

PART 1

PROJECT IDENTIFICATION

Sub-project II.3

Transboundary Diagnostic Analysis

Regional Framework Sustainable Use of the Rio Bravo

Link to umbrella project:

Sub-project II.3 is linked to all activities of Component I and III.

The basic activity of this sub-project is related to the formulation of a Transboundary Diagnostic Analysis (TDA), as identified in Sub-component II that will provide an essential input to the Strategic Action Program (SAP; Sub-component III).

Geographical scope: Rio Bravo Basin (Mexico; United States of America)

Executing Agency/entity:

The Project Coordination Unit (PCU) will coordinate the overall execution of the umbrella project under the oversight of the Implementing Agency (IA) and Executing Agency (EA), and (2) will liaise directly with all sub-project execution teams.

Duration: 24 months

Focal area(s): International Waters

GEF grant: US\$ 229.940

Co-financing: US\$ 46,563 (MEXICO); US\$ 503,252 (US)

Total funding: US\$ 779,755

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Project Summary

Though it is known as the Rio Grande in the United States and as the Rio Bravo in Mexico, for the sake of clarity the river will only be referred to as the Rio Bravo in the documents for this project.

This sub-project is designed to formulate the Transboundary Diagnostic Analysis (TDA) for the Rio Bravo Basin. The TDA provides the scientific basis for the actions to be identified under Component III, and will serve as a vehicle for integrating the results of the biogeophysical, institutional, legal, economic, cultural and political knowledge and data generated as a result of Component I, and the results of the targeted research activities (Component II), all of which are to be integrated into and synthesized with the knowledge base that currently exists within the binational Rio Bravo Basin.

This sub-project will strengthen the ability of country-level institutions to implement common basin-wide programs and projects by creating a shared knowledge base upon which a common management framework for the Rio Bravo Basin can be formulated. As a particularly important outcome of this activity, it will provide the basis for subsequent management interventions to be determined through the formulation of a Strategic Action Program (SAP) for the Basin.

Sub-project II.3 - Transboundary Diagnostic Analysis (TDA)		
Activity	Output	Outcome
TDA Formulation, including relevant data collection and root cause analyses; prioritization of transboundary issues to be addressed through a subsequently-developed and agreed Strategic Action Program (SAP)	A TDA based on scientific, multi-discipline knowledge concerning the water resources, biogeophysical, institutional, legal, economic, social, cultural and political characteristics of the Basin, to serve both as the baseline for identifying current needed management efforts throughout the Basin, and as a future reference for assessing progress made binationally in ensuring sustainable use of the Rio Bravo.	(i) Binationally-shared knowledge base and improved understanding of key scientific, technical, institutional, legal, economic, social, cultural and political aspects of the Rio Bravo Basin and its ecosystems, consistent with their sustainable use. (ii) An agreed agenda of issues to be addressed in the SAP.

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Sub-project II.3 - Transboundary Diagnostic Analysis (TDA)			
Activity	Sources of funding		
	GEF funding (US\$)	Co-financing (US\$)	Total Cost (US\$)
1. Identification and Synthesis of existing data and information	100,000	239,112	339,112
2. Synthesis and Integration of the outputs derived from the targeted research and related enabling activities	50,000	119,556	169,556
3. Analysis and determination of priority transboundary Concerns	79,940	191,146	779,755
TOTAL	229,940	549,815	820,652

