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1. THE ARAL SEA CRISIS

1.1. The Biophysical Dimension

Once the world’s fourth-largest inland body of water, the Aral Sea, has shriveled to occupy half its former area and to a third of its volume. The Aral Sea fell victim to a drive led by Soviet planners, who decided in the 1960s to make their country self-sufficient in cotton and to provide employment for a rapidly growing population. Irrigation water was thus diverted from the Amu Darya and from the Syr Darya rivers flowing into the inland sea. This diversion of water accentuated the shriveling of the sea by natural processes. As a result, besides the disappearance of the water itself, disaster conditions also spread to large portions of the territories upstream of the Aral Sea: productive wetlands in the deltas have dried up; salt dust from the bed of the drying sea and chemicals from fertilizers used in cotton fields have endangered the health of millions of people living in the region; in addition, salinity in the rivers has risen to very high levels, entailing serious threats to soil productivity.

President Mikhail Gorbachev’s ascension to power in 1985 brought to light the dimensions of the crisis. The Aral Sea was nearly biologically dead and rapidly diminishing in size, while formerly productive land was dead or dying. On attaining independence in 1991, the water management system and associated investments and transfers provided by the central planning system in Moscow were gone, and the potential for conflict was very high. The five new Central Asian republics (Kazakhstan, the Kyrgyz Republic, Tadjikistan, Turkmenistan, and Uzbekistan) thus recognized the urgency to react to this issue.
1.2. The Historical and Political Context

With the demise of the former Soviet Union in December 1991, five new countries emerged in Central Asia. Together with Afghanistan, they became riparians to the Amu Darya and Syr Darya rivers, which are two important international watercourses. This new political situation meant that paradigm shifts had to take place: the recently established States had to manage two international watercourses in accordance with principles and rules of international law in the context of their new mutual relationships, relationships that were no more of a domestic nature as they had been during the Soviet period. Moreover, the central planning and management system for energy, food, and other economic activities, put in place during the Soviet era was suddenly withdrawn and had to be replaced by a regional cooperative system between the riparian States. In addition, the five countries, regarded by the central Soviet planners before 1991 as a single agricultural region for economic purposes, have since developed different views with respect to water uses. Hence, the upstream States claim water for hydropower uses, while the downstream States mainly rely on water for agricultural uses.

The collapse of the former Soviet Union also brought to the fore an ecological catastrophe of great magnitude, the disappearance of the Aral Sea. The prevailing ecological system has its roots in mismanagement and diversion of rivers flowing into the Aral Sea. The present actors have inherited the pillars of the previous allocation system and have to work on these bases when renegotiating their agreements and putting in place joint institutions. The actions adopted so far regarding the Aral Sea Basin are set against this background, namely that a sustainable water management system based on an adequate framework of benefit to all riparians should be established. Several legal and institutional steps have been taken in this direction, although there is a need for further action to elaborate viable instruments based on a common understanding of all five riparians. These accomplishments constitute confidence-building measures that are necessary in order to reach agreement over a wide array of issues, some more contentious than others.

The Aral Sea crisis was to be dealt with at a basin level, taking into consideration the particularities of the Aral Sea Basin. The regional dimension was thus defined by the drainage future of the area. The Aral Sea is a closed drainage area, the characteristic feature of which is a marked variety of relief forms. Plains cover its western and central parts; the southern part is occupied by large mountain ranges. The rivers of the basin are fed predominantly by snowmelt, glacier-melt, or both. Rivers flow from the mountains onto the plains and are mainly exhausted and disappear in the deserts' sands, with the exception of the
The two largest, the Amu Darya and the Syr Darya, which cross the deserts and flow into the Aral Sea. The Amu Darya rises from Tadjikistan and Afghanistan and flows through Uzbekistan and Turkmenistan to the Aral Sea. The Syr Darya rises in the Kyrgyz Republic and flows through Tadjikistan, Uzbekistan, and Kazakhstan into the Aral Sea.3 Except for Kazakhstan, about 90 percent of the territories of the four other countries are within the basins of the two main rivers.

The Aral Sea crisis has to be seen in a broad context, which includes the management of water and agriculture in the entire Aral Sea Basin, the root cause of the problems. The interactions between physical, environmental, economic, political, and social factors must be taken into account, as they all play a role in the crisis.4 It is interesting to note that while these newly independent States made arrangements for water distribution, they did not make such agreements regarding other resources such as oil and gas. Nonetheless, differences of opinion have emerged with respect to water, and notably as regards its scarcity. It should also be noted that the focus of attention, which in the past was the depletion of the Aral Sea, has moved toward better management of the international watercourses. Kazakhstan seems to remain the only country that shows some interest in the preservation of what remains of the Aral Sea at least of its northern part, known as the “Little Aral Sea.”5

