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EVALUATION OF USAID'S STRATEGIC OBJECTIVE FOR THE PANAMA CANAL WATERSHED 2000–2005

FINAL REPORT



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The authors' views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.



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The Panama Canal Watershed Strategic Objective Program has involved many people and institutions throughout the natural resources and environment community in Panama over the past four years. This wide reach is a hallmark of the USAID/Panama program.

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EVALUATION METHODOLOGY

The evaluation began with preparatory work and initial interviews in Washington in late March. A four-person team¹ carried out field work between April 4 and May 9 and interviewed USAID program staff, key government authorities, program contractors and grantees and stakeholders; and visited several projects located in the sub-watersheds of Los Hules-Tinajones and Caño Quebrado and the Soberanía National Park. The team leader presented a draft report which was subsequently revised by DAI based on feedback from USAID/Panama, USAID/Washington, and the Academy for Education Development and the Inter-Institutional Commission for the Panama Canal Watershed (CICH).

¹ Team was led by Tom Catterson and included Henry Tschinkel, Jolanta de Villarreal and Michael Godfrey

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ACRONYMS

ACP	Autoridad del Canal de Panamá
AED	Academy for Educational Development
ANAM	Autoridad Nacional del Ambiente
ANCON	Asociación Nacional para la Conservación de la Naturaleza
APOTUR	Asociación Panameña de Operadores de Turismo
APS	Annual Program Statement
ARD	Associates in Rural Development, Inc.
ARI	Autoridad de la Región Inter-Oceánica
CAM	Conservation Action Plan
CAP	Central America & Mexico (USAID Regional Strategy)
CBO	Community Based Organization
CEASPA	Centro de Estudios Acción Social Panameño
CHCP	Cuenca Hidrográfica del Canal de Panamá
CICA	Centro Internacional para la Capacitación Ambiental
CICH	Comisión Interinstitucional de la Cuenca Hidrográfica del Canal
CONEP	Consejo Nacional de la Empresa Privada
DAI	Development Alternatives, Inc.
EPIQ	Environmental Policy and Training Support Project (USAID IQC)
FEDISPAM	Federación para el Desarrollo Integral de los Planes Ambientales Municipales
FIDEKO	Fideicomiso Ecológico de Panamá
FIS	Fondo de Inversión Social
FN	Fundación Natura
FPP	Fondo Peregrino Panamá
FUNDEMUN	Fundación de Desarrollo Municipal
GEMAS	Grupo para la Educación y el Manejo Ambiental Sostenible
GOP	Government of Panama
GWU	George Washington University
IDAAN	Instituto de Acueductos y Alcantarillados Nacionales

INRENARE	Instituto Nacional de Recursos Naturales Renovables
IDB	Inter-American Development Bank
IPAT	Instituto Panameño de Turismo
IR	Intermediate Result
IRG	International Resources Group, Ltd.
MARENA	Management of Natural Resources Project
MIDA	Ministerio de Desarrollo Agropecuario
MINGOB	Ministerio de Gobierno y Justicia
MINSA	Ministerio de Salud
MIPPE	Ministerio de Planificación y Política Económica
MIVI	Ministerio de Vivienda
MOP	Ministerio de Obras Publicas
MOU	Memorandum of Understanding
MSI	Management Systems International
NGO	Non-governmental organization
NRCP	Neotropical Raptor Conservation Program
NRM	Natural Resource Management
OBC	Organización Comunitaria de Base
PACD	Project Assistance Completion Date
PCC	Panama Canal Commission
PCW	Panama Canal Watershed
PiP	Parks in Peril Project
PMCC	Proyecto de Monitoreo de la Cuenca del Canal de Panamá
PPP	Public-Private Partnerships
PROARCA	Programa Ambiental Regional para Centroamerica
RENARE	Directorate General for Renewable Natural Resources (under MIDA)
ROCCA	Red de Organizaciones Campesinas Agroecológicas y Ambientales
SINAP	Sistema Nacional de Áreas Protegidas
SNP	Soberanía National Park
SO	Strategic Objective
SONDEAR	Sociedad Nacional para el Desarrollo de Empresas y Areas Rurales

STRI	Smithsonian Tropical Research Institute
TA	Technical Assistance
TNC	The Nature Conservancy
TPF	The Peregrine Fund
UMA	Municipal Environmental Unit
UNEP	United Nations Environmental Programme
USAID	United States Agency for International Development
WB	World Bank

EXECUTIVE SUMMARY

INTRODUCTION

The Panama Canal and its watershed is a significant asset to Panama, the United States and the world. The Canal serves as a critical link in the commerce chain, handling 4 percent of total world trade and, more importantly for the United States, 12 percent of U.S. maritime trade including 40 percent of all U.S. grain exports. It also plays a key role in Panama's economy, directly employing about 9,500 people, generating more than \$920 million in foreign exchange (approximately 8 percent of the country's GDP), and contributing about \$90 million to the national treasury in 2003. The Panama Canal's watershed (PCW) occupies one of the world's most biologically diverse areas, where more forest bird and plant species are present than many other parts of the world. This unique situation of a valuable economic asset depending upon the maintenance of a valuable environmental asset offers an almost unprecedented opportunity to link biodiversity conservation with local, national, and international development needs and opportunities.

The importance of USAID's commitment to improve the management and protection of the PCW cannot be understated. USAID's current program builds upon almost 30 years of support to improve the watershed's management, and currently focuses on improving the integrated management and protection of the watershed. This program has global implications, both in terms of biodiversity protection and in helping maintain global trade and security. The principal issues confronting the sustainable productivity of the Canal and its watershed today include: (i) risk of inadequate dry season flows that limit Canal operations; (ii) contamination of water used by households and industry; and (iii) sedimentation. USAID's current PCW program focuses on these issues.

THE PANAMA CANAL WATERSHED STRATEGIC OBJECTIVE (2002–2006)

Development Alternatives, Inc. (DAI) evaluated USAID/Panama's current strategic objective for sustainable management of the PCW, focusing on activities undertaken during the last four years, set in the context of past efforts to improve the management of the watershed. This evaluation records the changes made in the program's original design, assesses the impact of program activities in integrated watershed management (IR 1) and improved environmental management of protected areas (IR 2), and provides recommendations that USAID/Panama can use as it plans the next phase of support for improving the management of the PCW.

IR 1: INTEGRATED WATERSHED MANAGEMENT DEMONSTRATED IN SELECTED SUB-WATERSHEDS

IR 1 combines work on policies and regulations, environmental communications, and training with on-the-ground demonstration activities to test approaches for improving the management of the PCW. Pilot activities have included research and testing of technologies to address water quality and supply problems. Key accomplishments to date include:

- Developed studies that analyzed policy options on the following topics: sustainable livestock management, including changing livestock credit policies; plantation forestry and natural forest management; pineapple production, water pollution reduction through clean production in swine farms and tertiary road construction and maintenance to reduce soil erosion;
- Organized coordination committees of local stakeholders in conjunction with the demonstration activities to facilitate participatory integrated watershed management planning and implementation in the Los Hules-Tinajones and Caño Quebrado sub-watersheds;

- Facilitated agreement among the Government of Panama (GOP) agencies on the environmental indicators for monitoring of the conditions in the PCW, and the assignment of responsibilities among these institutions for monitoring specific indicators;
- Developed a wide range of communications materials related to integrated watershed management in the PCW, including a project website (www.aedpanama.org).
- USAID and the ACP established a \$5.0 million Fund to finance grants to local NGOs for demonstration activities in improved watershed management. This \$5.0 million fund helped catalyzed a \$20 million loan from the Inter-American Development Bank (IDB) for watershed projects in the PCW.

IR 2: ENVIRONMENTAL MANAGEMENT OF PROTECTED AREAS UPGRADED

IR 2 activities are helping ANAM to test two different approaches for managing and protecting protected areas. In the Soberanía National Park, efforts focus on helping the park achieve international tourist standards, generate sufficient income through eco-tourism to cover the park's operations and maintenance, and serve as the model for public-private development of eco-tourism activities with the participation of surrounding communities. In the Chagres National Park, efforts focus on developing a viable co-management model for protected areas that includes a mix of public and private lands.

Under THE AED TASK ORDER, the most significant accomplishments to date include:

- Completed a study on the strategy for developing ecotourism in the Soberanía National Park;
- Helped ANAM draft a regulation for Administrative and Service Concessions in Protected Areas recently approved;
- Helped the Panamanian Tourist Institute (IPAT) develop a national ecotourism strategy;
- Helped APOTUR develop a database on business activity around the park;
- Supported ANAM's development of a MOU with a group of tour operators for the development of a tourism cluster focused on developing a program entitled "Ecological Route Between Two Oceans";
- Prepared a training plan for ANAM personnel related to the management and supervision of ecotourism;
- Approved three demonstration activities that support eco-tourism development.

Work in the Chagres National Park has also yielded several significant results. These include:

- Reached agreement with ANAM to establish a foundation that would co-manage the park;
- Developed a Conservation Action Plan (CAP) for the park that serves as a guide for park management and protection;
- Brokered the ratification of a debt-for-nature swap between the U.S. Government and the GOP under the Tropical Forest Conservation Act that will provide about \$375,000 per year for 14 years to finance conservation projects in the park;

- Established program steering committee involving GOP agencies, USAID, and non-governmental organization (NGO) partners to review the management strategy and proposals for conservation actions and oversee the park's co-management plan;
- Prepared 51 farm management plans to mitigate negative environmental impacts caused by traditional farming and cattle production in the park.

SYNOPSIS OF FINDINGS AND RECOMMENDATIONS

The evaluation team believes that USAID's current program and demonstration activities are focused on the right choices for addressing watershed management issues in pilot subwatersheds of Los Hules-Tinajones and Caño Quebrado, and the principal challenges confronting the long-term sustainable management of the PCW. Principal findings and lessons learned from the current program and other watershed management programs across the region are the basis for the following recommendations for future support and program direction in order to improve the management of the PCW.

1. SECURE STABLE FINANCING FOR SUSTAINABLE WATERSHED MANAGEMENT AND PROTECTION

The lack of sustained, adequate funding for watershed management and protection has contributed to the poor state of some areas of the PCW today and undermines USAID efforts to improve the management and protection of the PCW. USAID can help the GOP address this issue by: (i) working with the ACP and CICH to develop a long-term investment plan that identifies the priority investments in the PCW; and (ii) supporting selected projects that demonstrate and promote cost-effective market-based approaches to specific problems and enable the analysis of financial and economic costs and benefits for specific interventions.

2. TARGET WATER QUALITY AND SANITATION PROGRAMS

The AED Task Order has invested more than \$1.5 million in water supply and sanitation, clean production, and solid waste management demonstration activities in the PCW. These activities respond to the significant threats to potable water and human health posed by poor waste management and watershed degradation. While the community-level water and sanitation activities are important, industrial and agro-industrial pollution and urban sewage pose growing threats to water quality in the watershed. USAID should redesign its approach to household sanitation, and shift from financing rural household latrines and septic systems to focus on urban and peri-urban sanitation needs.. Future efforts should incorporate successful experiences from other countries and focus on: (i) supporting the La Cabima project and its approaches to demonstrate effective sanitation management and charging for sanitation services in a major peri-urban area; and (ii) expanding USAID's cooperation with the private sector to reduce pollution from agro-industries such as pig farming that threaten the water supplies of growing towns and villages.