PART 2

PROJECT DESIGN

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Background and Context

The 3,000-km long Rio Bravo, the 5th largest river in North America, and 24th largest in the world, is a major boundary between Mexico and the United States. It is central to the cultural heritage and history of the border region of both countries, with its 467,000 km² drainage basin stretching across five Mexican States (Chihuahua, Coahuila, Nuevo Leon, Tamaulipas, Durango) and three US States (Colorado, New Mexico, Texas). It traverses three major Ecoregions (Southern Rocky Mountains, Chihuahua Desert, and Tamaulipan Thorn Scrub) exhibiting a mosaic of mountain, desert and coastal habitats. The lower Rio Bravo valley is one of the most biologically-diverse regions in North America, with millions of migratory birds stopping to feed and rest during seasonal migration. Its international basin also is the most rapidly-growing area in both countries. Ninety percent of the border population resides in 14 paired, inter-dependent sister border cities, with the annual growth rate in most large basin cities exceeding 3%. The lower Rio Bravo Basin faces a predicted population increase of 175% between 2000 and 2050. There is significant agricultural activity on both sides of the border. The Mexican side of the border has experienced a proliferation of maquiladoras (product assembly plants) as a result of the North American Free Trade Agreement, which has stimulated migration from the Mexican interior to the border region. This migration has been accompanied by a significantly increased number of informal settlements (colonias), lacking basic water supply and sanitation facilities. Because of such factors, and the accompanying stresses on natural resources, the Rio Bravo is a river in serious disarray. Although a 1944 Treaty between Mexico and the USA controls water allocations in the international section of the Rio Bravo, the river's ability to support a formidable range of human physical, social, and economic needs, while also maintaining important ecosystems, is being overwhelmed. Excessive water abstractions (96% of the river's annual average flow is allocated) are exacerbated by additional factors such as water diversions, dams, high evaporation rates, recurring droughts, invasive species, sensitive biodiversity, agricultural and urban land use changes, and social dislocations. In addition, water availability and quality will be affected by climate change, although the implications are poorly understood. Results from pilot projects and targeted research will lend information regarding possible impacts of a changing climate within the Rio Bravo basin and will be incorporated into the TDA. Because of its importance to both countries, and because it has been identified among the world's ten most endangered rivers by both the World Wildlife Fund and American Rivers, the primary objective of this project is to develop and facilitate implementation of an integrated, ecosystem-based, binationally-agreed management activities to address the serious human and environmental problems, including climate change, confronting this sensitive transboundary river system, and to maximize its transboundary benefits to the inhabitants of both riparian countries.

The need to share and utilize the water resources of the transboundary Rio Bravo in a sustainable manner is at the core of this project. The proposed project is directed to developing a comprehensive, participatory framework for coordinated management activities, focused on facilitating more efficient water use throughout the basin. The socioeconomic factors influencing the livelihoods of basin inhabitants, particularly the poor and underrepresented population, are integral to such goals, particularly in maximizing

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transboundary benefits. The natural heritage of the Rio Bravo basin also must be considered, being unmatched by any desert riverine system in the world. The basin contains many threatened and endangered species among its extensive biodiversity. Unfortunately, however, more than 95% of the lower basin's native brushland has been converted to agricultural or urban use since the 1920s, with few undisturbed, natural communities remaining. Water development projects have seriously disrupted natural flow regimes, affected wetlands and aquatic fauna, and degraded native riparian plant communities. A further complicating factor to the sustainable use of the Rio Bravo is that both countries have treaty obligations to deliver specific quantities of water to each other at different locations in its basin, seriously complicating the holistic, integrated use of the river. A legal and institutional fragmentation of authority for water management also exists because the waters of the Rio Bravo are governed by a plethora of uncoordinated binational treaties, interstate compacts, reclamation projects, water rights, and contracts that are, in turn, implemented by a range of governmental agencies at international, national, state, and local levels. These institutions, and a large number of private organizations (e.g., irrigation districts), comprise a major grouping of different stakeholders that must be involved in transforming the current fragmented system into a more integrated decision-making process. Although part of the solution lies in better coordination of organizational activities on both sides of the border, this goal remains difficult and elusive. Lack of effective communication between water-user communities and other stakeholder groups also constrains sustainable use of the river. Taken together, these factors ensure a continuing piece-meal, and non-sustainable, approach to managing this important transboundary water system.

Building on the existing, although uncoordinated, legal framework between Mexico and the United States, this project outlines a 2-phased approach of diagnosis, as described herein, and action, as described in Component III. Both are directed to developing a comprehensive, participatory framework for coordinated management of the Rio Bravo Basin for sustainable use.

Objectives

The overall objective of this sub-project is to formulate a Transboundary Diagnostic Analysis (TDA) of the Rio Bravo Basin, incorporating all available hydrological and socio-economic data and information. The TDA provides the technical and socio-economic basis necessary for formulation of scientifically-sound strategic responses that will serve as input for the formulation of a Strategic Action Program (SAP).