In particular, Kazakhstan has worked with the World Bank for several years in order to develop and implement a lasting strategy to improve water management and to rehabilitate the Northern Aral Sea (NAS). The latest project deriving from the cooperation with the World Bank was approved in 2001 and is expected to cost about $86 million of which 75 percent will be financed by the World Bank (IBRD). In its first phase, the project aims at rehabilitating the NAS by building a dike across the channel connecting the NAS to the larger Aral Sea. It should also improve the hydraulic structures on the Syr Darya, as well as rehabilitate a dam (the Chardarah dam), restore aquatic resources, and develop fisheries.6

2. ANALYSIS OF RELEVANT INSTITUTIONS AND ACTORS

2.1. Identification of the Relevant Institutions and Actors

2.1.1. A Plan for Action: The Aral Sea Basin Program

At the request of the five Central Asian republics, a number of international and organizations such as UNDP, UNEP, the World Bank, and the European Union (hereafter the donors) provided support to enable these countries to elaborate ideas for long-term solutions. This culminated in
the adoption by the five Central Asian republics of a comprehensive Aral Sea Basin Program (ASBP) in January 1994. The ASBP attempts to deal in a comprehensive fashion with the full range of problems inherent in the Aral Sea crisis. It is a transboundary and multi-sectoral agreement, including measures devised to develop sustainable water and related land resources management strategies, improve the information system needed for all planning and management activities, mitigate the impacts of environmental degradation, ameliorate the conditions in the upper watersheds and the area adjacent to the sea, and strengthen the implementation capabilities of the competent regional institutions.

The ASBP has four long-term objectives: (i) to stabilize the environment of the Aral Sea Basin; (ii) to rehabilitate the Disaster Zone around the sea; (iii) to improve the management of the international waters of the basin; and (iv) to build the capacity of regional institutions to plan and manage these programs. It is also intended to assist the riparian States in cooperating and adopting sustainable regional policies to address the crisis, as well as to provide a framework for establishing national macroeconomic and sectoral policies with a view to achieving sustainable development of land, water, and other natural resources.

It was recognized at the outset that achieving these objectives—which in fact were supposed to reverse forty years of water resource mismanagement and environmental destruction—would be an enormous undertaking and would have to be approached in gradual phases. The first phase of the program, placing emphasis on assistance to the people of the Disaster Zone, and building up the knowledge base and the institutions required to deal with longer-term issues, is to be completed in three to four years. In the next stage of the program, attention should be focused on a few strategic regional water management problems, and on intensifying complementary efforts at the national level, both to meet the needs of the people of the Disaster Zone and to promote sustainable resource use in the basin. Stabilizing the environment, rehabilitating the disaster zone around the Aral Sea, improving the management of international waters, and building the capacity of the regional institutions were identified as core elements of the core regional program. The last stage, which should be completed by 2025, should expand and continue the program already undertaken.

The heads of States have met at least once a year in the past eight years to develop, approve, and express continued support for the program. Moreover, the basin State governments have acted to realize watershed-wide gains where it was clear how to do so. An Immediate Impact Project was added to the ASBP in 1995, in order to meet the needs of people in the Disaster Zone as quickly as possible.
Among the objectives to be achieved through the ASBP, was the improvement of the management of the waters of the basin as well as the strengthening of the capacity of institutions in charge of this management. The elaboration of an appropriate institutional and regulatory framework was a means to this end.

2.1.2. The First Legal and Institutional Steps

Committed to avoiding conflict over water issues after their independence, the five Central Asian States immediately put in place interim arrangements and institutions for water sharing. They were aware of the need to elaborate an appropriate institutional and regulatory framework to deal with water scarcity issues at an intergovernmental level. All five countries were going through dramatic economic changes and their claims on water uses were to be seen within the framework of these changes, each having different needs in the use of water, be they oriented toward irrigation needs or hydropower developments.

2.1.2.1. The 1992 Agreement on Cooperation in the Management, Utilization, and Protection of Water Resources in Interstate Sources

During the former Soviet era, inter-Republican water resources were administered centrally under the aegis of the Ministry of Water Management. Schemes for water uses were developed for the Syr Darya and the Amu Darya River basins based on annual water withdrawal limits. They were devised on the basis of crop requirements and little attention was paid to water quality. Due to the seasonal variations, the republics would enter into a series of bilateral and trilateral agreements to correct water allocations made on the schemes.

At the time of their independence, all five countries formulated claims to an equitable share of the waters, acknowledging at the same time that this could only be achieved through international negotiations. Ultimately, it was agreed that the status quo would be maintained and would be an equitable formula for the time being. This was achieved through the five Central Asian countries jointly declaring on September 12, 1991 that mutual water resources management would be a basis for equity and joint benefits. They subsequently concluded the Agreement on Cooperation in the Management, Utilization and Protection of Water Resources in Interstate Sources on February 18, 1992. This constituted the first step toward the establishment of a cooperative scheme: the riparian States thereby formally acknowledged their commitment to implement the cooperative management of waters in the Aral Sea Basin.