3. SCALE-UP PILOT PROJECTS INTO PROGRAMS

USAID has experience in the region successfully using demonstration projects to introduce new technologies and land management practices that continue to be adopted after the project ends. These efforts have succeeded because they identified and demonstrated technologies and practices that:

- Positively impact peoples' lives in a demonstrable way; and/or

- Generate positive financial and economic incentives for the private sector or government to encourage further investment in the practice or technology.

One product of the current demonstration activities and grants must be a greater sense of the economics of integrated watershed management at the sub-watershed and household/farm levels. Such analyses can help inform policy reform efforts and clarify the incentives/support needed to yield long-term positive economic and environmental benefits. USAID can provide valuable assistance helping the ACP, CICH, Fundación Natura, and local communities to better understand the economics of integrated watershed management, in terms of program operating costs and the costs and benefits to the farmers and residents. This will require carrying out assessments of the ongoing demonstration activities and pilot projects to determine if and how these activities impact individual and household incomes or generate sufficient downstream benefits to justify government subsidies. Assessments also should analyze the funding and institutional requirements to successfully replicate and scale up activities for greater impact. Results from these assessments can help GOP agencies revise policies and laws to provide appropriate incentives and remove obstacles to encourage sound management of lands within the watershed.

4. PRIORITIZE DEMONSTRATION ACTIVITIES AND GRANTS TO IMPROVE SUSTAINABLE WATERSHED MANAGEMENT

Under a \$5.0 million partnership between USAID and the ACP, Fundación Natura (FN) and AED both provide grants to local NGOs for demonstration activities in improved watershed management. Experience gained in other projects across the region demonstrates that most successful pilot projects and demonstration activities were those with significant oversight, fine-tuning, testing, and continual adjustment. Another lesson gained from other integrated watershed management efforts across the region is to focus efforts on: (i) identifying and promoting solutions for priority problems at the most reasonable cost, and (ii) encouraging recipients or beneficiaries to replicate the activities because they see the inherent benefits for themselves.

Based on interviews and observations, the evaluation team identified two issues with the current approach followed by AED and FN in their pilot projects. First, FN has inadequate systems and staff for monitoring, evaluating, and providing needed technical assistance to all the grantees as they implement activities. Second, in Panama and elsewhere in the region, the use of grants to pilot new technologies and practices to achieve measurable improvements in land management over entire watersheds, with a few notable exceptions, has achieved limited success. For example, of the many funds allocated through FN since its creation, the team could find little evidence that such initiatives continue to expand once funding has ended. All the AED projects began only recently, so it is too early to see results. Some show promise for sustainability, but only if they receive close follow-up and oversight to address unanticipated problems that arise during project implementation.

USAID should require analyses of the ongoing AED and FN demonstration activities, and help FN carry out analyses of its experience with grants to learn what motivates farmers to replicate certain practices, what it will cost to induce farmers and watershed residents to adopt more sustainable watershed management practices, and to identify the most effective mechanism(s) for the delivery of services. This information should be shared widely and used in discussions with the GOP to fine-tune current policies and practices.

5. SECURE GOVERNMENT AND COMMUNITY COMMITMENT TO IMPROVE THE MANAGEMENT OF PROTECTED AREAS

USAID has devoted considerable effort to promote the conservation and management of protected areas within the PCW. These investments reflect the importance of protected areas in the watershed –

38 percent of the PCW is designated national park or protected area. Lessons from within Panama and around the world highlight that protection of existing intact resources remains the first and best option for any watershed management program. Rehabilitation of landscapes at any scale, whether via reforestation or changing entrenched land use practices, requires far more resources, is institutionally and socially more complex, and yields fewer positive results.

ANAM's limited budget for national park and protected area management constrains current efforts to protect these critical areas. This constraint led USAID to support two efforts to develop public-private models for managing protected areas.

In the Soberanía National Park, the model focuses on improving eco-tourism as the means to generate additional revenues to improve infrastructure, management, and protection costs, and develop a broader constituency for protected areas. Worldwide experience shows that very few, if any, protected areas can rely entirely on tourist concessions and user fees to meet investment and operating cost. Meanwhile, ANAM's limited resources are proving insufficient to protect the assets that are of interest to eco-tourists. Current efforts target primarily the higher-end tourist market, but potential exists to create a much larger conservation constituency in Panama by enhancing the outdoor recreation opportunities for the country's growing middle class. Finally, experience from around the region shows that the local communities must benefit if they are to abandon illegal activities like hunting, logging, and setting fires in the park in favor of eco-tourist activities. In the Chagres National Park, the co-management agreement is still being developed. Thus, it is too early to assess the issues this approach will face in implementation.

USAID efforts can best address these challenges by continuing to support the development of alternative, public-private management models for parks and protected areas and work with ANAM, the ACP, and the other appropriate GOP ministries to secure sufficient sustained funding for the basic protection of the parks and protected areas within the PCW.

6. STRENGTHEN THE COORDINATION OF GOP AGENCIES FOR WATERSHED MANAGEMENT AND PROTECTION

The GOP has taken an important first step toward improving watershed management and protection by placing overall responsibility for the PCW with the ACP. The ACP and the CICH provide the foundation for the coordination of GOP investments and activities in the PCW. This relatively new organizational arrangement will evolve as these organizations sort out their respective roles and responsibilities. USAID can help this process by providing assistance from USG organizations that have experience coordinating complex intergovernmental programs. USAID should also consider strengthening the capabilities of selected CICH member ministries like MIDA, MINSA, and the MOP to better address the principal threats to improved watershed management.

7. BUILD STRONG LOCAL SUPPORT THROUGH PARTICIPATORY COMMUNITY INVOLVEMENT

USAID has invested considerable effort building community participation to contribute to the analysis and identification of priority environmental and development challenges in the targeted sub-watersheds and in the selection of projects to address these challenges. Both the SONDEAR and FUNDEMUN projects, in the first phase of the PCW SO, involved local NGOs and local governments in designing and implementing projects to improve environmental management. This played an important role in strengthening the participation of civil society to contribute to the management of the PCW in concrete ways and served to develop a constituency of NGOs to advocate sustainable development and environmental conservation in Panama. The team recognizes the importance of involving local stakeholders and securing local input and buy-in during the design and implementation of activities. However, the team is concerned that current efforts to organize

instancias have resulted in the formation of overly complex organizations with a limited mandate to implement activities. Though the project successfully expanded local participation through these *instancias*, the evaluation team questions their sustainability beyond the life of the project. Many stakeholders consulted expressed less interest in the planning carried out by the *instancias* and wanted to see more on-the-ground activities. To build upon the experiences gained to date, the team recommends surveying the present set of participants in the *instancias* to gauge their expectations and reasons for participating in the project, and analyze ways in which their participation can lead to meaningful contributions in watershed planning and management.

STRUCTURE OF THE REPORT

The following detailed report contains six chapters and seven annexes. Chapter One highlights the strategic importance of the Canal and its watershed and the challenges to sustainable management that justifies USAID's continuing support. Chapter Two provides an overview of USAID's past support to improve the management of the PCW 2000-2002. Chapter Three focuses on the last four years of PCW SO, and reviews the program's Intermediate Results (IRs), tasks, activities, and accomplishments achieved since 2002. Chapter Four provides an analysis of findings and recommendations for future programming, and Chapter Five responds to the strategic and programmatic questions included by USAID in the SOW for the evaluation. Chapter Six lists the documentation we consulted in our evaluation.

CHAPTER ONE: BACKGROUND ON THE PANAMA CANAL WATERSHED

The Panama Canal and its watershed represent a complex balance between modernization and environmental sustainability. The Canal serves as a critical link in the commerce chain, handling four percent of total world trade and more importantly for the United States, twelve percent of US maritime trade including 40 percent of all US grain exports (Niesten and Reid 2001). The Canal and its watershed also occupy one of the world's most biologically diverse areas, providing habitat for more forest bird and plant species than many other parts of the world (Condit et.al. 2001). The Government of Panama (GOP) has plans for modernizing and expanding the Canal that will increase the need for stable water supplies for its operations. This situation of a valuable economic asset that depends upon a valuable environmental asset offers a chance to link biodiversity conservation with local, national and international development needs and opportunities.

ECONOMIC OVERVIEW

The Canal plays a key role in Panama's economy. It directly employs about 9,500 people, generates more than \$920 million in foreign exchange (approximately 8 percent of the country's GDP) and contributes significant funds each year to the national treasury (ACP 2003).

Toll revenue and vessel-transit related services comprised most of the income generated by the Canal. Electric power generation, water sales and interest income provide additional revenue for the ACP. The cost of operating the Canal totaled \$607.8 million in 2003. After depreciation of assets (\$55 million) the ACP earned a net income of \$258 million. Of this income, the ACP set aside \$151 million for investments in new infrastructure, reserves for catastrophic risk, and social and environmental programs in the watershed. It transferred \$89 million to the Panamanian Treasury, and retained approximately \$18 million in increased net equity and cash reserves (ACP 2003).

LAND USE WITHIN THE PANAMA CANAL WATERSHED

The Panama Canal's watershed covers 552,761 hectares (see Map 1), or 7.3 percent of the entire national territory (World Bank 2003). Despite its relatively modest size, the watershed contains 10.4 percent of Panama's protected areas (World Bank 2003). In terms of vegetation and land use, forests still cover about 54 percent of the watershed. Two-thirds of these forests are found within the watershed's protected areas that include five national parks, Chagres, Soberanía, Altos de Campana, Camino de Cruces, and El Cope National Park and two protected areas, the Barro Colorado Natural Monument, and the Gatun Lake Recreation Area. Rural areas outside of the protected lands are largely deforested, yet very little of the cleared land produces crops; pastures and abandoned fields occupy most of the deforested lands.

