

**THE WORLD BANK INDEPENDENT EVALUATION GROUP****An Independent Evaluation of the World Bank's  
Support of Regional Programs****Case Study of the Aral Sea Water and  
Environmental Management Project****Shawki Barghouti**

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# Contents

<b>Acronyms</b> .....	<b>iii</b>
<b>Preface</b> .....	<b>iv</b>
<i>Evaluation Objectives and Methodology</i> .....	<i>iv</i>
<i>Evaluation Criteria</i> .....	<i>iv</i>
<b>Executive Summary</b> .....	<b>vi</b>
<b>1. Introduction</b> .....	<b>1</b>
<i>Challenges Facing the Sector</i> .....	<i>1</i>
<i>Regional Program Summary Description</i> .....	<i>3</i>
<b>2. Relevance: Rationale, Alignment, and Design</b> .....	<b>1</b>
<i>Subsidiarity Principle</i> .....	<i>1</i>
<i>Alignment with Country, Regional, and Bank Goals and Strategies</i> .....	<i>2</i>
<i>Regional Consensus</i> .....	<i>2</i>
<i>Program Design</i> .....	<i>3</i>
<i>Clarity and Monitorability of Objectives</i> .....	<i>5</i>
<b>3. Efficacy: Outcomes, Impacts, and Sustainability</b> .....	<b>7</b>
<i>Achievement of Objectives</i> .....	<i>7</i>
<i>Capacity Building</i> .....	<i>10</i>
<i>Realized Distribution of Costs and Benefits</i> .....	<i>10</i>
<i>Risks to Outcomes and Impacts</i> .....	<i>11</i>
<b>4. Efficiency: Governance, Management, and Financing</b> .....	<b>13</b>
<i>Governance, Management, and Legitimacy</i> .....	<i>13</i>
<i>Financing</i> .....	<i>15</i>
<b>5. Monitoring and Evaluation</b> .....	<b>17</b>
<b>6. World Bank Performance</b> .....	<b>18</b>
<i>Comparative Advantage</i> .....	<i>18</i>
<i>The Bank's Coordinating Role with Other Donors</i> .....	<i>19</i>
<i>Quality of Support and Oversight</i> .....	<i>19</i>
<i>Structures and Incentives</i> .....	<i>20</i>

<i>Linkages to Other Bank Country Operations</i> .....	20
<i>Disengagement Strategy</i> .....	21
<b>7. Countries' Participation</b> .....	<b>22</b>
<i>Commitments and/or Capacities of Participating Countries</i> .....	22
<i>Leadership among Participating Countries</i> .....	23
<i>Program Coordination within Countries</i> .....	23
<b>8. Conclusions</b> .....	<b>24</b>
<i>Summary of Findings</i> .....	24
<i>Implications for Program Support</i> .....	24
<b>Annex A: Active Investment Operations in the Riparian Countries</b> .....	<b>27</b>
<b>Annex B: Financial Data</b> .....	<b>29</b>
<b>Annex C: Persons Consulted</b> .....	<b>30</b>
<b>Annex D: Documents Reviewed</b> .....	<b>32</b>
<b>Annex F: References</b> .....	<b>34</b>
<b>Boxes</b>	
Box 1.1: The Environmental Challenges of the Aral Sea Basin.....	2
Box 2.1: The Evolution of Aral Sea Basin Program and Bank Support.....	4
Box 3.1: Despite Specific Achievements, the Outcome of WEMP Was Unsatisfactory ....	9
Box 4.1: Donors Support to ASBP .....	13
<b>Figures</b>	
Figure 1.1: Maps of the Aral Sea Basin.....	2

## Acronyms

ASBP	Aral Sea Basin Program
CAS	Country Assistance Strategy
EU	European Union
GEF	Global Environmental Facility
IBRD	International Bank for Reconstruction and Development
ICAS	Interstate Council of the Aral Sea
ICR	Implementation Completion Report
ICWC	Interstate Commission for Water Coordination
IDA	International Development Association
IEG	Independent Evaluation Group
IFAS	International Fund of the Aral Sea
PMCU	Project Management and Coordination Unit
SDC	Sustainable Development Commission
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
WEMP	Water and Environmental Management Project

# Preface

## EVALUATION OBJECTIVES AND METHODOLOGY

This review of the Bank-executed Aral Sea Water and Environmental Management Project (WEMP)—which forms part of the Aral Sea Basin Program (ASBP)—is one of 19 reviews undertaken as part of an independent evaluation by the Independent Evaluation Group (IEG) of the effectiveness of World Bank support for multi-country regional programs over the past 10 years (1995-2004). Sixteen of the reviews, including this Child Protection Initiative assessment, are desk reviews; the other six reviews are in-depth field studies.

This review involved a field mission to Kazakhstan, the Kyrgyz Republic, and Tajikistan, and discussions with regional officials and water experts. It also takes into account the following documents: the 1993 and 2001 Country Assistance Strategy (CAS) documents and technical assistance loans for Kazakhstan, the 1998 CAS for Tajikistan, the 1995 CAS for Kyrgyz Republic, the 2002 CAS for Uzbekistan, the Staff Appraisal Report (SAR), the Project Implementation Completion Report (ICR) of the Water and Environment Management Project, the IEG ICR Review, and other relevant documents. See Annexes C and D for a list of persons consulted and documents reviewed.

## EVALUATION CRITERIA

The 19 reviews use the IEG evaluation criteria of relevance, efficacy, and efficiency. In addition, they assess the Bank's performance and examine the performance of the regional program's participating countries. The key evaluative questions addressed under these criteria—designed to deal with the special characters of multicountry programs—are listed below.

### *Relevance*

- **Subsidiarity:** To what extent is the program being organized and carried out at the lowest level effective, and how does it complement, substitute for, or compete with Bank country or global programs?
- **Alignment:** To what extent does the program arise out of a regional consensus, formal or informal, concerning the main regional challenges in the sector and the need for collective action? To what extent is it consistent with the strategies and priorities of the region/sub-region, countries, and the Bank?
- **Design of the regional program:** To what extent is the program design technically sound? To what extent does it take into account the different levels of the participating countries' development and interests, foster the confidence and trust among participants necessary for program implementation, and have clear and monitorable objectives?

### *Efficacy*

- **Achievement of objectives:** To what extent has the program achieved, or is it likely to achieve, its stated objectives, including its intended distribution of benefits and costs among participating countries?

- **Capacity building:** To what extent has the program contributed to building capacities at the regional and/or participating country levels?
- **Risk to outcomes and impacts:** To what extent are the outcomes and impacts of the program likely to be resilient to risk over time? To what extent have the risks to project outcomes been identified and have measures to integrate them been undertaken?
- **Monitoring and evaluation:** Has the program incorporated adequate monitoring and evaluation processes and taken account of available findings?

### *Efficiency*

- **Efficient use of resources:** To what extent has the program realized, or is it expected to realize, benefits by using reasonable levels of time and money?
- **Governance, management, and legitimacy:** To what extent have the governance and management arrangements clearly defined key roles and responsibilities; fostered effective exercise of voice by program participants and coordination among donors; contributed to or impeded the implementation of the program and achievement of its objectives; and entailed adequate monitoring of program performance and evaluation of results?
- **Financing:** To what extent have financing arrangements positively or negatively affected the strategic direction, outcomes, and sustainability of the program?

### *World Bank's Performance*

- **Comparative advantage and coordination:** To what extent has the Bank exercised its comparative advantage in relation to other parties in the project and worked to harmonize its support with other donors?
- **Quality of support and oversight:** To what extent has the Bank provided adequate strategic and technical support to the program, established relevant linkages between the program and other Bank country operations, exercised sufficient oversight of its engagement, and developed an appropriate disengagement strategy for the program?
- **Structures and Incentives:** To what extent have Bank policies, processes, and procedures contributed to, or impeded, the success of the program?

### *Participating Countries' Performance*

- **Commitments and/or capacities of participating countries:** How have the commitments and/or capacities of participating countries contributed to or impeded the success of the program? Have one or more countries exercised a primary leadership role?
- **Program coordination within countries:** To what extent have there been adequate linkages between the regional program's country-level activities and related national activities?

# Executive Summary

## Background

1. **Conditions in the region:** The Aral Sea in Central Asia is drying up. Since the 1960s its surface area has declined by two-thirds. This shrinkage is the result of intensive use of the two rivers that feed the sea for purposes of irrigation, especially within the three downstream countries of the Aral Sea Basin—Kazakhstan, Turkmenistan, and Uzbekistan. While the irrigation has benefited more than 30 million farmers, it has also led to waterlogging, soil salinization, and the decline in the sea’s level—conditions that have caused economic and health problems for the more than 5 million people living around the sea. The intensified drawdown of the water has heightened water allocation conflicts between the three downstream countries, which need the water most in the summer months, and the two upstream countries—the Krygyz Republic and Tajikistan—which use water for power generation in the winter and need to store it in the summer. Soviet-era administrative allocation arrangements broke down after the Soviet Union collapsed, due to mistrust among the riparian countries and the neglect of dams and other infrastructure essential for efficient management and use of the water.
2. **Development of the program:** The environmental crises of the Aral Sea Basin attracted global attention and led the heads of state of the five riparian countries to seek international assistance. This agreement led in 1994 to the launching of the Aral Sea Basin Program (ASBP). The countries’ high-level political endorsement reflected their different water needs, and their competing interests significantly affected the program’s implementation.

## Program Summary Description

3. **Objectives:** The ASBP has four objectives:
  - To stabilize the environment of the Aral Sea Basin;
  - To rehabilitate the disaster area around the sea;
  - To improve the management of the international waters of the Aral Sea Basin; and
  - To build the capacity of institutions at the regional and national level to advance the program’s aims.
4. **Phases:** International assistance has proceeded in three phases.
  - Phase One (1992-97): development of the regional program, creation of regional institutions, and initiation of a series of technical studies.<sup>1</sup>
  - Phase Two (1998-2003) implementation of the Water and Environmental Management Project (WEMP), which was executed by the World Bank.
  - Phase Three (1997): overlapping support by the Bank for in-country operations in each of the five riparian countries.<sup>2</sup>

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<sup>1</sup> The ASBP studies covered eight thematic areas to be addressed through some 20 projects.



5. **Funding:** In the first two phases, international donors provided some \$46 million in grants and technical assistance. Within that framework, the proposed cost of WEMP was \$21.2 million, of which \$12.2 million was to be financed by a Global Environmental Facility (GEF) grant; \$4.9 million by the Netherlands, European Union (EU), and Sweden; and \$4.1 million by the five riparian countries. But the riparian countries did not make their full contributions, and the project had to be scaled back to some \$15.5 million.

### **Rationale for the Regional Program**

6. The deterioration of the Aral Sea Basin created serious development constraints for the five riparian countries, and threatened what the international community viewed as a global public good. Since the Aral Sea Basin (including the rivers) was a shared resource, a regional approach was required to deal with the multiple, intertwined problems. But the regional approach overlooked the country-level costs and benefits, and the support needed for in-country interventions to deal with irrigation inefficiencies.

### **Quality of Design and Implementation**

7. **Design and implementation:** The ASBP, in its first phase, supported studies on environmental degradation, allocation of transboundary water, management of water quality and quantity, and declining water productivity in agriculture. It created a council of ministers, a regional unit for overseeing coordination and implementation of the regional projects, and a project management unit. The program's second phase, WEMP, focused on two of its four main objectives: stabilizing the environment and improving the management of international waters. WEMP financed five operational components: (a) technical studies on water and salt management and a competition to foster low-cost water conservation measures; (b) public awareness campaigns to reduce water consumption; (c) dam safety resource management and training; (d) installation of water quality monitoring equipment; and (e) wetland restoration to rehabilitate Lake Sudoche in Uzbekistan.

