

ASIAN DEVELOPMENT BANK

TAR: OTH 36516

TECHNICAL ASSISTANCE

FOR

**IMPROVED MANAGEMENT OF SHARED WATER RESOURCES
IN CENTRAL ASIA**

December 2003

ABBREVIATIONS

ADB	–	Asian Development Bank
ASBP-1	–	First Aral Sea Basin Program
ASBP-2	–	Second Aral Sea Basin Program
CAR	–	Central Asian republic
CTJRC	–	Chui-Talas joint rivers commission
EU	–	European Union
ICWC	–	Interstate Commission for Water Coordination
IFAS	–	International Fund for Saving the Aral Sea
PIU	–	project implementation unit
SIC	–	Scientific and Information Center
SPECA	–	Special Program for the Economies of Central Asia
TA	–	technical assistance
TACIS	–	Technical Assistance for the Commonwealth of Independent States
USAID	–	United States Agency for International Development
WEMP	–	Water and Environment Management Project

NOTE

In this report, "\$" refers to US dollars.

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I. INTRODUCTION

1. Central Asian republics (CARs) share natural resources—particularly water that flows through river basins that stretch over the national boundaries. The largest is the Aral Sea Basin, which drains 64% of the combined geographical area of five CARs¹ through two rivers, the Syr Darya and Amu Darya. Over the last 50 years, water that flows into the Aral Sea has been drastically reduced by irrigation and poor water management, causing serious environmental and social damage. Water scarcity, water-related conflicts, and pollution pose serious challenges for the national governments and communities in achieving sustained economic growth and improved living standards.

II. ISSUES

2. A large part of Central Asia, particularly in the southern steppes, is arid. With average annual rainfall ranging between 100 and 200 millimeters per annum, river waters play a crucial role in the economic activity, health, and well being of the people and environment. However, unsustainable exploitation of land and water resources during the former Soviet period, and political and economic turmoil that followed the independence of CARs, have shattered the delicate balance between the supply of and demand for water in the subregion. In just about 35 years, the Aral Sea—previously the fourth largest lake in the world—has shrunk by 50%, affecting the livelihoods and health of four million people who live around the sea and in the delta areas. Since independence, conflicts have grown between the upper watershed countries and the lower riparian countries, especially over the use of the Syr Darya waters (the former desiring hydropower generation in the winter and the latter irrigation of crops in the summer), further constraining economic cooperation and integration, and creating considerable waste of precious water.²

3. In response to the ecological and human health problems of the Aral Sea, the five basin states signed a water treaty in 1992 and established the Interstate Commission for Water Coordination (ICWC). The First Aral Sea Basin Program (ASBP–1) was agreed by five CARs in 1994, and the International Fund for Saving the Aral Sea (IFAS) was established as the highest regional governing body, chaired by the five heads of state in rotation, with its executive committee as secretariat.³ The ASBP–1 was finalized in 1997, and included regional water management strategies, information systems, water quality management, wetland restoration, water and sanitation, integrated land and water management, operational water resource management, and capacity building. The Program helped to mobilize loans of over \$280 million (including \$200 million investment projects for water supply and sanitation in the 3 countries in the vicinity of the sea) and nearly \$50 million of grant-funded technical assistance (TA). In 2003, the basin countries collectively prepared the Program on Concrete Actions on Improvement of Environmental and Socio-economic Situation in the Aral Sea Basin for a Period of 2003–2010, or the Second Aral Basin Program (ASBP–2) which composed investment projects and studies totaling \$2.5 billion.

4. Despite the significant resources provided to the region through the ASBP–1, little progress was achieved in restoring the overall ecosystem and improving livelihood and social

¹ Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan.

² Continued winter release from the Toktogul reservoir results in 2-3 kilometers of water wasted in the Arasay depression every year, depriving the Aral Sea of these vital flows.

³ The brief descriptions of regional water and environment organizations, which fall under the overall umbrella of IFAS, are provided in the Supplementary Appendix.

conditions.⁴ Among the key reasons for the less-than-satisfactory results were the weak institutional and legal frameworks for regional cooperation, the lack of political and financial commitments, and ownership by riparian states to regional causes.

