



International Rivers and Lakes

A Newsletter issued by the Department of Technical Co-operation for Development
United Nations, New York

No. 7

UNST
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November 1986

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Declaration of Iguazú: international river aspects 1/

The Declaration of Iguazú was signed on 30 November 1985 at Foz do Iguacu by the Presidents of Argentina and Brazil. It refers to a wide array of matters subject to international co-operation, including issues concerning international river basins. In this connection, in considering co-operation in the River Plate basin, the parties expressed the political will of the two nations to promote with renewed vigour and on a pragmatic basis bilateral and multilateral action aimed at achieving the objectives of the Treaty of Brasilia.

The Presidents also stated their decision to proceed jointly with the Garabí Binational Hydroelectric Project, on the basis of a timetable guaranteeing conclusion of the basic project and the relevant documentation within 12 months after the signing of the Declaration. Thus, subject to the development and co-ordination of their respective national grids, the project can be expected to come into service in accordance with the two countries' construction plans, between 1995 and the year 2000.

Both Presidents also welcomes Argentina's decision to execute, in conjunction with Brazil, the Pichi-Picun-Lenfu hydroelectric power works.

Transboundary Impact: Togo affected by the Akosombo Dam in Ghana's portion of the Volta River 2/

The lack of new sediment has caused Togo's coastline to move inland about 135 meters since 1980. The country's coastal road along the Gulf of Guinea has had to be rebuilt twice, and Lome, Togo's major port, is threatened.

The Akosombo Dam on the River Volta in Ghana is the "prime cause of one of the most dramatic examples of coastal erosion in the world", according to George Rossi of the University of Benin. Sediment carried down-river by the Volta into the Gulf of Guinea at one time compensated for the erosive action of waves in the Gulf. Since the Akosombo was built in 1965, however, its reservoir retains nearly all the sediment. According to the news agency Earthscan, what little sediment remains cannot be deposited because Lome's main pier slows and diverts the lateral currents sweeping the coast.

Rossi says that the phenomenon is moving westward, with the Benin coast now coming under attack and the effects of erosion expected to reach Lagos, Nigeria. Land-locked countries such as Niger, Mali and Burkina Faso also could be affected since Lome is their main transit port. According to Rossi, those problems could have been avoided with better planning, even if it was only better planning of the site of Lome's pier. But, he said, because the countries needed them, the dam and the port were constructed without anticipating what might happen in ten years' time.

Nile River 3/

It is proposed that the use of Nile River water be co-ordinated through the formation of an authority, the membership of which is now being considered

by Egypt, Uganda and Sudan. Zaire and Burundi are potential members and Kenya, Rwanda and Ethiopia have also been contacted. The authority would conduct surveys and draw up integrated plans for providing water to each country in the river valley.

The Ixtapa Working Group produces a draft agreement relating to the use of transboundary ground-waters^{4/}

Background information

Ground-water is a common resource which can exist within national boundaries or across international frontiers. In the latter case, it is subject to the use of each one of the countries overlying the aquifer, any one of which has an incentive to capture as much of the resource as possible, since the volumes beyond its control would likely be abstracted by the other shareholders of the aquifer.

In the long term, the incentive that each country has to use as much water as possible would, lacking a controlling agreement, deplete the aquifer, lead to non-efficient expenditures and increase the potential for international conflict.

The situation prompted the Ixtapa Working Group, a multi-disciplinary assembly of water specialists, to meet over a period of three years to prepare a draft agreement for the allocation and management of transboundary groundwaters. Two United Nations experts participated in the discussions; the final draft reflects the experience of the working group with the particular needs of the United States-Mexican frontier regions, since most members had theoretical knowledge and practical experience with the water problems of that border.