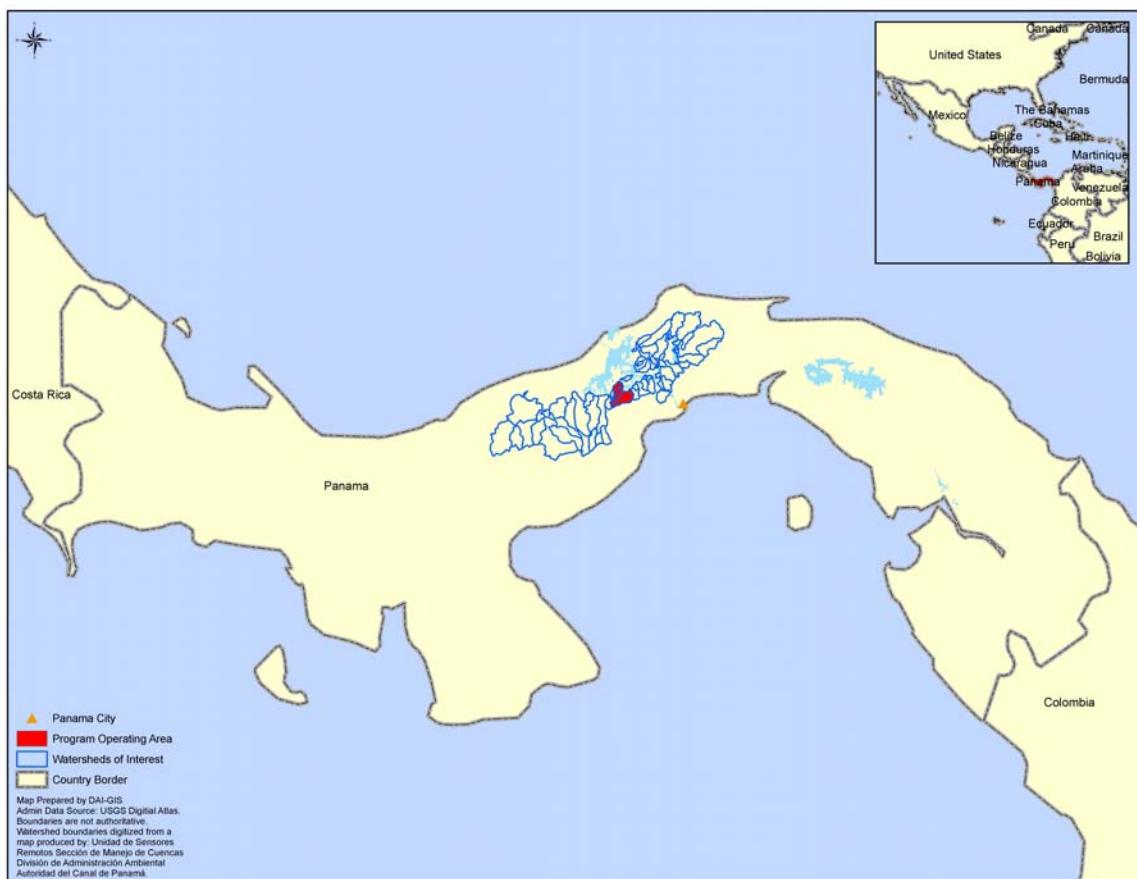
Approximately two thirds of the land holdings in the watershed are less than 10 hectares. Agroindustry is increasing in the PCW, particularly swine and poultry production, agro-processing and the intensive commercial production of pineapple. Organic sediments and nutrients discharged from these farms pose a significant threat to downstream potable water supplies (World Bank 2003). Background documents for a GOP development plan required under Law 21, 1997 indicated that approximately "95 percent of the productive use areas outside the protected areas in the watershed were under land use regimes considered to be incompatible with the objectives of maintaining hydrological services critical to the Canal's functioning" (World Bank 2003).

POPULATION GROWTH WITHIN AND NEARBY THE PANAMA CANAL WATERSHED

Current demographic and development trends indicate that pressure on the watershed resources will continue to increase. In 1950, only 22,000 people lived within the PCW. By 2000, the population living inside the watershed had increased to about 153,000, and the number of people living in the growing urban centers immediately adjacent to the watershed had grown from 400,000 to almost 1.6 million. The population growth rate of people living inside the PCW is 3.8 percent; much higher compared to the entire country's annual population growth rate of 2.1 percent. This high rate of growth reflects the influx of people into the towns of Las Cumbres and Chilibre, along the northern edge of Panama City urban area, and settlements adjacent to the trans-isthmian highway (World Bank 2003).

No sewage treatment exists in the watershed with the exception of the Smithsonian's facility on Barro Colorado Island. Industries dump wastewater directly into the Chilibre River and most households use septic tanks. Many communities also have no waste pickup. Fortunately, most of the streams inside the watershed have only small human settlements nearby and no industrial establishments, so rivers remain relatively clean except those near Chilibre and Las Cumbres which are severely contaminated and unsuitable for any human use.

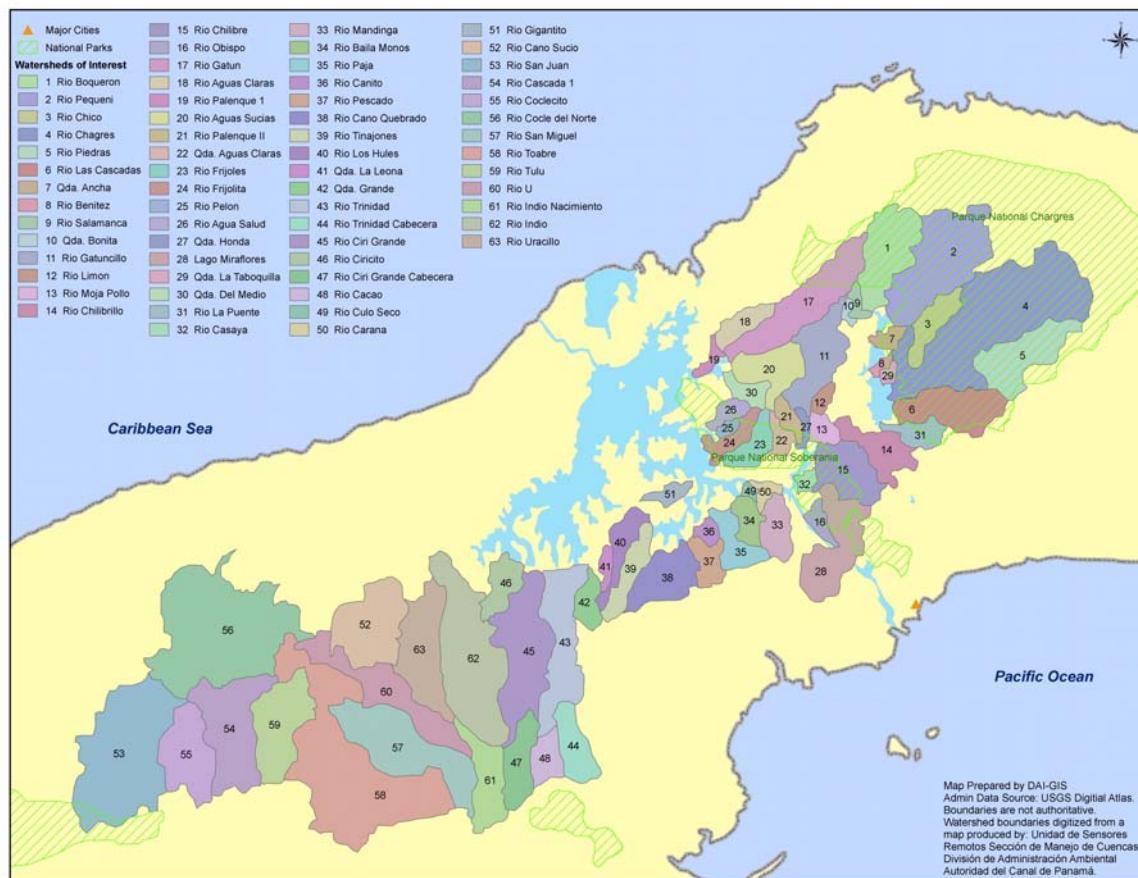
MAP 1: LOCATION OF THE PANAMA CANAL WATERSHED



WATER SUPPLY AND DEMAND

The PCW consists of 63 sub-watersheds (see Map 2). The nine western sub-watersheds do not supply water directly to the Canal, but have been included within the overall watershed management and protection plans to meet potential future needs. On average, the total runoff over the Canal watershed is 4.4×10^9 cubic meters. Current demands total 4.1×10^9 cubic meters and include water to operate the Canal (2.6×10^9 cubic meters), electricity generation at Gatun dam (1.2×10^9 cubic meters) and for potable water for the urban areas of Panama City and Colon (0.27×10^9 cubic meters) (Condit et.al. 2001). The watershed has two major manmade lakes: Lake Gatun, the main basin and reservoir of all the water captured by the PCW, and Lake Alhajuela, a result of the dam on the Chagres River at Madden along the transistemic corridor. Lake Alhajuela serves as the water supply for Panama City.

MAP 2: SUB-WATERSHEDS AND PROTECTED AREAS WITHIN THE PCW



The watershed currently meets all water needs with a modest surplus during years with typical rainfall. However, periodic droughts induced by El Niño climatic events, plans to expand the Canal, and the need to supply potable water to the growing urban centers pose significant challenges for the ACP. Panama has experienced dry years accompanying a strong El Niño event, when water levels have fallen 25 percent below the long-term average. In the past, the ACP took steps, such as limiting volumes of water released over the Gatun Dam spillway, to conserve water. However, this strategy will be insufficient to meet projected water demands during future drought incidents. The ACP will need to explore means to recycle water and/or transport additional water into Lake Gatun from the western region of the PCW (Bathrick & Kernan 2003).

Sedimentation rates in the PCW, while not excessively high compared to other tropical river basins with similar rain fall, still reflect the significant weathering taking place across the isthmus. Concerns were raised in the 1970's about whether erosion would reduce the water storage capacity and raise the cost of dredging the shipping channel in Lake Gatun. In response, the Panama Canal Commission started collecting data on sediment loads in 1981. Data for 16 years showed no trend toward increased sedimentation, but rather showed that sedimentation fluctuated dramatically as a function of rainfall patterns (Condit et.al. 2001). The Panama Canal Authority (ACP), which assumed responsibility for the Canal in 1999, manages a dredging program that maintains the navigability of the Canal as it traverses Lake Gatun. While this increases the costs of operating the channel, sedimentation currently does not pose a major threat to the Canal's operations. However, within the rivers and impoundments of the watershed upstream of the Canal, sedimentation remains a concern as it affects urban water supplies.

INSTITUTIONAL AND LEGAL FRAMEWORK FOR MANAGING THE PCW

Three key institutions govern the management and protection of the PCW.

The Panama Canal Authority (ACP), established in 1997 through Law 19, formally assumed the administration of the Canal and the PCW on December 31, 1999.

Law 19 also directed the ACP to organize the Inter-Institutional Commission for the PCW (CICH). The CICH was established in 2000 and is responsible for coordinating all GOP agency investments and programs in the PCW.

In 1998, the GOP established the National Environmental Authority (ANAM) whose mandate includes formulating environmental and natural resource use policies, environmental quality and environmental impact studies, and managing Panama's forests, wildlife, and protected areas. Within the PCW, ANAM's role focuses mainly on the management and protection of protected areas, and controlling pollution from industries.

Legal Foundation for Management of the Watershed and Canal

- Law 19 (1997) established the Panama Canal Authority (ACP) to assume the responsibilities of the former Panama Canal Commission (US PCC) upon the USG's turnover of the Canal to Panama. This law assigned responsibility to the ACP for the management and conservation of the Canal watershed and coordinating with other institutions, something that was not within the mandate of the US PCC (See Map 1)
- Agreement 16 provided for the establishment of the Inter-Institutional Commission for the Watershed (CICH) to allow for more coordinated efforts of the ACP, ANAM, MIDA, ARI, MIVI, MINGOB, and two NGOs representing civil society—Caritas Arquidiócesana and the Fundación Natura.
- Law 21 (1997) outlined principles of efficiency, equity and social justice. The law's intent is to stimulate the economic development of the PCW within the context of the larger regional development plan, covering the provinces of Panama and Colon, while favoring the protection of the PCW for the conservation and sustainable use of hydrological resources of the watershed and biodiversity of the area.
- Law 41 (1998) established the National Environmental Authority (ANAM) which assumed INRENARE's responsibilities for protected area administration and a wider agenda of environmental concerns, including emerging pollution issues.
- Law 44 (1999) expanded the geographical limits of the Panama Canal Watershed adding 225,000 hectares in the Western Region as a water reserve.

