

# INTERNATIONAL MULTIPURPOSE WATER RESOURCES DEVELOPMENT IN THE LOWER MEKONG BASIN

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Ecological and environmental problems in the United States<sup>1</sup> make us increasingly conscious of the importance of water to our way of life. Until recently, we tended to take for granted the blessings which regulation and control of our water resources bring, and only now and then did we think of the power and potentially destructive force of uncontrolled floods, the problems of pollution or drought, or alternatively, the benefits of water for such purposes as municipal and industrial use, navigation, irrigation and power production. By contrast, the entire way of life of the peasant cultivator in much of Southeast Asia is determined by the presence or absence of water: the seasonal flooding from monsoon rains or the periods of drought during dry months.<sup>2</sup> The possible benefits for him of a controlled, predictably available water supply are enormous.

The conflict in Vietnam has made most of us aware that there is a Mekong River but not of its potential benefits for the region. It is, in fact, one of the mightiest rivers of the world, but as has been aptly stated:<sup>3</sup> "The impressive fact about the Mekong River as a natural resource is not its great length, its vast drainage basin, or the volume of its flow, but the negligible extent to which it and its tributaries have been developed."

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1. See, e.g., President Nixon's State of the Union address, N.Y. Times, 23 January 1970 at 22, Reitze, *Pollution Control: Why Has It Failed*, 55 A.B.A.J. 923 (1969).

2. The majority of the 26 million people living within the Lower Mekong Basin (which includes Laos, Northeast Thailand, Cambodia and South Vietnam) are engaged in agriculture and live close to the margin of subsistence. There is insufficient precipitation to support crop production throughout the year; there is water deficiency in one season, water surplus in the other. Although only 3% of the land area is now being irrigated, there is ample water for irrigation, if it were controlled UNITED NATIONS, ATLAS OF PHYSICAL, ECONOMIC AND SOCIAL RESOURCES OF THE LOWER MEKONG BASIN v-vi (1968).

3. *Id.* at v.

A rational approach to development of water resources requires knowledge, based on basic data, and planning. The river basin is the logical unit both for data collection and for planning of the comprehensive development of its water resources.<sup>4</sup> The natural flow of water, however, often takes it across political boundaries, so that in the absence of international cooperation and agreement, development may be impeded. Unified basinwide planning and development have been more easily achieved in national as opposed to international river basins.<sup>5</sup> More often than not, the approach to development of international basins has been piecemeal, with agreement covering only specific projects, or some but not all potential uses, or including only a portion of a basin.<sup>6</sup>

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4. Article II of the Helsinki Rules defines an international drainage basin as ". . . a geographical area extending over two or more States determined by the watershed limits of the system of waters, including surface and underground waters, flowing into a common terminus." Comment (a) under Article II includes the statement: "The drainage basin is an indivisible hydrologic unit which requires comprehensive consideration in order to effect maximum utilization and development of any portion of its waters." INTERNATIONAL LAW ASSOCIATION, HELSINKI RULES ON THE USES OF THE WATERS OF INTERNATIONAL RIVERS (1967). *See also* GARRETSON, HAYTON OLMSTEAD, THE LAW OF INTERNATIONAL DRAINAGE BASINS 4 (1968).

5. Correlated development of water resources even within national river basins is relatively recent. Until about the beginning of this century each use of water was implemented separately without regard to possible conflict with other uses and sometimes to the detriment of other basin states. *See* L. TECLAFF, THE RIVER BASIN IN HISTORY AND LAW 113-19, 157-60 (1967). Examples of basin development within individual countries include the Tennessee (U.S.), Damodar Valley (India), Gal Oya (Ceylon), Cauca (Columbia), Volta (Ghana), Snowy Mountains (Australia). For a discussion of the institutional arrangements in these basins, *see id.* at 132-40. *See also* GARRETSON, note 4, *supra*, at 137, indicating that within the federal systems, major developments on interstate streams have been completed only where the federal government has assumed substantial administrative and financial responsibilities. The central control has been a major factor in overcoming disputes. *See also* Cano, Legal and Institutional Problems of Multinational Water Development Schemes in Latin America and the Caribbean 8 (1968) (unpublished working paper prepared for Regional Seminar in International Law for Latin America and the Caribbean, organized by United Nations Institute for Training and Research (UNITAR) at Quito, Ecuador, 13-25 January 1969). Dr. Cano indicates that in Latin America, despite some declarations enunciating the aim of integrated planning and development, there has been little such planning and development for entire river basins.

6. A variety of causes, some historical and technical, some political, have contributed to these results. The early use of rivers was primarily for navigation. It was not until about 1860 that development of earthmoving equipment and invention of reinforced concrete made possible effective dams. Development of hydro power and its transmission was begun in Europe about 25 years later. *See* TECLAFF, note 5, *supra*, at 113-14. Political differences have often hindered cooperative development; for example in the Jordan basin, between Israel and the upstream basin states; and between India and Pakistan in the Indus basin. The Indus Waters Treaty, September 19, 1960, 419 U.N.T.S. 125 (1962), allots the three eastern rivers (Sutlej, Beas and Ravi) to India, and the three western ones (Indus, Jhelum and Chenab) to Pakistan, so that each country can proceed with development on a purely national basis.

The United Nations and its various agencies have long been interested in water resources development.<sup>7</sup> Special emphasis was placed upon this field during the U.N. Development Decade<sup>8</sup> and the UNESCO International Hydrological Decade 1965-1975, the program of which constitutes a concerted international effort to promote the study of the world's water resources and to intensify research in scientific hydrology.<sup>9</sup> The United Nations, its regional and specialized agencies, have played a catalytic role in bringing to the attention of the basin states the advantages to each of them to be gained from regional cooperation toward development of their water resources. Their efforts have borne fruit in a number of major river basins of the world.<sup>10</sup> One of the earliest and most successful examples of cooperation has been in the Lower Mekong River Basin.