5. However, some positive developments have occurred. In March 1998, the landmark Framework Agreement between the Governments of Kazakhstan, the Kyrgyz Republic and Uzbekistan on Syr Darya Basin Water and Energy Resources Use was concluded, allowing energy transfers from and electricity purchases by the downstream states—Kazakhstan and Uzbekistan—in exchange for the storage of irrigation water by the Kyrgyz Republic. Tajikistan joined the agreement later in 1999 allowing similar arrangements for management of the Kairakkum Reservoir. This 5-year renewable agreement has served as the basis for annual bilateral negotiations for working agreements that establish the timing and amounts of water releases from Toktogul Reservoir as well as compensation for foregone winter hydropower generation.⁵ Notable progress has also been made in the management of other transboundary river basins outside the Aral Sea Basin. For example, Kazakhstan and the People's Republic of China recently reached an agreement on sharing the waters of the Ili River, which terminates in Kazakhstan's Lake Balkash, and Kazakhstan and the Kyrgyz Republic concluded an agreement in 2000 covering the Chui and Talas rivers.⁶

6. In addition, various projects and studies implemented under the ASBP-1 improved understanding of the complex water management issues facing the region. Among them, the Water and Environment Management Project (WEMP) funded by the Global Environmental Facility (GEF) and implemented by the World Bank, aimed to develop national plans and regional strategies for rational use of water resources and salt control. The WEMP provided a number of useful insights that were meant to lead to a next phase of development and resource management actions. These include: (i) there is no urgent need to define new water sharing agreements; (ii) the low standard of water management is the main water related problem in the Basin; (iii) rational water use could arrest the worsening problems of land degradation and accelerate the recovery of the Aral Sea ecosystem; (iv) most water losses take place on the farm, as there are little incentives to improve on-farm water management, and knowledge and resources are lacking; and (v) interstate cooperation in water management should continue through strengthening existing organizations, including formal representation of other sectors and higher authorities. The World Bank's current subregional strategy is based on the findings of the WEMP, and consists of 3 closely interrelated pillars of (i) improved irrigation and drainage management, (ii) improved management at the level of the individual river basins, and (iii) focus on particular "hotspots" where improved management and consensus on solutions has both national and transboundary benefits.

7. The activities in the region of the Asian Development Bank (ADB) are relatively recent (since 1994) and its assistance in the water resources sector has been focused on individual countries. ADB's loans and TAs in the water sector typically include promotion of national water sector reforms, strengthening of the institutional aspects of water management organizations, and rehabilitation of key irrigation infrastructures. Since all ADB-supported water management projects receive their water from the two large rivers of Aral Sea basin, it is recognized that the

⁴ Kazakhstan-United Nations Development Programme. 2003. *Aral Sea Assessment Report*. Almaty.

⁵ The agreement's initial 5-year term is over and the annual bilateral working agreements process has recently broken down. Thus, there is a very urgent need to review and revise the framework agreement.

⁶ These agreements are important stepping stones to strengthen the interstate cooperation, but they remain tentative and still require considerable additional effort to formalize technical and economic content and accompanying legal and institutional arrangements.

long-term viability of these projects depends directly on improved management of shared water, particularly on the use of water in a more equitable, efficient, and sustainable manner.

8. The long-term economic, political, and social stability is directly dependent on the sustainable management of the subregion's shared water resources, and reducing tensions among riparian states originating from transboundary water disputes, will improve mutual trust and create an atmosphere conducive to greater economic and political cooperation among the states. During the Regional Consultative Meeting of Senior Officials of CARs in August 2001 in Manila, the CAR governments formally requested ADB's assistance for subregional water management issues. ADB responded to this and other specific requests made by CARs by supporting high-level policy dialogues, forums, and consultations on regional water management issues.⁷ With its emphasis on the country ownership and consensus-based approach, ADB's supports to promote regional cooperation among CARs have gained increasingly strong support and appreciation in the subregion.

9. Clearly, promotion of interstate cooperation for improved management of shared water is a challenging task. Despite continuing difficulties, CARs invariably recognize the need, and requested ADB's assistance. The proposed regional technical assistance (TA)⁸ focuses on specific, and practical targets where substantially positive progress has been made. The proposed TA has been designed through extensive consultation with governments, civil society, and donor agencies that are active the region, including the World Bank, United Nations Development Programme, United States Agency for International Development (USAID) and Swiss Development Corporation.

III. THE TECHNICAL ASSISTANCE

A. Purpose and Output

10. **Goal and Purpose.** The overall goal of the TA is to achieve sustainable and efficient water management in the region. The purpose of the TA is to help the CARs strengthen their cooperation in the management of shared water resources in the Aral Sea Basin and other transboundary basins.

11. **Outputs.** The TA will produce three key outputs (Appendix 1). First, the TA will develop a working interstate water management mechanism on a selected small river basin to reduce the current barriers to the implementation of collaborative and integrated water management of cross-border rivers. Specific criteria have been developed to measure the progress and performance of the pilot interstate river basin management body to be supported. Second, the TA will help the CARs to jointly move forward with concrete steps on selected high priority regional water policy issues, according to specific performance indicators, including the relevance, immediate impacts, and extent of ownership/participation. Third, the TA will strengthen the capacity of key regional water management institutions and their national

⁷ Under RETA 6001 (ADB. 2001. *Technical Assistance for the Regional Consultations for the Third World Water Forum*. Manila) and RETA 6031 (ADB. 2002. *Technical Assistance for Promoting Effective Water Management Policies and Practices*. Manila.), ADB organized several regional workshops and coordination meetings among stakeholders, where the key policy, institutional, and technical issues of subregional water management were discussed. Also, ADB under its TA 6099 (ADB. 2003. *Assessment of Subregional Water Resources Management Issues in Central Asia*. Manila.) conducted a critical assessment of past and ongoing subregional activities and identified ADB's short- and medium-term operational priorities in regional water management area.