8. **Design weaknesses:** There were several major shortcomings in the design of these efforts.

- **Overbroad scope.** Both the ASBP and WEMP scope and design should have been modest and simple, in view of the riparian countries' different interests, their limited coordination and implementation commitments and capacities, and the new regional institutions' lack of a track record.
- **Failure to address root causes.** The strategic action plan based on the studies was not logically sequenced. The plan focused only on the problems of the Aral Sea, which are downstream problems, without addressing the root causes of poor water management in upstream zones.

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<sup>2</sup> This summary is of a review of the first two phases of the regional program, with an emphasis on the Bank-managed WEMP and account taken of the Bank's on-going third-phase support.

- **Failure to address local interests.** The program was designed by technical experts and government officials, with limited participation by affected communities. Thus, it did not adequately address the costs and benefits of interventions to the national economies and local communities; nor did it assess the risks to implementation posed by the countries' conflicting interests in improved water management.
- **Poorly defined role for regional institutions.** The role of the regional institutions was poorly defined, and the institutions were weakly linked to national agencies. The regional institutions should have played a modest role in project implementation and focused on services that could not be performed at the country level. The national agencies should have received support from the regional institutions to implement project activities and mainstream the results of regional components into their national plans.

### **Program Achievements**

9. The ASBP mobilized support and defined the actions needed to stabilize the environment around the Aral Sea. WEMP, in particular, clarified what actions were needed for improved water management and dam safety, installed water monitoring stations, and restored the wetlands surrounding Lake Sudoche. WEMP did not achieve much in the areas of water conservation and the translation of water management studies into action plans, due in large part to weak country ownership of the problem assessments and their proposed solutions.

### **Effectiveness of World Bank Performance**

10. The Bank played a central role in mobilizing the support for the ASPB and in supporting the implementation of WEMP. It appropriately shifted its support of the ASBP by initiating country-level investments to improve the efficiency of water management at national and local levels. Its intervention would have been more effective, however, if it had strengthened—and fostered the involvement of—the national institutions in WEMP studies and pilot activities. The Bank also should have actively worked to build trust and resolve conflict among the riparian countries, to develop viable regional water management treaties, and to create competent organizations to help countries implement and monitor these agreements.

# 1. Introduction

## CHALLENGES FACING THE SECTOR

1.1 The Aral Sea is a saline lake located within Uzbekistan and Kazakhstan and is fed by rivers these two countries share with Tajikistan, Turkmenistan, and the Kyrgyz Republic (all countries which were part of the former Soviet Union). In 1960 it was the world's fourth largest lake, the size of Southern California. Figure 1.1 provides maps of the Aral Sea region.

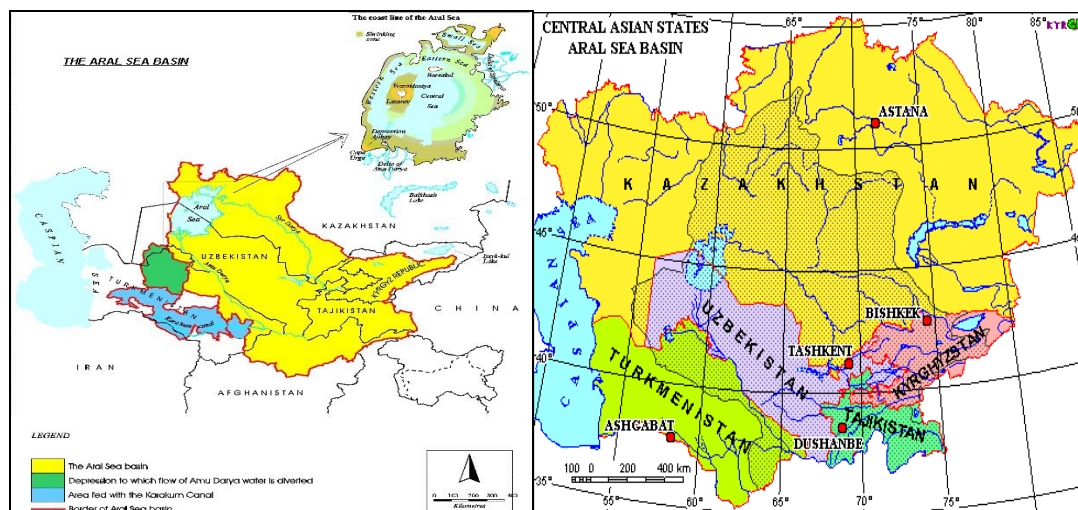
1.2 Situated in the center of a large, flat desert basin, the Aral Sea is a prime example of a dynamic environment. Before the 1960s, the water level of the Aral Sea was relatively stable; since then the surface area of the sea has decline to one-third of its original size. The main sources for the Aral Sea are the Amu Darya River (which runs through Tajikistan, Turkmenistan, and Uzbekistan, where the river delta joins the Aral Sea) and the Syr Darya River (which originates in the Tian Shan mountains and flows through the Kyrgyz Republic, Tajikistan, Uzbekistan, and south-central Kazakhstan, to the Aral Sea). High volumes of water were diverted from the two rivers for irrigation when the Soviet Union assigned Central Asia the role of producing cotton in the lower reaches of the rivers. Irrigated areas expanded from 4.5 million hectares in the 1960s to about 8 million in the 1980s. While this intensification of irrigated agriculture expanded economic opportunities for the more than 30 million rural people who benefited from growing irrigated crops, especially cotton and rice, it also created problems. It led to waterlogging and salinization (caused by low irrigation efficiencies, poor canal construction, and the absence of drainage work), and reduced the annual flow of water into the Aral Sea by more than 60 billion cubic meters, causing a gradual decline in the sea's water level. Because of these deteriorating conditions, more than 5 million people living around the sea shores have suffered economic hardship: fishing and other employment opportunities have decreased, and their health and social conditions have deteriorated. Box 1 provides detailed description of the deteriorating environmental conditions.

1.3 When they became independent in 1991, the five newly emerging Central Asian republics—Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan—recognized the need for action. At their request, these countries were assisted by the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP), the World Bank, the EU, and other international agencies in elaborating plans for long-term solutions. This effort culminated in the adoption by the five Central Asian republics of a comprehensive Aral Sea Basin Program (ASBP) in January 1994.

### Box 1.1: The Environmental Challenges of the Aral Sea Basin

- The extensive withdrawal of water from the Amu Darya and Syr Darya rivers has harmed the traditional ecosystem of the two deltas. The marshes and wetlands, and their rich biodiversity, which covered more than half a million hectares, are giving way to sand deserts. More than 50 small lakes covering the deltas have dried up. The Aral Sea itself is drying up. Its level has dropped by 21 meters, its water surface decreased by one-third, and its volume diminished by three-quarters.
- The sea's rising salt levels have eliminated commercial fishing. Wetlands in the sea basin have dried up, and increased salinity of irrigated lands depressed productivity. Moreover, farmers in the Aral Sea Basin used high levels of subsidized chemicals, such as fertilizers and pesticides, which drained into the rivers and damaged the quality of the groundwater. The declining environment affected the quality of life in several communities bordering the sea in Kazakhstan, Uzbekistan, and Turkmenistan. In addition, deforestation and overgrazing of the upper watersheds in the Kyrgyz Republic caused land erosion, and landslides exacerbated downstream flooding.
- By 1985, the Aral Sea Basin had become an environmental disaster of global importance. Its main problems were environmental degradation in the upper and middle watershed and degradation of irrigated lands; desiccation of the Aral Sea and destruction of its fishery and wetlands; loss of livelihoods; and a rapid increase of poverty and illness among the people living in the two river deltas and the sea shore zone. Detailed information about the serious deterioration of the Aral Sea Basin became available to experts and donors only after the dissolution of the Soviet Union in the late 1980s. The complex set of inter-related development problems called the "Aral Sea Crises" was described by concerned donors as the most severe environmental crises of the 20th century.

Figure 1.1: Maps of the Aral Sea Basin



## REGIONAL PROGRAM SUMMARY DESCRIPTION

1.4 **History of water management in region:** Prior to 1991, a series of resolutions and protocols governed the sharing of water among the Soviet republics of the Aral Sea Basin. During this period, the Soviet Union issued a decree to improve ecological and sanitary conditions in the Aral Sea region. Special plans for water allocation among the riparian countries of the Amu Darya and Syr Darya rivers were designed and implemented by the Soviet Union's Ministry of Water to improve the conditions of the sea shores. The breakdown of the Soviet Union in 1991 passed responsibility for protecting the Aral Sea and implementing the water allocation plans to the newly independent countries.

1.5 After the dissolution of the Soviet Union, the riparian countries' ministers of water jointly declared that their water management would be based on equity and joint benefits. A regional committee was established to manage the allocation of water in the river basins of the Amu Darya and the Syr Darya. In 1992, the countries agreed to convert the regional committee into the Interstate Commission for Water Coordination (ICWC), a regional agency responsible for water allocation among the five countries. In addition, the countries sought support from international donors for establishing what eventually became the ASBP.

1.6 **Objectives:** The overall goals of the ASBP were to assist the five riparian countries in improving water allocations among them, and to provide technical and financial support for regional- and national-level actions to deal with the Aral Sea environmental crises. Specifically, the ASBP's four stated objectives were to:

- Stabilize the environment of the Aral Sea Basin;
- Rehabilitate the disaster area around the sea;
- Improve the management of the international waters of the Aral Sea Basin; and
- Build the capacity of institutions at the regional and national level to advance the program's aims.

1.7 **First two phases:** Assistance to the riparian countries in dealing with the issues of the Aral Sea Basin has proceeded in three phases (summarized in Box 2.1). The first phase of the ASBP, which ran from 1992 to 1997, developed the regional program. It was conceived as a broad intervention to address eight themes through some 19 projects. In 1996, a review by the World Bank recommended changes in the structure and operations of the program and its regional institutions. The review also led to the preparation of the Water and Environmental Management Project (WEMP), which was funded by the Global Environmental Facility (GEF) and three other donors and managed by the World Bank. The second phase of the ASBP, running from 1998 to 2003, implemented WEMP.

1.8 **Funding for Phases One and Two:** During these two ASBP phases, international donors provided some \$46 million in grants and technical assistance for a series of

technical studies and for pilot activities, as well as to establish regional institutions and coordination plans to address the interrelated crises of the Aral Sea Basin. At the time of design, the total proposed cost of WEMP was \$21.2 million, of which \$12.2 million was financed by a grant from the GEF. In addition, the five Central Asian republics agreed to contribute \$4.1 million, and three donors—the Netherlands, EU, and Sweden—provided \$4.9 million in the form of cofinancing. But in the course of implementation, the five riparian countries did not make their full contributions, and project components had to be scaled back to some \$15.5 million.

**Box 2.1: The Evolution of the Aral Sea Basin Program and Bank Support**

***Phase One (1992-97): Technical studies and institution-building for implementation of regional program***

1992: The World Bank and several other donors helped the five riparian states create the Aral Sea Basin Program. This effort followed a joint declaration by the five states in 1991 on the need for water resources management of the Amu Darya and Syr Darya rivers, and an interstate agreement in 1992 establishing the Interstate Commission for Water Coordination (ICWC).

1993: Three new regional institutions were created to serve the ASBP: the Interstate Council of the Aral Sea (ICAS) in Uzbekistan, the International Fund of the Aral Sea (IFAS) in Kazakhstan, and the Sustainable Development Commission (SDC) in Turkmenistan.

1994: The ASBP was launched at a meeting in Paris, at which donors pledged support for a comprehensive program focused on eight themes and 19 projects to assess the deteriorating conditions in the basin region and propose solutions.