The CICH provides the mechanism for overall coordination of activities in the PCW. The ACP chairs the CICH, and members include the Ministries of Agriculture, Justice, and Housing, ANAM, the Inter-Oceanic Regional Authority (ARI), and two representatives from civil society organizations. The CICH also has a Permanent Technical Committee comprised of 36 members with representatives from the governmental institutions listed above as well as others operating in the PCW – such as the Ministry of Public Works (MOP), Health (MINSA), Education and Trade and Industry (MICI), The Social Investment Fund (FIS), and the National Institute of Water and Sanitation (IDAAN); as well as representatives from local government, NGOs, and civil society (World Bank 2003).

SUMMARY

The future of managing the complex balance between modernization and environmental sustainability will rest on the ability to confront the principal issues challenging the long-term sustainable management of the Canal and its watershed. These issues are:

- inappropriate land use, including slash and burn agriculture, and its impact on downstream water quality due to sedimentation;
- contamination of water used by households and industry;
- risk of inadequate dry season flows that limit Canal operations.

These principal issues will most likely have noticeable impact in the near future for the populations that surround and depend upon the primary water supply sources of the Chilibre and Las Cumbres rivers and Gatun Lake. The ACP, ANAM and other CICH institutions are key partners in designing and implementing plans and activities for maintaining the integrity of strategic water supply points and sustainable watershed management.

CHAPTER TWO: PAST USAID SUPPORT TO IMPROVE THE MANAGEMENT OF THE PANAMA CANAL WATERSHED

USAID has enjoyed a long and successful working relationship helping the GOP improve the management of the PCW. Efforts began in the early 1970's in response to emerging concerns about deforestation, seasonal flooding and drought, soil erosion and sedimentation, particularly as these impacted the dry season navigability of the Canal.

The first key project USAID designed to address land management issues was the Watershed Management Project. This project aimed to: (i) strengthen the institutional capabilities of the General Directorate for Renewable Natural Resources (RENARE), established in 1973 under the Ministry of Agricultural Development (MIDA); (ii) increase public awareness of natural resources conservation; and (iii) establish watershed management programs in three watersheds, including that of the Panama Canal (Bathrick & Kernan 2003). The project increased RENARE's capacity by recruiting and training qualified professionals, resulting in increased expertise in watershed management, including the implementation of soil conservation techniques, improving pasture management techniques, and reforesting 4,000 hectares. While the Watershed Management Project has strengthened the capabilities of RENARE, USAID had continuing concerns about this institution's ability to carry out natural resources conservation and protection while organizationally under MIDA, which had an agricultural expansion agenda.

In 1986, USAID/Panama designed the Management of Natural Resources Project (MARENA). This project addressed a much wider, range of natural resources problems at the national level in Panama. With the passage of Law 21, the Government of Panama formed the National Institute for Renewable Natural Resources (INRENARE) as a semi-autonomous agency under the Ministry of Planning and Economic Policy (MIPPE). The creation of INRENARE, a separate agency that would provide national leadership in natural resource management, allowed USAID to complete negotiations to approve MARENA, a ten-year effort expected to cost US\$50 million, of which USAID planned to provide \$35.7 million. Unfortunately, deteriorating relations between the USG and the GOP delayed the project's approval for several years. Following a renewal of USG assistance to Panama in 1990, USAID/Panama reformulated and approved MARENA in 1991 with a total budget of \$46 million.

The MARENA project period spanned a particularly active era in which the capacity for watershed management in Panama increased significantly. The project's three components focused on: (i) the Panama Canal Watershed, (ii) national parks and wildlands and, (iii) institutional strengthening. project activities shaped the current USAID/Panama portfolio and the manner in which watershed management and conservation evolved in Panama. The MARENA project achieved the following key outcomes:

- Established and capitalized, in partnership with The Nature Conservancy (TNC), the Ecological Conservation Trust Fund of Panama (FIDECO) in 1991. FIDECO provided a stable source of funds for environmental management in Panama and in particular the PCW.
- Strengthened the capacity for the Fundación Natura to manage FIDECO. FIDECO funds supported numerous environmental NGOs that were emerging to help build a growing constituency for environmental conservation in the country.
- Helped established the National System of Protected Areas (SINAP) under INRENARE.
- Strengthened INRENARE's management capacity by funding expansion of infrastructure, staffing and programming.

- Implemented the Panama Canal Watershed Monitoring Project (PMCC) through an agreement with the Smithsonian Tropical Research Institute (STRI). The PMCC published an important benchmark survey in 1999 that generated new data on the status of the PCW (Heckadon et al 1999). The consultancy firm, Louis Berger, subsequently finished implementing the PMCC.

Bathrick and Kernan (2003) cite that MARENA's principal weakness was an over-reliance on FIDECO for the operation of protected areas in the PCW. By 2002, protected areas nationwide depended primarily on FIDECO funds to finance development costs unless they received external funding from international organizations. FIDECO could not meet the funding needs of all protected areas with its limited funding. However, the MARENA project helped reduce deforestation and encroachment rates in the PCW, especially during the critical transition of the Canal from the USG to the GOP.

PANAMA CANAL WATERSHED STRATEGIC OBJECTIVE (2000–2002)

USAID approved the Panama Canal Watershed (PCW) Strategic Objective (SO) in January 2000 to assist the GOP to achieve sustainable management of the PCW and its buffer areas. The initial results framework included four intermediate results (IR):

- IR1 Institutional arrangements for effective PCW functioning*
- IR2 Natural resources in the PCW and buffer areas managed effectively*
- IR3 Civil society actively supporting sustainable management of the PCW*
- IR4 Local government and private sector capacity for environmental management in the PCW and buffer areas increased*

The design document for the SO emphasized the importance of coordination and support among key stakeholders, including the central government, local governments, private sector, non-governmental organizations (NGOs) and community-based organizations (CBOs). The rationale was that strengthened coordination among government and non-government actors would increase the management effectiveness of the PCW and its buffer areas. USAID entered into a series of contracts and grants to achieve the PCW's IRs.

AED - ENVIRONMENTAL EDUCATION ACTIVITIES²

During 2000–2001, program activities focused on creating greater awareness and support among the Panamanian population through a series of environmental education activities related to the Panama Canal Watershed. The scope of the first Task Order with AED was to develop and execute a research-based environmental education and communication strategy aimed at creating a sense of national awareness and pride in the Panama Canal Watershed (AED 2001). Under this Task Order, AED achievements include:

- Developed a baseline for measuring stakeholders' knowledge and awareness of the importance of the watershed and its protection. The survey sampled 400 residents of 14 administrative districts in the eastern PCW.

² Project was executed as Task Order with the Academy for Educational Development under the centrally-managed GreenCOM IQC (Contract No. PCE-Q-805-93-000-69-000). Implementation period was September 1998 to March 2001.

- Established an inter-institutional working group (including the ACP and ANAM) to promote a campaign for sustainable watershed management.
- Launched a mass media program designed around the slogan: “The Panama Canal Watershed is a National Treasure; Take Care of It”.
- Developed a participatory environmental education strategy that was implemented by the Ministry of Education, ANAM, the ACP, selected NGOs and several local universities.
- Trained ANAM staff to develop successful ecotourism and interpretation models in the protected areas within the watershed. Completed a supply and demand analysis with tour operators and tourists that resulted in the production of a series of promotional materials for ANAM (a poster map of the watershed’s protected areas, five bilingual tourist guidebooks on specific protected areas, and tourism promotion folders).
- Developed environmental management plans in La Chorrera, Arraiján and Capira to provide a guide for decentralized natural resource management and to identify training needs in these municipalities. The project supported NGOs from FEDISPAM (Federation for the Integrated Development of Municipal Environmental Plans) to participate in, and legitimize, these planning processes.
- Evaluated the effectiveness of USAID/Panama’s strategic objective indicators to measure knowledge about the watershed among the residents and mid-level officials in the government agencies responsible for watershed management (AED 2001).

IRG - INSTITUTIONAL SUPPORT FOR SUSTAINABLE MANAGEMENT OF THE CANAL WATERSHED³

IRG provided technical assistance to CICH organizations in: policy formulation, planning, capacity development, elaboration of information systems and the design of inter-institutional coordination mechanisms. The most significant achievements include:

- Provided policy and institutional analysis as the basis for developing a strategy to designate institutional responsibilities among the ACP and CICH for implementing a Regional Plan that would guide sustainable development in the PCW.
- Assisted the CICH to define their administrative structure, regulations, and procedures including a plan for self-financing.
- Trained senior ACP managers, mid-level professionals, and supervisors on good practices in watershed management and design.
- Produced background papers for ANAM to guide the development of fiscal incentives for promoting clean production technologies by industries located within the PCW.
- Involved stakeholders in developing key planning documents including action plans to improve land management in the Chilibre, Los Hules-Tinajones, and Caño Quebrado sub-watersheds. These materials serve as the basis for present activities in integrated watershed management in these pilot sub-watersheds.

³ Funded by a Task Order through the EPIQ IQC (Contract No. 525-C-00-02-00265-00) with the International Resources Group, Inc. (IRG) from August 1999 to September 2002 (and subsequently extended through January 2003).

- Developed initial action plans for two rural subwatersheds (Los Hules-Tinajones y Caño Quebrado).
- Conducted the first assessments or “audit lights” in selected industrial sectors to promote clean production policies in the country.

This USAID-supported activity helped strengthen the institutional framework of the CICH and increased GOP agency capacity for the sustainable management of the PCW on which much of the present program is based.

ARD - INTEGRATED MANAGEMENT AND WATER QUALITY PROTECTION IN THE GATUNCILLO RIVER SUB-WATERSHED

Besides the work carried out under the AED project, USAID also issued a Task Order to the Associates for Rural Development (ARD), Inc. in May 2002 to prepare an action plan for the Gatuncillo River sub-watershed. The Gatuncillo River sub-watershed is a priority of the ACP/CICH on the Eastern side of the PCW. The local NGO, Group for Education and Sustainable Management of the Environment (GEMAS) served as a subcontractor to ARD. ARD and GEMAS completed work in March 2003. The Watershed Management Unit of the ACP served as the GOP counterpart (in contrast to the CICH Technical Secretariat that served as the counterpart in the Western sub-watersheds).