Environmental Benefits

The development and documentation of a sound technical and scientific understanding of the issues of concern facing the Rio Bravo Basin is a priority step for formulating appropriate and relevant responses to environmental and related socio-economic concerns in the Basin. During the project development phase, it became clear that considerable scientific effort has been devoted to attempting to understand elements of the Rio Bravo ecosystems and their associated hydrological and biogeophysical elements. Much of this effort is documented in technical and scientific journals, professional documents, reports, proceedings of meetings,

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and other literature. However, although much of the scientific effort has focused on specific aspects of the river system, particularly its hydrological and biodiversity characteristics, or on specific areas of the system, surprisingly little effort has been made to integrate all this information and data into a detailed understanding of the basin as a whole. The above-noted studies, in combination with the results of the socio-economic analyses of Component I, and the targeted research activities of Sub-project II.1, will be synthesized through the process of TDA formulation, facilitating a better understanding of the Rio Bravo Basin, and provide guidance to achieving its sustainable use.

Overall Outcome

The outcome will be (i) Binationally-shared knowledge base and improved understanding of key scientific, technical, institutional, legal, economic, social, cultural and political aspects of the Rio Bravo Basin and its ecosystems, consistent with their sustainable use; and (ii) An agreed agenda of issues to be addressed in the SAP.

Consistency with Regional/National Priorities and Plans

Many regional and national priorities and plans that focus on the Rio Bravo are encompassed within ongoing activities of the two riparian countries, and which are consistent with goals of this proposed integrated, ecosystem-based management program. Major agencies and programs relevant to the Rio Bravo Basin are as follows:

Regional

(A) International Boundary and Water Commission (IBWC; the Mexican section of IBWC is called La Comisión Internacional de Límites y Aguas (CILA)): The IBWC is an international body responsible for applying the boundary and water treaties between Mexico and the USA, and settling any differences that may arise in their application. Its mission is to apply the rights and obligations assumed by Mexico and the United States under numerous boundary and water treaties and related agreements in a way that benefits the social and economic welfare of the peoples on both sides of the boundary and improves relations between the two countries, including such issues as boundary demarcation, national ownership of waters, sanitation, water quality, and flood control in the border region.

(B) Border 2012 Program: The 1983 Agreement on Cooperation for the Protection and Improvement of the Environment in the Border Area (La Paz Agreement) is the legal basis for this binational collaborative program. With active participation of 10 Mexican and US border states, and US tribal governments, the US Environmental Protection Agency (EPA) and Mexico's Secretariat of Environment and Natural Resources (SEMARNAT), in partnership with the US Department of Health and Human Services (HHS), the Mexican Secretariat of Health (SS) and other federal agencies, the goal of the Border 2012 Program is to improve the environment, and protect the health of people living along the common border, consistent with principles of sustainable development. The program focuses on providing safe drinking water, cleaning the air, reducing risks of exposure to hazardous waste, and ensuring emergency preparedness along the border region.

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(C) Border Environment Cooperation Commission (BECC): The BECC is an international organization created by the Mexican and US Governments under side agreements to the North American Free Trade Agreement (NAFTA). BECC's mission is to help conserve, protect and enhance the environment in the Mexico-US border region, through developing and certifying environmental infrastructure projects incorporating innovative sustainability and public participation concepts. BECC's mandate addresses water pollution, wastewater treatment, and municipal solid waste management projects, including issues such as hazardous waste, water conservation, water and sewer system hookups, and waste reduction and recycling. Air quality, transportation, clean and efficient energy, and municipal planning and development projects (including water management) have subsequently been added to BECC's mandate.

National

Mexico:

(A) Secretary of Environment and Natural Resources (Secretaría de Medio Ambiente y Recursos Naturales, SEMARNAT): A department of the federal government's Executive branch, SEMARNAT is responsible for environmental protection policy to reverse ecological deterioration, and establishing the basis for sustainable development in Mexico.

(B) National Water Commission (Comisión Nacional del Agua, CNA): The 1992 National Water Law, as revised in 2004, gives the federal government, through CNA, a department of SEMARNAT, responsibility for key water sector functions, with the chief mission of managing and preserving national water resources, with participation of society, to achieve sustainable use of these resources.

United States:

(A) U.S. Environmental Protection Agency (EPA): The EPA was established in 1970 as a federal response to growing public demands for cleaner water, air and land. The concerns of EPA's Region 6 encompass the US portion of the Rio Bravo Basin, including facilitation of construction of wastewater and drinking water facilities for people living in unincorporated areas (colonias) along the US side of the border. The EPA also works with other Federal, State, and local agencies to help identify and solve border environmental problems.