In 1957, in response to a recommendation adopted by the United Nations Economic Commission for Asia and the Far East (ECAFE), the governments of Cambodia, Laos, Thailand and the Republic of Vietnam established the Committee for Coordination of Investigations of the Lower Mekong Basin (the "Mekong Committee"). As indicated in its annual reports, the objective of the Mekong Committee is the achievement of the purposes envisaged in the 1958 report of the United Nations Technical Assistance Mission headed by Lt. Gen. Raymond A. Wheeler (USA ret'd) which stated:

The Mekong is a majestic river. Even a cursory examination of the available hydrologic and topographic data, meager as it is, has convinced the Mission of the great potential of the Lower Mekong for service to the riparian countries in the fields of navigation, hydropower generation, irrigation and other related uses. Since it is a snow-fed river, the Mekong has a perennial flow. The possible hydropower sites are easily accessible and are located within reasonable distance of potential load centres. The topography of the Basin appears to be suitable for irrigation of large tracts of land. The control of its floods and improvement of drainage can be accomplished with reasonable works

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7. See United Nations Resources and Transport Division, Department of Economic and Social Affairs, the United Nations and International Water Resources Development (Dec. 1968) (unpublished working paper prepared for United Nations Panel of Experts on Legal and Institutional Implications of International Water Resources Development, Vienna, Austria, December 1968).

8. Fifth Biennial Report on Water Resources Development, at 11, U.N. Doc. E/4447.

9. *Id.* at 7.

10. *Id.* at 11-14. For example in the Senegal and Niger Basins in Africa, the Mekong Basin in Asia

and in most instances could be combined with its development for other purposes. Thus developed, this river could easily rank with Southeast Asia's greatest natural resources. Wise conservation and utilization of its waters will contribute more towards improving human welfare than any other single undertaking.<sup>11</sup>

The Mekong River is one of the world's longest, approximately 4,000 kilometers. It rises in the high mountains of the great Tibetan plateau, flows through the mountain ranges of Yunnan Province in China, forms the border between Burma and Laos. The lower basin, which is defined by the statute of the Mekong Committee<sup>12</sup> as "the area of the drainage basin of the Mekong River situated in the territory" of Cambodia, Laos, Thailand and the Republic of Vietnam, is generally considered to start at the tri-point where the borders of Burma, Thailand and Laos meet. It forms the long frontier between Laos and Thailand, traverses central Cambodia and forms a broad delta in southern Vietnam before emptying through many mouths into the South China Sea below Saigon.<sup>13</sup>

The Mekong Committee has had a remarkable and heartening history of cooperation in an area of the world where arms-length distrust is more often found. There are a number of factors which have helped encourage this cooperation. It appears to have been a wise choice that the approach to formal agreement and institution building in the Lower Mekong Basin has been a gradual one. The Committee's statute is short and relatively uncomplicated. The basin states did not try to start development on the basis of sophisticated and complicated treaties laying down principles for priorities of uses and division of waters.<sup>14</sup> For one thing, they simply lacked facts on which to base such

11. United Nations Technical Assistance Mission, *Programme of Studies and Investigations for Comprehensive Development—Lower Mekong Basin*, U.N. Doc. TAA/AFE/3, quoted in COMMITTEE FOR COORDINATION OF INVESTIGATIONS OF THE LOWER MEKONG BASIN, ANNUAL REPORT 1969 § 1.3.

12. Ch. I of Statute \_\_\_\_\_, 267 *et seq.* Committee for Coordination of Investigations of the Lower Mekong Basin, *Legislative Texts and Treaty Provisions Concerning the Utilization of International Rivers for Other Purposes Than Navigation*, U.N. Doc. ST/LEG/SER B/12. [Hereinafter cited as U.N. LEG. TEXTS].

13. UNITED NATIONS, ATLAS OF PHYSICAL, ECONOMIC AND SOCIAL RESOURCES OF THE LOWER MEKONG BASIN v (1968).

14. The existing treaties, all of which pre-date the establishment of the Mekong Committee, are concerned primarily with such matters as navigation and boundaries. Many of their provisions are outmoded, overlapping and confusing. See Caponera & Wohlwend, *Legal Aspects of Mekong Navigation*, U.N. Doc. WRD/MKG/INF/L 309 (1969); Wohlwend, *Legal Aspects of Lower Mekong Basin Development*, U.N. Doc. WRD/MKG/INF/L 313 (1969). It was a

agreement. However, preliminary reconnaissance surveys of the river conducted under the auspices of ECAFE had been sufficient to show the potential advantages to the riparian states of joint action.

When the Mekong Committee was organized, little was known about the river or the related resources of the region, and with the exception of minor navigational aids, there were no man-made structures on or across the main stream. Hence the functions of the Mekong Committee were primarily data collection and planning. Its statute provides:

The functions of the Committee are to promote, co-ordinate, supervise and control the planning and investigation of water resources development projects in the lower Mekong basin. To these ends the Committee may:

- (a) Prepare and submit to participating governments plans for carrying out co-ordinated research, study and investigation;
- (b) Make requests on behalf of the participating governments for special financial and technical assistance and receive and administer separately such financial and technical assistance, as may be offered under the technical assistance programme of the United Nations, the specialized agencies and friendly governments;
- (c) Draw up and recommend to participating governments criteria for the use of the water of the main river for the purpose of water resources development.<sup>15</sup>

The Committee is composed of four members. Each participating government is to appoint one member with plenipotentiary authority, and such alternates, experts and advisers as it desires.<sup>16</sup> The Committee acts as a kind of board of directors which meets periodically to give policy direction.

Another factor which helped to encourage cooperation, especially in the early stages, was the statutory requirement of 100% quorum for Committee meetings, and of unanimity in reaching Committee decisions.<sup>17</sup> This assured each of the countries that action contrary to its own self interest could not be taken without its consent.