Similar to the work done in the western sub-watersheds, ARD and GEMAS carried out a participatory planning process that included the local communities responsible for many of the degradation problems. This led to a socio-environmental diagnosis of the sub-watershed, and included a series of workshops and community meetings to formulate a socio-environmental action agenda. This analysis provided the foundation for an Action Plan for the Gatuncillo River sub-watershed that addressed the priority socio-environmental problems identified by community representatives. Subsequently, the team prepared three project profiles, including both technical and financial analysis: (i) alternatives for the management of waste water of the Valle de La Union community, (ii) sustainable livestock management in Gatuncillo, and (iii) improvement of sanitary infrastructure associated with commercial pig farming in the subwatershed. The ACP and Fundación Natura used these profiles to execute grants for pilot projects in the Gatuncillo sub-watershed, which are now getting underway.

THE NATURE CONSERVANCY - PROTECTED AREAS MONITORING SYSTEM

USAID/Panama entered into a cooperative agreement with The Nature Conservancy (TNC) in 2001 to support ANAM’s design and implementation of a system to monitor the status of protected areas of Panama. TNC technical staff members worked with ANAM to develop a system modeled on the one used by the USAID-funded Regional PROARCA Program in Central America. TNC trained ANAM staff working in individual protected areas on proper procedures for data collection and monitoring.

This project, which ended in 2004, resulted in two annual reports (2001 and 2002) detailing the status of the protected areas. The report preparation process provided a forum for addressing, and in some cases resolving, particular issues with local communities and stakeholders. Most importantly, ANAM protected area administrators and regional administrators began to utilize updated information on the status of the protected areas under their control as inputs to the annual management planning and decision-making process.

ANAM adopted the monitoring strategy and system for all the protected areas and intended to hire additional staff to implement the system. However, budget constraints in 2003 made it impossible for ANAM to add these staff members. ANAM and the FIDECO donors subsequently developed a plan for continuing the system. Under this plan, FIDECO earmarked ten percent of its annual funding for

this purpose, and Fundación Natura assumed responsibility for implementing the system, adding one new staff member immediately with the agreement to recruit additional staff, if needed, to carry out this responsibility.

FUNDEMUN - STRENGTHENING MUNICIPAL ENVIRONMENTAL CAPABILITIES⁴

The objectives of this activity were to: (i) elaborate a Strategic District Development Plan; (ii) strengthen financial administration capabilities; (iii) prepare a District Organization and Responsibilities Manual; (iv) build and start up a Municipal Environmental Unit (UMA) in each participating municipality and ensure its sustained effectiveness; (v) analyze and identify feasible sources of municipal income that could be utilized to finance the UMA; and (vi) prepare an integrated plan for solid waste management for each of the targeted municipalities.

USAID/Panama contracted with the Foundation for Municipal Development (FUNDEMUN) to implement the project and build municipal level environmental management capabilities in three municipalities of the Panama Canal Watershed and buffer areas—Chorrera, Arraiján, and Capira. The activity achieved its objectives and developed new activities for solid waste management and disposal in rural areas of the Panama Canal watershed, targeting the Los Hules-Tinajones and Caño Quebrado sub-watersheds. Due to the interest generated by the participatory planning process in these sub-watersheds, USAID extended FUNDEMUN's contract to include the construction of more than 500 sanitary latrines for individual households. Latrine construction was co-financed through an ancillary arrangement with the Ministry of Health and a local Panamanian NGO—FAS/Panama, and also included a hygiene training component for the beneficiary families.

SONDEAR - STRENGTHENING NGOS FOR PROTECTION OF THE PANAMA CANAL WATERSHED⁵

This project had three main objectives to: (i) strengthen institutional capabilities; (ii) develop network structures and functions; and (iii) insert trained NGOs and their network in the participatory process of the sustainable management of the PCW.

SONDEAR identified a core group of ten local NGOs based on their leadership and project management capacity, as well as twelve other NGOs and twelve community-based organizations (CBOs), to form the Network of Agro-ecological and Environmental Peasant Organizations (ROCCA) (see Annex E for a list of the NGOs). The project built capacity for civil society to actively support the sustainable management of the PCW. Key results that emerged from the project included:

- Developed a formalized analytical framework for building the institutional capabilities of civil society to enhance their contribution to the sustainable management of the PCW. Six of the core group of NGOs went on to implement field projects and many are now active participants in current activities funded by USAID and the ACP for the sustainable management of the PCW.

⁴ The contract (No. 525-C-C-00-00056-00) was implemented by FUNDEMUN, a Central American NGO headquartered in Tegucigalpa, Honduras. The implementation period was originally from March 2000 to March 2003 but was extended to October 2003. The contract value was approximately US \$ 1.5 million, (FUNDEMUN 2003).

⁵ USAID/Panama signed a Cooperative Agreement (No. 525-A-00-01-00016-00) with the local NGO Sociedad Nacional para el Desarrollo de Empresas y Áreas Rurales (SONDEAR) in November 2000. There were three other organizations subcontracted to SONDEAR as part of this agreement, Asociación Nacional para la Conservación de la Naturaleza (ANCON), el Centro Internacional para la Capacitación Ambiental (CICA) and Management Systems International (MSI). The project lasted from November 2000 to November 2003.

- Increased capacity for participating NGOs and CBOs to prepare project proposals in order to solicit funding from donors to implement a series of mini-projects and training events.
- Completed a series of studies and documents that added to the understanding and best practices in sustainable natural resources management in Panama.
- Contributed to the greater involvement of the NGO community in executing development programs within the PCW.⁶

LA CABIMA - PUBLIC-PRIVATE PARTNERSHIP FOR PERI-URBAN SANITATION

As part of the early efforts in 2000 to address the issues of the Panama Canal Watershed, USAID and its GOP partner organizations selected an urban sub-watershed area to study for piloting and validating methods and technologies for sanitation development. Past research revealed that the rapid and uncontrolled urban growth posed a serious threat to water quality and human health. At that time none of the communities in the targeted area had any kind of sewage collection or treatment systems and all the households depended on largely defective septic systems. As a result, untreated sewage discharged directly into the La Cabima Arroyo and subsequently into Gatun Lake.

The La Cabima demonstration project serves as a model for municipal sanitary services by treating the sewage of the La Cabima urban area and preventing the contamination of the waters of the Panama Canal. This project, if successful, could serve as a model for similar urbanizing communities in the PCW. The project was developed by the GOP, primarily represented by the Ministry of Health, and co-financed by USAID/Panama. To date this project accomplished the following:

- Prepared an Environmental Sanitation Plan for La Cabima.
- Completed a willingness to pay assessment that revealed public demand for sanitation services and local concerns about sanitation.
- Created a strategic alliance involving the public and private sector including the Ministry of Health, IDAAN, the ACP, Alcaldia de Panama, UNEP, and Cementos Mexicanos and Colgate Palmolive to co-finance the treatment of sewage of La Cabima. This alliance made it possible for Panama to seek a \$500,000 grant from the Cities Alliance, administered by the World Bank.

Activities in La Cabima were put on hold during the change of government in 2004. IDAAN is now taking the lead and implementation is pending re-commitment of funds by the different parties.

SUMMARY

Prior to 2000, USAID/Panama engaged in two primary efforts to help the GOP improve the management of the PCW. Both the Watershed Management Project and MARENA focused on institutional strengthening for government counterparts and conservation practices for the watersheds. During the MARENA project, FIDECO was established to support the work of numerous environmental NGOs that were emerging.

⁶ A final report of this project has been presented by SONDEAR and is currently under discussion as a working document with USAID/Panama. It provides an extensive detailing of project activities along with background information on some of the changes in USAID policy and to the programmatic approach under this SO which changed the terms of the contract substantially. In the end, this change led to the termination of this project in November 2003 as a result of program consolidation.

With the approval of the PCW SO in January 2000, USAID engaged the services of multiple contractors and grantees to implement seven separate projects for the purpose of achieving the four IRs established under the SO. The projects focused heavily on institution building and strengthening participatory watershed planning processes. Other activities also supported during this time included developing a model for municipal sanitary services, environmental education campaigns, and civil society strengthening to contribute to PCW management. Activities were implemented in the following locations: the municipalities of La Chorrera, Arraiján, and Capira; the sub-watersheds of Chilibre, Los Hules-Tinajones, Caño Quebrado, and Gatuncillo; the La Cabima Arroyo; Gatun Lake, and in the protected areas of the PCW.

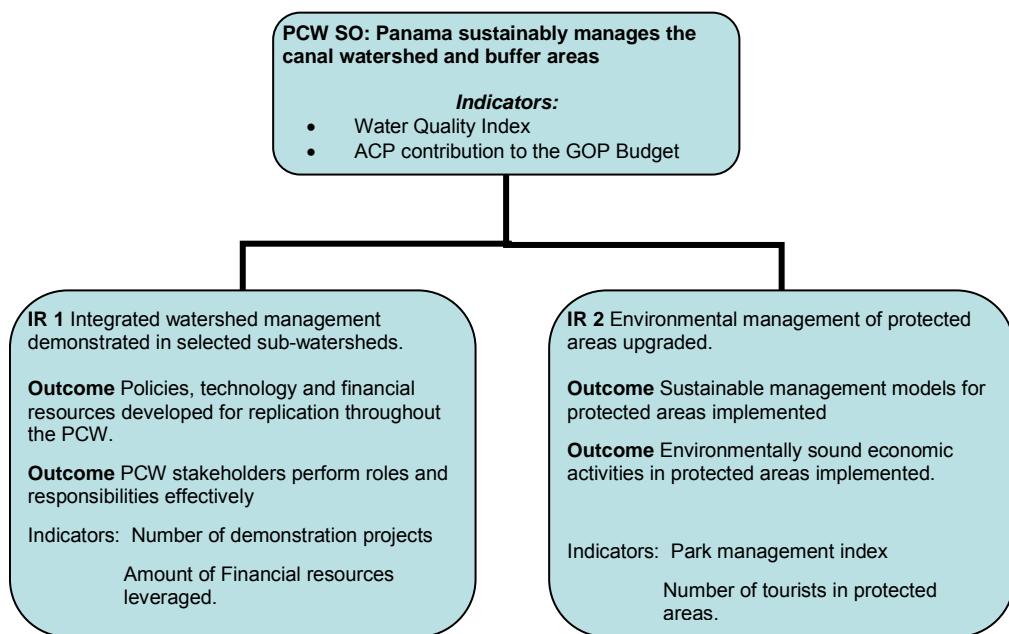
CHAPTER THREE: DESCRIPTION AND ANALYSIS OF THE REVISED PANAMA CANAL WATERSHED SO (2002–2006)

REVISIONS TO THE STRATEGIC OBJECTIVE AND IMPLEMENTATION APPROACH

In early 2003, the Mission reorganized the Strategic Objective and consolidated activities around two new Intermediate Results (See Figure 1). This reorganization consolidated activities and management units and represented a shift from institutional strengthening to greater emphasis on policy reform, behavior change, and more participatory and practical approaches to watershed management. It also put in place demonstration projects in selected pilot sub-watersheds to test on-the ground approaches that could serve as proof-of-concept laboratories for replicable watershed management interventions and generate field-informed findings for further policy/regulation reforms. USAID and the GOP selected representative urban (Chilibre), peri-urban (Gatuncillo), and rural (Los Hules-Tinajones and Caño Quebrado) sub-watersheds to target under the revised SO.