Working premises

In drawing up the draft agreement, the Working Group relied on a set of basic assumptions, namely, that:

(a) In areas where supplies are interrelated, management of surface and ground-water must be conjunctive;

(b) Legal rights should be related to the control and use of water, not to the ownership of water;

(c) There should be reasoned development schemes;

(d) There is a need for hydrologic information to determine sustained yield and to prevent salt-water intrusion;

(e) Well withdrawals should be measured and recorded;

(f) Drilling controls must be placed for those areas where present and future uses might be endangered;

(g) Allocation procedures and planning processes must be flexible, allowing for transfers, minimization of conflicts and shortages and planned depletion;

(h) Management must include water quality matters and should be entrusted to an agency with sufficient authority;

(i) Shared groundwater should be used according to the principles of equitable apportionment. Analogical application of surface water principles may be made, if needed;

(j) The shares that each country is allotted in the allocation of the waters of international drainage basins should take into account the amount and quality of the ground-water available to the affected countries;

(k) The allocation of shared ground-water should be determined through deliberations and negotiations;

(l) Each country should manage, allocate and enforce the rights to the waters that it has been allocated according to its own jurisdictional rules and political subdivisions;

(m) There should be a commission with enough supervisory power to ensure that each party abides by its obligations;

(n) Prolonged droughts should authorize the Commission to use transboundary groundwater as drought reserves;

(o) The draft agreement is based on the sovereign power of nations to enter into agreements.

The draft Convention

The key concepts of the draft Convention are as follows: (a) common interest; (b) creation of a joint commission; (c) designation of transboundary ground-waters conservation areas; (d) enactment of comprehensive plans for rational management and protection of the waters; (e) allowance for planned depletion; (f) provision of a drought management plan; (g) transfers of transboundary water; (h) protection of water quality; and (i) provision for public health emergencies.

The draft itself foresees sixteen possible articles. Article I deals with agreement definitions, including the following concepts: aquifer, border area, drought, ground-water, impairment, interrelated surface water, mining, pollutant, pollution, recharge, state, sustained yield, commission, transboundary water conservation area and transboundary water. Article II determines the common interest and responsibility that the parties have in ensuring the amicable, prudent and equitable use of ground-water according to the principles of equitable sharing optimum use, and quality protection, through the development and sharing of adequate and reliable information.

Article III states that the implementation of the functions and responsibilities provided for in the agreement will be entrusted to a joint agency to be known as "The Commission". As indicated in article IV, the Commission will be responsible for the following:

(a) The identification, investigation and verification of transboundary ground-waters and the underground environment through continuing research programmes;

(b) The creation and maintenance of comprehensive and co-ordinated point data files, to be continuously updated;

(c) The collation, analysis and dissemination of timely information and data resulting from inventories, examination and studies, to be provided by the parties, in accordance with Commission requirements.

According to article V, the Commission will determine the desirability of declaring any area within the border area containing transboundary ground-waters to be a Transboundary Ground-water Conservation Area. While the determination of the Commission is not obligatory per se, it becomes so if the parties fail to object to the determination within a given deadline.

The substantive facts that validate the creation of a Transboundary Ground-water Conservation Area are: (a) endangerment of yield or water quality; (b) reduction of surface water quantity or quality through the pumping of ground-water; (c) need for prudent water management; (d) endangerment of an important source of drinking water supply; (e) aquifer contamination; (f) drought conditions which necessitate emergency management.

In declaring transboundary conservation areas, it is considered that water quality may be impaired through point- or non-point source pollution, and adverse effects on waters previously allocated by agreement between the parties may be taken into account.

The status of transboundary ground-water conservation areas will be under continuing study in order to review: (a) the appropriateness of such a status (b) the terms of the Declaration and (c) the desirability of declaring additional conservation areas. Such determination shall be made at intervals not to exceed ten years.

Article VI establishes the measures that can be taken by the Commission according to a comprehensive plan for the rational development, use, protection and control of the waters of the conservation area. In this connection, the Commission may: (a) equitably apportion water uses; (b) prescribe interim measures such as pumping limitations, criteria for well regulation, pumping fees, ground-water reservation and data collection and reporting; (c) prescribe permanent measures to govern abstraction of ground-water within the transboundary ground-water conservation area, after monitoring the effects of interim measures for a reasonable time; (d) in the case of a demonstrated need, approve advances against future planned withdrawals, over and above the allotted shares for the current year.