Under this agreement, the five States realized that they have common interests in the use and protection of shared water resources and
equal rights and responsibilities in this respect. The water resources of the region were defined as “common and integral.” The republics codified past practices in promising to provide strict observance of the order relating to water allocation established and agreed upon during the Soviet period. They also committed themselves to refrain from conducting activities that would result in a deviation from the agreed water shares, from causing water pollution, or from allowing any deviation likely to affect detrimentally the interests of the five States. They also agreed to carry out joint activities for the solution of the Aral Sea crisis and to determine yearly sanitary releases based on water availability for the Aral Sea.

2.1.2.2. The Establishment of Regional Institutions

As a first institutional step, the five States established the Interstate Commission for Water Coordination (ICWC) in 1993. Its members, who meet several times per year, are the heads of the main water management organizations in each country (or their designate). The commission is the institutional framework for water management, including water allocation issues and the approval of schedules for the operation of reservoirs. Its decisions are adopted by unanimous vote and are binding on all water users. It should also be mentioned that two river basin agencies, the water management authorities (BVOs), were established by the Ministry of Water Resources of the USSR in 1986, for each of the two rivers. They are vested with executive functions with respect to the operation of hydraulic structures and installations on the rivers and are in charge of the management and monitoring of the allocation made by the ICWC to member States. They are among the symbols of continuity with the Soviet era, carrying with them the emphasis that was put on quantity aspects as well as on the economic water uses at stake. Both the ICWC and the BVOs are responsible for ensuring compliance with water withdrawal limits and for guaranteeing the annual volume of water to be supplied to the Aral Sea and to its deltas. The ICWC and BVOs are directly responsible to the States for the execution of their functions. The countries have obligations regarding financial and technical support for both BVOs.

To further the reinforcement of cooperation among the five States, four other intergovernmental institutions were created between 1993 and 1995. These are (i) the Interstate Council on the Aral Sea Basin (ICAS) intended to set policy, provide intersectoral coordination, and review the projects and activities conducted in the basin; (ii) the Executive Committee of ICAS (EC-ICAS), a secretariat responsible for implementing the Aral Sea Basin Program; (iii) the International Fund for the
Aral Sea (IFAS), whose purpose was to collect contributions for ICAS from the five States and donors; and (iv) the Sustainable Development Commission (SDC), established to ensure that economic, social, and environmental factors are given equal weight in planning decisions. The SDC was intended to function within the framework of ICAS and to complement the input of the Water Ministries by defining proposals for ICAS addressing the ecological protection and socioeconomic development of the basin.8

These new institutions helped strengthen the willingness, and more importantly, set the framework, for the five countries to decide jointly on water management issues, an exercise in which the donor community was involved through the provision of technical assistance.9 However, to rationalize the allocation of responsibilities and streamline the decision-making process in the Aral Sea Basin,10 a modification of this institutional structure was deemed necessary. Being concerned with the establishment of an effective donor grants management process, such changes were held as particularly desirable to the donors.

Following a review of the ASBP made by the World Bank and by other donors, a new fund was created, the International Fund for the Aral Sea (IFAS). It is a successor to the former ICAS as well as to the former structure of the IFAS. Established in 1997, it has a board composed of the deputy prime ministers of the five States concerned with agriculture, water, and the environment. The board meets regularly to reconcile the views of member States and decides on the policies, programs, and institutional proposals recommended by the Executive Committee (EC) (renamed the Executive Committee of the IFAS). Moreover, the IFAS collects contributions and finances program activities.

2.2. Relationships and Interconnections between the Different Institutions: Interstate Water Resources Management Structure in the Aral Sea Basin

The relationship between this new IFAS and the International Commission for Water Coordination (ICWC) was further clarified through an agreement concluded between the heads of States on April 9, 1999. As a result, responsibilities have been distributed in the following manner:

**Board of the International Fund for the Aral Sea (Board of the IFAS)—**comprised of the deputy prime ministers of the five States. It is the highest political level for decision making and final approval of activities before (if needed) approval by the heads of States;

**Executive Committee of the IFAS—**a permanent body, comprised of two members from each State, carrying out all activities for the implementation of decisions made by the board of the IFAS via the national branches of the IFAS. Also, on behalf of the board, the EC-IFAS coordinates the
FIGURE 12. Aral Sea Basin Institutions (regional and national)
activities of the agencies involved in the implementation of projects (international and donors);

**Interstate Commission for Water Coordination (ICWC)**—the highest level of transboundary water resources management, water allocation, water monitoring, water use, and preliminary proposals assessment for principal improvement and change of organizational, technical, financial, environment policies, and decisions related to water on the interstate level. BVOs and the Scientific Information Center (SIC ICWC) are executing bodies of this commission, which is not a permanent body.