(B) Rio Grande Watershed Federal Coordinating Committee (RGWFCC): The RGWFCC is a consortium of 11 US federal agencies, including IBWC, National Park Service, EPA, Army Corps of Engineers, Bureau of Reclamation, Department of Agriculture, Bureau of Indian Affairs, Bureau of Land Management, and National Weather Service. Its purpose is to facilitate familiarity of these agencies with each other's mission and ongoing projects related to watershed planning activities relevant to the Mexico-US border, and facilitate opportunities for interagency collaboration.

As a means of optimizing the binational efforts being directed to facilitating the sustainable use of the Rio Bravo throughout its basin, and enhancing the transboundary benefits to be

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derived from them, the proposed TDA will make maximum use of the activities and programs being administered or implemented by these various organizations and programs, as well as other relevant activities involving the Rio Bravo Basin, including academic studies.

Consistency with the GEF Strategies and Programs

In facilitating development of an integrated, ecosystem-based management approach for the transboundary Rio Bravo basin, this project is consistent with the IW Focal Area GEF-4 Strategic Objective 1 (SO-1) and its SP-3. As earlier noted, significant legal and institutional fragmentation of authority for water management in the basin is a significant constraint to equitable, sustainable use of the Rio Bravo Basin. Water allocations are governed by numerous binational treaties, interstate compacts, reclamation projects, water rights and contracts, some inconsistent with sustainable water use in the basin. These various instruments are implemented by a bewildering range of international, national and state governmental agencies, and private organizations (most notably irrigation districts on the U.S side). The unique mandates and responsibilities of these various agencies and organizations ensures there is no integrated approach to managing and using the waters of the Rio Bravo Basin. With water demands expected to increase with continuing population growth, and agricultural and industrialization activities, developing and implementing an integrated management approach, such as that embodied in a TDA approach, is a paramount need for ensuring sustainable use of this badly-stressed transboundary water system. An integrated approach is especially critical for addressing a core problem within the Rio Bravo basin, namely, multiple competing uses (and overuses) of limited water resources, both surface- and groundwater, by providing a mechanism for cooperation between Mexico and the USA in identifying and addressing priority border water issues. With the existing piecemeal method of managing and allocating the waters of the Rio Bravo Basin, an integrated approach is the only rational means of addressing the serious ecological and economic damage associated with overuse of this transboundary river, and of improving the livelihoods of basin inhabitants in this drought-prone region. This project is designed to address this goal by facilitating the development of the planning and management tools needed to ensure sustainable use of the Basin as a whole, with the TDA to be developed under this Component II.3 being the necessary first step.

Gender Sensitivity

The project will attach great importance to gender equality and views a gender sensitive approach as a means for better quality, validity and utility. When human beings are involved, as stakeholders, research subjects, users, in training or dissemination activities, gender differences may exist. These differences will be considered and addressed during the implementation of this sub-project, particularly activity 3, under the supervision of the PCU and Project Steering Committee to ensure the highest level of quality in the project's outcomes.

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Coordination and Linkages to the Umbrella Project

Each of the Basin countries currently implements a set of national policies and laws through appropriate national and local level institutions established within each country. Numerous universities, research organizations—both governmental and nongovernmental, and interest groups, including private sector corporations, also undertake studies and research projects in the Basin that are typically centered around mission-specific or sectorally-focused purposes. Nevertheless, the exchange of information or consideration of research findings within the context of the Basin as a whole remains inadequate. The result is discontinuities in regulations, enforcement, economic development, and resource management activities which, singularly or collectively can limit the potential for the sustainable use of the water resources of the Rio Bravo Basin to be achieved. These discontinuities also reduce the opportunities available to the Basin countries to maximize the social and economic benefits associated with the sustainable use of these resources.