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recommendation of the Mekong Legal Seminar referred to at note 30, *infra*, that the existing treaty regime of the basin should be studied with a view to selecting those treaty provisions which have continuing validity, identifying areas of uncertainty or differences, eliminating unnecessary or no longer applicable provisions and suggesting areas in which new agreement may be necessary. There are no existing agreements specifically covering any of the proposed multi-purpose international projects on the Mekong.

<sup>15</sup> See Statute, note 12 *supra*, Art. 4.

<sup>16</sup> *Id.* Art. 1.

<sup>17</sup> *Id.* Art. 5, §§ 2 and 3.

The Committee's day to day operations are handled through an Executive Agent and secretariat. The secretariat is provided in part by the four basin states and in part by ECAFE and the United Nations Development Programme through an institutional support project to the Mekong Committee. The "U.N. presence" has been a further factor which has encouraged cooperation among the riparian states; it has helped to assure them that decisions will be carried out "for the benefit of all the people of the Basin, without distinction as to nationality, religion or politics."<sup>18</sup>

Still another ingredient in the Committee's success has been that its approach has been primarily at the technical as distinct from the political level.<sup>19</sup> Its activities have continued uninterrupted in spite of the fact that some of the basin states do not have diplomatic relations with each other.<sup>20</sup> Nevertheless, even though the programs and personnel have had a technical orientation, the Committee has seen to it that each member country benefits, and in this sense it has established political priorities. The strategy of assuring fair shares to each riparian country was necessary to gain local support.<sup>21</sup>

The field of activities of the Mekong Committee encompasses the tributaries as well as the main stream of the Mekong. The program of the Committee has been a truly international one in that in addition to the resources provided by the four Lower Mekong Basin countries themselves, some 26 countries outside the basin, 12 United Nations agencies, three foundations and a number of private business organizations are cooperating with the Committee in its activities. By

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18. This phrase is found in the introductory statement of most of the Annual Reports of the Mekong Committee. See COMMITTEE FOR COORDINATION OF INVESTIGATIONS OF THE LOWER MEKONG BASIN, ANNUAL REPORT 1969 § 1.1.

19. The approaches in Latin America appear to have been primarily at the diplomatic level, with little joint action for integrated planning and development. See Cano, note 5 *supra*. See also Comision Economica para America Latina (CEPAL) "Requirimientos Juridicos y Administrativos de los Proyectos y Obras Hidraulicas Multinacionales en America Latina" and Departamento de Asuntos Juridicos, Secretaria General de la Organizacion de los Estados Americanos (OEA), "Programa para el Desarrollo de la Cuenca del Plata, Aspectos Juridicos y Institucionales," (documents prepared for Regional Seminar in International Law for Latin America and the Caribbean, organized by United Nations Institute for Training and Research [UNITAR] at Quito, Ecuador, 13 to 25 January, 1969).

20. For short periods, the Committee itself has been hampered by absence of one of its members from meetings, but the authority of the Executive Agent, together with informal contacts among the Committee members has enabled the work of the Committee to proceed, and the full Committee has later ratified action taken.

21. See E. BLACK, *ALTERNATIVE IN SOUTHEAST ASIA* 134-35 (1969).

the end of 1969, some \$180 million equivalent had been pledged to the Mekong Committee or to projects sponsored by the Committee.<sup>22</sup>

There are few, if any, international river basins where joint cooperation and planning for multi-purpose development have started at such an early stage and achieved such comprehensive results as in the Lower Mekong Basin. In other areas, even if there was agreement for coordination of data collection or for joint investigation and planning, it was likely to cover only a part of a basin or to relate to planning for a particular project or series of projects without considering overall integrated multipurpose development.<sup>23</sup> In one sense, the Mekong Committee was fortunate in starting with a virgin river. It has not had to plan on the basis of existing appropriations of water and existing structures. There were none. There are no disputes among the basin states over the waters, nor is there a problem of water shortage. There is ample water; the need is for regulation to catch the destructive floodwaters and make them available for beneficial use during the dry season.<sup>24</sup>

During its twelve years of existence, the work of the Mekong Committee has covered a wide range. Studies and data collection are continuing in such fields as agriculture, archaeology, ecology, fisheries, forestry, geology, hydrology, hydrography, industry, literacy, mineral resources, public health and power markets. Development planning is

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22. 2 MEKONG MONTHLY BULL. (Nos. 11 & 12, November-December, 1969).

23. For example, the foreign ministers of the River Plata Basin (Argentina, Bolivia, Brazil, Chile, Paraguay) in Santa Cruz de la Sierra, Bolivia, adopted criteria regarding priorities to decide the sequence of water resources project construction. They do not contemplate integrated planning for the development of the water resources of the basin. See Acta Final, II Reunion de Cancilleres de los Paises de la Cuenca del Plata (20 de mayo de 1968), Organization of American States, *Textos de Documentos Sobre el Uso Comercial de Rios y Lagos Internacionales*, OEA DOCUMENTOS OFICIALES, OEA/Ser. I.VI.1, CIJ-97 at 17-32 (Nov., 1968) [hereinafter cited as OAS, *Textos de Documentos*]. See also note 19, *supra*. In Africa there are a number of instances in which joint action has begun. The Intergovernmental Committee for the Senegal River Basin established in 1963 by agreement among Mauritania, Guinea, Senegal and Mali, and the River Niger Commission established in 1964 by agreement among Cameroon, Chad, Dahomey, Guinea, Ivory Coast, Mali, Republic of Niger, Nigeria and Upper Volta are similar in many respects to the Mekong Committee. See Convention Relative a l'Amenagement General du Bassin du Fleuve Senegal (26 July 1963), OAS, *Textos de Documentos* 296; Accord Relatif a la Commission du Fleuve Niger et a la Navigation et aux Transports sur le Fleuve Niger (23-25 Nov., 1964), Organization of American States, *Rios y Lagos Internacionales (Utilizacion para Fines Agricolas e Industriales)*. OEA DOCUMENTOS OFICIALES, OEA/Ser. I/VI, CIJ-75 Rev. at 196-200 (Aug., 1967), 587 U.N.T.S. 19.