**Interstate Sustainable Development Commission (SDC)**—the regional SDC consists of three representatives from each of the five States, one from each of the following three bodies: the ministers of Nature Protection/Ministry of Natural Resources; representatives of the national SDC; and representatives of the Ministries of Economy/Ministry of Macro-Economy. The regional SDC has a six-year mandate, but intends to submit an updated version of its mandate to the board of the IFAS for its consideration.

3. **MANAGEMENT OF THE ARAL SEA BASIN:**
   **CURRENT ISSUES AND ISSUES AHEAD**

The Central Asian countries, together with the World Bank, the Global Environment Facility (GEF), and other donors (the Netherlands, the European Union/TACIS, the Swedish International Development Agency [SIDA], and the Swiss government [SECO]), have developed a project aiming at substantially contributing to the stabilization of the environment and to the improved management of the waters. This Water and Environment Management Project (WEMP) achieves its aims by promoting coherent national and regional water and salt management policies. Attention is also given to education of the general public as to water conservation, including the possible need to accept difficult decisions in the shorter-term for longer-term gains. The WEMP also focuses on improving the management of reservoirs and dams as well as the monitoring of transboundary water flows—the latter both in terms of quantity and quality. Finally, it plans to rehabilitate a pilot wetland in one of the Aral Sea deltas.

To complement the WEMP, the U.S. Agency for International Development (USAID) has initiated the Natural Resource Management Project (NRMP), which provides technical assistance in improving management of critical natural resources in the five countries of central Asia. With respect to its water related activities, the NRMP is designed to increase water management capabilities in the region through training programs, upgrading data management, improving the understanding of the implications of
natural resource policies and regulations, strengthening skills for design and implementation of demonstration projects, and also increasing public awareness of environmental issues.\textsuperscript{13}

Additionally, the United Nations Educational, Scientific, and Cultural Organization (UNESCO) is becoming increasingly active in the field of water conflicts prevention. Hence, UNESCO (in collaboration with Green Cross International ([GCI]) is at the head of the PC\textsuperscript{-}CP initiative (from Potential Conflict to Co-operation Potential), whose purpose is notably to define and survey potential conflicts arising from water resource management and to provide concerned States with water-related negotiations and cooperation-building techniques. The Aral Sea Basin is expected to be one of the first cases to be examined by UNESCO under that project.

3.1. The Need for Further Development of the Water Management Framework

Among the issues to be dealt with is the need to clarify the legal framework for water management. Although the five States have committed themselves to the water-sharing order agreed under the Soviet era, there is still scope for uncertainties and diverging practices that may prove to be a source of conflict: criteria for water sharing are not expressly stated; water resources conservation and planning are not clearly envisaged; the problem of reservoirs and the economic and social needs at stake in the region are potential irritants; and water is still used fairly inefficiently. It has also become increasingly apparent that the quantifiable minimal flow of water to the Aral Sea would have to be formulated so as to preserve what remains from this sea. Finally, in the event of a conflict, there is no adequate dispute settlement mechanism.

This situation was notably identified by the World Bank’s WEMP and by the USAID’s NRMP, as well as by the European Union (TACIS Program) as a possible area where the donor community could play a role in providing technical and financial assistance.

In particular, the EU’s TACIS Program includes a section on Water Resources Management and Agricultural Production (WARMAP) in the Central Asian republics, whose general objectives are (i) to provide the administrative and technical framework within which policies, strategies, and development programs for utilization, allocation, and management of the water resources of the Aral Sea Basin can be developed; and (ii) to assist at the regional level with the establishment of the institutional structure required to prepare and implement the policies and strategies on water allocation and management. Among the specific
objectives is the provision of a legal basis for international and national water resources utilization, giving due weight to the environmental needs of the Aral Sea Basin. It was agreed by the five States that the TACIS Program\textsuperscript{14} would support the drafting process of water-sharing agreements. The program was launched in 1995, based on the organization of training activities, the setting up of working groups, and the advice provided by experts on international water law issues.

To date, three draft agreements have been produced, covering the functions, powers, and responsibilities of the Interstate Commission for Water Coordination and its organs, as well as the general principles applicable to the Aral Sea Basin in its entirety. They also provide a mechanism for joint interstate strategic planning of the management, development, and protection of transboundary water resources.\textsuperscript{15}

Although these draft agreements lack precision, they nevertheless provide for quantifiable minimum releases of water to the Aral Sea and to its deltas. They also set a framework for information sharing on the planning of activities between States and prescribe respect for principles of international law as reflected in the UN Convention on the Law of Non-Navigational Uses of International Watercourses,\textsuperscript{16} such as the principle of equitable and rational use, the "no-harm rule," and the obligation to cooperate. Yet the draft agreements neither further specify how these principles should be applied, nor provide how they should interact with each other.