In 2003, as the Mission began implementing its revised SO, USAID/Washington directed it to conform current activities to the new Central America and Mexico (CAM) Regional Strategy. As part of its evaluation, the team reviewed the current SO in light of this regional strategy for Central America and Mexico. Based on the team's review, it believes the current PCW SO and activities are well aligned with the CAM strategy.

FIGURE 1: REVISED PCW STRATEGIC OBJECTIVE RESULTS FRAMEWORK



In line with these revisions to the Strategic Objective, the Mission also simplified its program implementation and coordination. This decision led to the consolidation of the number of technical assistance instruments, and the selection of AED, under the Mission's existing GreenCom IQC task order, to lead the revised program effort. The Mission also obtained ACP agreement and commitment to co-fund an incentive fund. Through this agreement, both USAID and the ACP each contributed \$2.5 million to finance replicable demonstration activities in selected sub-watersheds. This committed the ACP to work with other organizations through a grants-making facility, an innovative approach

for an institution used to carrying out programs directly with its own staff and resources. Finally, the Mission reached agreement with the National Environmental Authority (ANAM) to test new approaches of protected area management using the Chagres National Park as a co-management model, led by the Nature Conservancy, and the Soberanía National Park as an ecotourism model led by AED.

At the outset, USAID/Panama directed AED to develop a legal framework and best practices that exemplify an integrated approach to the management of the PCW. AED convened a series of workshops and working groups with the CICH that defined program implementation mechanisms, geographic scope and funding arrangements. This dialogue with the GOP agencies helped define a long-term approach to the management of the PCW, and led to the activities that USAID/Panama approved under the AED Task Order in April 2003.

AED organized tasks around the Program's two Intermediate Results: IR 1- Promotion of sustainable integrated management of selected pilot sub-watersheds in the PCW; and IR 2 – Implementation of environmentally sound economic opportunities in selected protected areas of the PCW. The following sections provide a synopsis of the contracts, grants, and activities carried out under each IR including the principal achievements to date.

IR 1: INTEGRATED WATERSHED MANAGEMENT DEMONSTRATED IN SELECTED SUB-WATERSHEDS

Activities under this IR combine work on policies and regulations, environmental communications and training, with on-the-ground demonstration activities designed to support participating Panamanian NGOs to test approaches for improving the management of the PCW. Work focuses around five tasks:

- | | |
|----------|--|
| Task 1.1 | Incentive Fund for Demonstration of Sustainable Integrated Watershed Management; |
| Task 1.2 | Complementary Integrated Watershed Management Projects within the PCW; |
| Task 1.3 | Legal, Regulatory and Policy Reform and Administration of Justice for Improved Environmental Management; |
| Task 1.4 | Local Governance, Planning and Land-Use Regulation; and |
| Task 1.5 | Environmental Monitoring and Information. |

Specifically the demonstration activities address a range of issues including: domestic and industrial water quality and sanitation, waste management, water contamination from agricultural runoff (primarily from pineapple or swine production), silvopastoral management, afforestation for soil stabilization, and strengthening the capacity for local committees to manage water resources. The portfolio serves as living laboratories for the development and demonstration of policy reforms, good practices for conservation and promoting the active participation of stakeholders. A full description of the demonstration activities, with expected impacts, is listed in Annex F.

AED involved stakeholders at the “corregimiento” level in the design and implementation of activities. AED and local stakeholders selected activities based on need and potential to demonstrate significant impact, generate lessons that could be replicated in other sub-watersheds, and to

strengthen the capacity of the CICH institutions to design and implement more integrated watershed management plans for the PCW⁷.

Under the original agreement, both USAID and the ACP planned to contribute to the incentive fund managed by Fundación Natura (FN). FN would, in turn, issue subgrants through local administrative units in each targeted watershed. However, this arrangement proved difficult to implement, and after a year's delay, USAID incorporated its \$2.5 million contribution plus an additional \$500,000 into the AED contract, and authorized AED to issue direct sub-grants. AED successfully designed and implemented a transparent grant making process and established 16 demonstration activities worth approximately US \$ 3.0 million on priority watershed management issues, mainly in Los Hules-Tinajones and Caño Quebrado. (See Annex F for a list of sub-grants). To date, projects funded through sub-grants have leveraged an additional \$900,000 in NGO counterpart funding and in-kind contributions from pilot project beneficiaries. These demonstration activities faced considerable delays at the outset, and are only now in the early stages of implementation.

In addition to the demonstration activities, the program has:

- Developed and presented studies to the CICH that analyze policy options on five topics: sustainable livestock management including changing livestock credit policies; plantation forestry and natural forest management; pineapple production, water pollution management for swine farms, and tertiary road construction and maintenance to reduce soil erosion;
- Helped the ACP adopt a transparent and participatory system to award grants to the NGOs and community organizations for specific projects in the PCW;
- Conducted an assessment of the environmental justice system in Panama;
- Led the organization of local coordination committees (*instancias*) to facilitate participatory integrated watershed management planning and implementation of demonstration activities. These *instancias* involve an array of stakeholders including local representatives of CICH partner ministries and local communities in the Los Hules-Tinajones and Caño Quebrado sub-watersheds;
- Helped facilitate an agreement between ACP and CICH member organizations on a list of environmental indicators (15 indicators selected and subsequently expanded to 24) and to institutionalize monitoring of the conditions in the PCW;
- Supported the development of protocols for the CICH member institutions to monitor their assigned indicators;
- Helped develop and review the “Local Organization Watershed Management Manual” in conjunction with the CICH; and
- Developed, produced and disseminated a wide range of communications materials related to integrated watershed management in the PCW, including a project website (www.aedpanama.org), fact sheets, brochures, leaflets, the Biblioteca Básica Ambiental, and a quarterly bulletin entitled Infocuenca.,

⁷ This synopsis of activities and achievements is based on the design per AED Task Order Modification 11 and is drawn primarily from Quarterly reports from October to December 2004 and from January to March 2005. Modification 13 (which reportedly was signed after the field activities of the DAI evaluation team were completed) will add additional changes to the expected tasks/results and activities of the AED Project.

IR 2: ENVIRONMENTAL MANAGEMENT OF PROTECTED AREAS UPGRADED

IR 2 activities concentrate on testing different management approaches to help ANAM form alliances and mobilize funding to improve the management and protection of the Soberanía and Chagres National Parks. ANAM can spread the lessons learned from these efforts to the rest of the National System of Protected Areas.

The AED project works in the Soberanía National Park and focuses on helping the park achieve international tourist standards, generate additional income to cover the park's operations and maintenance, serve as the model for public-private development of eco-tourism activities with the participation of surrounding communities, and build a larger constituency for improved protected area management. The Nature Conservancy (TNC) leads efforts in the Chagres National Park and focuses on developing a viable co-management model for protected areas that better suits the mix of public and private land ownership within the designated park area. This IR also includes a grant to The Peregrine Fund (TPF) to breed and release Harpy Eagles in Panama and implement raptor-focused environmental education activities.

ECO-TOURISM DEVELOPMENT IN SOBERANÍA NATIONAL PARK

Soberanía National Park - Present Status: Soberanía National Park receives much of its operating budget from ANAM with supplemental funding from FIDECO. In 2005, ANAM budgeted \$100,000 for operations and staff salaries while FIDECO contributed almost \$30,000 to the Park's budget for recurring costs and new infrastructure investments. Of the funds provided this year, FIDECO allocated \$6,000 for recurrent costs⁸ and earmarked the remaining \$24,000 for new infrastructure in spite of the Park's inability to maintain existing infrastructure. The Park's inadequate budget has forced vacancies in key staff positions at the outpost facilities built with FIDECO funds. Furthermore, park owned river launches do not run, and only one pickup truck is in condition to move staff around the Park. As a result, Park staff cannot fulfill their functions, collect visitor fees, staff the Casetas de Control, monitor park use, protect visitors and key park resources, or supply copies of the tourist guides that were developed under a previous USAID effort. In addition, the Chagres River flowing through the Soberanía Park is one of the most polluted rivers in the country due to effluents from the growing urban and industrial areas along the highway to Colon. In the lower reaches of the river, eco-tourists more frequently encounter floating solid waste than waterfowl. The garbage that litters both sides of the Madden and Gaillard highways provides a lasting impression to anyone accessing the Park. In 2003, AED carried out an evaluation of the Soberanía National Park, recommending several actions to improve eco-tourism in the park (see Text Box).

⁸ Recently revised guidelines allow greater flexibility in the use of FIDECO funds within the National System of Protected Areas (SINAP). This should resolve the issue of what percentage of annual FIDECO funds can be used to maintain the infrastructure established in protected areas.

AED Recommendations for Strengthening the Management of the Soberania National Park

- Consolidate the functions of an Ecotourism Committee and include representatives of the public and private sector and the adjacent communities for the Soberania National Park. Clarify the roles and responsibilities of this committee and define clear rules for the management of the Park.
- Give urgent attention to improving and enhancing the visitor facilities at the Park's main attractions.
- Immediately improve security for visitors to the Park.
- Devise policy alternatives for the administration of private sector concessions and services within the Park.
- Inventory the attractions and assets of the Park.
- Conduct an analysis of ecotourism supply and demand opportunities, including attention to domestic demand for ecotourism.
- Develop complementary products and a marketing and promotion plan for commercializing these products.
- Incorporate the needs of surrounding communities in the overall business and marketing plans for the Park.
- Develop and implement a training plan to strengthen the park management capacity of local staff.
- Develop a strategy for securing the resources essential for operations and maintenance of the Park and its facilities and programs over the longer-term.
- Establish mechanisms for monitoring the resource base and the quality of the ecotourism experience.

(Ham and Baez, 2003)

The AED Task Order has five separate tasks under this IR to address the challenges presented by current conditions at the park. Some of these tasks and subsequent activities address AED's evaluation's recommendations.

- | | |
|----------|---|
| Task 2.1 | Eco-tourism Pilot Project in Protected Areas |
| Task 2.2 | Enabling Environment for Environmentally Sound Revenue Generation in Protected Areas |
| Task 2.3 | Public-Private Alliances for Development of Environmentally Sound Revenue Generation in Protected Areas |
| Task 2.4 | ANAM Management of Environmentally Sound Revenue Generation in Protected Areas |
| Task 2.5 | Incentive Fund to Improve Management of Protected Areas |

Under these tasks, the AED project provided the following types of support:

- Completed a study on the strategy for developing ecotourism in the Soberanía National Park, and presented this study to both GOP officials and representatives of the private sector (environmental NGOs and tourism business operators).
- Supported the Committee for Sustainable Tourism and Environment. The committee provides a forum for discussing ecotourism development options for Soberanía.