Notwithstanding this reality, the national plans and policies of Mexico and the United States do seek to promote the joint utilization and optimization of the Basin's resources on a transboundary basis. Such joint utilization obviously must be predicated upon a common understanding of the priority issues facing the Basin which, in turn, must be based on shared and accepted scientific and technical knowledge. The proposed TDA will utilize scientific, socio-economic, legal and institutional information and data obtained during the course of the Vision formulation (Sub-project I.1), the targeted research activities (Sub-project II.1), and the legal and institutional analyses (Sub-project I.2). The PCU, Technical Advisory Committee, and other binational partners in this project are best suited to address the key issue of multi-level agencies and missions, and to facilitate development of a comprehensive, integrated TDA that identifies and prioritizes key issues, thereby facilitating the development of possible solutions under the SAP (Sub-project III.4). The outcome of this TDA -- the scientific, technical and socio-economic understanding of the priority transboundary issues facing the Basin countries -- is both consistent with, and forms the firm foundation upon which an agreed, binational SAP can be formulated and implemented.

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Activities, Outputs, Outcomes

Sub-project II.3 TDA Formulation

This activity comprises three major activities, including a workshop as noted below: (i) building upon the results of the sub-projects of the Components I and II (vision, targeted research, legal and institutional analysis, and other relevant inputs), assemble, document, and synthesize the existing database on issues related to integrated water resources; (ii) identify transboundary concerns with regard to key biogeophysical, socio-economic, and ecological issues, resources and gaps in available data related to groundwater and freshwater systems within the basin, including the potential impacts of climate change;; (iii) conduct causal chain analysis and prioritize the transboundary issues to be addressed in the SAP formulation (Sub-project III.4) [validation workshop].

The outputs of this action will be a TDA, based on: (i) documented scientific knowledge of the water resources and hydro-meteorological conditions of the basin; its biogeophysical, institutional, legal, economic, social, cultural and political characteristics; and identified gaps in knowledge and compiled essential (existing) baseline information from which priority interventions and key strategic actions can be developed. These outputs also will serve as the baseline for identifying current needed management efforts throughout the Basin, and as a future reference for assessing progress made in ensuring sustainable use of the Rio Bravo. In addition, these outputs will be essential to the sub-projects developed under Component II, and specifically the subsequent formulation of the SAP for the Rio Bravo Basin.

The outcomes of this action will be: (i) A binationally-shared knowledge base, and improved understanding of the key scientific, technical, institutional, legal, economic, social, cultural and political aspects of the Rio Bravo Basin and its ecosystems, consistent with their sustainable use; and (ii) An agreed and prioritized agenda of issues to be addressed in the subsequently-developed SAP for the Rio Bravo Basin.

Activity II.3.1 Identification and synthesis of existing data and information

This element will contract an assistant to the PCU, who, building upon the results of the sub-projects of the Components I and II, will assemble, document, and synthesize the existing database on issues related to integrated water resources management of the Rio Bravo Basin. This element will contribute to the identification of knowledge gaps and, together with new data to be acquired under Activity 2, will form a contribution to the integrated information system (IIS) to be developed under Component III, as well as informing the diagnostic analysis necessary to define priority concerns within the to be undertaken by Activity 3.

The output of these actions will be a synthesis report on the state of knowledge of the natural resource base of the Rio Bravo Basin, which will form a contribution to the integrated information system to be developed under Component III.

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The outcomes of these actions will enable the conduct of the TDA, which is an essential prerequisite for the formulation of an intervention strategy (SAP) necessary to integrate water resources management activities addressed to the sustainable use of the Rio Bravo throughout its basin.

Activity II.3.1 - Identification and Synthesis of Existing Data and Information					
Budget Item	Total GEF Funding	Year 1	Year 2	Co-financing/ Counterpart	Total
Consultant (Transboundary Issues Expert)	26,400	13,200	13,200	63,126	89,526
Consultant (Website Development Specialist)	23,658	12,000	11,658	56,569	80,227
Consultant (Technical Assistance)	22,000	12,000	10,000	52,605	74,605
Materials and Supplies	7,000	3,000	4,000	16,737	23,737
Editing, Translating and Publishing	17,280	7,000	10,280	41,319	58,599
Communications	3,662	1,850	1,812	8,756	12,418
Activity II.3.1 - Total	100,000	49,050	50,950	239,112	339,112

Activity II.3.2 Synthesis and integration of the outputs derived from the targeted research and related enabling activities

In addition to the data to be acquired under Activity 1, new information on transboundary concerns will be generated as outputs of this sub-project. These outputs will focus on acquisition and analysis of knowledge of key biogeophysical, socio-economic, and ecological issues related to groundwater systems, sediment transport dynamics, and knowledge of hotspots exposed to greatest risk from natural climate change related hazards. The outputs will be synthesized and integrated into a common framework of available data, in order to ensure a comprehensive knowledge base on the Rio Bravo Basin as a single unitary entity. This knowledge, an input to Activity 3 below, will ultimately facilitate the formulation of a program of strategic actions that will allow governmental and nongovernmental entities at the Basin, national, and local levels to implement at the level of the Rio Bravo Basin. It also will contribute to the informational mechanisms that will ensure appropriate consultation and exchange of information to enable the application of the principles of integrated water resources management throughout the Basin.