According to them, the ICWC is in charge of allocating annual limits of water to be used by the parties. They also intend to supplement these provisions with two attachments, the first one dealing with the Amu Darya Basin and the second with the Syr Darya Basin. They will contain water allocation criteria and operational regulations for each of the river basins.

Another step to promote a more efficient water management framework was to organize, at the domestic level, working groups composed of specialists in water, energy, and agricultural issues, and to establish regional working groups to work on drafts before their submission for adoption to the governments. The EU TACIS Program continues to support these processes, but nevertheless, the conclusion of the agreements will depend greatly on the political determination of the States.\textsuperscript{17}

At present, the riparian States do not see this outcome as a priority. Preference seems to be given to developing national and regional strategies for water use in the Aral Sea Basin, rather than to commit to stringent water allocation quotas. This is seen as a better way to ensure that all of the States get on board and that their levels of water consumption are reduced.
Although it may not prove to be very fruitful in the short-term as a means of arriving at the treaties' signature stage, a virtue of the legislative process may nonetheless be that the creation of working groups forms part of an educational and information-sharing process. Indeed, it helps to consolidate the understanding among the various stakeholders, an element as important in the negotiation and adoption of water agreements as in the verification of their effective implementation.

Another matter of concern relates to the quality of the transboundary waters. It was decided that this issue would be negotiated in a separate agreement. However, this area is in a crucial need for initial action, since there is at present no water quality management scheme. Attention has to be paid to key pollutants such as salts, as well as to monitoring and control. It is also important that water quantity and quality problems are dealt with together, as they are physically linked and intertwined at a managerial level.

The possibility of Afghanistan becoming a party to any relevant agreement should also be taken into consideration. Afghanistan, an upstream riparian of the Amu Darya River, may decide to develop water resources for its own use. The involvement of Afghanistan is therefore important for ensuring effective long-term management of the waters of the Aral Sea Basin. From a legal standpoint, such participation should be seen as pursuing the process embedded in the treaties concluded between Afghanistan and the former USSR, to which the five Central Asian republics are successors.

Under the technical assistance deriving from the second phase of the WARMAP Project of the EU-TACIS Program, the BVOs have created their own database, which is compatible with the regional Information System already put in place. The work concerning further development of the basin-wide Information System should be continued and financially supported by the donor community. As part of this work, modeling of the operational management should take place.

Recently, the ICWC has been in charge of developing a water management framework through its collaboration with the International Water Management Institute (IWMI) (and its partner in this project, the Swiss Development Council). Indeed, the IWMI established an office in Tashkent (Uzbekistan) in 2001 and has been notably focusing its research on building strong water management institutions, essentially by endeavoring to develop a framework to transfer water management responsibilities from agencies managing water along administrative boundaries to an institution managing water along hydrological boundaries. Simultaneously, the IWMI concentrates its effort on improving water productivity by identifying the best practices in order to reduce the amount of water used by farmers.
3.2. The Need to Improve the Management of the Water Storage System

A complex system of water storage was built during the Soviet period in the Syr Darya and Amu Darya river basins, with the initial primary purpose of accumulating water in winter for its subsequent use in the summer, mainly for irrigation and electric power production. Downstream States benefited by gaining a supply of hydropower, while upstream States received energy supply in the winter. Yet problems arose with respect to financing and responsibility for the operation of the infrastructure, problems that were partially solved during independence when it was decided that the infrastructure would be owned by the State in which it is located but that management activities would be shared by the States and by relevant river basin authorities. This nevertheless leaves uncertainties with potential for disagreements in the longer term, in particular as local ownership is not conducive to the coordination of regional water use requirements. Due to seasonal variations, the States have established a practice of concluding bilateral and multilateral agreements to correct the water allocations.

A special case is the Toktogul hydro-power station and reservoir located in the Kyrgyz Republic. The storage facility (19 km³) controls downstream water use in Uzbekistan and in Kazakhstan. This situation called for a more formalized agreement, with all interested States agreeing on a formula to be codified so that disputes can be avoided.

Following independence, the Kyrgyz Republic found itself with an abundance of water and hydroworks and with a severe shortage in energy supply during the winter. The downstream States, Uzbekistan and Kazakhstan found themselves with an agriculture-based economy with water demands during the summer months but with an upstream neighbor that needed to release the waters during the winter period in order to supply its energy needs. In order to resolve this matter, Uzbekistan, Kazakhstan, and the Kyrgyz Republic entered into a series of annual agreements that tend to establish trade-offs between energy and water: the Kyrgyz Republic agreed to reduce water releases during the winter months in return for Uzbekistan and Kazakhstan supplying it with electricity and fossil fuel during the winter (i.e., water storage for summer irrigation/energy production and delivery of coal and gas in the winter).