1996: The World Bank conducted a review of the ASBP, which recommended changes in the structure and operations of the ASBP institutions and initiated the development of WEMP.

***Phase Two (1998-2003): Implementation of regional water and environmental management project***

1998: WEMP, funded by the GEF and three other donors and managed by the World Bank, was approved in 1998 at a total cost of \$21.2 million and was completed in 2003.

***Phase Three (1997-present): Bank support for in-country operations***

1997: The Bank began financing national-level operations, amounting to about \$1 billion to date. These operations—designed to improve irrigation; water supply and sanitation; and policy reform in land administration, agricultural development, and rural development—are intended to support the overall goals of the ASBP

1.9 ***Unsatisfactory project performance:*** WEMP began in September 1998 and was closed in 2003. The Implementation Completion Report (ICR) rated the project as “unsatisfactory” for three reasons: poor financial management; weak leadership, which was made worse by insufficient participation and representation by the concerned countries; and poor implementation, which failed to reduce water withdrawal from the two rivers (one of the project’s main goals).

1.10 ***Third phase:*** In 1997, the Bank began a third, overlapping phase of support involving the financing of in-country operations in each of the five riparian countries. With these investments, the Bank became the largest funder providing assistance to countries to deal with problems related to the deteriorating conditions in the Aral Sea Basin. The Bank shifted the focus of its support to country-level activities. To date, the Bank has supported more than 16 loans and credit projects worth about \$1 billion. The operations finance efforts to improve drinking water supply and sanitation, irrigation and drainage, land and water management, land registration, area development, biodiversity, and several sector reform projects. (Annex A lists these projects.) Two of these operations have been completed; the rest are still in progress.

1.11 ***Focus of this review:*** The Bank ended its support to the ASBP when WEMP closed in June 2003, but continues its country-level operations as a way to advance the overall goals of managing the water and environmental issues in the region. This review focuses on the regional activities begun in the first phase of the ASBP, in 1992-1997, and activities carried out under WEMP in the second phase, 1997-2003. It also takes into account the Bank's on-going third phase of support, as well as evidence of progress by the end of 2005.

## **2. Relevance: Rationale, Alignment, and Design**

2.1 **Summary:** The broad ASBP and related WEMP were responsive to the riparian countries' request for help in addressing the deteriorated conditions in the Aral Sea Basin following several decades of diverting water for irrigation from the two main rivers supplying the sea. But the ASBP involved little planning for activities by the individual countries. High-quality technical experts and government officials designed the program, with limited participation by the affected communities. The underlying analysis did not adequately address the costs and benefits of interventions to the national economies and local communities; nor did it assess the risks to implementation posed by the countries' conflicting interests in improved water management. The structure of the regional units established to serve the program was complicated, weakly linked to national institutions, and short on professional staff responsible for strategic planning and policy analysis. These flaws carried over into the design of WEMP, which focused on activities to be implemented at a regional level without appropriate involvement of national agencies, and set overly ambitious objectives relative to its scale of financing and scope of activities.

### **SUBSIDIARITY PRINCIPLE**

2.2 The principle of subsidiarity states that a program should be organized and carried out at the lowest level effective. The Aral Sea is a shared resource and a regional approach was required to deal with the multiple, intertwined crises of the Aral Sea Basin and their impact on the lives of people living throughout the basin region. But as became clear in the course of implementing WEMP, attention also needed to be paid to the country-level costs and benefits of a regional effort and support provided for in-country interventions to deal with problems of direct importance to program beneficiaries.

2.3 The scope of the problems affecting the Aral Sea Basin and the surrounding communities were caused by the diversion of water from the two rivers supplying the Aral Sea. The integrated nature of the irrigation and energy systems on the Syr Darya River are complex, difficult to manage, and relied during the Soviet era on a barter transaction among the downstream countries. Uzbekistan and Kazakhstan, which need water in the summertime for irrigation, supplied the Kyrgyz Republic with coal and gas in winter in exchange for water in summer. The water-sharing agreements among the riparian states are fragile and inadequate in terms of international legal obligations, due in part to mistrust among the parties involved. To address these problems, a special effort was needed to design a collective program to coordinate the countries' actions. National-level actions were seen as essential for success if implemented within a well-coordinated regional program, but little was done to articulate these actions during the early planning phase of the program. The regional program was conceived to help the riparian countries ease tensions surrounding water allocations, and to provide technical and financial support at both the regional and national level.

2.4 The pattern of water allocations along the Amu Darya and Syr Darya for irrigation and energy has produced winners and losers among the communities



surrounding the Aral Sea Basin. According to background studies, about 4 million people living around the sea and the delta areas have lost their livelihoods from the decline of the fishing industry and the encroachment of saline soils. They also have experienced health problems from salt-contaminated dust from the exposed seabed and saline water used for drinking. This loss was contrasted by benefits captured temporarily by about 31 million people, mainly in Uzbekistan and Turkmenistan, who doubled irrigated lands to about 8 million hectares over 50 years of exploitation of the two rivers feeding the Aral Sea. This gain was temporary because poor management of irrigation systems caused increased soil salinity and waterlogging, which reduced benefits of irrigated agriculture. Regional action was needed to address these overlapping problems. Irrigation, which consumes more than 85 percent of the water in the two river basins, led to uneven economic development of the five countries. Among the downstream countries, Uzbekistan accounts for 53 percent of the basin water use, Turkmenistan 22 percent, and Kazakhstan 10 percent. Among the upstream countries, Tajikistan accounts for about 10 percent and the Kyrgyz Republic only 5 percent.

#### **ALIGNMENT WITH COUNTRY, REGIONAL, AND BANK GOALS AND STRATEGIES**

2.5 After the breakup of the Soviet Union, the responsibility for managing water and related issues associated with the Aral Sea was passed to the newly independent five riparian countries. The Bank expressed support for the strategy adopted by these countries to establish new regional institutions that could address such issues, seeing solutions to the serious deterioration in the environment as salient objectives relevant to environmental protection and poverty reduction in Central Asia.

2.6 The regional program complemented the objectives of the Bank's Country Assistance Strategies (CAS) for the five riparian countries. These strategies were designed to promote economic growth, develop rural communities, and improve and rehabilitate the agriculture and water sectors within a sound environmental policy framework. The strategies proposed support for analytical work and investment operations to stop environmental degradation, improve water management, reverse desertification, restore lands and ecosystems, and address factors causing declining productivity of the farm sector in these countries. The objectives of the ASBP were also consistent with the Bank's global environmental strategy, which was concerned with global hot spots that needed support from international partners. The Aral Sea Basin was identified as a priority area in need of such support.

#### **REGIONAL CONSENSUS**

2.7 ***Countries' shared interests:*** For the five countries in Central Asia, common problems and shared resources necessitate coordinating water and energy policies and programs. Under the Soviet Union, the region's role in a larger planned economy determined the construction of water infrastructure and canal systems; the creation of water-sharing agreements; and the generation and pricing of—and trade in—energy. With the dissolution of the Soviet Union, the links were broken and the integrity of the infrastructure systems destroyed. Political, logistical, and bureaucratic obstacles at

national levels limited communication among decision-makers regarding water agreements. And efforts at regional cooperation had limited success because mutual trust among the riparian states remains weak.

2.8 ***Acknowledgment of shared interests:*** Against this background, the political leaders of the riparian countries stated their strong interest in international efforts to help restore the Aral Sea Basin. The five heads of the Central Asian republics endorsed the Nukus Declaration in 1995, which committed them to regional cooperation in pursuit of sustainable development in the Aral Sea Basin, and endorsed the Almaty Manifest in 1998, which identified restoring the Aral Sea Basin as a priority and called on the international community to provide support and assistance. This was followed by another declaration signed by the five presidents in Ashgabat in 1999. But regional cooperation on the ground as measured by financial contribution and cofinancing has not matched the strong political commitments made during these presidential meetings.

2.9 ***Countries' conflicting interests:*** The main source of mistrust and conflict among the five countries lies in disputes between upstream and downstream uses of the region's transboundary waters. At present, the two upstream countries, Tajikistan and the Kyrgyz Republic, use water for power generation during the winter months, when water flow in the Syr Darya basin is at its minimum. To do this, much of the water has to be stored during the peak spring/summer seasons, which is the period when downstream users, Uzbekistan, Kazakhstan, and Turkmenistan, most need water for irrigation. The dams in upstream countries can not recharge adequately to supply the large volume of water needed in summer by the downstream countries. Moreover, water releases from power operations during the winter in some years have caused serious flooding downstream, where water flow is inhibited by frozen canals not engineered for winter.

2.10 During the Soviet period, the upstream countries were provided with large yearly shipments of coal and gas distribution was arranged. Today, while agreements still exist between the countries for fuel transfers in return for water, they are often broken or neglected on both sides, with upstream countries not supplying agreed-upon water quotas, and downstream countries not delivering agreed-upon fuel supplies needed to keep residents of upstream countries warm in winter. As a result, the riparian countries have expressed support for the regional program, but for different reasons. This has affected the efficiency of implementation and development impact of the ASBP, as discussed in more detail below.

## **PROGRAM DESIGN**

2.11 ***Phase One:*** The ASBP, as indicated above, was initiated in 1992. During its first phase, it supported a series of technical studies, developed a strategic action plan, and established regional institutions to oversee and coordinate program activities. The studies completed in this period addressed interstate issues related to conditions of the Aral Sea, such as environmental degradation, allocation of transboundary water, managing water quality and quantity, decline in water productivity in agriculture, and institutional weakness.

2.12 ***Phase One's design weaknesses:*** The strategic action plan based on these studies was meant to be supported by a rolling sequence of program interventions. But the plan lacked a logical sequence of intervention. For example, it did not require the riparian countries to establish professional authorities responsible for joint river basin planning and development. By focusing only on the problems of the Aral Sea, which are downstream problems, without addressing the root causes of poor water management in upstream zones, the program cannot make a significant contribution to solving to the Aral Sea's problems.

2.13 ***Phase Two:*** The implementation of WEMP formed the second phase of the ASBP. Designed to help implement the ASBP, WEMP focused on two of the program's four main objectives: stabilizing the environment and improving the management of international waters. To achieve these objectives it financed several operational components: national and regional water and salt management, including support for technical studies and a competition for farmers and water agencies to propose low-cost water conservation measures; public awareness campaigns to convince water users to reduce water consumption by 5 percent by the end of 2002; dam safety and resource management to assess the safety of selected dams and provide training in dam safety; transboundary water monitoring to install water-quality monitoring equipment at several water-monitoring stations; and wetland restoration to rehabilitate Lake Sudoche. The project also established a project management and coordination unit (PMCU), which coordinated the regional activities and managed the separate donor accounts that supported these activities.

2.14 ***Phase Two's design weaknesses:*** Experts from the Bank, the donor community, and government agencies of the five riparian states designed the program, with little or no participation from the affected communities. The public awareness component was one area where this disconnect was particularly detrimental to the design of activities. The aim of the component was to inform the public about the Aral Sea crises and to encourage it to take recommended actions. This effort failed to recognize the region's political realities. The campaign was based on modern methods of public relations designed to reach specific groups of water users and policy-makers. Public awareness was no substitute for field-level participation that could have mobilized the communities to coordinate their efforts to achieve the project objectives. The public awareness approach was premature in a cultural context where such campaigns are broadly understood as government propaganda, and where users have little or no participation in the design and delivery of water systems.