The Commission shall carry out continuing studies to determine the appropriateness of interim measures.

In making the decision concerning article VI, the Commission will consider the following: (a) the geography, geology and hydrogeology of the area; (b) the existing utilization by each party, paying special attention to present and future possible uses, particularly those related to human consumption, health, sanitation and public safety; (c) the protection of water quality necessary for the utilization of the shared resources by each party; (d) economic implication; (e) water conservation and efficacy in water management; and (f) other factors.

The relative weight to be given to each factor is a function of the particular situation of each area. Every factor has to be considered within an ongoing process - flexible approach combining apportionment and interim measures - in determining what is an equitable share, or an appropriate interim measure.

The Commission may determine what is an appropriate sustained yield through the consideration of economic, hydrological and hydrogeological criteria.

Determination of equitable apportionments and interim and permanent measures made by the Commission shall be considered firm if they are not objected to by the interested parties within a certain time.

Article VII authorizes the Commission to allow the planned depletion of any aquifer, provided that this course of action is consented to by the parties concerned. In carrying out a depletion plan, the Governments shall make annual reports to the Commission.

Reflecting the background of the group members, article VIII of the draft agreement sets up rules for drought conditions, to be applied through a Drought Management Plan, which is the instrument for administering and allocating water at times of scarcity.

The plans for drought management, which must be approved by the Governments concerned, may provide for conjunctive management of surface and ground-water - using the latter as a drought reserve. The application of the plan is entrusted to the Commission, which may declare a drought alert and impose measures for emergency management. However, actual enforcement of the measures is left to each Government, which may enact additional extraordinary measures if they are needed. The binding power of the emergency measures ceases with the termination of the drought alert.

Article IX provides for transfers of transboundary ground-water, if they are agreed upon by the Commission and are consistent with the programmes for the protection and management of the quantity and quality of ground-water.

The Working Group considered the question of water quality and suggested three alternative solutions to the problem, all of which are contained in article X of the draft agreement.

According to the first alternative proposal, the parties should respect the duty of international law and not cause appreciable harm to each other.

The role of the Commission is limited to a biennial review and assessment of the actions of the parties.

While the second option does not significantly increase the powers of the Commission itself, it does, however, emphasize the duties of the parties, both concerning the monitoring of pollution and vis-à-vis the Commission. Thus, the parties shall classify water according to use, and monitor pollution. To this end, they must: (a) identify toxic and hazardous pollutants; (b) maintain a continuing record of such substances from origin to disposal; (c) monitor storage of toxic wastes, and (d) provide the Commission with an inventory of dumping sites.

The Commission prepares reports assessing the performance of the parties, which will furnish the Commission with relevant information, according to the reporting schedules. Actual enforcement of standards and regulation is left to the parties.

The third option strengthens the authority of the Commission by giving it the power to formulate a water quality protection plan which would prevent and eliminate the degradation of transboundary water quality. Furthermore, the Commission is given the authority to classify ground-water according to use and to promulgate standards and regulations, including the designation of protective zones for land use. Actual enforcement is left to the parties concerned, who will apply the measures in ground-water and recharge areas. However, the Commission will review and assess the measures taken within the jurisdiction of each party and report on their adequacy and effectiveness.

In further emphasizing the connection between water quality and well-being, article XI addresses the question of public health emergencies, which the Commission may declare in effect following notification to the Governments upon a determination of imminent or actual contamination of ground-water.

The Declaration will be in effect for a fixed period of time; it empowers the Commission to investigate the situation, to alert the affected parties and, in consultation with them, to undertake measures to eliminate the danger.

Article XII, entitled "Administration", encompasses the wide range of powers entrusted to the Commission. While the actual administration of transboundary ground-water will be left to each party, the Commission will monitor, review, assess and report the measures undertaken by the parties, who will furnish the necessary information. In reporting, the Commission will evaluate the adequacy and effectiveness of programmes of use, protection and control of ground-water.

In addition, the Commission may enact rules, standards and regulations, which become binding on the parties if not rejected within 180 days of issuance.