24. The peak flow of the Mekong River during wet months is usually more than 20 times the low flow in the dry season. See UNITED NATIONS, ATLAS OF PHYSICAL ECONOMIC AND SOCIAL RESOURCES OF THE LOWER MEKONG BASIN vi (1968).

a continuous process. Feasibility studies are under way or have been completed on numerous mainstream and tributary projects. By the end of 1969, construction had been finished on two tributary projects in Thailand and was in progress on five additional tributary projects in Cambodia, Laos and Thailand. Pre-investment work was in progress on three mainstream multipurpose projects, four tributary projects, a bridge and an agricultural development project. Funds were being sought for construction of seven projects, and for pre-investment work on three others.<sup>25</sup> The five year objectives of the Committee for the period 1968-1972<sup>26</sup> include continuation of a navigation improvement program, establishment of a basinwide flood forecasting and warning system and of pioneer irrigation projects, construction of two bridges, assistance to the basin states with 26 tributary projects, at various phases ranging from feasibility reports through financing and construction, completion of feasibility reports on five major multipurpose mainstream projects and obtaining finance to start initial construction on two of them, the Pa Mong and the Sambor.

A feasibility report on Stage I of the PaMong mainstream project, a key project in any scheme of basinwide development, is to be presented to the Committee early in 1970.<sup>27</sup> The project is located at a site where the Mekong River forms the boundary between Laos and Thailand. The U.S. Bureau of Reclamation, on behalf of the Mekong Committee, has been studying the Pa Mong Project since 1961. Ultimately, the project, if constructed, would be one of the major multi-purpose water resources projects of the world. It could generate some 20 billion kilowatt-hours of firm power annually and provide water for irrigation of up to five million acres in northeast Thailand and in Laos. For the downstream riparians, Cambodia and Vietnam, it could provide a more than triple increase in the dry season flow, to make possible double cropping of fertile irrigated areas in the delta, improved navigation, and some (though not complete) alleviation of flood damage. Stage I of the project would include a dam over the main stream and smaller dams over two tributaries, a reservoir with a storage capacity in excess of 100 billion cubic meters of water,<sup>28</sup> a

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25. 2 MEKONG MONTHLY BULL. (Nos. 11 & 12, November-December, 1969).

26. COMMITTEE FOR COORDINATION OF INVESTIGATIONS OF THE LOWER MEKONG BASIN, SEMI-ANNUAL REPORT: (1 January 30 June 1969) (*Note by the Executive Agent*, vol. 1, E/Cn.11/WRD/MKG/L.276, annex 3).

27. COMMITTEE FOR COORDINATION OF INVESTIGATIONS OF THE LOWER MEKONG BASIN, ANNUAL REPORT 1969 § 4.7.

28. This is roughly equivalent to 80 million acre feet, i.e., enough water to cover 80 million acres to a depth of one foot.



power plant with an installed capacity of 4,800,000 KW, transmission lines, and initial irrigation of some 106,000 acres. Estimated cost of the first stage alone is a billion one hundred sixty million dollars.<sup>29</sup>

It is clear that new international agreements and institutional arrangements will be required to ensure a smooth transition from the stage of planning to that of construction and operation of huge international multi-purpose projects. In August, 1969, the Mekong Committee sponsored a seminar in Bangkok on "Legal and Administrative Aspects of Lower Mekong Development with Special Reference to Initial Mainstream Projects."<sup>30</sup> As a result of the recommendations of that seminar, working groups have been established to study and discuss the many thorny legal and administrative problems which must be solved.

It is fortunate that during 1970 the Mekong Committee will have ready for discussion the draft of a basinwide plan, called the "Amplified Basin Plan," since it amplifies and brings up to date previous basin plans which were based on less complete data. The new plan will, of course, also be subject to continuing review and revision. It can provide the framework into which the Pa Mong and other major projects can be set. The Committee can perform a useful service to the four member states by helping to develop policy and guidelines as an aid to eventual basinwide agreement on broad principles to govern development.

It may be, however, that at this stage the Lower Mekong states will prefer to feel their way slowly and to limit their formal agreements to specific problems as they arise. Even for the Pa Mong Project, the solution to many difficult problems must be negotiated. For example, the mix out of which an eventual division of costs and benefits will be determined is a complicated one. The principal structures would be

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29 UNITED STATES BUREAU OF RECLAMATION, PA MONG PROJECT—STAGE I FEASIBILITY REPORT Summary (1970).

30. United Nations Economic Commission for Asia and the Far East (Mekong Committee), Fifth Economic and Social Seminar, 25-29 August 1969, Bangkok, Thailand [hereinafter referred to as the Mekong Legal Seminar]. The seminar was attended by nationals of the four basin states, by representatives of ten additional countries, of the Mekong secretariat, of U.N.D.P., W.H.O., E.C.A.F.E. and by experts and consultants including a former French representative of the Rhine Commission, the Special Legal Advisor of the World Bank, the Commissioner of the U.S. Bureau of Reclamation, the Deputy Director of the General Legal Division of the U.N. Office of Legal Affairs, the Assistant General Counsel of the Asian Development Bank, the Associate Director of the Swiss Federal Bureau for Hydro-Economy, an official of the U.S. Army Corps of Engineers, and university professors from the United States and Japan.