⁸ The TA first appeared in *ADB Business Opportunities* (Internet edition) on 13 June 2003.

affiliates on clearly defined and agreed mandates, according to the key result areas to be achieved through the TA.

B. Methodology and Key Activities

12. Improving Transboundary Water Management on a Pilot Basis. The TA centers on demonstrating good transboundary basin management practices on a pilot basis. The sites chosen are the Chui and Talas river basins, located across Kazakhstan and the Kyrgyz Republic. The riparian countries intend to establish a Chui-Talas joint rivers commission (CTJRC) during the first quarter of 2004 to manage interstate relations in these matters. Once the CTJRC has been formally established, TA activities will commence to assist the CTJRC to become fully operational—by helping to develop operational guidelines, a financing plan, and a water rights analysis as a basis for a water allocation policy—as well as other capacity-building efforts. The TA activities will be complemented by parallel planned assistance by the European Union (EU) Technical Assistance for the Commonwealth of Independent States (TACIS). The EU TACIS project is expected to be operational before the end of 2003, and will provide a basinwide water management plan and help to develop a decision support system for the basins. The framework of coordination with EU TACIS has been developed and agreed upon (Appendix 2). During the TA implementation, a steering committee of funding agencies will be established to coordinate the agencies' activities.

13. Facilitating Regional Water Policy Discussions. The TA will also facilitate discussions among regional stakeholders and develop (i) consensus on the extension and revision of the 1998 framework agreement on water and energy use in the Syr Darya basin;⁹ (ii) shared vision about the need and opportunities for the agriculture and water sector reform policies, particularly those relating to policy options and economic incentives to slow the worsening land degradation, including crop diversification for conserving water and reducing drainage effluent, and introduction of low-cost land leveling, irrigation and drainage system rehabilitation; and (iii) common understanding about the options available for improved water management, including development of water users' associations, irrigation cost recovery, and other related legal and institutional issues.

14. TA activities dealing with the review and improvement of the 1998 Syr Darya framework agreement will largely be implemented through the Scientific and Information Center (SIC) of ICWC (SIC-ICWC) and the Executive Committee (EC) of IFAS (EC-IFAS),¹⁰ in close coordination with other development partners, particularly USAID, whose assistance had led to the initial brokering of the 1998 framework agreement. For the broader sector issues to be covered under (ii) and (iii), the TA will produce a series of technical papers, and conduct participatory workshops with a wide range of stakeholders—including policy makers, water and environment ministries, nongovernment organizations, and farming communities. The workshops will clarify the understanding of the alignment between relevant national-level policy thrusts that are necessary to improve shared water management in the subregion. In undertaking these activities, ADB will mainly play a facilitating role in regional water policy discussions, with clear understanding that the participating CARs will drive the whole process and will also be responsible for the delivery of final output.

⁹ The initial support to revision of 1998 Framework Agreement is being provided by ADB through its TA: 6001: Regional Consultations for 3rd World Water Forum, which has been limited to financing of initial preparations, and regional consultations to organize regional working group's meetings.

¹⁰ This will be based on the submission of a proposal to ADB by SIC-ICWC and the EC-IFAS and, if approved, the issuance of a letter of agreement covering all terms of the grant and including a detailed terms of reference for the activities of SIC-ICWC and EC-IFAS.

15. **Building Regional Water Management Capacity.** The TA will also strengthen the capacity of regional water management organizations and their national-level affiliates in such priority areas as international water rights, negotiation and conflict resolution mechanisms, and integrated water resources management. Special attention will be also given to their capacity for collecting and sharing data and disseminating the relevant information and findings under the TA. The corresponding national bodies in Afghanistan¹¹ will be encouraged to participate in relevant workshops and meetings held under the TA.

C. Cost and Financing

16. The estimated cost of the TA is \$850,000 equivalent. Of this, ADB will provide \$700,000 on a grant basis from ADB's TA funding program. The governments of participating CARs will provide counterpart staff time and resources, data, and documents to support the TA implementation. These are valued at \$150,000 and will be equally shared by participating CARs. The detailed cost estimates and a financing plan are given in Appendix 3.