The output of these actions will be a synthesis report on the state of knowledge of those elements of the natural resource base of the Rio Bravo Basin that are identified as major gaps in understanding during the project preparation activities. This knowledge also will form a contribution to the integrated information system to be developed under Component III.

The outcomes of these actions will enable the conduct of the TDA, which is an essential prerequisite for the formulation of an intervention strategy (SAP) necessary to integrate water resources management activities within the Rio Bravo Basin.

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Budget Item	Total GEF Funding	Year 1	Year 2	Co-financing/ Counterpart	Total
Consultant (Information Development Specialist)	14,300	6,600	7,700	34,193	48,493
Consultant (Technical Assistance)	11,000	5,500	5,500	26,302	37,302
Materials and Supplies	8,000	4,000	4,000	19,129	27,129
Editing, Translating and Publishing	14,000	6,000	8,000	33,476	47,476
Communications	2,700	1,200	1,500	6,456	9,156
Activity II.3.2 - Total	50,000	23,300	26,700	119,556	169,556

Activity II.3.3 Analysis and determination of priority transboundary concerns

The data acquired under Activities 1 and 2 of Sub-project II.3, as outlined above, will be consolidated, synthesized, and analyzed at the level of the Rio Bravo Basin to develop proposals for the strategic responses necessary for application of the principles of integrated water resources management for the entire basin through a causal chain analysis. The results of this activity will be presented at a workshop, edited and published.

The output of these actions will be a documented transboundary diagnostic analysis (TDA), identifying and prioritizing the key transboundary concerns to be addressed in the subsequently-developed SAP for the Rio Bravo Basin.

The outcomes of these actions will enable the development of the SAP, with focus on the scientific, institutional, policy, economic, and cultural development needs within the Rio Bravo Basin.

Activity II.3.3 - Analysis and Determination of Priority Transboundary Concerns						
Budget Item	Total GEF Funding	Year 1	Year 2	Year 3	Co-financing/ Counterpart	Total
Consultant (Facilitator)	14,300	6,000	8,300	-	34,193	48,493
Consultant (Technical Assistance)	15,000	7,500	7,500	-	35,867	50,867
Travel	3,160	1,580	1,580	-	7,556	10,716
Carbon Offset	168	84	84	-	403	571
TDA Workshop	12,000	-	12,000	-	28,693	40,693
Materials and Supplies	10,000	5,000	5,000	-	23,911	33,911

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Meeting Room Rental Space	8,400	-	8,400	-	20,085	28,485
Editing, Translating, and Publishing	12,000	-	6,000	6,000	28,694	40,694
Communications	4,912	2,000	2,000	912	11,744	16,656
Activity II.3.3 - Total	79,940	22,164	50,864	6,912	191,146	271,086

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Indicators, Baseline, Targets

Sub-project II.3 TDA Formulation

Project objective and Outcomes	Description of indicator	Baseline level	Mid-term target	End-of-project target
Objective II.3 Key issues of transboundary concern relating to water resources management and management of climate change impacts are identified and prioritized	(S) Completed TDA	Knowledge of critical issues is mission-specific and/or sectorally-focused; Limited knowledge is available at Basin level	Key issues pertaining to water resources management and climate change impact mitigation are identified and prioritized in the TDA and approved by SC	Key issues pertaining to water resources management and climate change impact mitigation are identified and prioritized in the TDA and approved by SC
Outcome II.3: Scientific and technical knowledge necessary to create an agreed agenda of issues to be addressed in preparing SAP for Rio Bravo Basin is available	(T) TDA is published and included as input in the SAP	TDA is completed	TDA available for development of strategies included in the SAP;	TDA available for development of strategies included in the SAP;