built at a site on the boundary between Laos and Thailand, and large areas in both countries would be inundated by the reservoir. Initially, Thailand will probably be the principal market for power, but the project could provide electricity to the other basin states as well and even to countries outside the basin, such as North Vietnam, if Hanoi were interested.<sup>31</sup> Both Thailand and Laos could benefit from irrigation flows and from flood control, but in the short run Laos, a landlocked country with no railroad and few good roads, may be more interested in the benefit of improved navigation. Downstream benefits to Cambodia and South Vietnam (other than direct consumption of power if transmission lines were provided)<sup>32</sup> include, as indicated above, greatly increased flows for irrigation in the dry season, some flood protection, improved navigation, and vastly improved performance of any future run-of-the-river hydroelectric plants at downstream sites. Benefits to all the basin states would seem to outweigh by far any adverse effects. The precise effects upon fisheries, however, whether beneficial or detrimental, are not yet known and are still being studied.<sup>33</sup> Incidental and inevitable benefits would accrue to the downstream countries even if the project were built as a purely Lao-Thai one. However, in those circumstances, the project would probably be operated to obtain maximum benefits for Laos and Thailand alone. Maximum benefits to the lower riparians could be assured only if all four countries agreed to the adoption of system-wide operating criteria.<sup>34</sup> Furthermore, the likelihood of obtaining international finance for a project as costly as the Pa Mong would be greatly enhanced if the project were presented by the Mekong Committee as a regional, as distinct from a bilateral one. The building of the project

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31. See E. BLACK, *ALTERNATIVE IN SOUTHEAST ASIA* 124 (1969).

32. On the value of inter-ties and grid operation, see Main, *A Peak Load of Trouble for the Utilities*, *FORTUNE* 116 (November 1969). See also Dominy, *Considerations Prerequisite to Implementation of the Pa Mong Project with Emphasis on Operation and Management*, 13 (18 July 1969, paper prepared for the Mekong Legal Seminar) concerning justification of the Columbia River development on the basis of transmission of power to California.

33. See Dominy, note 32, *supra*, at 3-6. See also UNITED STATES BUREAU OF RECLAMATION, *PA MONG PROJECT—STAGE I FEASIBILITY REPORT CONCLUSIONS* (1970).

34. See Dominy, note 32, *supra*, at 17. As stated by Commissioner Dominy:

. . . the downstream benefits would undoubtedly be enhanced by adoption of system-wide criteria. For example, flood control and salinity control in the Mekong River delta would be beneficially influenced by appropriate operation of the Pa Mong Dam and Reservoir. Downstream run-of-the-river power plants would inevitably receive substantial benefit from upstream storage and river regulation; however, such benefits could be enhanced by appropriate, coordinated management of the upstream facilities.

is beyond the resources of the Lower Mekong Basin states alone, but the endorsement and participation of all four countries might furnish the basis for concessional financing on a scale greater than would be possible if the project were considered as a Lao-Thai one.

On the particular subject of administration of the proposed mainstream multi-purpose projects, Committee members and their governments have shown a willingness to consider some novel and imaginative institutional arrangements. They have indicated, in principle, that the administration of mainstream projects should be international,<sup>35</sup> and that participation by representatives of the United Nations or of its specialized agencies, or even of countries from outside the basin was a possibility. No firm decisions have been made, and it is probable that none should be made until the outlines of the necessary financial arrangements are known. In the case of a project such as the Pa Mong, the tremendous amount of external financing needed will probably be sought from a number of international institutions and friendly governments. Those who provide the financing may wish to have a say in the form of institutional arrangements for the project. The basin states must, however, be prepared with their own proposals for those arrangements, and they have already started their homework.

One of the open questions is the role which the Mekong Committee should play at the stages of construction and operation of international multi-purpose projects. There will, of course, be a continuing need for coordination, data collection and planning as carried out by the Mekong Committee at present. There has been some discussion of the possibility that the Committee might be transformed into a kind of basin authority to own and operate the international mainstream projects. Another thought was that the Mekong Committee, if its powers were suitably broadened, could be authorized to establish the necessary entity or entities to administer international projects. An additional idea is that the Mekong Committee members *ex officio*, or a representative of the Mekong Committee, might have a place on the governing body of any entity established to operate an international

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35 As early as 1963, the Committee in its Annual Report stated its hope that the Pa Mong Project "would have an international administration by the countries concerned." COMMITTEE FOR COORDINATION OF INVESTIGATIONS OF THE LOWER MEKONG BASIN, ANNUAL REPORT 1963 § 8 21 (1963) FOR MORE RECENT VIEWS OF THE THAI MEMBER OF THE COMMITTEE, see Binson, Systems of Administration of International Water Resources, 2-9 December 1968 (paper prepared for the United Nations Panel of Experts on Legal and Institutional Implications of International Water Resources Development, Vienna, Austria, December, 1968). See also GARRETSON, note 4 *supra* at 144.

project. There will, however, be a need for an overall regulatory or supervisory body, and the Mekong Committee would seem to be a likely candidate for that role. Through an appropriate extension of its functions and powers, the Committee could serve as the body to provide necessary coordination or regulation of such matters as water storage and release, power production, power grid operation, navigation, irrigation, fisheries, pollution and other water uses.<sup>36</sup>

There are few precedents for an international type of administration of a project such as the Pa Mong, but the Lower Mekong countries have been successful with some pioneering methods in the stage of data collection and planning, and it may well be that they can now go a step further.

Understandably, for reasons of sovereignty, and because of the comparative ease of proceeding alone rather than waiting for negotiation of international agreements, development of international river basins has usually started first with national projects under the administration of one of the basin states. Even so, of course, the agreement of other basin states may be required if they are affected by or could affect the operation of the proposed project.<sup>37</sup> In the Lower Mekong Basin as well, the four countries are following this procedure, since they have started with construction and operation on a national basis of tributary projects.<sup>38</sup> These are smaller, less costly and are giving the countries valuable experience. The Mekong Committee's role in these projects has differed. The Committee has been involved at the

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36. See Wheeler, *The Mekong Committee: A Look into the Future*, ECAFE (Mekong Committee) Doc. WRD/MKG/INF/L 322 (1969). Cf. the powers and activities of the Delaware River Basin Commission under the Delaware River Basin Compact among the United States, Pennsylvania, New York, New Jersey and Delaware, Pub. L. No. 87-328 (Sept. 27, 1961).

