, water has become just another commodity, like oil or gas or coal.

In other words, the waters of a river may now serve a much larger population than that of its drainage basin. Aware of this fact and faced with an increasing shortage of fresh water, a state will inevitably take into account the interests of this larger population and give thought to the most beneficial use of its water resources both inside and outside of their basins. It may then find that an "area" or "regional" or "national" rather than a "drainage basin" approach will make for the most rational use;<sup>73</sup> it may even find

<sup>73</sup> The trend to regional or national development in the United States was started in 1937 when President Roosevelt sent a message to Congress proposing to divide the country into seven regions and to establish in each an agency whose function would be to develop "integrated plans to conserve and safeguard the prudent use of waters . . . of the areas entrusted" to its charge; for, although "the area most suitable as a region . . . to prevent floods is the basin . . . other problems dependent upon other combinations of natural economic and social factors may require a somewhat different area to permit the most effective functional program": see (1937), 81 Cong. Rec. 5280-5281. The 1965 federal Water Resources Planning Act, 79 Stat. 244, was a major step in this direction; it created a Water Resources Council to maintain a continuing study of the relation of regional or river basin plans and programmes to the requirements of large regions of the nation; it also empowered the President to establish river basin commissions to plan the development of the water resources of a river or a group of rivers in an area. An example of the current thought in the United States on this matter may be taken from the Report of the Senate Committee on Interior and Insular Affairs on S. 20 (1967), 90th Cong., 1st Sess., Report No. 25, Calendar No. 28, p. 2: "The United States has developed to such an extent that water problems and specific water programs proposed to solve these problems have social, political, economic and ecological ramifications that affect the entire Nation and not just the immediate area or region in which a problem or project is located. The total impact on the country of water programs may vary greatly, depending on the choice made from alternative solutions. The committee recognizes that the problem of water is national in character; that proper solutions must be developed with full attention to the entire range of alternatives and the ultimate consequences of proposed projects. . . ." Bill S. 20 would establish a National Water Commission "to assess our major water problems and develop guidelines for the most effective use of available water resources": *ibid.* For a full discussion of the proposed National Water Commission, see Hearings on S. 3107 Before the Senate Committee on Interior and Insular Affairs (1966), 89th Cong., 2nd Sess. For a dis-

that, in some circumstances, a "continental" approach will do so, as the proponents of the NAWAPA scheme for the utilization of the water resources of North America argue.<sup>74</sup>

Practice today shows that states are increasingly viewing their water resources in this broader context. It confirms Mr. Bower's statement that "a water resources system does not encompass a single geographic area, but rather a set of overlapping, but not necessarily coincident, areas".<sup>75</sup> And it lends weight to Mr. Utton's view that "comprehensive regional planning is mandatory

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cussion of the use of areas other than the drainage basin as units for the development of water resources, see Teclaff, *op. cit.*, footnote 3, pp. 123, 130-131, 141-146, 151, 184-192, 201-203.