2.15 ***Phase Three:*** By 1997, the Bank concluded that national-level operations would be more effective in assisting each of the five riparian states in its effort to develop national strategies for improved management of water, the environment, and rural development. The Bank began to invest in national operations that aimed to deliver economic and social benefits to the national economies and local communities via irrigation and drainage, improved local-level water management, and enhanced performance of the water sector. While little or no investment was allocated to the ASBP in these operations, the Bank and the borrowing countries contended that improving the

national irrigation and drainage programs would eventually lead to efficient use of water, which in turn would benefit the overall water flow to the Aral Sea.

2.16 ***Bank local- and national-level investments:*** The Bank investments include the Syr Darya Control and North Aral Sea Project in Kazakhstan, which was intended to improve the irrigation infrastructure in Kazakhstan and restore water to the northern Aral Sea and the delta of the Syr Darya. The Bank also financed an irrigation and drainage project in Kazakhstan to complement that effort. Similarly, four projects were financed in the Kyrgyz Republic to control flooding, improve farm water management, improve rural water supply and sanitation, and rehabilitate local irrigation systems. Three projects were financed in Tajikistan, two in Turkmenistan, and three in Uzbekistan. The development objectives of the country-level operations were designed within the framework of the Aral Sea Basin Project, with a specific focus on achieving benefits for the local communities. The shift in focus from supporting regional activities to supporting local- and national-level projects has provided financial support for locally relevant operations at the national level, and allowed the beneficiaries the chance to become involved in managing water resources through local organizations such as water users' associations.

#### **CLARITY AND MONITORABILITY OF OBJECTIVES**

2.17 ***Overbroad objectives:*** The four objectives of the ASBP (see paragraph 1.6) were stated in broad terms. These goals were not supported by an implementation framework and accompanying quantifiable indicators to measure progress and provide timely feedback for guiding corrective actions. The difficulty in monitoring progress toward these objectives was compounded by the poor articulation of the responsibilities of each participating country, compounded by inadequate implementation plans to guide participating national agencies.

2.18 ***Failure to gather data or monitor regional cooperation:*** Because the project components were not supported by clear performance indicators, Bank supervision missions did not gather and update empirical data or field information related to progress in achieving objectives. Nor did they use any empirical indicators to monitor regional cooperation. The collective political support from the heads of the five governments was perceived as a strong commitment to the regional effort. But that political support did not translate into a country-level commitment to reducing conflict over transboundary water allocations, increasing budgetary contributions for operational activities, or improving integration of those activities at the national level.

2.19 ***Unrealistic and nonmeasurable water management targets:*** The main quantitative objective was to improve water management by reducing water use by about 15 percent of the total water flow of the two main rivers, the Amu Darya and Syr Darya. This target implies that the countries would need to divert about 20 billion cubic meters to the Aral Sea, a target that was not supported by a credible technical program with the adequate financial resources needed to upgrade the water delivery systems in the participating countries. Although improving water management and conservation was a major goal, it was impossible to measure any success in this area or any progress in building the capacity of regional or national water and environmental agencies.

2.20 ***WEMP's outcome rated unsatisfactory:*** WEMP had the same overarching goal of reducing water withdrawal from the rivers by 15 percent in the project period. There was, as noted above, a considerable disconnect between project indicators, project design, and the scale of the project's financial resources needed to achieve project objectives. The unrealistic goal of diverting about 20 billion cubic meters to the Aral Sea was not supported by convincing monitoring measures and tools. The ICR found that the project's monitoring and evaluation arrangements were weakly developed, and ad hoc findings on results were not disseminated in a timely way. Thus, there was little feedback on implementation. Key performance indicators were added by the supervision mission in late 1999, but they were narrower in scope than the aims of the project components and used inadequate baseline data.

2.21 ***Design weaknesses addressed in later country-level operations:*** The weakness in the design of monitorable indicators for water management in both the ASBP and WEMP were later addressed in the country-level water-related operations supported by the Bank starting 1998. These operations included well-defined indicators related to each component in the national-level operations. Still, these indicators are short on monitoring the overall impact of the new operations on the Aral Sea.

### **3. Efficacy: Outcomes, Impacts, and Sustainability**

3.1 *Summary:* The ASBP's main achievements have been in mobilizing the support and defining the actions needed to stabilize the environment around the Aral Sea. The first phase supported studies by highly qualified technical experts and established regional institutions that influenced the design and implementation of WEMP and other second-phase projects. WEMP undertook further studies on specific issues of water and soil management, water conservation, dam safety, transboundary water monitoring, and wetlands restoration, and supported some pilot investments in these areas. WEMP achieved better understanding of how to improve water management, and succeeded in those activities when the objectives were clear and simple, and when financing was certain—notably in improving dam safety, installing water monitoring stations, and restoring the wetlands surrounding Lake Sudoche in Uzbekistan.

3.2 But project performance was poor in improving water conservation and translating water management studies into action plans, mostly because the countries failed to take ownership of the problems and their proposed solutions. Overall, the level of trust among the riparian countries and the limited scope of the program components were insufficient to achieve significant progress on the project's overarching goal of reducing water withdrawal by 15 percent from the rivers supplying the sea. WEMP was completed in 2003 and received a rating of unsatisfactory in its ICR.

3.3 Many of the findings and recommendations of the phase one and phase two WEMP studies were not adequately translated into participatory operations owned by national agencies and the intended beneficiary communities. These studies, however, were helpful later on because they were used by the riparian countries and donors to design national-level operations. As mentioned earlier, these operations attempt to address the root causes of the Aral Sea crises and bring the potential benefits of investment in restoring the Aral Sea Basin closer to the national economies and local communities. These operations—supported by the Bank to improve the performance of the water sector by modernizing individual countries' irrigation and drainage systems—are under implementation and therefore not covered in this section on achievement of program objectives.

#### **ACHIEVEMENT OF OBJECTIVES**

3.4 *Objectives:* The four main objectives of the ASBP were to: (1) stabilize the environment of the Aral Sea Basin; (2) rehabilitate the disaster area around the sea; (3) improve the management of the international waters of the Aral Sea Basin; and (4) build the capacity of the institutions at all levels, including the regional units mentioned above. In addition, the program was designed to help affected states develop national and regional policies for addressing the crisis and to provide a framework for national macroeconomic and sectoral policies to achieve sustainable land, water, and other natural resources. In helping to implement the ASBP, WEMP focused on stabilizing the environment and improving water management (the first two objectives); it also aimed to

contribute to the other two objectives, though they were primarily addressed by other partners. The two different phases of the ASBP achieved different objectives.

**3.5 Phases One and Two:** The first phase supported several important regional studies, many of which were continued under WEMP. These studies clarified, quantified, and detailed the main causes affecting the Aral Sea. They confirmed that water scarcity in the basin was not primarily due to allocation tensions at the regional level. Dilapidated infrastructure and poor government policies in Uzbekistan and Kazakhstan, the downstream countries, produced inefficient water use and resulted in reduced inflows to the Aral Sea. In the second phase, WEMP also supported pilot activities in three substantive areas, carried out for the most part by a project management and coordination unit.

**3.6 WEMP's outcomes:** Box 3.1 provides a summary of the extent to which WEMP achieved its specific objectives. This assessment draws heavily on the project's ICR and gains additional insights from interviews with project stakeholders during a field mission in early 2006. While pointing out that several of WEMP's activities had replicated physical models of improved water management in the basin and, therefore, had achieved their intended physical outcome, the ICR rated the project's overall outcome unsatisfactory. Its reasons for that rating were: (a) poor financial management of the project; (b) weak leadership by the regional bodies, especially by the PMCU, further diminished by insufficient participation by the riparian countries and lack of engagement with national agencies; and (c) inadequate scope, which led to the project's failure to reduce water withdrawal from the two rivers.<sup>3</sup>

**3.7** This review concurs with the ICR's outcome rating and reasons for it. It finds, in addition, that a major impediment to project performance was the lack of country ownership of some of the studies' findings. In particular, the countries downplayed the issue of poor management of irrigation and related salinity problems, and instead wanted to address issues related to water allocations among the riparian countries. A second, related, major impediment to project performance was the lack of trust among the riparian countries and the project's failure to adequately address conflicts related to water allocation between upstream and downstream riparians. While resolving the conflicts is a long-term challenge, there are ways to address it. Major investments at the national level to modernize irrigation, drainage, and water storage systems would reduce inefficiencies in national water management. The project should have, at a minimum, supported institutional, legal, and technical efforts to establish a viable water management framework. While generous investment in studies by several donors has built an impressive knowledge base about the scope of the crises affecting the Aral Sea Basin, there was little effort to produce state-of-the-art operational maps for the river basins and associated water utilization systems in the five riparian countries.

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<sup>3</sup> As discussed below in Section 4, one example of the riparian countries' limited participation was their failure to make counterpart funds available. This contributed to a scaling down of all components midway through the project.

### **Box 3.1: Despite Specific Achievements, the Outcome of WEMP Was Unsatisfactory**

WEMP supported several substantive components and one project management component. Their main achievements and costs<sup>1</sup> are the following.

**Component A: National and Regional Water and Salt Management** (\$4.9 million). The studies demonstrated that water scarcity in the Aral Sea Basin is not due to intercountry allocation tensions. Water resources in the basin are adequate to meet current needs. About 70 percent of water diverted from the rivers is lost and only 30 percent is beneficially used to grow crops. Debilitated infrastructure and poor government policies were the main reasons for inefficient water use, especially in Uzbekistan and Turkmenistan.

**Component B: Public Awareness** (\$1.4 million). Media campaigns were mounted to inform farmers, policy-makers and other groups about the regional program. But they were poorly conceived and no attempt was made to measure their impact on improving water use.

**Component C: Dam safety and Reservoir Management** (\$2.2 million): Support for the safety assessment of the 10 dams in the riparian countries helped create awareness among government officials about the urgency of dam safety, and led to support for improved safety of nine dams. Rehabilitation of these dams also helped to ease the water and energy conflicts between upstream and downstream users by increasing the supply of water to generate energy in winter and irrigate crops in summer seasons. But more water storage capacity is needed, especially during the winter seasons, to better manage water allocation conflicts.

**Component D: Transboundary Water Monitoring** (\$3.0 million). The project established 25 water monitoring stations to record water levels and assist in planning water flow and water quality, including salinity, along the river basins. Equipment was also procured for an additional 12 stations before the project was closed. The equipment was delivered to Tashkent and officials in the Kyrgyz Republic and in Tajikistan complained that they had not received their shares of equipment after the project closed. The Bank did not follow up on this complaint.

**Component E: Wetlands Restoration** (\$3.4 million). The project assisted in restoring Lake Sudoche and provided a successful model for addressing the environmental degradation of the wetlands in the basin. This achievement has led to additional investment by the World Bank and the government of Uzbekistan in wetland restoration.

**Component F: Project Management Unit** (\$0.6 million). The decision to rotate the chairmanship of the main regional coordinating unit (EC-IFAS) from state to state every two years, and to physically separate the PMCU from it, proved unworkable. Financial management by the PMCU was substandard. On the whole, the project failed to establish viable and professionally staffed regional units.

<sup>1</sup>The costs are those reported (after a midterm scaling back to take into account the absence of expected country counterpart funds).

*Source:* "Implementation Completion Report" February 25, 2004, Report No: 27626.



## CAPACITY BUILDING

3.8 ***Capacity building unsuccessful:*** One of ASBP's four main objectives was to build the capacity of regional institutions, but neither ASBP nor WEMP were successful in achieving this objective. At the regional level, the ASBP established a number of regional governance units (listed in Table 4.1). The main functions of these regional bodies were to attract international and regional attention to the environmental conditions in the basin, mobilize financial resources needed to address the complex development and rehabilitation issues affecting the region, and maintain regional cooperation among the riparian countries. In addition, WEMP supported a PMCU. The interactions among these bodies, their generally poor performance, and reasons for the shortfalls in strengthening their capacities are discussed in detail below in the sections on Governance and Management (4.4-4.5).