37. For arrangements which made possible construction of the High Aswan Dam, see Agreement between the United Arab Republic and the Republic of Sudan for the Full Utilization of the Nile Waters, Nov. 8, 1959, Protocol Concerning the Establishment of the Permanent Joint Technical Committee, Jan. 17, 1960, U.N. LEG. TEXTS. See also the Geneva Convention Relating to Development of Hydraulic Power Affecting More than One State, an early attempt through a general convention to provide guidelines and procedures for negotiations of agreement to permit development of hydro power resources, 36 U.N.T.S. 76, U.N. LEG. TEXTS 143. The convention has been ratified by only eleven states, including Thailand, but none of the other Lower Mekong Basin countries. See also INTERNATIONAL LAW ASSOCIATION, HELSINKI RULES ON THE USES OF THE WATERS OF INTERNATIONAL RIVERS (1967) (see Article IV of Helsinki Rules).

38. As reported by Dr. C. Hart Schaaf, the first executive agent of the Mekong Committee, "The Committee . . . has never expressed the view that it should exercise sole responsibility for all lower Mekong tributary developments, and indeed in three of the countries several welcome tributary projects antedated or are being developed outside its formal purview." C. SCHAAF & R. FIFIELD, *THE LOWER MEKONG: CHALLENGE TO COOPERATION IN SOUTHEAST ASIA* 111 (1963).

stage of planning and investigations, and in some of the projects it has gone further, for example, helping the country concerned to obtain necessary technical or financial assistance for project design or construction.<sup>39</sup> Its role after the national tributary projects come into operation is still evolving. It is serving as a clearing house for information during the stages of construction and operation, so that the four countries assist each other to profit from experience gained in overcoming types of problems which may recur elsewhere. In the future, if the principle of integrated development and operation of water resources of the basin (including tributary as well as main stream projects) is followed, it would be desirable that the international cooperation through the Mekong Committee be broadened to include, for example, coordination or supervision of electrical inter-ties and power grid operation, water releases, pollution control and fisheries regulation.<sup>40</sup>

Coordinated, integrated development and operation is undoubtedly more efficient both technically and economically than uncoordinated development and operation by individual jurisdictions. Even in the United States many regions now face a severe power crisis because of lack of coordinated development and sufficient electrical inter-ties.<sup>41</sup> In the Mekong region, a beginning has been made at the Nam Ngum Project in Laos, where a transmission line (part of which is symbolically owned by the Mekong Committee)<sup>42</sup> crosses the Mekong River to provide power to the Nam Ngum construction site and the city of Vientiane in Laos from a tributary project in Northeast

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39 For example, the Nam Ngum project in Laos and the Prek Thnot project in Cambodia were endorsed by the Mekong Committee, and the committee actively helped the two countries to obtain technical assistance for feasibility studies and project design, and finance for construction.

40 See Wheeler, note 36, *supra*.

41 See Main, note 32, *supra*, at 200. Concerning the situation in the United States, he says:

The absence of any legal requirement to build adequate transmission lines between regions is a startling reminder of the autonomy still enjoyed by the utilities and the impotence of regulatory agencies. The necessity of proper inter-ties was a matter of national concern as far back as 1965, when an overloaded transmission line in Ontario automatically tripped out, starting a power failure that cascaded through the Northeast. Not a great deal has been done since then. . . . With strong transmission lines, a kind of fail-safe system protects consumers against blackouts.

42 Pursuant to an agreement signed in 1965 by Laos and Thailand and countersigned by the downstream basin states and the United Nations as "parties directly interested in the comprehensive development of the Lower Mekong Basin," the portion of the line which crosses the Mekong River belongs to the Mekong Committee. See COMMITTEE FOR COORDINATION OF INVESTIGATIONS OF THE LOWER MEKONG BASIN, ANNUAL REPORT 1969, § 5.19.

Thailand. After completion of the Nam Ngum Project, the flow of power will be reversed, and Thailand will receive power from Nam Ngum.<sup>43</sup>

Even if we assume that the Mekong Committee or another similar inter-governmental organization will be empowered to provide operational coordination and possibly rule-making or regulation on a regional basis, the problem of the specific type of administration for international mainstream multi-purpose projects such as the Pa Mong remains. A closely allied question is who shall participate in the enterprise. There is no one form of institutional arrangement which can be applicable in all circumstances. What has worked well in one river basin cannot necessarily be translated to another. However, an examination of solutions elsewhere may give some perspective.

Although (as at Pa Mong) the site of an international project is the boundary between two countries, the riparians have often chosen to divide the dam, power houses or other facilities between separate administrations in the two countries for purposes of construction and operation.<sup>44</sup> The Iron Gates Project between Romania and Yugoslavia,<sup>45</sup> the projects on the border between Mexico and the United States<sup>46</sup> and on the St. Lawrence between Canada and the United States<sup>47</sup> are examples. Coordination is provided through joint supervisory bodies. This type of solution, although it is workable and does go as far as possible to retain individual sovereign rights, is likely to be a less efficient and more costly solution than an integrated administration.

Another approach to international projects has been through the granting of concessions by each of the riparian states to the same

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43. *Id.*

44. See Fox, Gotzman, Smith & Torti, Administration of International Rivers. Paper Prepared for U.N. Panel of Experts on Legal and Institutional Implications of International Water Resources Development (Vienna, Austria, Dec. 9-15, 1968). The authors conclude that as desirable as the concept of unified management by a single agency may be, the current state of relationships among nations makes such a completely unified approach for international river basins impracticable of accomplishment.

45. See GARRETSON note 4, *supra*, at 127.

46. See Article 7 of Treaty between the United States of America and Mexico Relating to the Utilization of the Waters of the Colorado and Tijuana Rivers, and of the Rio Grande (Rio Bravo) from Fort Quitman, Texas, to the Gulf of Mexico, signed at Washington on 3 February 1944, and supplementary protocol, signed at Washington on 14 November 1944. 3 U.N.T.S. 314, U.N. LEG. TEXTS 236. See also Dominy, note 32, *supra*.