D. Implementation Arrangements

17. ADB will be the Executing Agency for the TA, with the Agriculture, Environment, and Natural Resources Division of East and Central Asia Department responsible for all TA activities. In each participating country, national agriculture and water ministries or agencies, as the case may be, will be implementing agencies, with the heads or deputy heads of the ministries or agencies in charge of water resources as the focal points. The implementation will be undertaken in close coordination with EC-IFAS, ICWC, and various development partners, in particular, EU TACIS, USAID, and the World Bank. TA activities will be implemented during a 12-month period, beginning in February 2004.

18. The TA will finance 13 person-months of international and 36 person-months of domestic consultancy, covering river basin and water resources management, policy and institutions, economics, and others. The outline terms of reference are in Appendix 4. Given the small number of international experts and specialized nature of services required, including the need for prior CARs experience and Russian language capability, individual consultants will be recruited in accordance with ADB's *Guidelines on the Use of Consultants* and other arrangements satisfactory to ADB for the engagement of domestic consultants. Individual domestic consultants will be engaged by ADB in consultation with the team leader. Special short-term studies will be commissioned by the team leader to augment assessments conducted under the TA. Equipment and materials to be financed by the TA will be procured by the consultants or ADB in accordance with ADB's *Guidelines for Procurement* or other procedures acceptable to ADB.¹²

IV. THE PRESIDENT'S DECISION

19. The President, acting under the authority delegated by the Board, has approved the provision of technical assistance not exceeding the equivalent of \$700,000 on a grant basis for Improved Management of Shared Water Resources in Central Asia, and hereby reports this action to the Board.

¹¹ Including the Ministry of Irrigation, Water Resources and Environment.

¹² Equipment may include computers, software, photocopier, facsimile machine, and multimedia instruments.

TECHNICAL ASSISTANCE FRAMEWORK

Design Summary	Performance Indicators/Targets	Monitoring Mechanisms	Assumptions and Risks
Sector Goal			
Achieve sustainable and efficient water management in the region.	<p>The winter release of the Syr Dayra River at Toktogul reduced substantially.</p> <p>The regional water body management with sufficient local funding, clear mandates, and adequate sector representation and authorities.</p> <p>Rate at which the areas affected by shallow ground watertable and soil salinity decreased.</p> <p>Effective economic incentives in place to conserve water and reduce drainage effluent, together with the supporting policy and legal framework, in each of Central Asian republics (CARs).</p>	<p>Discharge record.</p> <p>Assessment and reports of Interstate Commission for Water Coordination (ICWC) and Executive Committee (EC) of International Fund for Saving the Aral Sea (EC-IFAS).</p> <p>Government reports, surveys carried out under the First Aral Sea Basin Program (ASBP-1) related to the projects.</p> <p>Relevant government decrees, International Monetary Fund and World Bank country reports.</p>	<p>High-level commitment from the governments.</p> <p>Continued donor support for the Second Aral Sea Basin Program (ASBP-2).</p>
Purpose			
Help CARs strengthen cooperation in the management of shared water resources in the Aral Sea Basin and other transboundary basins.	<p>A joint river commission established with (i) agreed legal framework; (ii) adequate and sustainable local funding; (iii) agreed water allocation plan; and (iv) clear operational guidelines, including staffing and relevant authorities.</p> <p>A consensus reached among CARs about the content of the extension and revision of the 1998 Syr Darya framework agreement.</p>	<p>Technical assistance (TA) reports.</p> <p>TA reports. Assessment by the participating governments.</p>	<p>High-level commitment and support from the countries.</p> <p>Close coordination between Asian Development Bank (ADB) and European Union (EU)/Technical Assistance for Commonwealth of Independent States (TACIS).</p> <p>Mutual trust, willingness to cooperate, and commitment of the governments.</p>