- Developed five more tourism interpretation signs for the Venta de Cruces sites within the park.
- Supported ANAM’s passage of an administrative resolution for Administrative and Service Concessions in Protected Areas developed by the project.
- Provided support to the Panamanian Tourist Institute (IPAT) on developing the new national ecotourism strategy.
- Conducted a survey with Panamanian Association of Tourism Operators (APOTUR) to develop a database on business activity around the park.
- With support from AED, ANAM and the IDB signed an MOU to work with a group of tour operators for the development of a business cluster focused on tourism related to the ecological route between the two oceans.
- Prepared a training plan for ANAM personnel related to the management and supervision of ecotourism.
- Sponsored two ANAM and IPAT staff members to participate in the Regional Trail Design and Construction Workshop held in Costa Rica.
- Approved three demonstration activities under the incentive fund; one supporting the Panama Rainforest Discovery Center and two more focusing on bird watching and interpretation in Soberanía National Park. This committed approximately \$200,000 and leveraged another \$120,000 in cost sharing from three local NGOs.
- Conducted a George Washington University led Student Practicum aimed at developing a strategy for Soberanía National Park and the recently formed eco-tourism cluster in Panama.

The recent modification of AED’s task order highlights the importance of “environmental management models for selected protected areas” and resulted in expanding the number of tasks beyond eco-tourism development. The revised tasks include:

Task 2.1	Enabling Regulations and Standards for Sustainable Tourism in Protected Areas
Task 2.2	Institutional Strengthening of GOP Institutions in Sustainable Tourism Management
Task 2.3	Management Systems in Place in Protected Areas
Task 2.4	New and Improved Administrative and Financial Systems in Protected Areas
Task 2.5	Sustainable Tourism Cluster Consolidation
Task 2.6	Tourism Related Facilities for the Pilot Activity
Task 2.7	Public-Private Partnerships Developed in, or around Soberanía National Park
Task 2.8	Catalytic Initiatives Promote Sustainable Tourism Activities in Protected Areas
Task 2.9	Incentive Fund Facilitates Development of Sustainable Tourism Activities in Protected Areas of the PCW and Buffer Areas

ANAM officially informed AED that it would prefer to address Tasks 2.1, 2.3 and 2.4 with its own resources and with support from the IDB, and requested USAID to reallocate funds from these

activities to update the Management Plan for Soberanía National Park. AED has requested proposals for creating public-private alliances developing tourist facilities in the Park's buffer zones, and helped ANAM develop a new law specifically for protected areas.

SUSTAINABLE MANAGEMENT OF THE CHAGRES NATIONAL PARK

The Chagres river watershed provides more than half of the water to the Canal and includes a large percentage of Panama's unique biodiversity assets. Work in the Chagres National Park under TNC focuses on establishing sustainable financial mechanisms and developing a co-management model under which a local organization, established for this purpose, will co-manage the Chagres National Park in collaboration with ANAM. Negotiating this approach with ANAM opened a dialogue about options for state-run protected area management regimes. USAID and TNC successfully involved three Panamanian NGOs—ANCON, SONDEAR and CEASPA—in the implementation of activities in the Park.

TNC and its partner organizations, working with ANAM and local communities completed a Conservation Area Plan (CAP) to address the principal threats to the Chagres National Park including: encroachment by urban and industrial development, land clearing for agriculture, illegal hunting, gold extraction, and logging. This plan outlines eight specific conservation targets (TNC 2005) that include the protection of remaining cloud forest, the Santa Rita Ridge forest, neotropical migrant bird species, aquatic systems, the Harpy Eagle, and the jaguar. It also detailed stresses on those targets (threats), and sources of the threats. The CAP establishes a goal of maintaining eighty percent of the Chagres forest cover by 2007, and outlines several strategies and activities to meet specific conservation targets. These include:

- Promoting of alternative income-generating activities that will allow for replication throughout the site and reduce the impact from incompatible agricultural practices;
- Creating the Chagres steering committee to guide the consolidation of the site;
- Strengthening of partners to ensure enhanced local conservation capacity;
- Establishing the Chagres Trust Fund as a long-term funding mechanism for implementing conservation strategies; and
- Establishing a co-management arrangement for Alto Chagres, giving local NGOs the responsibility for stewarding land that had previously been managed by the government.

TNC and its partners have achieved several major accomplishments to date including:

- ANAM agreed to establish a foundation that would serve as the co-manager of the park: work is underway to establish the foundation and USAID expects ANAM approval soon.
- Developed a Conservation Action Plan (CAP) for the park that serves as a guide for park management and protection, including new zoning regulations for resource use within the park. Participatory workshops were held to present the CAP, elicit stakeholder responses and to promote buy-in. ANAM has officially adopted the CAP for the Chagres National Park.
- Brokered the ratification of a debt-for-nature swap in July 2003 between the USG and the GOP under the Tropical Forest Conservation Act. The agreement stipulates that the USG retire \$10 million of GOP debt in exchange for a commitment from the GOP to set up a trust fund, with TNC and USAID support, to finance tropical forest conservation in the Chagres National Park. This agreement provides up to \$5.6 million over 14 years or approximately \$375,000 per year to finance

conservation projects in the Park, and included a parallel co-financing commitment by TNC for \$1.16 million.

- Established a program steering committee involving GOP agencies, USAID, and NGO partners, to review the management strategy and proposals for conservation actions.
- Prepared fifty-one farm management plans to mitigate negative environmental impacts caused by traditional farming and cattle production in the park. Implementation of the plans will contribute to reduced sedimentation and improved water quality in the Panama Canal watershed, as well as increased forest cover and biodiversity in Chagres.

PEREGRINE FUND-NEOTROPICAL RAPTOR CONSERVATION PROGRAM

Prior to 2003, USAID/Washington funded a Cooperative Agreement with The Peregrine Fund (TPF) and its local partner the Peregrine Fund–Panama (FPP) to implement the Neotropical Raptor Conservation Program (NRCP). Based in Panama, with smaller-scale activities in the Dominican Republic and Grenada, the NRCP conserves neotropical raptors and their habitats through research, conservation interventions, public education, and development of local capacity for science and conservation.

This program achieved success in breeding and releasing Harpy Eagles in Panama, and developed and implemented raptor-focused environmental education activities. At the end of the previous Cooperative Agreement, USAID transferred the management of this program to USAID/Panama with the objective of strengthening the FPP to ensure the sustainability of the NRCP activities into the future while gradually decreasing the need for continued financial assistance from USAID.

Under this new arrangement, USAID/Panama signed a four-year \$1.5 million cooperative agreement with the Peregrine Fund to undertake the following:

- Enhance the conservation capacity of the Neotropical Raptor Program (Panama);
- Enhance the content and participation in the Neotropical Raptor Conservation Network;
- Develop local capacity through training and support for local organizations and staff in the Dominican Republic and Grenada;
- Implement the Harpy Eagle Project to restore the Harpy Eagle population through propagation and release in Panama, Belize and Costa Rica;
- Strengthen environmental education to conserve biodiversity by incorporating information on the Harpy Eagle and other raptors in education programs in Panama, and potentially expanding efforts to Belize, Costa Rica, and other countries.

The DAI team observed that one of the more successful innovations of this ongoing program is the organization and training of “parabiologists”, in the case of Panama, among members of the Embera-Wounam indigenous communities whose lands harbor large numbers of Harpy Eagles. These individuals serve as conservation promoters within their communities and ensure greater protection for the Harpy Eagle, Panama’s national bird. The program also established a very proactive environmental education campaign for schools and other institutions in Panama at the Harpy Eagle Interpretation Center at Summit Park outside Panama City.

SUMMARY

A reorganized SO has enabled USAID to refocus activities in response to lessons and results achieved from previous years work. The new SO has two IRs:

- Integrated watershed management demonstrated in selected sub-watersheds
- Environmental management of protected areas upgraded.

Ongoing and planned activities under these two IRs are being implemented in several sub-watersheds, Chagres, Chilibre, Gatuncillo, Los Hules-Tinajones, and Caño Quebrado, which represent distinct geographical and environmental settings. The primary vehicle for achieving the IRs is the AED Task Order, however USAID has also issued contracts and agreements with ARD, TCN and TFP/FFP for additional activities in support of the SO.

Work under IR 1 has included activities for policies and regulations, environmental communications, demonstration activities, and preparation of an Action Plan for the Gatuncillo River sub-watershed. Demonstration activities have engaged NGOs and civil society in improved watershed management activities and served to increase awareness of environmental and management issues. This has been accomplished by issuing sub-grants to local NGOs to address priority watershed management issues in Los Hules-Tinajones and Caño Quebrado sub-watersheds.

IR 2 has focused on two park systems, the Soberanía National Park and the Chagres National Park. The primary project implementers are AED and TNC respectively. For the Soberanía National Park, AED has focused on ways to generate additional income for the Park through eco-tourism. In the Chagres, TNC works toward (i) sustainable financial mechanisms for the park and (ii) establishing a co-management model by establishing a local organization to work closely with government counterparts on the management of the Park.

CHAPTER FOUR: FINDINGS, RECOMMENDATIONS, AND LESSONS LEARNED

The Panama Canal and its watershed is a significant asset to Panama, the United States and the world. The importance of USAID's program to improve the management and protection of the PCW cannot be understated, as it has global implications, both in terms of biodiversity protection and in helping maintain global trade and security. It is with this perspective that the DAI team frames its recommendations for continuing USAID support to Panama for stewardship of the Canal and its watershed. The team believes that USAID has targeted the key challenges confronting the long-term sustainable management of the PCW. This chapter summarizes the team's principal findings and lessons learned from the current program and other watershed management programs across the region, and its recommendations to USAID for future programs to improve the management of the PCW.

1. SECURE STABLE FINANCING FOR SUSTAINABLE WATERSHED MANAGEMENT AND PROTECTION

FINDINGS

The U.S. Government (particularly USAID), other agencies (World Bank and IDB), an international NGO (The Nature Conservancy) and more recently the ACP (which initiated financing activities in the PCW under an agreement with USAID for 5M), provide most of the resources for the management and protection of the PCW. Since the formal transfer of the Canal to the GOP in December 1999, the ACP and the CICH assumed responsibility for the planning and coordination of programs within the Canal's watershed. USAID has also leveraged counterpart funds from NGOs working in the subwatersheds and around protected areas. The ACP collects more than \$900 million in revenue each year which, after deducting costs and transfers to the national treasury, makes more than \$150 million available for investment in the Canal's infrastructure and the watershed. In its first six years, the ACP focused almost all of its investments in Canal infrastructure. Not until 2003 did it finally allocate \$2.5 million for socio-environmental programs in the watershed despite the importance of the watershed to the Canal. Similarly, in spite of receiving almost \$1.3 billion in transfers from the ACP since 2000, the GOP has yet to directly earmark funds for the protection and management of the PCW. The 2003 evaluation of the MARENA project supports this finding and highlights the need for a stronger GOP commitment to the protection, management and rehabilitation of the PCW (Bathrick & Kernan 2003).

The lack of sustained, adequate funding for watershed management and protection poses serious implications for the future of the PCW. The 2003 allocation of funds by the ACP is a positive step. Also encouraging are recent efforts by the ACP to develop a watershed management program to support additional watersheds of the western region through a loan from the IDB.

RECOMMENDATIONS

In view of current and planned programs, and the investment plans being considered by the ACP the DAI team recommends that USAID focus future investments on:

- Working with the ACP and the CICH to develop a long-term investment strategy for the PCW. Drawing from experience gained through the pilot projects, other donor funded efforts and building upon earlier information developed by the PMCC; such a strategy can be used by the ACP and GOP line ministries to target resources for priority investments in the PCW.