47. See 33 U.S.C. § 981 *et seq.* (1964) (concerning the Saint Lawrence Seaway Development Corporation). See also TECLAFF, note 5, *supra*, at 157.

cessionnaire. This method has often been used in Europe. In the case of Switzerland and her various neighbors, for example, the usual procedure has been that agreement between the riparian states provided the principles upon which concessions would be granted. Thus, a number of concessions on the Swiss-German reaches of the Rhine were granted within the framework of a permanent Swiss-German joint commission established in 1919 by an exchange of notes between the two governments.<sup>48</sup> The usual pattern was that concessions were granted to joint-stock companies incorporated under the law of one of the two countries and qualified to do business in the other. The shareholders included private undertakings, public corporations and mixed organizations incorporated under Swiss and German law. They undertook to accept delivery of the energy produced, in proportion to their shareholdings, and to bear the annual financial charges, including repayment of loans, in the same proportion. In general, shareholdings and seats on the Boards of Directors were divided between the two countries in proportion to their share of the hydraulic energy. (Most of the plants were run-of-the-river type, without storage reservoirs.) There was normally an attempt to maintain a balance between the two countries in distribution of personnel.

In Europe, both private capital and trained personnel necessary to undertake ownership and operation of hydro power concessions are available. They are not likely to be found in the Lower Mekong Basin on the scale required for the tremendous mainstream projects, so that a concession of the Swiss-German type is not a probable solution for the Lower Mekong Basin. It would, of course, be possible to grant a concession to a corporation organized under the law of one of the basin states, and the stockholders of which were the basin states themselves or public organizations of those states. Essentially this procedure was followed for the Danube Power Plant-Jochenstein Joint Stock Company, established by agreement among Austria, the Federal Republic of Germany and the State of Bavaria.<sup>49</sup> Among other things, the company, established under German law, was to construct, own

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48. The concessions were based on principles adopted in the Rheinfelden Agreement of 20 December 1890 which in turn had been negotiated under Article 5 of Convention entre la Suisse et le Grand-Duché de Bade au Sujet de la Navigation sur le Rhin, de Neuhausen jusqu'en aval de Bale Signée à Bale le 10 mai 1879, U.N. LEG. TEXTS 776. See also Zurbrugg, *The International Cooperation of Switzerland in the Field of Boundary Waters* (paper presented to the Mekong Legal Seminar).

49. Agreement concluded 13 February 1952. U.N. LEG. TEXTS 476.

and operate a power plant on the Danube. Shareholders were Austrian and German public entities, with shares divided equally by nationality. In addition, preferred shares without voting rights could be sold to the general public. The Board of Management and Board of Directors were composed of an equal number of representatives of Austrian and German voting shareholders. Financing was to be provided by the voting shareholders, but the contracting states agreed to give necessary guarantees.

The Danube Power Plant-Jochenstein Joint Stock Company is in a sense an example both of a "concession" and of another type of operating organization: the multinational public enterprise. A usual characteristic of the concession is that the concessionaire is organized under the corporate law of one of the basin states. For the Mekong area, the differences in the legal systems of the basin states, the relatively under-developed state of the corporate law, and the unfamiliarity of the potential suppliers of external capital with that law could cause difficulties. These might be avoided through organization of a multi-national public enterprise under an international agreement which would spell out the applicable legal regime, powers and duties of the entity. Reference to local law, if any, could be residual, for matters not explicitly covered in the constituent documents. In a recent study of multinational public enterprises, their characteristics are outlined as follows:

Multinational public enterprises are created pursuant to an agreement between States, which become partners in the venture; sometimes private persons or autonomous public entities are also admitted to partnership. They are subject to a special international regime, established by the agreement between the participating States, which can be limited to an undertaking to create the enterprise under the national law of one of them, or can go to the extent of granting to the enterprise its juridical personality and constituting or prescribing its governing law. These enterprises have a public purpose and are generally granted juridical personality, capital and assets which they use exclusively for their operations, and management autonomy. In addition, a special procedure is generally established for the settlement of disputes between the partners.<sup>50</sup>

A multinational public enterprise which is not a stock corporation but an equal partnership of two countries in a project is the Central

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50. C. FLIGLER, MULTINATIONAL PUBLIC ENTERPRISES 8 (IBRD, September, 1967).



African Power Corporation. The Kariba Project in Zambia and Rhodesia had its genesis when those countries were part of the Federation of Rhodesia and Nyasaland.<sup>51</sup> Upon dissolution of the Federation and formation of the states now known as Zambia and Rhodesia, the Kariba Project was transferred from the Federal Power Board to a new multinational public enterprise, the Central African Power Corporation.<sup>52</sup> The Corporation is a body corporate with full juridical personality. It is composed of a Chairman and seven other members. The first Chairman was to be appointed by agreement of the two governments. Later Chairmen are to be appointed by the Higher Authority for Power, a supervisory body composed of two Ministers appointed by Zambia and two by Rhodesia. Each Government is to appoint three of the other members of the Corporation, "of diverse technical, professional or administrative qualifications."<sup>53</sup> So long as a 1956 loan made by the (British) Commonwealth Development Corporation for the project remains outstanding,<sup>54</sup> a seventh member of the Corporation, acceptable to the Commonwealth Development Corporation, is to be appointed by the Higher Authority for Power.

An interesting example of an even more elaborate multinational public enterprise, concerned with nuclear energy but not with water resources, is The European Company for the Chemical Processing of Irradiated Fuels ("Eurochemic").<sup>55</sup> It was organized as a joint stock company, to be governed by the multilateral convention among the states which organized it, by its statute, and residually by the law of the headquarters state (Belgium). Its shares are held by governments,

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51. See BLACK, note 31, *supra*, at 129.