Design Summary	Performance Indicators/Targets	Monitoring Mechanisms	Assumptions and Risks
	<p>ICWC members and senior policy makers of CARs made aware of the policy and technical options available to slow land degradation and improve water management. Understanding is also reached on how ADB could incorporate these options in its future operations in the subregional context.</p> <p>The roles of ICWC, EC-IFAS, and their national affiliates clarified in implementing and following up the TA. The agencies capacities for data sharing and information dissemination through TA are strengthened.</p>	<p>TA reports. Assessment by the participating government officials. Subsequent changes in the policies.</p> <p>Assessment by ICWC and EC-IFAS.</p>	<p>Identification and presentation of realistic and achievable gains that can emanate from the policy changes and other technical options. Greater gains on national and subregional context supercede vested interests that support continued restrictive policies.</p> <p>Conflicting national interests can be negotiated for common goal.</p> <p>Financing agencies agree that the present regional bodies need no major changes.</p>
Outputs			
A. Improved Transboundary Water Management on a Pilot Basis (Chui-Talas)			
<p>(i) An operational and functioning Chui-Talas joint rivers commission (CTJRC).</p> <p>(ii) Water management improvements achieved in the basins.</p> <p>(iii) Lessons from the CTJRC disseminated in the region.</p> <p>(iv) Operational guidelines for the CTJRC.</p> <p>(v) Sustainable financing plan for the CTJRC.</p> <p>(vi) Information management and sharing structure for CTJRC and stakeholders.</p> <p>(vii) Analysis of C-T water rights as basis for equitable and efficient allocation policy.</p>	<p>Organizational structure for the CTJRC agreed, with financing beyond 2004 assured.</p> <p>Baseline conditions documented, and improvements recorded in sharing of water and irrigation system costs.</p> <p>Regional outreach achieved.</p> <p>Report completed and approved by the CTJRC.</p> <p>Report completed and approved by the CTJRC.</p> <p>Report completed and approved by the CTJRC.</p> <p>Report completed and approved by the CTJRC.</p>	<p>ADB's TA review. TA reports.</p> <p>ADB's TA review. TA reports.</p> <p>ADB's TA review. TA reports.</p> <p>ADB's TA review. TA reports.</p> <p>ADB's TA review. TA reports.</p> <p>ADB's TA review. TA reports.</p>	<p>Cooperation of the countries.</p> <p>Close collaboration with EU of TACIS, and the successful progress of the latter's program.</p> <p>Effective participation by various stakeholders.</p> <p>Country ownership.</p> <p>Budget availability.</p> <p>Effective participation by various stakeholders.</p> <p>Data availability.</p>

Design Summary	Performance Indicators/Targets	Monitoring Mechanisms	Assumptions and Risks
B. Facilitation of Water Policy Discussions			
<p>(i) Draft revision of 1998 Syr Darya Framework Agreement as endorsed by ICWC.</p> <p>(ii) Technical papers and workshops on policy and technical options on (a) crop diversification for conserving water, low-cost land leveling, and irrigation and drainage system rehabilitation; (b) water users' associations; (c) irrigation cost recovery; and (d) other related legal and institutional issues.</p>	<p>Revisions extended for more than 5 years, allow reduction in the winter release, and provide adequate compensation scheme.</p> <p>Quality reports with contents and recommendations seen as relevant and useful for near term adoption by the governments. Presentation of relevant good international practices. Clear identification of potential gains.</p>	<p>ADB's TA review. TA reports. Acceptance of the governments.</p> <p>ADB's TA review. TA reports. Acceptance by the governments. Assessment of the participants.</p>	<p>Governments' commitment and interest.</p> <p>Strong participation by the relevant policy and decision makers from the governments.</p>
C. Regional Water Management Capacity Building			
<p>The roles of ICWC, EC-IFAS and their national affiliates clarified in implementing and following up the TA.</p> <p>The agencies have their data sharing and information dissemination capacity strengthened through the TA.</p>	<p>Reduced tension and conflicts among the regional water management agencies.</p> <p>Availability of relevant water management data and information. Transparency and disclosure of data and information. Stronger conceptualization and analytical skills, particularly linking the national policies and strategies and subregional concerns. Stronger linkage with stakeholders, including policy makers and other sector representatives (energy, environment).</p>	<p>ADB's TA review. TA reports. Assessment by ICWC and EC-IFAS.</p> <p>ADB's TA review. TA reports.</p>	<p>Support by IFAS Board.</p> <p>Available local staff qualified and motivated.</p>
Inputs			
<ul style="list-style-type: none"> • International consultants (13 person-months) • Domestic consultants (36 person-months) • Resource persons • Data and information • Office supplies • Counterpart staff 	<p>Financing of project costs (see Appendix 3)</p> <p>TA reporting requirements met.</p> <p>Strong technical inputs as judged by staff mission and evaluation of counterparts.</p>	<p>Dialogue with agency staff and consultants.</p> <p>Financial reporting from TA implementation.</p> <p>ADB staff missions.</p>	<p>Availability of qualified consultants.</p> <p>Governments' commitment of counterpart staff and other support.</p>

ESTABLISHMENT AND OPERATION OF THE CHUI-TALAS JOINT RIVERS COMMISSION: DONOR COORDINATION FRAMEWORK

1. The division of responsibilities for the technical assistance are given in the following paragraphs.
2. The governments of Kazakhstan and the Kyrgyz Republic will be responsible for overall coordination of activities and communications, legal and institutional arrangements, logistics and administration, and financial and personnel resources.
3. The Organization for Security and Cooperation in Europe, United Nations Economic Commission for Europe, and United Nations Economic and Social Commission for Asia and Pacific will engage in the following principal activities:
 - (i) developing a statute and regulations for the proposed joint commission;
 - (ii) analyzing the allocation of costs for operation, management, and rehabilitation of selected water-control facilities;
 - (iii) developing mechanisms for enhanced public participation in water management; and
 - (iv) disseminating information on the Chui-Talas through a web site created for that purpose.