There was a need to settle the operation of the reservoir in a more predictable way so that all of the countries could meet the water management objectives. This would place the Toktogul Reservoir on a secure footing, eliminating an important potential source of conflict over water.

Yet another international institution, the Interstate Council for Kazakhstan, the Kyrgyz Republic, and Uzbekistan (ICKKU)—now known as the Central Asian Cooperation Organization (CACO)—was established. With the assistance provided by the USAID, it has negotiated a
Multi-Year Interstate Agreement on Management on the Naryn-Syr Darya Cascade among the four riparian States (Uzbekistan, the Kyrgyz Republic, Kazakhstan, and Tajikistan). The agreement would encompass regulation of the timing of water storage releases from the Toktogul reservoir of the Naryn-Syr Darya Cascade through compensatory schemes based, inter alia, on seasonal water storage and delivery of coal and gas. It would also take into account the issue of the valuation of the price of water. The process was launched at a meeting of high-level government officials of the States involved in December 1996. In March 1998, Uzbekistan, the Kyrgyz Republic, and Kazakhstan signed a framework agreement acknowledging the principle of financial compensation. It was also agreed that Tajikistan would be invited to join the agreement, which it did in 1999. Following the signing of this agreement, USAID management activities led to the use of a planning tool (developed by the latter) enabling the parties to make decisions on the allocation and distribution of water in the region, as well as to the creation of another water management facility on one of the Syr Darya's major tributaries, the Chirchik River.

Several issues thus remain at stake. For instance, the USAID is expected to continue providing technical assistance to further develop the technical basis of the agreement. However, some changes in the ongoing activities are anticipated after an internal assessment of the new measures' outcome. One issue concerns the choice of the regional institution taking charge of such processes, as several institutions (mainly IFAS and CACO) are involved. The answer to such questions rests on the trust placed by each country in the processes and on the political resolve and determination they will demonstrate to set up an adequate framework. The donor community plays an important role in the choices to be made and its influence should be supportive of solutions satisfying the interests of all of the partners. The proliferation of competent institutions is not desirable in a context where there is a need for a more integrated approach, both in a technical and political sense.

3.3. The Need for Integrating Water, Energy, and Trade Concerns

Between 1985 and 2002, the volume of cross-border power transactions through the integrated water and power systems of the five Central Asian countries dropped from $15 billion a year to $1 billion. An insular approach to energy self-sufficiency and a dramatic reduction in maintenance spending has created a perverse result. In spite of growing electricity shortages in the region, water that exceeds the storage capac-
ity of mountain reservoirs is often released without producing a single kilowatt-hour of electricity. In this context, USAID experts provided technical advice and negotiation support to the Asian Development Bank (ADB) in the successful negotiation and adoption in November 2002 of a Power Trade Relations Agreement between the governments of Uzbekistan and Tajikistan.

The agreement establishes a framework for bilateral power-trade relations to reduce the combined electricity costs of the two countries by $20 million a year in the near term. The agreement also specifies the policy and institutional conditions needed for an integrated water and energy system in the whole of Central Asia. Such a regional system would enable the dispatch of energy and water resources on the basis of economic criteria and has a potential windfall of about $1 billion a year. The agreement will reduce electricity costs, improve the use of the region's water resources, and help to reduce potential conflicts over water and energy resources. It is expected that the other Central Asian countries will join the agreement.

Successful completion of the agreement was a precondition of a $175 million loan package to be provided by the ADB and by the European Bank for Reconstruction and Development (EBRD) to upgrade the electric transmission networks of the two countries. The renovation of the physical network and the reorientation of the regional water and energy systems along market principles promises to benefit the entire region with savings that will flow to all of the consumers, including significant benefits to low-income customers. Currently detailed work plans, cost estimates, and implementation arrangements are being prepared in order to devise various provisions in the agreement. These plans were discussed at the first meeting of a regional working group in January 2003 with support from USAID's Transboundary Water and Energy Project.

3.4. How the Situation Is Likely to Evolve

3.4.1. Technical and Scientific Activities As Crucial Components for Developing and Implementing Legal Instruments and Strategies

Over the medium-term, water quality is emerging as an issue of great significance, especially with respect to salinity. Indeed, it is now considered that salt management will be the major challenge to basin water resources management for the next decade. The rivers transport 140 million tons of salt per year, induced partly by natural runoff, but mostly by extensive irrigation development. As a result of insufficient
drainage in some areas and excessively deep drains in others, salt mobilization from the soil profile is much greater than the internationally accepted practice. If no action is taken, the problem of severe salinity will most likely spread from the lower watersheds to the highly productive middle watershed areas.