52. FEDERATION OF RHODESIA AND NYASALAND (DISSOLUTION) ORDER IN COUNCIL 1963, Part III (effective December 21, 1963). Text published in England by Her Majesty's Stationery Office (1963). The *Order in Council* followed an AGREEMENT BETWEEN THE GOVERNMENT OF SOUTHERN RHODESIA AND THE GOVERNMENT OF NORTHERN RHODESIA (now Zambia), Southern Rhodesia Government Notice No. 567A of 1963, by which the project was to continue as a single integrated system under joint ownership. Each country undertook in its own territory to enact identical legislation which constituted the charter of the Corporation and agreed not to amend that legislation without the consent of the other government.

53. AGREEMENT, note 52, *supra*, § 1.

54. The loan was originally made to the Federal Power Board. Liability for it was assumed by the Central African Power Corporation. AGREEMENT, note 52, *supra*, § 1.

55. The Company was established by 12 European countries under the auspices of the European Nuclear Energy Agency, pursuant to a Convention signed December 20, 1957, by Austria, Belgium, Denmark, France, Federal Republic of Germany, Italy, Norway, Netherlands, Portugal, Sweden, Switzerland, and Turkey, and later by Spain. The statute of the company is an annex to the convention. See Fligler, MULTINATIONAL PUBLIC ENTERPRISES, INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT (September, 1967, Annex).

public entities and some private enterprises. Its governing body is the General Assembly, composed of all the shareholders. However, representatives of the European Nuclear Energy Agency and of the European Atomic Energy Community (Euratom) are to take part in the General Assembly in an advisory capacity.<sup>56</sup> The General Assembly appoints members of the Board of Directors; each shareholder or group of shareholders which holds shares equivalent to 5% of initial capital is entitled to propose to the General Assembly the appointment of a director.<sup>57</sup> The Board of Directors, which is responsible for managing the business of the company, may delegate all or part of the management to one or more of its members or to third persons. It is to draw up rules of management which must be approved by the General Assembly.<sup>58</sup> Decisions of the Board of Directors are by majority vote except for certain matters for which a 2/3 majority is required.<sup>59</sup> Representatives of the European Nuclear Energy Agency and of Euratom take part in sessions of the Board in an advisory capacity.<sup>60</sup>

At the Mekong Legal Seminar<sup>61</sup> there was lively discussion of the appropriate form of enterprise to handle operation and administration of mainstream projects. Consideration of possibilities covered a wide range, including a preliminary draft of a proposal for an international public enterprise to administer the Pa Mong Project.<sup>62</sup> Additional discussions among representatives of the basin states are continuing. Even a decision as to the basic type of enterprise desired would be only one step. No such decision has yet been made, but it was clear that the draft of a proposal raised more questions than it answered. Closely intertwined with the decision as to type of enterprise is the question of who will participate in it. For the Pa Mong Project, the probable choices range from participation limited to the two countries in whose territories the project is physically located; or broadened to include the two lower basin states as well; to participation in some form by the

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56. STATUTE OF THE EUROPEAN COMPANY FOR THE CHEMICAL PROCESSING OF IRRADIATED FUELS (Eurochemic), Art. 10. Fligler, note 55 *supra*.

57. *Id.* at Art. 18.

58. *Id.* at Art. 21.

59. *Id.* at Art. 23.

60. *Id.* at Art. 18.

61. See note 30, *supra*.

62. Clark, The Pa Mong Project, ECAFE (Mekong Committee) U.N. Doc. WRD/MKG/INF/L. 354.

United Nations or other international agencies; or possibly by other countries or entities outside the basin if they are involved either as financeers or customers for purchase of power. The examples of the Central African Power Corporation<sup>63</sup> and Eurochemic<sup>64</sup> show some ways in which outside parties have in other instances provided a type of impartial steadying force somewhat similar to the "U.N. presence" which has proved beneficial during the initial stage of the Mekong Committee's operations.

There is a wide diversity of possible types of institutional arrangements for administration of international water resources projects, and it is clear that the particular form must be tailored to fit the circumstances of the individual case. Among the forms of administrative arrangements illustrated above, the multinational public enterprise would seem to hold the most promise for a project such as the Pa Mong. The institutional arrangements for the project should include provision for participation in some form by all four of the basin states. This participation could, for example, be at two levels, i.e., directly, within the entity established to administer the Pa Mong, and also at a higher level, possibly through a Mekong Committee of expanded powers, to provide coordination and regulation of the Pa Mong and of other water resources projects in the basin.

A multinational public enterprise type of administration for the Pa Mong Project could easily accommodate participation by all four basin states, and such participation could be weighted for differing degrees of control if that were necessary to conform with the varying interests. It could also be the vehicle for participation by international agencies or even by countries outside the basin if that were thought to be desirable. The "U.N. presence" has been valuable in the early stages of Lower Mekong Basin development, and some form of participation would be useful during the stages of construction and operation of international mainstream projects as well.

The Pa Mong Project has great potential benefits for all four of the basin states, and participation by all four, rather than merely by the two (Laos and Thailand) in whose territories the physical project is located, would help ensure that the project would be operated for maximum benefit basin-wide. A regional, as distinct from a bilateral approach, to the project, should also be helpful, and may be essential, for obtaining the tremendous amounts of financing required. Even if

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63. See text accompanying notes 51-54, *supra*.

64. See text accompanying notes 55-59, *supra*.

the direct contributions of the lower riparian countries were nominal, their participation and sponsorship might furnish the basis for concessional financing from sources outside the basin in amounts substantially greater than those available if only two countries are involved.

The task confronting the Mekong Committee and its member countries is a monumental one. The strains may be great, but the climate of cooperation fostered over the past decade by the Mekong Committee in the field of water resources development is a favorable omen. The potential benefits from continued, broadened cooperation for integrated, coordinated water resources development are enormous. Let us hope that with the impetus given them by the Mekong Committee, the states of the Lower Mekong Basin can meet the challenge.