These activities will occur from January 2003 through May 2004, and will cost an estimated \$110,000.

4. The Asian Development Bank will engage in the following principal activities:
 - (i) preparing operational guidelines and policies for the joint commission;
 - (ii) preparing a financial plan for the commission, and sustaining delivery of water management services;
 - (iii) assessing the information available and required, and preparing associated management guidelines;
 - (iv) analyzing water rights issues and options, including the roles of water users' associations;
 - (v) training members of the joint commission and other relevant people on water economics, water rights, information sharing, and related topics; and
 - (vi) documenting the functioning of the commission as a model for the region.

The activities will take place from January 2004 through March 2005 and will cost around \$400,000.

5. The European Union-Technical Assistance for Commonwealth of Independent States (EU-TACIS) will engage in the following principal activities:
 - (i) analyzing basinwide water resources development and management options, including projections of demand for water;
 - (ii) formulating a preliminary strategy for implementing preferred water management options;
 - (iii) preparing and testing a support system for decisions, for improved understanding of options to manage water quality and quantity; and
 - (iv) building the capacity of cooperating institutions for water resource planning, water demand projection and development, and use of decision support systems.

The activities will take place from December 2003 through December 2004 and will cost approximately \$1.1 million equivalent.

COST ESTIMATES AND FINANCING PLAN
(\$'000)

Item	Cost
A. Asian Development Bank Financing^a	
1. Consultants	
a. Remuneration and Per Diem	
i. International Consultants	285
ii. Domestic Consultants	40
b. International and Local Travel	120
c. Reports and Communications	10
d. Grant to Scientific and Information Center- Interstate Commission for Water Coordination and International Fund for Saving the Aral Sea	90
2. Equipment ^b	15
3. Training and Workshops	
a. Facilitators	15
b. Programs	30
4. Surveys	15
5. Miscellaneous Administration and Support Costs	30
6. Contingencies	50
Subtotal (A)	700
B. Government Financing	
1. Office Facilities and Logistics	60
2. Remuneration and Per Diem of Counterpart Staff	60
3. Others	30
Subtotal (B)	150
Total	850

^a Financed by ADB's technical assistance funding program.

^b Equipment may include computers, software, photocopier, facsimile, and multimedia instruments.
Source: Asian Development Bank estimates.

OUTLINE TERMS OF REFERENCE FOR THE CONSULTANTS

A. Consultant Qualifications and Inputs

1. A total of 13 person-months of international and 36 person-months of domestic consulting services will be required in the areas of river basin management, water economics, water resources management, policy and institutions, water resources planning and information management. The consultants will be hired on an individual basis according to *Guidelines on the Use of Consultants of the Asian Development Bank (ADB)* and other arrangements satisfactory to ADB for the engagement of domestic consultants. Special short-term studies will be commissioned by the team leader using technical assistance (TA) resources to augment the inputs of the consultants.

2. The international consultants will have strong qualifications and demonstrated experience in implementing policy and institutional aspects of integrated water resources management, and in participatory implementation of water sector projects. The international consultants should have had experience in Central Asia or in regions with similar conditions and have excellent oral and written communications and diplomacy skills and tact adequate for dealing with stakeholders ranging from high government officials to farmers and other beneficiaries. Working knowledge of the Russian language will be strongly advantageous, though it is not a requirement.

3. The domestic consultants' skills will complement those of the international consultants and bring local knowledge of water resources management issues, policy reforms, and institutional developments in Central Asia. The domestic consultants will assist the international consultants in all tasks, including information collection, analysis, and organization of meetings, and workshops.

B. Specific Terms of Reference

4. **Improving Transboundary Water Management on a Pilot Basis: Developing the Chui-Talas Basins (Activity Area 1).** The first set of activities under the TA will work with the Chui-Talas joint rivers commission (CTJRC), once it is legally established, to develop an example/model within the region of cooperative management of transboundary water resources. Six specific tasks are to be carried out, not necessarily in sequential order, and in some cases with subtasks indicated:

- (i) Prepare operational guidelines and policies for the CTJRC, and document the development of CTJRC functions to serve as an example for the region.
- (ii) Document general baseline conditions in the two basins, and assess water management improvements and associated benefits for basin populations.
- (iii) Prepare a plan for the sustainable financing of the CTJRC and for meeting the operation and maintenance costs of providing water services in the basins, including a review of bilateral cost-sharing arrangements and external financing options.
- (iv) Assess information available and the needed for smooth CTJRC operation, and prepare associated information management guidelines emphasizing transparency.
- (v) Analyze water rights issues and options, including the potential roles of water users' associations.
- (vi) Carry out training on water economics, water rights, information sharing and related topics, applying these to the specifics of the Chui-Talas basins.