The salinity problem is complex: there is neither a single source, nor a single solution. In this context, WEMP, funded by the World Bank, by the GEF, and by a few other donors, is intended to provide a basis for technical assessment, allowing the collection and analysis of relevant data with a view to the development of a salinity strategy. Related investments of $65 million dedicated to improve water management and water conservation—for example, irrigation improvements in Kazakhstan, Uzbekistan, and the Kyrgyz Republic—are associated with this endeavor.

The proposed strategy is expected to provide the basis for the negotiation of a legal agreement in which the Central Asian republics would deal with the salinity management issue. The proposed project will help determine salinity standards and the locations along the two rivers where salinity levels might be controlled. It will also help the various States assess the costs of dealing with different salinity levels that may potentially occur. The latter is important, as the downstream States will be the main beneficiaries of a salinity management scheme while the upstream States will have to take stringent measures for addressing the problem. Ultimately, the States could also decide to revise their shares of water accordingly.

The WEMP and related activities reveal one of the roles that financial and technical assistance can play with respect to institutions and regulations. Such assistance can support the conduct of scientific and technical activities that are of significant importance to the design of a legal regime, for they help in identifying and remedying problems. Financial and technical assistance may open paths leading to the negotiation of international agreements; it can also promote the edification of mechanisms that monitor the regime put in place and allow for its adaptation to new needs. In this respect, financial and technical assistance are important components in a process aimed at negotiating viable instruments.

3.4.2. Public Participation and Other Institutional Changes

Government plays a predominant role in water resources development and management in Central Asia, and it has been asserted that political leaders have shown to be wary of public participation and direct influ-
ence; that the bureaucracies tend to oppose sharing management deci-
sions or being subject to oversight and the public at large often lacks
information; and, that implementing agencies were never accountable to
the public for their activities. In most cases the public was only periph­
erally involved in the guise of special interests and pressure groups. The
growing importance of public opinion and NGO activities has been
recognized only since the midnineties.

One of the centerpieces of the WEMP project is a Public Aware­
ness Component, whose objective is to heighten the public’s aware­
ness of water conservation issues. The project has two phases. The
first is to draw to the attention of decision-makers the importance
and indeed financial benefits, of taking into account public opinion
about water resources management and development and the need to
establish a strategy to improve water management. In the second
stage, governmental institutions and implementing agencies should
provide access to information about their policy and strategy for the
public at large. The public should become an advocate for the pro­
posed strategy’s implementation.

The water sector has always played a vital role in the region.
To increase human potential, especially at the level of decision mak­
ing in the water sector, the public awareness campaign and nongov­
ernmental organization (NGO) involvement have a crucial role. At
the regional level, public participation is understood as a broad
spectrum of information activities about regional organizations’ ac­
tivity through EC-IFAS in close collaboration with water-related and
environmental NGOs. The first meeting of NGOs and IFAS organi­
zations took place in May 1999 and a memorandum about mutual
activity was agreed upon.

4. CONCLUDING REMARKS

At the end of the 1980s, the Aral Sea crisis attracted international
attention. The five new States emerging from the ruins of the Soviet
Union were committed to acting together to face the catastrophe. While
codifying past practice agreed under the Soviet period in terms of water
allocation, they recognized the need to strengthen the existing institu­
tional and regulatory framework and to adapt it to their new de­
mands. They have established a relatively comprehensive framework,
which makes it fairly unique among the river basin organizations.
They now need to show political commitment to implement effectively
this endeavor, a commitment which, for the time being, is rather evanescent to say the least.

The donor community has provided assistance in achieving this aim. The European Union, UNDP, the World Bank, and other donors have given substantial support for capacity building at the regional level. However, for financial and technical activities to reach their objectives, a key aspect is coordination among donors. This is particularly true for the design and implementation of an adequate international institutional and regulatory framework. An additional issue is for an international organization to take the lead for coordinating donors' activities. Once at the forefront, the World Bank seems to be disengaging itself from this role. This raises problems for creating incentives at the regional and local levels for implementing sound water management policies and activities.

At the institutional level, there is a need to clarify further the relationship between the various regional organs (IFAS and ICWC) as well as with CACO. This would strengthen both the decision-making and implementation processes. It is important that all parties perceive that their interests are taken into consideration. Enhanced consultation and joint action are based on these premises. The institutional setup also needs to be refined so that it reflects the need for integrated management, in particular for managing together water quantity and quality problems. Public participation at all levels of water management should also be encouraged, although it should be recognized that for the region, it is a new issue to be dealt with and that today, such a process remains in a nascent phase.

![Figure 13. Regional and International Organizations in the Aral Sea Basin](image-url)
NOTES

Director and Professor, Department of Public International Law and International Organization, Faculty of Law, University of Geneva, Switzerland. The author would like to thank Anatoly Krutov, Operations Officer, World Bank, for his comments on an earlier version of this book. However, the ideas expressed in this chapter are those of the author.