The Commission is also charged with the settlement of disputes arising out of the agreement.

Articles XIII, XIV, XV and XVI provide for existing rights and regulations, amendments, entry into force and resolution of disputes. There is no draft proposal related to the latter matter, for it was felt that questions of this importance would have to conform to the needs of the parties concerned.

ASEAN: agreement on conservation with water resources implication 5/

An agreement on the conservation of nature and natural resources, which refers to water in several clauses, has been entered into by the Association of South East Asia Nations (ASEAN). It was signed at Kuala Lumpur on 9 July 1985 by the following countries: Brunei Darussalam, Indonesia, Malaysia, the Philippines, Singapore and Thailand.

The objective of the treaty is to develop conservation strategies which will be co-ordinated within a regional framework. The measures to be undertaken will aim at maintaining essential ecological processes and life support systems, preserving genetic diversity and ensuring the sustainable utilization of harvested natural resources (article 1).

As it refers to water, the agreement provides for: (a) conservation of fresh water and marine habitats (article 3); (b) conservation of underground and surface water resources; (c) promotion and development of hydrological research, focusing in particular on watershed characteristics; (d) regulation and control of water utilization, with a view to achieving continuous and sufficient water supply and (e) incorporation of environmental principles within water resources planning (article 8).

Specific provisions emphasize the relationships among critical habitats, natural ecosystems, adequate wetland management (article 10) and water pollution control (article 11).

Other articles provide for protected areas in relation to fresh and marine waters, reserves of special water catchment areas, and buffer zones, which might include the watersheds of rivers flowing into protected areas (article 13).

Further provisions concerning impact assessment (article 14), research (article 15), education (article 16), international co-operation (article 18), shared resources (article 19) and transfrontier environmental effects (article 20) will prove useful not only for water resources management, but will also serve as standards for settling differences on the use, conservation and protection of international rivers.

In the latter connection, settlement of disputes by consultation or negotiation, as established by article 30, is particularly relevant. Unfortunately, the agreement did not provide for third party resolution, such as arbitration or adjudication.

Monitoring and evaluation of transboundary water pollution ^{6/}

A preliminary survey on the subject of monitoring and evaluation of transboundary water pollution has been released by the secretariat of the Committee on Water Problems of the Economic Commission for Europe.

The survey is not limited to measures and techniques agreed upon by riparian countries, but treats also the question of quality control (including pollution controlling measures and the question of accidental pollution) and monitors the impact of joint measures for water quality control.

It also covers matters concerning agreements, transboundary water commissions, control of transboundary water quality, control of accidental pollution and co-operation without contractual arrangements.

A. Agreements

A two-fold approach is used by the ECE governments when tackling the issues of transboundary water quality. Thus, some countries have incorporated relevant legal provisions within agreements covering the whole length of the frontier, while others have resorted to special agreements designed to prevent and control water pollution in identified and specific water bodies. However, both kinds of approach present some common features, for example the recognition of the technical relevance of the watershed.

According to the report, transboundary waters may comprise river stretches along state borders and surface and ground-waters transected by state borders, whether they are flowing or dormant waters.

B. Transboundary water commissions

While few agreements provide details on water quality management or on technical aspects of monitoring and evaluation of pollution, many treaties contain specifications on procedural matters, such as the creation of joint commissions. Alternative arrangements include meetings of contracting parties or government representatives, and the setting up of expert panels, either on a permanent or an ad hoc basis.

Water-quality control may include, inter alia (a) standard setting; (b) enactment of monitoring and evaluation regulations; (c) observation and appraisal of the state of transboundary water quality; (d) comparison of monitoring results; (e) exchange of information; (f) management planning; (g) elaboration of water quality forecasts; (h) recommendations for sewage treatment plans; (i) land-use planning and technical research.

Most contractual arrangements contain clauses refraining from unilateral action, meaning that no party would carry actions or works with a possible negative effect on other parties without the consent of the latter.

Special reference is made to commissions with wide-ranging powers, for example, the International Boundary and Water Commission of the United States and Mexico, and the Swedish-Finnish Frontier River Commission.