<sup>74</sup>The Hon. Paul Martin, then Secretary of State for External Affairs, Canada, spoke well of the continental concept: see Proceedings of the Standing Committee on External Affairs, House of Commons (1964), 2nd Sess., 26th Parl., p. 35. He said: "... the Columbia River Treaty should be viewed as a greatly significant effort toward the advancement of regional and national energy programs that include not only the idea of regional and national electrical energy interchanges and grids, but perhaps even more urgently, the exploitation of hydro power resources wherever the Canadian potential and United States markets can accommodate each country's needs and interests." However, the notion of treating "Canadian natural resources" as "North American natural resources" and thus implicitly to be shared with the United States and Mexico usually raises the hackles of Canadian politicians who are already sensitive to charges of American domination of Canadian industry. The government of British Columbia, whose abundant waters would be taken to the south-western United States and Mexico under the NAWAPA plan, has denounced that plan and insists that British Columbia's water resources will not be shared with others: for example, see Premier Bennett's statement in The Vancouver Sun, April 19th, 1965, p. 6: "[Water] is our greatest heritage. We do not intend to surrender it at any time for any price." The position of the Canadian government is more flexible: export of water to the United States may be feasible, but it is premature to talk of such schemes until an inventory of Canada's water resources and a reliable estimate of her needs have been made. In other words, the Canadian government thinks that there must first be a national plan before there can be a continental international plan: see the report of a speech by Mr. Jack Davis, parliamentary secretary to the Minister of Energy, Mines and Resources, in The Vancouver Sun, April 2nd, 1966, pp. 1-2. The idea of Canada's water resources being considered as "continental" is rejected by many persons. Arthur Laing, then federal Minister of Northern Affairs and National Resources, stated their point of view succinctly in a speech to the Third National Northern Development Conference, Edmonton, Alberta, on October 24th, 1964 when he said: "Canada's water supply is our water and we intend to do with it what we consider to be in our national interest. That is our continuing policy." Speaking to the American Bar Association in 1966, he said that "Canadian water is not now negotiable, and I am not certain that it ever will be": see American Bar Association, Section of Mineral and Natural Resources Law, 1966, Proceedings, Montreal, Canada, August 8th to 11th, 1966, at p. 37. This does not, of course, preclude an integrated development of particular water resources by Canada and the United States if study shows such a development to be advantageous to both.

<sup>75</sup>Bower, Some Physical, Technological and Economic Characteristics of Water and Water Resource Systems: Implications for Administration (1963), 3 Nat. Resources J. 215, at p. 220.

in order to achieve the optimum utilization of international streams", the area to be included in any given plan varying from use to use.<sup>76</sup>

Furthermore, the legal right of states to take this broader view and to engage in comprehensive regional planning, even when an international drainage basin is involved, is supported by the judicial decisions already referred to.<sup>77</sup> It is also supported by the Helsinki Rules, article V of which, quoted above, expressly requires all relevant factors, including extra-basin factors, to be taken into account, and by the 1961 Salzburg Resolution, article 2 of which provides that the "respective needs, as well as of other pertinent circumstances", should be considered; although these documents do not expressly confer the right to utilize water outside of its basin, their whole tenor and background show that states do have that right in certain circumstances. The recognition of this right, it should be said, does not imply that international law requires the planning of water utilization to be based on any particular region or national scale; present international law favours a flexible formula, the appropriate area for planning to be determined "in the light of all the relevant factors in each particular case", to echo the words of article V of the Helsinki Rules.

The argument against the juridical unity of a drainage basin and in favour of a rule that would allow a comprehensive regional, if not continental, approach to water resources development seems overwhelming. How does one explain, then, the emphasis in legal

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<sup>76</sup> Utton, *The Columbia River Treaty and Protocol* (1966), 1 *Land and Water L. Rev.* 181, at pp. 198-199. So far, there has in fact been little comprehensive international planning of the development of international rivers; the Mekong River is an exception, but it is a special case and even so its integrated development is only partial: see Sewell and White, *The Lower Mekong*, *International Conciliation*, No. 558, May 1966, pp. 9 and 19, 32, and 48. Professor Andrassy makes the same point, saying that international river treaties are not based on the idea of community, but are negotiated settlements dealing with particular interests: see (1961), 49 *Annuaire de l'Institut de Droit International*, Tome II, 110, at pp. 110-111. For a discussion of comprehensive regional development and for a description and list of some integrated river basin development programmes and of the commissions to implement them, see White, *A Perspective of River Basin Development* (1957), 22 *Law and Contemp. Prob.* 157, at pp. 171-175, 179-183. Wengert, in *The Politics of River Basin Development* (1957), 22 *Law and Contemp. Prob.* 258, at pp. 264-268, wrote of "the myths and symbols that have grown around the idea of the river basin as an appropriate unit for development programmes"; care should be taken lest "comprehensive regional planning" does not itself become a matter of myths and symbols.