3.9 ***Failure to address national-level capacity building:*** The ASBP did not address the issue of building capacity at the national level. From 1994 to 2001, the program relied heavily on expatriate technical assistance, especially to conduct detailed technical studies and make investment plans for which the riparian countries took little or no ownership. Although these studies have produced valuable reports and documents about select technical issues affecting the basin, the communications between expatriate consultants conducting these studies and national staff was poor. This disconnect resulted in weak commitments by both donors and national governments to timely implementation of the recommendations of these studies.

3.10 ***Lack of support for national institutions and agencies:*** WEMP also did little to support relevant national institutions and agencies. Some training was provided under the two components on dam safety and water monitoring. But, national staff members who were expected to design and implement project activities, strategic planning and policy, and economic analysis received little training. The focus on only supporting regional institutions without corresponding support to national counterpart institutions created a serious institutional gap which undermined the program's overall contributions. This shortcoming was ascribed in part to the fact that the project was financed by the Global Environment Facility to address environmental problems which have been framed as regional problems.

3.11 ***Recent Bank support for national-level capacity building:*** When the Bank shifted its investment program toward financing water projects at the national level, the new operations included significant support for capacity building and for new institutional arrangements of national-level agencies (such as national committees for water resources and river basin consultative groups) and farm-level organizations (such as water users associations) to train their members in operations, maintenance, and water distribution and allocation management.

## REALIZED DISTRIBUTION OF COSTS AND BENEFITS

3.12 ***Regional efforts should have focused on supporting national agencies:*** Both the ASBP and WEMP scope and design should have been modest and simple in view of the

riparian countries' different interests in the program objectives and their limited coordination and implementation commitments and capacities. Not all riparian countries supported the entire ASBP: the downstream countries were interested in improving water supply for irrigation and the upstream countries in securing water for hydropower. There was little implementation experience among them and the newly created regional institutions had no track record. Against this background, the national agencies should have been supported from the outset to implement project activities and to mainstream the results of regional components into national plans.

3.13 ***Benefits to local communities not shown:*** Available evidence does not show that the program substantially improved the livelihood of the fishing communities surrounding the Aral Sea or the farming communities in the river basins. The impact on irrigation productivity was not measured. While farmers have historically benefited from expanded (but not always efficient) irrigation services, the regional program did not provide much support for them. As for the fishing communities, their problems also were not alleviated by the program intervention. In addition, though trade-offs between water use for energy and irrigation emerged as a major issue (as the previously established barter system disintegrated), mechanisms were not developed to work out a legal and regulatory framework to ease tensions and foster greater cooperation.

## **RISKS TO OUTCOMES AND IMPACTS**

3.14 ***Failure to address risks:*** WEMP faced political, equity, and managerial capacity risks that were not adequately analyzed at the stage of project design or mitigated during implementation. The project design did not address the countries' varying levels of commitment to the regional effort that resulted from differing interests in water management among them. The effect of overlooking these risks became evident soon after the project started; when mistrust among the riparian states became a serious factor in achieving project objectives (as discussed in more detail in Section 4). Nor did the design take into account the weak policy environment within which the project was to be implemented. The five countries did not have comprehensive water policies. There was a substantial risk of financial shortages because of poor cost recovery in the water delivery systems and uncertainty in cofinancing by several donors.

3.15 Mitigation measures taken during implementation did not prevent the need to substantially scale down or drop several activities after the project midterm review, as indicated above. For example, limited financing available for water conservation should have been recognized as a main factor behind poor results in improving irrigation efficiency, saving water, and diverting the conserved amount to restore the Aral Sea.

3.16 ***Outcomes transferred to national level likely to be sustainable:*** Three outcomes of the ASBP directly supported by WEMP are likely to be sustained because they were mainstreamed into the national government programs: dam safety and reservoir management, transboundary water-flow monitoring, and wetland restoration. For example, the ICR confirmed that Uzbekistan had decided to expand the restoration program with its own resources and is creating a permanent body to manage the restored wetland areas. The benefits from investing in dam safety have generated both political

and financial support for additional investment in this area in the participating countries. Also, the database and scientific models generated from these studies have been shared to design the follow-up national-level operations (which are largely supported by bilateral and multilateral aid programs including grants, credits, and loans from IDA and IBRD).

3.17 In contrast, the regional institutions established under the ASBP are unlikely to be sustained, because of weak partnerships with the corresponding national water agencies, and also because support from donors has declined, as discussed in more detail below in Section 4.

3.18 ***Continued financing necessary to sustain program:*** The financial sustainability of the regional program became uncertain when the GEF-funded operations, including WEMP, were completed. The cost of several WEMP components, such as water and salt management and water conservation, were underestimated. Achieving sustainable results would require substantial investment, which became possible only when such issues were carefully appraised at the national level. Financial sustainability of regional institutions such as the International Fund of the Aral Sea (IFAS) would depend on continued support from UNDP, USAID, and other donors. Sustainability of field-level activities depends on how successful the program is in mobilizing grass-roots support from water users through the establishment of active water users associations. These associations would collect water fees needed to cover operations and maintenance on local water courses.

3.19 ***Environmental sustainability:*** The environmental sustainability of the program has been supported by several interventions, including the establishment of a regional database to collect and monitor the environmental conditions of the Aral Sea Basin, the design of national-level operations to improve water management along the two main rivers, and the strengthening of research and development activities related to conserving biodiversity in the wetlands and deltas of the basin. The separate regional program for biodiversity, not reviewed here, has been funded by another regional grant from the GEF.

3.20 ***Cultural and social sustainability:*** The cultural and social sustainability of Aral Sea Basin communities will not be achieved by efforts to restore the sea to its original level. Communities that, for generations, have been dependent on the sea for fishing, trade, and other activities would have to be assisted through special investment operations to help find alternative economic activities. The sustainability of these communities will rest, therefore, on the level of support they receive from their respective governments and concerned international and bilateral partners.

3.21 ***Country ownership and commitment necessary to sustain program:*** Overall, the sustainability of program outcomes will rest on the strength of ownership and willingness to resolve conflict over international water issues by the national governments as well as the affected communities. This ownership was not ensured at the close of WEMP because the stakeholders' engagement in the preparation, design, and implementation of the regional project was limited, and because action plans for achieving direct benefits from most project activities were not developed before project closing. It remains to be seen if follow-up investments based on project findings can move substantially in that direction.

## 4. Efficiency: Governance, Management, and Financing

4.1 *Summary.* The implementation of the regional project was not efficient. It was hampered by weak governance and management arrangements. In particular, the rotation of the leadership and offices of key regional units among the capitals of the riparian countries to accommodate political sensitivities added cost and reduced the quality of project oversight and implementation. Project financial management was cumbersome, due to the weak coordination among multiple donor accounts, and poorly performed by the project's management unit. Also, heavy reliance on external consultants and limited involvement of national institutions made the project costly and hindered the translation of studies into plans for needed national actions.

### GOVERNANCE, MANAGEMENT, AND LEGITIMACY

4.2 WEMP implementation and the related achievement of ASBP objectives were undermined by several features of the project's governance and management structure. Table 4.1 describes the regional governance and management units and their main functions.

**Table 4.1: Institutional Framework for the Aral Sea Basin Program**

<b>Regional Institution</b>	<b>Composition</b>	<b>Function</b>	<b>Location</b>
Interstate Council of the Aral Sea (ICAS)	Presidents of the five countries	Coordinates overall regional program; merged with IFAS in ....	Transfer of office with chairman
Interstate Commission for Water Coordination (ICWC)	Ministers of Water of the five states.	Manage water allocations and reservoir operation schedules. Decisions have to be unanimous and are binding.	Tashkent
International Fund for the Aral Sea (IFAS)	Executive secretary from the country that leads the program; rotating chairmanship every two years and professional staff from riparian countries.	Apex organization for coordinating and implementing ASBP regional projects.	Office rotates with chairman
Sustainable Development Commission (SDC)	Representatives of five water ministries	Address and monitor ASBP environmental issues	Ashgabat, Turkmenistan
Project Management and Coordination Unit (PMCU)	Staff recruited by Bank	Project management for WEMP	Tashkent

4.3 ***Effect of political factors on institutional structure:*** The institutional structure for the project was driven by political decisions and power relationships among the riparian countries, rather than by criteria for program effectiveness and efficiency. Specifically, the chairmanship of the main governing body—the International Fund for the Aral Sea (IFAS), which merged with the Interstate Council to become the EC-IFAS in 1996—rotated from state to state every two years and its offices moved with the position. This instability caused a decline in the quality of support provided by the unit. It also separated the governing body from the PMCU, which was permanently situated in Tashkent, Uzbekistan. This allowed Uzbekistan to dominate the PMCU, to the consternation of other riparian states.<sup>4</sup> These two problems caused support for the regional institutions by the countries and donors to decline.

4.4 ***Failure to adequately represent small countries:*** The inadequate handling of the sensitive relationship between “big” and “small” countries was another source of difficulty. Officials from the Kyrgyz Republic and Tajikistan (“small countries”) expressed frustrations and dissatisfaction for the way they were treated by officials from Uzbekistan, especially when the PMCU was located in Tashkent. Every effort should be made to protect the interests of small countries when they share regional programs with big countries, especially in staffing regional units and providing access to financial resources.

4.5 ***Disproportionately high-paying regional jobs:*** Also, regional jobs created under the program were better paid than the counterpart national jobs. National staff for the regional institutions were selected through a political process. The PMCU has a large number of local staff as well as directors for each component and several national coordinators. This arrangement may have facilitated the Bank’s interest in establishing a unit that could follow Bank procedures, but it did not build ownership at the country level. On the contrary, it may have led to resentment from technical ministries. Civil servants of the specialized ministries, who are poorly paid in most Central Asian countries, did not play a major role and were insufficiently involved in or supported by the regional staff.

4.6 ***Failure to address national-level problems:*** Under the ASBP, the role of national institutions and the support they received were inadequate for two distinct reasons. First, riparian countries were not willing to delegate authority to a regional body to manage water allocations, despite agreeing, in a declaration of the five heads of state, to implement the program. Nor did they have strong national institutions technically and politically capable of addressing such issues. Second, the PMCU dominated the

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<sup>4</sup> The Bank negotiated the project agreement with EC-IFAS when the chairmanship was held by the government of Uzbekistan. At that time, it agreed to the recruitment of staff on a no-objection basis and en bloc—that is, without vetting of individual qualifications. It also agreed to the appointment of the former chairman of EC-IFAS, who had handled the original negotiation with the Bank, as the director of the PMCU, immediately after he had completed his chairmanship of EC-IFAS and signed the Grant Agreement. This represents a conflict of interest. Several officials from the Kyrgyz Republic and Tajikistan interviewed for this study confirmed that the support from the PMCU was inefficient and not equitable, and follow up by the Bank on the performance of the project unit was weak.

management and coordination of the regional studies and pilot activities, with too little engagement of and support to national agencies. The individual countries had neither the capacity nor the resources to translate studies into operational plans.

4.7 ***Need to address both national and regional levels:*** The success of the regional program requires clearly defined roles and capacity building at both the regional and national levels, and well-developed interactions among units at those levels. Competent and professional regional institutions are needed to play a modest, well-defined role focused on regional services that cannot be performed by national agencies, such as data and information standardization and clearing services, updating regional reports, collecting and classifying studies and reports, and facilitating communication and exchange of experiences. At the same time, national agencies need to be strengthened so they can effectively manage and implement the program within a framework of regional cooperation.

## FINANCING

4.8 ***Donors:*** The ASBP was financed by some 20 donors, four of which financed WEMP—notably the GEF, the Netherlands, Sweden, and the EU. The total financing package for phases one and two of the program was about \$45.7 million, as indicated in Annex B.