The former is entrusted with planning, construction, operation and supervision of water projects; the latter grants permits for the use and discharge of water, including the issuance of licences, and the setting of requirements and measures to prevent and control pollution.

In addition, a survey of the functions of the joint Commissions reveals that they can be entrusted with research, control, drafting and information responsibilities.

C. Control of transboundary water quality

According to the report, there are two basic co-operative approaches to the monitoring and evaluation of transboundary water pollution, as well as interpretation of the findings: (a) contracting parties take joint samples, process them according to common procedures, and compare results; (b) the parties, individually, carry out sampling and analyses, according to a common methodology and programming, and send the results to the joint Commission for verification, processing and in some cases publication.

Common to both approaches is the joint evaluation of results. However, since the selection of sampling sites can be influenced by a number of factors, it is considered advisable to obtain continuous water quality data through the use of automatic monitoring stations. According to the survey report, this procedure would also allow for the conservation of resources.

There are some sampling parameters that are common to most monitoring programmes. Typically, they will comprise data on dissolved oxygen, temperature, pH, conductivity, oxygen demand, nutrients and, to a certain extent, heavy metals. However, in some cases, attention is also being given to phenols, chlorinated organic compounds and, in general, to toxic, persistent and bio-accumulative pollutants.

Lakes present issues of their own; the main problem is normally one of eutrophication. Thus, data are required for substances responsible for that process. However, recent efforts also keep track of heavy metals. In addition, multi-disciplinary teams take notice of the economic, social and environmental variables that can be related to, or affected by, water quality problems.

Common procedures are not only applied to sampling and monitoring, but they are also used in analysis, interpretation and evaluation of results.

Follow-up actions might include concerted efforts to improve water quality.

D. Accidental pollution control

Accidental pollution, such as that resulting from oil spills, is becoming common. In this regard, an increasing number of riparian countries are applying advanced techniques for monitoring and combating accidental pollution.

E. Non-contractual arrangements

The survey points out that some countries such as Greece, Spain and Portugal are carrying out joint actions, although agreements have not as yet been reached. It also emphasizes the need for common standards to be applied in the use and protection of Danube waters.

Report on sharing and development of international waters

A Regional Symposium on Water Resources Policy and Agro-Socioeconomic Development was held in Dhaka, Bangladesh, on August 4 to 8, 1985. A report on the sharing and development of international waters was drafted by a panel of experts on the subject. It stressed the importance of co-operation among co-basin states and the relevance of political will in ensuring a reasonable and equitable share of the waters of international water-courses.

Several principles of international water law, such as mutuality of interest and prohibition of substantial harm, were acknowledged. (It should be pointed out that recent documents of the International Law Commission and the World Bank refer to appreciable harm, which implies a somewhat higher standard of behaviour).

Special reference is made to the duty to engage in good faith negotiations and to inform and consult regarding all activities affecting shared water and other resources, including ground-water. Attention is also paid to the importance of ensuring such flows as are necessary for the maintenance of ecological balance and environmental quality. The need for permanent planning bodies and integrated development was also recognized. Such bodies should consist of representatives of the co-basin states.

Finally, for rivers involving more than two riparian countries, the right of every riparian to be involved in negotiations concerning the river was upheld, together with the right of any riparian to resort to third party adjudication on matters of admission to negotiations.

Report on the law of the non-navigational uses of international water courses 71

A preliminary report on the law of the non-navigational uses of international water courses has been prepared by Stephen C. McCaffrey, Special Rapporteur of the thirty-seventh session of the International Law Commission. While most of the report is a summary of former works - which have been described in previous newsletters - it also includes an outline of the future programme of work.

The report points out that although certain issues have not been fully resolved, there is broad agreement on the vital nature of the topic itself. Accordingly, future work should be aimed at making further concrete progress in the form of the provisional adoption of draft articles. Consequently, the rapporteur would recommend that the articles referred to the drafting committee in 1984 should not be subject to another general debate in 1986.