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Project Outputs	Description of indicator	Baseline level	Mid-term target	End-of-project target
Activity II.3.1 Output: Identification and synthesis of existing data and information	(S) Synthesis report prepared	Limited basin-level information available	Data are available for use in the TDA, and included in the integrated information system (I.I.S.) for Rio Bravo Basin	Data are available for use in the TDA, and included in the integrated information system (I.I.S.) for Rio Bravo Basin
Activity II.3.1 Outcome: Enabling the implementation of the TDA through publication of compiled knowledge base	(R) Synthesis report is reviewed and agreed by SC	Limited basin-level information is currently compiled	TDA report and plan of implementation is agreed by SC; data are available for use in the I.I.S. for Rio Bravo Basin	TDA report and plan of implementation is agreed by SC; data are available for use in the I.I.S. for Rio Bravo Basin
Activity II.3.2, Output: Synthesis and integration of the outputs derived from the targeted research and related enabling activities	(S) Synthesis report includes new knowledge from targeted research	Data gaps in knowledge of transboundary water quality, biological, agricultural, and groundwater hotspots	Targeted research data and results are available for use in the TDA, and included in the I.I.S.	Targeted research data and results are available for use in the TDA, and included in the I.I.S.
Activity II.3.2 Outcome: Enabling the implementation of the TDA through publication of targeted research results	(R) Synthesis report includes targeted research; reviewed and agreed by SC	Data gaps in knowledge of transboundary water quality, biological, agricultural, and groundwater hotspots	TDA report and plan of implementation is agreed by SC; data are available for use in the I.I.S. for Rio Bravo Basin	TDA report and plan of implementation is agreed by SC; data are available for use in the I.I.S. for Rio Bravo Basin
Activity II.3.3 Output: Analysis and determination of priority transboundary concerns	(S) TDA report is completed	No TDA currently exists for Rio Bravo Basin	Binationally-agreed TDA, including identification of priority transboundary concerns to be addressed in SAP	Binationally-agreed TDA, including identification of priority transboundary concerns to be addressed in SAP
Activity II.3.3 Outcome: Enabling implementation of the SAP with focus on scientific, institutional, policy, economic, and cultural development needs in the Basin	(T) Data, analysis, and identification of hotspots in TDA are inputs to the I.I.S. and the SAP	No TDA currently exists for Rio Bravo Basin	Binationally-agreed TDA, including identification of priority transboundary concerns to be addressed in SAP	Binationally-agreed TDA, including identification of priority transboundary concerns to be addressed in SAP

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Incremental Cost Analysis

BASELINE: Human activities, especially water abstractions from the Rio Bravo, have significantly affected its quantity and quality. With more than 96% of the average river flow already allocated by treaty and/or other agreements, the river is overallocated throughout its length, with serious implications for the basin's continuing socioeconomic development. Massive water diversions for agricultural irrigation, coupled with a continuously-increasing basin population and industrialization, are increasing the basin population's vulnerability to water shortages, particularly under the recurring drought conditions characterizing this arid border region. The precarious nature of the basin's water resources was dramatically illustrated in February 2001 with blockage of the rivermouth by a sand bar because of low-flow conditions from a severe drought in the lower Rio Bravo Basin since 1995. Dredged by the International Boundary and Water Commission (IBWC) in 2001, the rivermouth was again closed with silt, remaining blocked until 2002, when higher tides and increased river flows partially re-opened it. As noted above, several other national and international initiatives also have attempted to mitigate the environmental and socioeconomic problems in the Rio Bravo basin (IBWC, Border 2012 Program, BECC). A range of NGOs (e.g., WWF; National Heritage Institute) also are involved in various basin studies. Academic institutions in both countries are engaged in, or have conducted, various studies on Rio Bravo issues, mostly hydrological in nature. State agencies in both countries address specific aspects of the quantity and/or quality of Rio Bravo waters. Many of these activities, however, are either sectorally-driven, or are being conducted in the absence of a common vision of how the river basin should be managed for sustainable use to meet both human and ecosystem needs, thereby ensuring no comprehensive, long-term vision for this transboundary water system. As a result, the resulting uncoordinated activities only marginally contribute to achieving the goal of sustainable use of the Rio Bravo Basin. The baseline, or "business-as-usual" situation comprises activities adopted by national, state, or local governments on a generally issue- or sectorally-based approach. Investments have been made in public health, irrigation facilities, water supply, and sanitation facilities to the benefit of those residing at or near the locations such facilities have been constructed. Environmental management interventions, however, continue to be undertaken by an array of governmental organizations on the international, state and local level in both countries, the nature of which is determined largely by local priorities and demands, without regard to the overall benefit to the basin as a whole.