4.9 ***Countries' failure to pay:*** The financial management of project interventions faced several problems. The participating countries did not deliver their agreed-upon financial contributions to the GEF-funded project management unit. Estimates for total project and component costs were not always possible because of inadequate information about the contributions of the five participating countries, changing disbursement percentages for various expenditure categories, and fluctuation in exchange rates during project implementation.

4.10 ***Complicated disbursement process:*** Project financing remained a cause of tension among the partners of the regional programs, including the Bank. EC-IFAS did not have financial resources of its own to make up for any deficit. The disbursement process was complicated further because several special accounts were established, each account funded by more than one trust fund. Transactions were difficult to trace. The ICR concluded that the financial management difficulties experienced during implementation were caused by the following project design features: low disbursement percentage from the Bank, a large number of special accounts, and activities funded by several trust funds, compounded by the poor financial management skills of the PMCU.<sup>5</sup> Most supervision missions raised the financing issues, and disputes over their solution consumed time and

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<sup>5</sup> The PMCU has to manage several trust funds which complicated the financial arrangements of this project. This is an important issue for GEF funded operations because GEF policy emphasizes the need for substantial cofinancing.

energy, which diverted attention from other important technical and institutional challenges facing project implementation.

4.11 ***Countries' contributions and benefits unclear:*** A major weakness in WEMP financing procedures was the confusion about the riparian countries' share in the overall project budget. The budget was allocated by component and not by country. The final financial reports provide information as to what was spent by component, but give no indication as to which country benefited. This shortcoming is serious, since the small countries worried that their share in regional program would be threatened by the relatively larger demands of the big countries. Officials from the Kyrgyz Republic and Tajikistan complained that they did not receive confirmation of or updates on their financial share in WEMP.

4.12 ***Weak coordination with other projects:*** The overall coordination with other environmental projects was weak. Officials from the environment departments of three riparian countries confirmed that they were not invited to participate in WEMP. Officials responsible for managing the environmental program of Lake Sarez, which was also financed by the GEF, confirmed that they also were not invited to participate in the program despite the fact that the lake is an integral component of the Amu Dary River Basin system.

4.13 ***Costly reliance on outside consultants:*** The heavy reliance on external consultants also made the project excessively costly. The project did not engage local research institutions such as universities, agriculture and water study centers, or local colleges to conduct field surveys, gather field data, or monitor progress in implementation. The limited resources available for the regional program were not prudently allocated by engaging local consultants or institutions to do local field work. Such engagement could have saved on expensive expatriate consultants and created strong partnership with local institutions of excellence.

## 5. Monitoring and Evaluation

5.1 ***Inadequate M&E framework:*** WEMP did not include an adequate framework for monitoring and evaluating its performance or results on the ground. During supervision, adjustments were made and a few monitoring indicators were added, as noted above. But there was no quantitative framework to measure progress, and targets were set in general terms with little or no supporting benchmarks. The objectives of the project were broad: to stabilize the environment and improve management of international water. There was no quantitative measure as to what was meant by stabilization of the environment, and no credible tool to measure improvement international water management.

5.2 ***Overbroad performance indicators:*** The supervision reports included simple accounting of what actually had been implemented and delivered. The indicators were mainly supply oriented and not designed to measure impact. For example, the indicator for improved national policies and strategies was the conduct of studies and the collection of information about water management. The indicator for reducing soil salinity was listed as “to increase benefits to farmers,” but measurements of soil conditions or productivity were not taken before and after the project’s interventions.

5.3 ***Improved M&E framework in recent national-level operations:*** Later national-level operations financed by the Bank included more detailed monitoring and evaluation framework than the earlier regional operations. Lessons learned from past operations have been included in the design of new projects. But evaluation frameworks are still not supported by benchmark data to measure changes caused by the projects over time and space. The complexity of linking national objectives with regional benefits is still not well-articulated in the design of the new national projects.



## 6. World Bank Performance

6.1 *Summary:* The Bank played a central role in helping the riparian countries mobilize support to address the crises of the Aral Sea Basin and implement WEMP. It also made an appropriate shift in its support of the ASBP, by initiating country-level investments to deal with the core need to improve the efficiency of water management at national and local levels. But its intervention would have been more effective if it had fostered adequate involvement and strengthening of national institutions as an integral part of WEMP studies and pilot activities, and if it had actively built trust and resolved conflict among the riparians, developed viable regional water management agreements, and created professionally competent organizations to help countries implement and monitor these agreements.

### COMPARATIVE ADVANTAGE

6.2 The Bank played multiple roles in support of the goals of the ASBP.

- In the early phase, the Bank was a partner with a group of donors who mobilized support to initiate international cooperation to address the serious environmental problems surrounding the Aral Sea. The Bank was instrumental in coordinating donors' activities and in organizing meetings to review and finance the ASBP strategic and implementation plans.
- The Bank assisted in the preparation of the technical framework for the regional program and in shaping the regional institutional units responsible for its implementation.
- The Bank designed the GEF-funded project and acted as the executing agency.
- It assisted in providing technical assistance and policy dialogue, and monitored the performance of several regional activities through its supervision of the GEF project.
- At a later stage, the Bank financed national-level operations dedicated to water management and irrigation and drainage.

6.3 The Bank's support for WEMP was built on its convening power, its technical expertise, and its ongoing assistance to the countries in the region. The Bank has been helping the five participating states to reduce poverty and enhance rural development. These efforts depended on improving the living conditions of the millions of people whose lives have been affected by the deteriorating conditions around the Aral Sea Basin. The Bank worked with several donors to help the political leaders of the riparian states articulate a regional action plan and mobilize support for its implementation.

6.4 The Bank should have served as a trusted partner to assist in building confidence among the riparian states, which did not trust each other. But the Bank missed its opportunity to play a lead role in promoting regional and national objectives in the design

and implementation of WEMP. Specifically, the Bank did not use its influence to facilitate a special component dedicated to conflict resolution and international cooperation in river basin planning.

6.5 The Bank enhanced the relevance of its support to the overall regional program through several operations dedicated to improving the water sector at the national level. The development objectives of these operations complemented the overall goals of the ASBP.

### **THE BANK'S COORDINATING ROLE WITH OTHER DONORS**

6.6 At the strategic level, the Bank has been instrumental in mobilizing support for the regional program. Donors attended coordination meetings organized by the Bank and the riparian states requested that the Bank lead the multidonor effort to support the regional program. But difficulties were encountered in translating this coordination into joint operations. While WEMP was supported by the GEF, the Netherlands, the EU, and Sweden, other donors supported separate limited interventions, such as training and support for information technology.

6.7 WEMP also encountered financial management difficulties, as discussed above, because the donors required it to keep separate accounts for their individual contributions. Stakeholders in the riparian countries contend that the Bank did not adequately address the financial irregularities that arose in the PMCU's handling of these financial arrangements.

### **QUALITY OF SUPPORT AND OVERSIGHT**

6.8 The Bank provided technical support throughout the ASBP phases. In the early phase it provided technical assistance for a series of well-conducted studies. It also provided strong technical support for the design and implementation of studies conducted under WEMP. But there were significant weaknesses in the quality of its support during the design and supervision stages.

6.9 The weaknesses of the Bank's input at the design stage were:

- a) Objectives to save the Aral Sea were unrealistic and beyond the project's scope or available resources.
- b) Intervention was limited to saving the Aral Sea, without addressing the roots of the problem, such as supporting an international framework for cooperation in managing river basin planning along the Amu Darya and Syr Darya.
- c) The political reality of the region was ignored, notably the lack of trust among the riparian countries.
- d) The Bank should not have accommodated the political desire of participating states to separate the project management unit (PMCU) from the executive

secretariat for the IFAS. This management structure was not ideal, and the Bank allowed it in an effort to please the client countries. The implementation environment in the five riparian states in the mid-1990s was challenging, and the Bank had limited experience in implementing projects in the newly independent states in Central Asia.

6.10 The Bank's management provided an adequate supervision budget for WEMP. A midterm review was conducted in 2001 by well-qualified experts. The review resulted in substantial changes in project design, including the cancellation of two subcomponents and the reallocation of funds to more promising activities.

6.11 Yet, the supervision missions were staffed by consultants who rarely visited all the riparian countries and did not facilitate interstate communications.<sup>6</sup> The skill mix of the missions was not adequate, and the terms of reference did not explicitly instruct the missions to encourage regional cooperation and the exchange of experiences among the riparian countries. The project experienced frequent turnover in task management. Between preparation and completion the Bank appointed four task team leaders to supervise the project.

6.12 The Bank's subsequent national-level loans and credit operations in the five riparian states benefited from several lessons learned from Bank's increasing involvement in the riparian countries through in-depth sector work and investment lending.

## **STRUCTURES AND INCENTIVES**

6.13 Oversight of project procurements, disbursements, and other functions were handled by the Bank country field office in Tashkent. The sector managers were closely involved in monitoring project performance and accompanied the project task team on several field missions. Sector managers participated in several supervision missions and actively discussed the findings of the ICR and its implication for future Bank support to the regional program. The split in responsibilities between field and headquarters staff interfered with the smooth implementation of the project.

## **LINKAGES TO OTHER BANK COUNTRY OPERATIONS**

6.14 The linkage between WEMP and other Bank country operations is mixed and evolving. While WEMP did not coordinate with other GEF-funded projects, especially the regional biodiversity project and the Lake Sarez project, the several Bank-financed

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<sup>6</sup> Officials in the Kyrgyz Republic and Tajikistan complained that they rarely met with the Bank's supervision missions and that consultants came infrequently to assess implementation. These countries also complained that the Bank did not provide them with adequate reporting about their financial shares in the regional program, and the Bank did not follow up to ensure timely delivery of goods procured by the PMCU. Some of the equipment procured for these countries reportedly remained in Uzbekistan.

national-level operations in water supply and sanitation, water management, biodiversity and irrigation, and drainage support ASBP goals. The Bank and other donors also have supported related operations in health and forestry. In addition, the Bank has conducted a series of studies as part of its country assistance strategies and economic analysis, which has included some reference to the problems and challenges of the Aral Sea Basin. With the closing of WEMP, there is no mechanism that links these separate national-level projects to an operational regional cooperation framework.

## **DISENGAGEMENT STRATEGY**

6.15 The Bank has not financed a second phase for the ASBP, and the pipeline of lending operations does not include funding for the regional program. Country-level investment operations financed by the Bank pay some attention to regional cooperation, but the Bank is no longer supporting the regional program. Instead, the Bank expects that national-level operations in the water sector, which are currently being supported through country lending programs in each of the riparian states, will improve water management in each country. Such improvement, in turn, could lead to better conditions in the Aral Sea Basin region. For example, the Bank supported the Syr Darya irrigation and drainage project, which has supplied large volumes of water to the northern Aral Sea. Also, the Bank approved a grant for Turkmenistan to rehabilitate the Karakum canal and to develop its valley area. The grant includes a component to support the original goals of the ASBP. The challenge for the Bank is to help the riparian countries articulate a strategy for managing water resources in Central Asia that would ensure regional issues are adequately addressed. Such a strategy would include cooperative support for improving the environmental conditions of the Aral Sea Basin and realistic overall objectives.

## 7. Countries' Participation

7.1 **Summary.** The riparian countries gave high-level political endorsement to the ASBP. But this commitment was not matched by adequate attention to conflict resolution or by financial contributions to support regional activities. The approach of the participating countries to managing the urgent regional crises was dominated by political rather than technical efficiency concerns. The political division of responsibilities and benefits delayed the sense of urgency needed to maintain political momentum and support of donors. The participating countries have different perceptions of expected benefits from the regional program. The upstream countries considered hydropower and energy as a major concern, while the downstream countries considered sustaining irrigation as the main goal of the program. The restoration of the shores of the declining sea was of interest only to the adjacent communities. These conflicting interests were not adequately addressed by the riparian countries in their effort to jointly manage the long-term solution to the Aral Sea Basin crises.