It is suggested that the discussion of those articles be confined, in principle, to any responses there may be to the views expressed on them in the next report of the Special Rapporteur.

Reflecting the general acceptability of the outline formulated by the previous Special Rapporteur, (Jens Evensen), the present Special Rapporteur proposes following the general organizational structure provided by that outline in elaborating further articles.

Symposium on water resources

An interregional symposium on improved efficiency in the management of water resources, which follows on the implementation of the Mar del Plata Action Plan, will take place at United Nations Headquarters, New York, from 5 to 9 January 1987. It will be organized by the Water Resources Branch, Natural Resources and Energy Division, Department of Technical Co-operation for Development of the United Nations Secretariat.

The immediate objective will be to discuss a set of constraints to the implementation of selected aspects of the Mar del Plata Action Plan, and alternative measures to improve related efficiency considerations. Accordingly, the following subjects will be considered: (a) management and mobilization of financial resources, including institutional problems; (b) management of human resources, including appropriate training; (c) management of technology, including considerations on the applicability of appropriate technologies; (d) management of water quality; and (e) management of natural hazards, including drought, desertification and floods.

The long-term objective of this interregional symposium is to contribute to increased efficiency in the management of water resources. Its findings will be presented to intergovernmental bodies in the course of 1987, 10 years after the recommendations of the United Nations Water Conference were adopted by the General Assembly.

Book review

A new book on water law and management was published in 1985 by William S. Hein and Company, Inc. The book, entitled Water Law in Historical Perspective, was written by Ludwik A. Teclaff. In this book, Professor Teclaff has rearranged and combined the most pertinent part of his writings over the past two decades to present a story of the development of water law and management which has relevance not only for the present, but may also influence the future.

In Part I, he shows how the different water law systems arose and expanded, embracing not only new territories and peoples, but also a wider range of water resources, from surface streams and lakes to ground-water and atmospheric water. In this expansion there was a constant search for the optimal unit of management, for the most efficient methods of use (as water became an increasingly scarce element under pressure of demand), and, more recently, for types of use that have the least destructive impact on the resource itself and on the environment as a whole.

Part II deals with the development of water management beyond state boundaries. Navigation forms an important segment of this second part, but, like municipal water law, international water law expanded to regulate new uses and different types of water resource. Predictably, surface waters were the first to be regulated, but as the threat of pollution has grown, transboundary ground-waters have become the focus of a search for appropriate international regimes. Pollution by toxic wastes is a problem of especial concern in a transboundary context, because its control involves land use regulation and potential encroachment on national sovereignty. Professor Teclaff feels that under pressure of an acute hazard, the drainage basin, which seemed for a time to be in danger of eclipse, may be regaining its claim to be the optimal areal unit of management.

Ludwik A. Teclaff is Professor of Law at Fordham University School of Law and a noted author on the management and use of natural resources. The present study draws on law review articles and conference papers, and on his books, especially The River Basin in History and Law; Abstraction and Use of Water: A Comparison of Legal Regimes; and Legal and Institutional Responses to Growing Water Demand.

Call for documents and participation in information exchange

In view of the scope and purpose of the Newsletter, the editor would like to encourage all those who are in a position to do so to contribute to the information exchange exercise with news items or documents. To date the response has been encouraging, and it is hoped that a growing network of interested readers will be willing to take an active part in the exercise.

Individual copies of the Newsletter are available on request. Requests should include the names and addresses of offices and officials wishing to receive copies.

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NOTES

1/ See A/41/112.

2/ See International Water Report, vol. 8, No. 4, autumn 1985.

3/ Ibid.

4/ See Ann Berkley Rodgers and Albert E. Utton, "The Ixtapa Working Group produces a draft agreement relating to the use of transboundary groundwaters", Natural Resources Journal, vol. 25, (1985).

5/ See Environmental Policy and Law, No. 15, p. 64.

6/ See Economic Commission for Europe, Committee on Water Problems, "Monitoring and evaluation of transboundary water pollution" (ECE/WAT/R.135).

7/ See A/CN.4/393.