5. **Facilitating Regional Water Policy Discussions (Activity Area 2).** Two types of activities will be conducted to promote dialogue on key regional water policy topics. The first covers review and improvement of the 1998 Syr Darya Framework Agreement and the second deals with analyses of and discussions on the important policy topics of (i) shared vision about the need and opportunities for the agriculture and water sector reform policies, particularly those relating to policy options and economic incentives to slow the worsening land degradation (shallow groundwater and soil salinity), including crop diversification for conserving water, reduction of drainage effluent, introduction of low-cost land leveling, and rehabilitation of irrigation and drainage systems; and (ii) common understanding about the available options for improved water management, including development of water users' associations, irrigation cost recovery, and other related legal and institutional issues.

6. Activities relating to review and refinement of the 1998 Syr Darya Framework Agreement will largely be implemented through a grant under the TA to the Scientific and Information Center (SIC)-Interstate Commission for Water Coordination (ICWC) and Executive Committee (EC) of International Fund for Saving the Aral Sea (IFAS). This will be based on the submission of a proposal to ADB by SIC-ICWC and EC-IFAS, which will be reviewed and agreed to by ADB staff in consultation with the consultant team leader. The EC-IFAS will be kept informed of developments in this regard.

7. In addition to the assistance provided through the SIC-ICWC, TA consultants will, as needed, help convene meetings to support regional dialogue on amendments to the agreement. Implementation will be closely coordinated with related work being supported by the United States Agency for International Development (USAID) under its Transboundary Water and Environment Project.

8. The TA will also support regional dialogue on key water policy questions by sponsoring analyses and discussion on (i) shared vision about the need and opportunities for agriculture and water sector reform policies, particularly those relating to policy options and economic incentives to slow the worsening land degradation; and (ii) common understanding about the available options for improved water management, including development of water users' associations, irrigation cost recovery, and other related legal and institutional issues. Analyses will be commissioned on each of these topics—to take account of local and international experience—and workshops will be convened with broad-based stakeholder participation. The recommendations will be presented to the ICWC members for their potential action and widely disseminated through the PIU and other stakeholders. For each of these policy topics, the regional dialogue will be facilitated through completion of the following tasks:

- (i) finalization, in consultation with regional stakeholders, of a detailed definition of policy topics to be discussed;
- (ii) commissioning of analyses by regional and international experts, including by TA consultants, to examine key issues related to each topic;
- (iii) organization of regional workshops on the chosen topics; and
- (iv) dissemination of the results, including recommendations for policy and program action as well as areas requiring further local, national, and/or regional dialogue.

9. **Building Regional Water Management Capacity (Activity Area 3).** In addition to the general capacity-building aspects of other activities carried out through the TA, specific training tasks will be conducted to strengthen regional institutions and the understanding of key decision makers. The final agenda for the training will be formulated during the inception period in

consultation with regional stakeholders, but activities are likely to focus on (i) strategic planning related to integrated water resources management; (ii) negotiation and conflict resolution; (iii) and other topics complementary to the pilot river basin management and policy dialogue activities under the TA. In particular, the Chui-Talas site may be used as a venue and case study for training on subjects relating to transboundary basin management and water sharing.

C. Positions and Qualifications

1. International Consultants

a. River Basin Management Specialist and Team Leader (9 person-months)

10. The river basin management specialist will manage the TA team of international and domestic consultants¹ and be responsible for coordinating all TA activities and accomplishing TA outputs with the support and inputs of other consultants and in collaboration with Central Asian counterparts. This will include presenting preliminary findings and incorporating inputs provided by ADB, the Central Asian republics (CARs') governments, and other stakeholders at each stage of TA progress review. The specialist will work under the supervision of ADB staff while interacting closely with Central Asian counterparts. In close consultation with Central Asian counterparts, and with the assistance of local resources persons, the specialist will take the lead in organizing the planned workshops in the region.

11. The specialist will draft the detailed terms of reference for all domestic consultants, and propose these to ADB for review and approval 1 week after accepting his or her contract. In close consultation with IFAS, ICWC, and the governments of participating CARs, the specialist will assist ADB in identifying suitable and technically qualified candidates for ADB's consideration for the domestic consultant positions to be engaged under the TA.

12. Specifically, the specialist will (i) provide overall management of the TA consultant team, including ensuring that all outputs and reporting requirements are met; (ii) directly supervise the work of the domestic river basin management specialist responsible for coordinating work related to the Chui-Talas Basin (Activity Area 1); (iii) manage all aspects of activity areas 2 and 3 regarding the facilitation of policy dialogue and capacity building; (iv) commission special short-term studies to augment assessments conducted under the TA; and (v) lead the presentation of the major findings and outputs of the TA to Central Asian counterparts and ADB.