3. The Aral Sea’s drainage basin covers about 1.8 million km² in seven States (five republics of the former USSR, Afghanistan, and Iran). Only about 0.5 million km² of this area actively produces or consumes water that could enter the Aral Sea. Iran’s contribution to the flows in the basin is entirely in streams ending in the Kara-Kum Desert that cannot actually reach the Aral Sea. Ibid.


5. “The Aral Sea: Saving the Last Drop,” The Economist, July 1, 2000 at p. 64

6. See the World Bank’s website, at http://www.worldbank.org/projects (last visited September 2002). Simultaneously and also through the World Banks’ assistance, Kazakhstan is undertaking an irrigation and drainage improvement project, whose main objectives are to promote sustainable agricultural production and practices, notably through the rehabilitation of its irrigation and drainage systems.

7. In June 1994, a donors meeting was held in Paris, and support for some elements of the first phase of the program (ASP-1) was pledged by various multi- and bilateral donors. The program has enjoyed solid donor support, backed by $32 million in grant financing pledged in Paris in 1994 for the preparation stage and now committed. For the current amounts of donor contributions, see Table 10.


11. TACIS is the European Union’s program for Technical Assistance to the Commonwealth of Independent States (Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan).

12. The project was negotiated during spring 1998. The five States have formally requested GEF assistance for the Aral Sea Basin program in April 1996. The aforementioned project with a total cost of $21.3 and a GEF contribution of $12 million is likely to constitute the single most important operation at the regional level for the years 1998–2003. Co-financing figures are $9.3 million that is distributed as follows: $4.1 million (five Central Asian States), $2.8 million (Government of Netherlands), $1.4 million (European Union/TACIS), and $1.0 million (Swedish International Development Agency).


14. The European Union assists the States of the Former Soviet Union (FSU) through the Technical Assistance to the Commonwealth of Independent States (TACIS).

15. While it had been unclear whether these draft agreements would remain as three separate agreements or be merged into a single instrument, it has been decided to opt for the former solution.

16. Text of the convention reprinted in 36 I.L.M.700 (1997). None of the Central Asian countries have signed yet to become a party to the UN Convention.

17. The States have made it clear that they do not want the agreements to be considered as outputs of the project, as the time frame for their adoption may be longer than the duration of the project.

18. About 12.5 percent of the Aral Sea Basin Program’s water resources originate in the country; only a fraction is used for irrigation. It contributes between 3 and 5 km$^3$ water per year to the Amu Darya.

19. The treaties concluded between Afghanistan and the former USSR—to which the five Central Asian republics are successors—provide inter alia for regular exchange of technical information and for the adoption of joint measures to prevent changes in the course of frontier waters. On these treaties, see M. Nanni, “The Aral Sea Basin: Legal and Institutional Issues,” 5 Review of the European Community and International Environmental Law, 130, 131.


21. There are over 80 water reservoirs, 45 hydropower plants, and 57 large dams in the Aral Sea Basin.


23. A practice that was also in force during the pre-independence period, see Nanni, supra, 131-132.


25. The GEF Operational Strategy indicates, inter alia, that
The overall strategic thrust of GEF-funded international waters activities is to meet the agreed incremental costs of (a) assisting groups of countries to better understand the environmental concerns of their international waters and work collaboratively to address them; (b) building the capacity of existing institutions (or, if appropriate, developing the capacity through new institutional arrangements) to utilize a more comprehensive approach for addressing transboundary water related environmental concerns; and (c) implementing measures that address the priority transboundary environmental concerns. The goal is to assist countries to utilize the full range of technical, economic, financial, regulatory, and institutional measures needed to operationalize sustainable development strategies for international waters.

27. MP Wat/2000/6/Add 1 (Economic Commission for Europe/UN/ECE).

**BIBLIOGRAPHY**

Documents and Reports of International Organizations


Articles


### Table 10. Aral Sea Basin Program Donor Contributions (as of 09/25/02)

<table>
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<tr>
<th>Name of the Program/Project</th>
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(continued)
Table 10. Aral Sea Basin Program Donor Contributions (as of 09/25/02) continued

Amounts in $million

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CIDA = Canadian Development Agency  
DN = Government of Denmark  
EU = European Union  
FR = Government of France  
GEF = Global Environment Facility  
ITA = Italian Trust Fund  
KFAED = Kuwait Fund for Arab Economic Development  
NTF = Netherlands Trust Fund  
PHRD = Japanese Policy and Human Resources Development Fund  
SWE = Government of Sweden  
SWISS = Government of Switzerland  
UK = Government of United Kingdom  
US = Government of United States (USAID)