INCREMENTAL REASONING: A sound scientific and technical basis is essential for development of innovative, shared management strategies for the Rio Bravo Basin, and for coordinated action by the two governments at the Basin, national and local levels to optimize the opportunity for integrated management of its water resources for sustainable use. Thus, knowledge of priority concerns facing the Basin is an essential element for creating a sound scientific, technical and socio-economic knowledge base for addressing its sustainable use. At the same time, because the TDA will be conducted at the Basin level, limited national benefit will accrue from the compilation of information and data within the context of this proposed TDA. The value of such benefits to individual stakeholders, however, will greatly exceed the commitment of national funds to conduct activities

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underpinning the knowledge base to be derived with the TDA. Lack of the Basin-level approach proposed in this proposed TDA will ensure that acquisition and utilization of relevant knowledge on the Basin's water and related resources by stakeholders will remain fragmented and piece-meal. The proposed GEF intervention under the International Waters focal area provides an important and necessary linkage and context for this goal, both for ongoing and future activities, through development of the proposed diagnosis (TDA; Sub-component II.3) and action coordination framework (SAP; Sub-component III.4) directed to managing the Rio Bravo Basin for sustainable use.

Budget

Sub-project II.3 - Transboundary Diagnostic Analysis (TDA)							
Activity II.3.1 - Identification and Synthesis of Existing Data and Information							
Code	Budget Item	Total GEF Funding	Year 1	Year 2	Year 3	Co-financing/ Counterpart	Total
1205	Consultant (Transboundary Issues Expert)	26,400	13,200	13,200	-	63,126	89,526
1205	Consultant (Website Development Specialist)	23,658	12,000	11,658	-	56,569	80,227
1205	Consultant (Technical Assistance)	22,000	12,000	10,000	-	52,605	74,605
4105	Materials and Supplies	7,000	3,000	4,000	-	16,737	23,737
5205	Editing, Translating and Publishing	17,280	7,000	10,280	-	41,319	58,599
5305	Communications	3,662	1,850	1,812	-	8,756	12,418
	Activity II.3.1 - Total	100,000	49,050	50,950	-	239,112	339,112
Activity II.3.2 - Synthesis and Integration of Outputs Derived From Targeted Research and Enabling Activities							
Code	Budget Item	Total GEF Funding	Year 1	Year 2	Year 3	Co-financing/ Counterpart	Total
1205	Consultant (Information Development Specialist)	14,300	6,600	7,700	-	34,193	48,493
1205	Consultant (Technical Assistance)	11,000	5,500	5,500	-	26,302	37,302
4105	Materials and Supplies	8,000	4,000	4,000	-	19,129	27,129
5205	Editing, Translating and Publishing	14,000	6,000	8,000	-	33,476	47,476
5305	Communications	2,700	1,200	1,500	-	6,456	9,156
	Activity II.3.2 - Total	50,000	23,300	26,700	-	119,556	169,556
Activity II.3.3 - Analysis and Determination of Priority Transboundary Concerns							
Code	Budget Item	Total GEF Funding	Year 1	Year 2	Year 3	Co-financing/ Counterpart	Total
1205	Consultant (Facilitator)	14,300	6,000	8,300	-	34,193	48,493
1205	Consultant (Technical Assistance)	15,000	7,500	7,500	-	35,867	50,867

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1605	Travel	3,160	1,580	1,580	-	7,556	10,716
1605	Carbon Offset	168	84	84	-	403	571
3205	TDA Workshop	12,000	-	12,000	-	28,693	40,693
4105	Materials and Supplies	10,000	5,000	5,000	-	23,911	33,911
4305	Meeting Room Rental Space	8,400	-	8,400	-	20,085	28,485
5205	Editing, Translating, and Publishing	12,000	-	6,000	6,000	28,694	40,694
5305	Communications	4,912	2,000	2,000	912	11,744	16,656
	Activity II.3.3 - Total	79,940	22,164	50,864	6,912	191,146	271,086
	Sub-project II.3 - Total	229,940	94,514	128,514	6,912	549,814	779,755