13. The specialist will have a university degree in natural resources/water management or a closely related field plus at least 5 years of experience dealing with complex river basin management issues, preferably at an international transboundary level. Fluency in the Russian language and experience in Central Asia would be highly advantageous, though they are not required.

b. Short-Term Consultants (4 person-months)

14. The TA team will include three short-term international consultants totaling 4 person-months of input as follows: water economist (2 person-months); water resources specialist (1 person-month); and legal and institutional specialist (1 person-month). The water economist will support all economic aspects of the TA's work as assigned by the team leader, including

¹ The subcomponent reviewing the 1998 Framework Agreement on the Syr Darya Basin will be led by the director, SIC-ICWC under ICWC oversight and in coordination with ADB and the TA consultant team leader.

developing a sustainable financing plan for shared water resources management in the Chui-Talas river basins. The water resources specialist will take the lead in framing, under the team leader's supervision, all aspects of the TA's facilitation of regional discussions on water use efficiency as well as other topics to be assigned by the team leader. The legal and institutional Specialist will take the lead in framing, under the team leader's supervision, all aspects of the TA's facilitation of regional discussions on legal and institutional arrangements for shared water management as well as other topics to be assigned by the team leader.

2. Domestic Consultants²

a. Water Resources Specialist and Deputy Team Leader (10 person-months)

15. The specialist will support the team leader in all aspects of TA implementation and will oversee the project implementation unit's (PIU's) operations. The specialist will have a university degree in water resources management or a closely related field plus at least 5 years of experience dealing with water management issues in Central Asia, preferably at the regional level. Fluency in spoken English and proficiency in written English are required.

b. Water Resources Specialist and Chui-Talas Coordinator (10 person-months)

16. The specialist will be based in the sub-PIU dedicated to the TA's Chui-Talas rivers activities and will lead these activities under the supervision of the team leader. The specialist will have a university degree in water resources management or a closely related field plus at least 5 years of experience dealing with water management issues in Central Asia, preferably at the regional level. Proficiency in spoken and written English are required.

c. Policy and Institutions Specialist (10 person-months)

17. The specialist will support all aspects of the TA's activities relating to policy and institutional development, particularly activity areas 2 and 3, under the supervision of the team leader. The specialist will have at least a masters degree in economics, management, or a relevant field and 5 years of experience dealing with natural resources management issues in Central Asia, preferably focusing on water management and at the regional level. Proficiency in spoken and written English are required.

d. Short-Term Consultants (6 person-months)

18. The TA team will include three short-term domestic consultants totaling 6 person-months of input as follows: water economist (3 person-months); water resources planning specialist (2 person-months); and information management specialist (1 person-month). The water economist will work with the international water economist to support all economic aspects of the TA's work as assigned by the team leader specifically to include the task of developing a sustainable financing plan for shared water resources management in the Chui-Talas River basins. The water resources planning specialist will assist the team leader and other team members with organization of all regional meetings, monitoring progress on the revision of the 1998 Syr Darya Framework Agreement, and otherwise supporting regional planning aspects of the TA's work. The information management specialist will work with the Chui-Talas Coordinator

² All domestic consultants will be recruited from across all CARs, not just from the countries where the TA operations are located.

and other team members to support all information management aspects of the TA's work, and specifically to include the task of developing an information management plan to support shared water resources management in the Chui-Talas River basins.

D. Reporting Requirements and Schedule

19. TA activities will be implemented over a 12-month period, beginning in February 2004. By the end of the second month, the PIU is to be established (in Almaty, Dushanbe, or Tashkent) with a suboffice near the offices of the CTJRC (anticipated to be in Bishkek). Most TA work will be completed by the thirteenth month, with the remaining time to be used for concluding activities, including dissemination of findings.

20. An inception report will be prepared within 6 weeks of the TA's initiation at which time all hiring of domestic consultants will have been completed. All advanced draft and final version of documents produced by the consultants are to be translated into the Russian language to facilitate their review and dissemination. The inception report will present detailed implementation arrangements, final recommendations for policy and training topics. A small inception workshop will be held to review the report's recommendations, build team dynamics, and finalize TA implementation plans once the TA is fully staffed. A midterm report will be finalized by the end of the sixth month of TA implementation, provide an interim assessment of outputs and outcomes, and identify areas requiring special attention by the steering committee and/or ADB to ensure the achievement of all TA objectives by the end of the implementation period. An initial assessment of opportunities for follow-on activities also will be included. ADB review missions will be conducted to ensure close monitoring of TA implementation. A draft final report will be prepared by the end of the eleventh month documenting all TA activities undertaken, assessing outputs and outcomes, and providing conclusions and recommendations derived from the TA's conduct. A workshop will be held to discuss its findings. The closing assessment of results will be covered in the final report, which will incorporate comments on the draft final report and any additional accomplishments in the final period of implementation.