### COMMITMENTS AND/OR CAPACITIES OF PARTICIPATING COUNTRIES

7.2 **Initial steps:** In the mid-1990s, the heads of the five participating states met annually and asked donors to help in financing and implementing the program. The countries established regional units to manage the program. These steps were necessary but not sufficient to ensure efficient implementation.

7.3 **Financial commitment:** There was little appreciation for the high cost of expatriate technical assistance associated with conducting complex field studies and/or implementation of follow-up action plans. The participating countries did not deliver on their financial commitment to the program. They expected the donors to pay for the operating cost and the salaries of the regional staff. The participating countries have uneven skill mixes and experience in program implementation. Two countries, Uzbekistan and Kazakhstan, had more qualified experts and experience than the other three riparian countries. Little was done to facilitate exchange of information among the participating countries. Part of the problem seems to be rooted in the limited availability of financial resources to facilitate intercountry exchange of experts and training. The donors did not support this type of cooperation among the riparian countries and instead allocated the funds to cover the cost of foreign consultants and expatriate-based technical assistance.

7.4 **Varying technical priorities:** On technical grounds, the riparian countries were concerned that the international consulting firms were given responsibility for conducting studies to design both water management and salt management operations. These countries considered improving water management to be most important, while the Bank considered salt management to be equally important. The donors were concerned about the quality of the environment, but the countries were concerned about water allocation among them.

7.5 The participating countries directed their attention and efforts selectively, focusing on their own priorities. For example, they were active in constructing facilities to monitor dam safety and also to monitor and measure water flow and allocation. Other issues recommended by the consulting firms related to salt management and regional studies of water strategies received less attention. The participating countries approach to the project development objectives shifted overtime. National water priorities received increasing attention and their support to restoring the health of the Aral Sea Basin, especially the southern part of the sea, has gradually declined.

#### **LEADERSHIP AMONG PARTICIPATING COUNTRIES**

7.6 The riparian countries' uneven experience levels and economic and financial resources created some hurdles in project implementation. The dominance of Uzbekistan in project management and the separation of the PMCU from the governing body created ongoing difficulties as mentioned above.

#### **PROGRAM COORDINATION WITHIN COUNTRIES**

7.7 There is little evidence to confirm that regional activities were integrated into country programs. Senior water officials in both the Kyrgyz Republic and Tajikistan reported that their work in the water sector, including operations funded by the Bank, does not have functional or operational links with the Aral Sea operations. The supervision reports, the midterm review, and the ICR of the GEF-funded project provide evidence for only a few activities that were mainstreamed into the national program. For example, the Syr Darya and Northern Aral Sea Control Project—currently being implemented by the government of Kazakhstan under a separate loan from the Bank—is restoring the northern Aral Sea and the related delta and wetlands (and improving the lower Syr Darya Basin). Improving dam safety continued to receive support under separate projects financed by the Bank. Kazakhstan, Kyrgyzstan, and Tajikistan have developed their own plans for rehabilitating dams and monitoring safety systems. Also, rehabilitation activities in the sea basin's wetlands have been coordinated with existing programs and supported by national-level operations financed by the Bank. But there has been no mainstreaming of the work on salt management, drainage, and training.

## 8. Conclusions

### SUMMARY OF FINDINGS

8.1 *Summary:* The environmental crises of the Aral Sea have attracted global attention and were the concern of the riparian countries at the highest political level, as well as of several international and regional organizations. The decline of the sea level, and associated health and economic issues, drew attention, but with limited planning for country-level actions and solutions. The regional program received support from several donors, but was hindered by weak coordination, especially in financial management and in sharing information and experiences among the riparian countries. The political leadership of the five riparian states gave the program full support but did not allocate financial contributions to support regional activities.

8.2 Highly qualified technical experts worked on the various dimensions of the Aral Sea crises for several years. Technical reports and detailed studies were carried out on numerous issues related to the environment, water management and international cooperation, soil salinity, and wetlands restoration and management. While the generous investment in these studies by several donors built an impressive knowledge base about the scope of the crises affecting the Aral Sea Basin, there was little effort to produce state-of-the-art operational maps for the river basins and associated water utilization systems in the five riparian countries. Not all solutions presented by these studies were adopted by the riparian countries, as indicated in the less-than-satisfactory rating of several components in the GEF-funded project. One reason for the poor performance is weak ownership of these studies. It became clear that studies are necessary but not sufficient to address regional water problems that are partially rooted in mistrust and weak political commitment to conflict resolution. Also, the studies' findings and recommendations as to the regional benefits of the intervention did not adequately translate into participation in project operations by the beneficiaries and their communities.

8.3 The valuable contribution of these studies, however, became evident later on when they helped the donors and riparian countries set the stage for national-level operations to bring the benefits of restoring the Aral Sea Basin closer to the national and local communities. Several of these operations are under implementation. Their design is guided by realistic development objectives affecting the local communities, and calls for the establishment of water users associations, strengthened decentralization and empowerment of local communities, and monitoring performance with indicators based on assessing local rather regional impact.

### IMPLICATIONS FOR PROGRAM SUPPORT

8.4 There are several implications for future Bank support of regional water management programs that emerge from this program review :

- a) **Analyze regional cooperation issues:** Donors' support for the regional program should be based on careful analysis of factors affecting regional cooperation, including issues related to political trust and cooperation. Such issues can seriously influence the attitude and predisposition of policy-makers and professionals from each of the participating countries.
- b) **Address both regional and local benefits:** Regional programs should clearly articulate both regional benefits and local benefits for the participating countries and communities. Designing a program to address global and regional public goods is necessary, but not sufficient, to sustain local community support for regional programs. When the causes of regional problems have their roots in poorly guided policies that influence millions of people, the regional program needs to focus on those causes and their solutions. One such solution would be policy reform within each country, supported by collective participation of local stakeholders. Addressing the underlying causes of the region's problems should be a prerequisite to defining a regional action plan.
- c) **Conduct cost-benefit analysis:** The design of regional programs should be supported by a carefully conducted cost-benefit analysis. Such analysis should provide a clear economic and policy framework to guide the rationale for intervention at both regional and country level. It is not adequate to justify regional intervention based on the general argument that it would protect the environment. Altering actions that have degraded the environment requires a complex analysis of political, economic, policy, technical, and institutional factors. WEMP did not pay much attention to these factors and the risks they posed to implementation. A careful analysis of winners and losers in each component would have prevented problems.
- d) **Involve local stakeholders in design:** Elaborate studies conducted by expatriate consultants may be helpful in designing a technically sound regional program. But active engagement of local specialized institutions and the affected communities in the design of the program is also essential for sustainable and cost-effective implementation. In addition, the stakeholders should be active members of the process from design to implementation to monitoring and evaluation.
- e) **Recognize countries' varying interests and priorities:** There are many bodies of water that are shared by several riparian nations, including numerous river basins. Their development requires regional cooperation, based on clearly defined roles and responsibilities for countries and institutions at the regional and national level. In the case of the ASBP, the expression of political commitment by the leaders of the riparian countries established the regional program's political legitimacy. However, the regional program was hindered by the countries' different interests in the management of shared water resources, a lack of clear and agreed-upon roles and responsibilities for each country, and a failure by the countries to make their financial contributions.



- f) ***Avoid political alliances in selecting staff:*** Selection of staff and locations of regional units should be sensitive to the “big vs. small-country syndrome” among the participating countries. Selecting staff members who are politically aligned with any particular riparian country may hinder efficient project implementation.
- g) ***Manage finances and operations at national level:*** While a regional unit is needed to coordinate technical cooperation, financial and operational management would be better located at the national level. Allocation of budgetary resources by component would deny the participating countries the opportunity to monitor their share of financial resources. In their response to the WEMP ICR, the clients confirmed that poor financial arrangements in the design of the project had their roots in undefined allocation of financial resources by country.
- h) ***Articulate clear and limited role for regional institutions:*** Based on the current ineffectual status of the regional institutions, it is clear such institutions should be expected to play a limited but carefully defined role. National agencies are not likely to give up their power in favor of regional institutions, so the functions of regional institutions should be modest. They should focus only on regional services that cannot be performed by national agencies, such as data and information clearing services; updating regional reports, and collecting and classifying both national and regional studies and reports; improving communication and the exchange of experiences and best practices; monitoring and evaluating regional activities; and helping conduct seminars, workshops and conferences to facilitate information exchange among stakeholders.
- i) ***Strengthen role of national institutions:*** Specialized national agencies must be supported to strengthen their capacities in managing, monitoring, and facilitating the national-level activities of the regional program. The concept of a regional program could be articulated at the strategy and policy level, but translating the concept into a viable operation, managing its financial resources, and implementing its national-level components should be a national responsibility. The Bank realized this as it moved on to finance country-level operations that would also contribute to achieving the regional objectives of stabilizing the environment of the Aral Sea Basin.
- j) ***In programs involving a body of water, include sources supplying that body:*** Regional programs concerned with transboundary bodies of water, such as seas or lakes, must pay attention to the water sources supplying these bodies. In the case of the Aral Sea, the regional program initially neglected to address the management of the basins of the two main rivers: the Syr Darya and Amu Darya. Subsequently, the Bank has supported projects designed to improve water management in both basins, and has shifted attention to supporting the immediate national needs as a prerequisite to supporting regional goals.