<sup>77</sup> See *supra*.



literature on the drainage basin?<sup>78</sup> Some may be inclined to attribute it to the inherent conservatism of lawyers, charging them with being slow to accept the implications of modern science, economics and politics. There are, however, more likely explanations.

First, the concept of the drainage basin, in its legal aspect, was a response to the anarchical theory of territorial sovereignty propounded by Attorney General Harmon, a theory especially popular in an age of strong nationalism, claiming the right to develop a river independently without responsibility for consequential injury. It was natural to react against a Harmon doctrine type of argument by stressing the interdependence of all parts of the drainage basin in question and the necessity of considering it as a whole. Thus, legal thought was shaped in this mould. Even in current legal discussion the unity of a drainage basin is in truth more a concept *against* unilateral and piecemeal development than a carefully elaborated doctrine defining legal rights and duties in the exploitation of water resources.

Second, the drainage basin is a logical place to start the planning for the exploitation of its waters; its physical interdependence does give it a certain unity that makes it a convenient framework for planning and justifies a tentative proposition that utilization of its waters in the basin offers the best chance of maximum benefits. It is probably true to say that even if the broadest and most comprehensive approach had been taken in the planning of past developments, the utilization of the waters in question in their basins would have proved to be their most beneficial use; doubtless, it will be equally true of future developments.

And, third, the concept of the drainage basin approach is attractive because it not only produces satisfactory results in many cases but also has the merit of simplicity; it is easier to study and plan for the needs of the people of a drainage basin than of a larger area.

The concept of the unified development of an international drainage basin, then, continues to attract attention. Its vitality is not surprising, for at its core lies a fundamental truth, the interdependence of communities that rely on common water resources. It cannot, however, be considered as being any more than hortatory, offering sound advice to co-basin states, telling them of the

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<sup>78</sup> For example see Teclaff, *op. cit.*, footnote 3. His concluding words are: "... it is felt that the basin will remain a legal entity in the foreseeable future": *ibid.*, p. 203.

potentially rich returns from co-operative development. Perhaps the concept should be given a higher status, that of a *prima facie* rule of law;<sup>79</sup> as such, it would require the comprehensive planning of the development of a drainage basin, but, being only a *prima facie* rule, it would not preclude consideration of extra-basin factors, even uses of water outside of its basin, when those factors could be shown to be relevant. But to elevate it into an absolute legal doctrine that would confine planning to the limits of a basin even though its waters might be best utilized elsewhere would be most undesirable. Instead of being a liberal and wise guide to co-basin states, the concept would then be a restrictive and intolerable rule.

A theory of international water law based on geography no longer will suffice. It ignores the fundamental fact that the problems of the utilization of water resources today involve economic and political factors that transcend the limits of drainage basins. Moreover, it is a distortion of the essential ideas of community and good neighbourship, the foundation stones of this branch of law; for the community whose interests will be affected by the development of a drainage basin is usually composed of far more persons than those who live there.

In short, the concept of the unity of a drainage basin is not fully in accord with reality. It therefore lacks an essential quality for the status of a legal rule; for, as the tribunal in the *Lake Lanoux* case said, "The unity of a basin is sanctioned at the juridical level only to the extent that it corresponds to human reality".<sup>80</sup>

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<sup>79</sup> See Batstone, *The Utilisation of the Nile Waters* (1959), 8 Int'l & Comp. L.Q. 523, at pp. 553-554, where it is argued that sometimes areas outside of a river basin must be taken into account: "These areas will usually be within the watershed of the river, but may not be so in every case. The watershed test is to be regarded as no more than a *prima facie* test." There is, however, no real authority on which to build an argument in favour of such a *prima facie* rule, and its practicability and wisdom are still unknown.

<sup>80</sup> *Supra*, footnote 50, at p. 125 (I.L.R.).