## Annex A: Active Investment Operations in the Riparian Countries

Fiscal year	Bank Approval Date	Region	Country	Prod Line	Proj ID	Title	Sector Board	IBRD/IDA Amt	Grant Amt
FY99	06/22/1999	ECA	Central Asia	GEF	P042573	CENTRAL ASIA BIODIV (GEF)	Environment	0.0	10.2
FY01	06/05/2001	ECA	Kazakhstan	IBRD/IDA	P046045	SYR DARYA CONTROL/NO ARAL SEA	Rural Sector	64.5	0.0
FY03	05/08/2003	ECA	Kazakhstan	IBRD/IDA	P059803	NURA RIVER CLEAN-UP	Environment	40.4	0.0
FY03	06/19/2003	ECA	Kazakhstan	GEF	P071525	DRYLANDS MGMT (GEF)	Environment	0.0	5.3
FY05	04/28/2005	ECA	Kazakhstan	IBRD/IDA	P049721	AGRIC COMPETITIVENESS	Rural Sector	24.0	0.0
FY06	11/29/2005	ECA	Kazakhstan	GEF	P087485	FORESTRY (GEF) - KZ	Rural Sector	0.0	5.0
FY06	11/29/2005	ECA	Kazakhstan	IBRD/IDA	P078301	FORESTRY	Rural Sector	30.0	0.0
FY06	05/30/2006	ECA	Kazakhstan	IBRD/IDA	P078342	UST-KAMENOGORSK ENV REMED	Environment	35.0	0.0
FY07	02/28/2007	ECA	Kazakhstan	GEF	P099053	IRRIG. ECOSYSTEM MGT (GEF)	Environment	0.0	6.0
FY07	03/31/2007	ECA	Kazakhstan	IBRD/IDA	P086592	IRRIG/DR 2	Rural Sector	155.0	0.0
FY08	07/10/2007	ECA	Kazakhstan	IBRD/IDA	P083976	FISHERIES MGMT	Rural Sector	15.0	0.0
FY08	07/31/2007	ECA	Kazakhstan	IBRD/IDA	P093825	SYR DARYA 2	Rural Sector	55.0	0.0
FY00	06/06/2000	ECA	Kyrgyz Republic	IBRD/IDA	P049723	ON-FARM IRRIGATION	Rural Sector	20.0	0.0
FY04	06/15/2004	ECA	Kyrgyz Republic	IBRD/IDA	P083235	DISASTER HAZARD MITIGATION	Rural Sector	6.9	0.0
FY05	05/19/2005	ECA	Kyrgyz Republic	GEF Med Size	P095206	DISASTER HAZARD (GEF MSP)	Rural Sector	0.0	1.0
FY06	03/30/2006	ECA	Kyrgyz Republic	IBRD/IDA	P088671	WATER MGMT IMPRVMT	Rural Sector	19.0	0.0
FY97	06/05/1997	ECA	Kyrgyz Republic	IBRD/IDA	P008520	RURAL FINANCE	Rural Sector	16.0	0.0
FY98	05/07/1998	ECA	Kyrgyz Republic	IBRD/IDA	P046042	IRRIGATION REHAB	Rural Sector	35.0	0.0
FY99	01/26/1999	ECA	Kyrgyz Republic	IBRD/IDA	P062682	FLOOD EMERGENCY	Rural Sector	10.0	0.0
FY00	06/22/2000	ECA	Tajikistan	IBRD/IDA	P058898	RURAL INFRA REHAB	Rural Sector	20.0	0.0
FY00	06/22/2000	ECA	Tajikistan	IBRD/IDA	P067610	LAKE SAREZ RISK MITIGATION	Environment	0.5	0.0
FY04	06/15/2004	ECA	Tajikistan	GEF	P081159	COMMTY AGRIC & WATERSHED MGMT (GEF)	Rural Sector	0.0	4.5
FY04	06/15/2004	ECA	Tajikistan	IBRD/IDA	P077454	COMMTY AGRIC & WATERSHED MGMT	Rural Sector	10.8	0.0
FY05	08/02/2004	ECA	Tajikistan	GEF Med Size	P082599	DASHTIDZHUM BIODIV CONS (GEF MSP)	Environment	0.0	1.0
FY05	04/21/2005	ECA	Tajikistan	IBRD/IDA	P089566	LAND REGIS & CADASTRE	Rural Sector	10.0	0.0

Fiscal year	Bank Approval Date	Region	Country	Prod Line	Proj ID	Title	Sector Board	IBRD/IDA Amt	Grant Amt
FY06	07/26/2005	ECA	Tajikistan	IBRD/IDA	P084035	FERGHANA VALLEY WATER RES	Rural Sector	13.0	0.0
FY07	11/30/2006	ECA	Tajikistan	IBRD/IDA	P098889	COTTON SEC MODERN	Rural Sector	15.0	0.0
FY97	09/12/1996	ECA	Tajikistan	IBRD/IDA	P008863	AGRIC REC & SOC	Rural Sector	50.0	0.0
FY99	06/10/1999	ECA	Tajikistan	IBRD/IDA	P049718	FARM PRIV SUPPORT	Rural Sector	20.0	0.0
FY03	06/19/2003	ECA	Uzbekistan	IBRD/IDA	P009127	DRAINAGE, IRRIG & WETLANDS IMPRVMT	Rural Sector	60.0	0.0
FY08	09/29/2007	ECA	Uzbekistan	IBRD/IDA	P090105	FERGHANA VALLEY - UZ	Rural Sector	30.0	0.0
FY08	05/22/2008	ECA	Uzbekistan	IBRD/IDA	P099253	AMU-BUKHARA PUMPING & IRRIG	Rural Sector	50.0	0.0

## Annex B: Financial Data

### Box 4.1: Donors Support to ASBP

GEF: \$12.2 million for WEMP

USAID: \$7 million for water supply, energy, water management.

EU-TACIS: \$ 7 million for interstate water management and regional water database

Netherlands: \$6 million for water quality assessment, wetlands restoration, capacity-building, and project preparation.

The World Bank: \$5.5 million special grant for institution-building and preparation from the GEF-funded project.

UNDP, UNICEF: \$2 million for SDC and EC-IFAS for capacity-building

Other donors: Canada, Finland, Switzerland, U.K., Italy, Denmark, Sweden, Japan, and Kuwait: \$6 million for capacity-building and regional studies

**Total: \$ 45.7 million.**

## Annex C: Persons Consulted

Name	Title	Organization
<b><i>Kazakhstan</i></b>		
Leonid Dimitriev	Chairman	Production Cooperatives
Amerkhan Kenshimov	Deputy Chairman	Committee of Water Resources
<b><i>Kyrgyz Republic</i></b>		
Manasbek Omorov	Director, IFAS	International Fund of the Aral Sea
Alexie Zyryanov	Head of Laboratory	International Fund of the Aral Sea
Holmatov Anatoly Pulatvitch	Technical Director	International Fund of the Aral Sea
Jenishbek Bekbolotov	General Director	Water Economy Department
Muratbek Bakano	Head	Hydrometeorological Administration
Valentina Kassymove	Professor	Sustainable Environment
Alisher Sakebaev	First Deputy Governor	Tokmok Town
Bekmurza Chybyer	Head	International Cooperation, Agency for Forestry and Environment
Venural Surappaera	Head	Forestry Inventory Department
<b><i>Tajikistan</i></b>		
Rahimov Sultan	Acting Chairman	EC-IFAS
Mavlon Kazakov	Member	EC-IFAS
Amin Husainov	Director	Lake Sarez Project
<b><i>World Bank, Washington</i></b>		
Marjorie-Ann Bromhead	Sector Manager	Europe and Central Asia Region, Environmentally and Socially Sustainable development
Simon Michael Kenny	Regional Coordinator	Europe and Central Asia Region
Joseph Goldberg	Sector Manager	Europe and Central Asia Region, Environmentally and Socially Sustainable Development

Masood Ahmad	Task Team Leader	Water and Environmental Management Project
Peter Whitford	Consultant and previous Task Team Leader	Water and Environmental Management Project
Annett Dixon	Director	Europe and Central Asia Region, Strategy and Operations

## Annex D: Documents Reviewed

### F1: Active Investment Operations in the Riparian Countries

Fiscal year	Bank Approval Date	Region	Country	Prod Line	Proj ID	Title	Sector Board	IBRD/IDA Amt	Grant Amt
FY99	06/22/1999	ECA	Central Asia	GEF	P042573	CENTRAL ASIA BIODIV (GEF)	Environment	0.0	10.2
FY01	06/05/2001	ECA	Kazakhstan	IBRD/IDA	P046045	SYR DARYA CONTROL/NO ARAL SEA	Rural Sector	64.5	0.0
FY03	05/08/2003	ECA	Kazakhstan	IBRD/IDA	P059803	NURA RIVER CLEAN-UP	Environment	40.4	0.0
FY03	06/19/2003	ECA	Kazakhstan	GEF	P071525	DRYLANDS MGMT (GEF)	Environment	0.0	5.3
FY05	04/28/2005	ECA	Kazakhstan	IBRD/IDA	P049721	AGRIC COMPETITIVENESS	Rural Sector	24.0	0.0
FY06	11/29/2005	ECA	Kazakhstan	GEF	P087485	FORESTRY (GEF) - KZ	Rural Sector	0.0	5.0
FY06	11/29/2005	ECA	Kazakhstan	IBRD/IDA	P078301	FORESTRY	Rural Sector	30.0	0.0
FY06	05/30/2006	ECA	Kazakhstan	IBRD/IDA	P078342	UST-KAMENOGORSK ENV REMED	Environment	35.0	0.0
FY07	02/28/2007	ECA	Kazakhstan	GEF	P099053	IRRIG. ECOSYSTEM MGT (GEF)	Environment	0.0	6.0
FY07	03/31/2007	ECA	Kazakhstan	IBRD/IDA	P086592	IRRIG/DR 2	Rural Sector	155.0	0.0
FY08	07/10/2007	ECA	Kazakhstan	IBRD/IDA	P083976	FISHERIES MGMT	Rural Sector	15.0	0.0
FY08	07/31/2007	ECA	Kazakhstan	IBRD/IDA	P093825	SYR DARYA 2	Rural Sector	55.0	0.0
FY00	06/06/2000	ECA	Kyrgyz Republic	IBRD/IDA	P049723	ON-FARM IRRIGATION	Rural Sector	20.0	0.0
FY04	06/15/2004	ECA	Kyrgyz Republic	IBRD/IDA	P083235	DISASTER HAZARD MITIGATION	Rural Sector	6.9	0.0
FY05	05/19/2005	ECA	Kyrgyz Republic	GEF Med Size	P095206	DISASTER HAZARD (GEF MSP)	Rural Sector	0.0	1.0
FY06	03/30/2006	ECA	Kyrgyz Republic	IBRD/IDA	P088671	WATER MGMT IMPRVMT	Rural Sector	19.0	0.0
FY97	06/05/1997	ECA	Kyrgyz Republic	IBRD/IDA	P008520	RURAL FINANCE	Rural Sector	16.0	0.0
FY98	05/07/1998	ECA	Kyrgyz Republic	IBRD/IDA	P046042	IRRIGATION REHAB	Rural Sector	35.0	0.0
FY99	01/26/1999	ECA	Kyrgyz Republic	IBRD/IDA	P062682	FLOOD EMERGENCY	Rural Sector	10.0	0.0
FY00	06/22/2000	ECA	Tajikistan	IBRD/IDA	P058898	RURAL INFRA REHAB	Rural Sector	20.0	0.0
FY00	06/22/2000	ECA	Tajikistan	IBRD/IDA	P067610	LAKE SAREZ RISK MITIGATION	Environment	0.5	0.0
FY04	06/15/2004	ECA	Tajikistan	GEF	P081159	COMMTY AGRIC & WATERSHED MGMT (GEF)	Rural Sector	0.0	4.5
FY04	06/15/2004	ECA	Tajikistan	IBRD/IDA	P077454	COMMTY AGRIC & WATERSHED MGMT	Rural Sector	10.8	0.0

Fiscal year	Bank Approval Date	Region	Country	Prod Line	Proj ID	Title	Sector Board	IBRD/IDA Amt	Grant Amt
FY05	08/02/2004	ECA	Tajikistan	GEF Med Size	P082599	DASHTIDZHUM BIODIV CONS (GEF MSP)	Environment	0.0	1.0
FY05	04/21/2005	ECA	Tajikistan	IBRD/IDA	P089566	LAND REGIS & CADASTRE	Rural Sector	10.0	0.0
FY06	07/26/2005	ECA	Tajikistan	IBRD/IDA	P084035	FERGHANA VALLEY WATER RES	Rural Sector	13.0	0.0
FY07	11/30/2006	ECA	Tajikistan	IBRD/IDA	P098889	COTTON SEC MODERN	Rural Sector	15.0	0.0
FY97	09/12/1996	ECA	Tajikistan	IBRD/IDA	P008863	AGRIC REC & SOC	Rural Sector	50.0	0.0
FY99	06/10/1999	ECA	Tajikistan	IBRD/IDA	P049718	FARM PRIV SUPPORT	Rural Sector	20.0	0.0
FY03	06/19/2003	ECA	Uzbekistan	IBRD/IDA	P009127	DRAINAGE, IRRIG & WETLANDS IMPRVMT	Rural Sector	60.0	0.0
FY08	09/29/2007	ECA	Uzbekistan	IBRD/IDA	P090105	FERGHANA VALLEY - UZ	Rural Sector	30.0	0.0
FY08	05/22/2008	ECA	Uzbekistan	IBRD/IDA	P099253	AMU-BUKHARA PUMPING & IRRIG	Rural Sector	50.0	0.0



## **Annex F: References**

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