- Continuing to support targeted pilot projects that demonstrate cost-effective market-based approaches to specific problems and enable the analysis of financial and economic costs and benefits for specific interventions. This will ensure that pilot projects generate information and lessons learned that can shape longer-term development strategies.
- Building on the present experience especially related to the economics of integrated watershed management. Work with GOP agencies and the ACP to test the concept of payment for specific environmental services to generate additional financing for specific watershed management and protection efforts.

2. TARGET WATER QUALITY AND SANITATION PROGRAMS

FINDINGS

To date, the AED Task Order has invested more than \$1.5 million in water supply and sanitation, clean production and solid waste management demonstration activities in the PCW (Table 1). These activities respond to the significant threats to potable water and human health posed by poor waste management and watershed degradation.

TABLE 1: WATER AND SANITATION PILOT PROJECTS FINANCED UNDER THE AED TASK ORDER

Pilot Project Title- Implementing Agency	USAID Contribution*
1. Water and Sanitation – Spark of Life--FAS/UTP	\$290,000
2. Water Health and Sanitation Project- GEMAS	\$396,000
3. Nacional Center for Clean Production CONEP	\$300,000
4. Surveillance and Control Plan for Clandestine Rubish Dumping APRONAD	\$49,000
5. Clean Production Technologies in Pig Farms Located - ANAPOR	\$150,000
6. Water and Sanitation Project within the Cirí Grande and Trinidad Sub-Watersheds-FAS Panama	\$165,000
7. Domestic Waste Management - FUNDECO/PANADIS	\$90,000
8. Improved Latrine Construction, Expansion of Rural Aqueducts and Construction of Micro-Landfills- Fundación Panama	\$88,000
Total	US \$1,528,000

*Totals rounded to the nearest thousand.

While the community level water and sanitation activities are important, only a few of the above efforts address the principal threats posed by industrial and agro-industrial pollution and none focus on the lack of effective sanitation management in the peri-urban and urban areas. Successful examples of controlling and managing industrial pollution in other parts of the world demonstrate the

need for the effective enforcement of existing regulations, and the potential offered by providing incentives for polluting industries to make the investments needed to clean up their wastewater.

Building sanitation systems to avoid the direct discharge of untreated wastes into the rivers and lakes requires significant investments. The long-delayed La Cabima “Cities Alliance” Project will provide USAID an opportunity to demonstrate an approach to improving urban sanitation. Experiences from other parts of Latin America (Brazil and Mexico) and Asia⁹ demonstrate intermediate solutions to the sanitation problem for urban and peri-urban areas, that may be feasible in Panama, including: (i) improving regulations to offer households choices in sanitation technologies but requiring households to upgrade existing sanitation infrastructure to meet specific standards; (ii) supporting and providing incentives to expand private sector involvement in the construction of household sanitation infrastructure and provision of sanitation services (like cleaning out septic tanks); and (iii) promoting national government investments in the facilities to treat household waste. These demonstrations have provided lower cost, intermediate approaches to managing household sanitation and a starting point for what will eventually become an interconnected sewage system.

RECOMMENDATIONS

- Redesign the programming approach to household sanitation, to shift from financing rural household latrines and septic systems to focus on urban and peri-urban sanitation needs and incorporate successful experiences from other countries. Efforts should focus on: (i) improving regulations and incentives for households to install or upgrade their sanitation facilities; (ii) greater role of the private sector in providing sanitation services; and (iii) prioritizing national government investments in waste treatment facilities.
- Support the La Cabima project and its approaches to demonstrate effective sanitation management in a major peri-urban area.
- In the rural areas, USAID should build upon the current model of private sector engagement with the pork industry being implemented by the National Council of Private Enterprises (CONEP) and expand this model with other agro-industries like poultry farms that threaten the water supplies of growing towns and villages. The Mission could also consider testing the use of incentives, subsidies, and payments for environmental services (such as proper pollution abatement).

3. SCALE-UP PILOT PROJECTS INTO PROGRAMS

FINDINGS

Past USAID efforts successfully introduced the use of Brachiaria grass in improved pasture management (see Text box). The use of this grass has spread throughout the watershed largely because it significantly improved the financial returns for farmers. The less environmentally friendly agricultural practice of commercial pineapple production has also expanded rapidly during the last four years due to the good financial returns farmers experience with this crop. USAID has two pilot projects to address environmental problems associated with pineapple cultivation: one introducing better soil management to reduce erosion, and the other promoting better use of pesticides and herbicides to decrease pollution of ground and surface waters. These projects will demonstrate less destructive production practices and help farmers achieve the eco-certification demanded by the

⁹ Sanitation and Hygiene Promotion Report. 2005. Water Supply and Sanitation Collaborative Council and World Health Organization.

lucrative European market. Given past experience, if these practices prove successful and improve farmer incomes, their use should spread rapidly.

Past examples like Brachiaria demonstrate that pilot projects can significantly impact land management practices. Key elements of success include identifying and demonstrating technologies and practices that:

- Positively impact peoples lives in a demonstrable way; and/or
- Generate positive financial returns and economic incentives for the private sector or government to encourage further investment in the practice or technology.

USAID has made a good start with the current set of pilot projects. However, except for the pineapple projects, few others offer the potential to directly improve farmer income and lead to replication by farmers unless they are supported by subsidies or required by governmental regulations.

The present set of pilot projects also aptly demonstrates the high cost of remediation solutions for water contamination. In order to be successful, they should instill in the ACP, GOP agencies, and targeted communities with a better understanding of the economics of integrated watershed management, both in terms of micro (farm or household level costs and benefits) and macro (sectoral costs and benefits across the entire sub-watershed). Such analysis can stimulate greater interest and investment by the ACP and GOP ministries to support activities that would yield long-term positive economic and environmental benefits.

RECOMMENDATIONS

- Assist the ACP and CICH to develop a greater sense of the economics of integrated watershed management, both its operational costs as a program (the macro-economic costs of remediation at the program level for a sub-watershed and a projection of the long-term financing needs) and the micro-economics (costs and benefits to the farmers and residents involved) of sustainable conservation practices.
- Before embarking on any new investment intended to improve land management by farmers, assess whether the new management approaches will directly and positively impact individual and household income. If not, such approaches need to consider whether the proposed practices will generate sufficient downstream benefits to justify subsidies from the ACP or GOP ministries.
- USAID and the ACP/CICH should analyze the funding and institutional requirements to successfully scale up and replicate pilot projects for greater impact; the different staff and investment requirements for different interventions; and how to harness market forces for improved land-use.

A USAID Success Story: Brachiaria Grass Introduction

The western pilot watersheds are a showcase of a positive example of a good land management practice that expanded widely because it increased income to the farmers. Under the Panama Canal Watershed Project, USAID introduced Brachiaria as an improved pasture in numerous on-farm demonstration plots in the early 1980s. Brachiaria now accounts for a large percentage of the pastures in the pilot watersheds. Apparently without further external assistance, it has changed the landscape – simply because it improves the income of the farmers. However, in the same watersheds, a much less environmentally friendly practice, pineapple production has exploded during the last four years. In this case, the best hope for achieving less destructive pineapple production seems to be the certification required by the European and other buyers. The challenge of the very modest USAID-funded efforts is to introduce and improve practices that market forces will proliferate -- an approach completely in line with the CAM strategy.

- Provide assistance in the formulation of policies, laws and regulations that provide incentives and remove bureaucratic obstacles to encourage sound management of lands within the watershed (i.e. credit policy for livestock).
- Provide the background analysis and help shape policies that create incentives for stakeholders to adopt environmentally friendly practices. For example:
 - Look for opportunities in other agriculture/rural sectors where, like AED's efforts to incorporate improved pasture management practices into rural credit programs, better management policies can be linked to credit access.
 - Continue to explore cases in which the use of green certification will open up new markets for products and encourage more sustainable production practices (i.e. pineapple).
 - Continue to explore with the ACP and GOP ministries approaches such as paying farmers to modify their land management practices. This could include payments for abandoning the farming of steep lands, converting steep lands to permanent crops, and fencing along stream banks to keep animals out of streams. USAID can use pilot projects to test some of these approaches, gauge their viability, and develop detailed cost and impact estimates for sharing with the ACP and GOP leaders.

4. PRIORITIZE DEMONSTRATION ACTIVITIES AND GRANTS TO ACHIEVE SUSTAINABLE WATERSHED MANAGEMENT

FINDINGS

Under the Task Order, AED awarded 16 grants to NGOs for demonstration activities that represent a mix of activity and sub-watershed level efforts designed to test and demonstrate improved practices for (i) community water supply and sanitation, (ii) soil conservation and pesticide management in pineapple plantations, (iii) sustainable agriculture, (iv) reforestation and (v) and pasture management (See Annex F for a description of the demonstration activities). The CICH selected these topics based on planning carried out under the first phase of the PCW SO. AED required NGO grant awardees to contribute at least 25 percent in matching funds to the projects. At the time of the evaluation, the local partners had successfully launched most of these demonstration activities.

The Fundación Natura (FN) also uses grants, both from its own resources and those provided by the ACP under the incentive fund, to finance pilot projects focused on conservation and good land management. Over the past 14 years, the FN has disbursed more than \$7 million to finance about 130 projects implemented by NGOs and community groups, both inside and outside the PCW. The FN and past USAID programs like MARENA have strengthened and enabled many NGOs to carry out a wide variety of programs with communities and community groups to improve natural resources management, and have contributed to increased awareness about environmental issues, especially among the participating communities.

Experience gained in other projects across the region demonstrates that most successful pilot projects and demonstration activities were those with significant oversight, fine-tuning, testing, and continual adjustment. This required significant involvement by knowledgeable professionals at every step in the design and implementation of the activities. Based on the evaluation team's observations and discussions with both AED and FN, it appears that these organizations are trying to manage too many projects to provide the level of oversight and professional guidance required by successful efforts in the region.

Another lesson from successful integrated watershed management efforts across the region is to (i) develop programs that promote solutions for priority problems at the most reasonable cost, and (ii) encourage recipients or beneficiaries to replicate the activities because they see the inherent benefits for themselves. Clearly, the model of the pilot projects must be gauged against the magnitude of the challenges--the area that needs to be treated or the number of farmers who need to adopt improved and sustainable practices. The key constraints inherent in the use of demonstration activities and small grants project include:

- Project managers must have a clear conceptual and organizational framework and system that emphasizes follow-up and documenting lessons learned in order to capture and replicate the lessons learned from small, independent activities and efforts. Based on conversations with the staff, these frameworks and systems do not yet exist.
- The focus is on discrete projects, and inadequate attention is devoted to measuring the impact of projects and whether they should be replicated. This approach risks creating scattered results that grow no further. The prevailing attitude of the FN was that once project funding is disbursed and accounted for, the job is done. No one appears to be asking the questions about what remains five years later.

The evaluation team has two principal concerns that emerged from its understanding of past uses of demonstration activities across the region, and from its analysis of both AED's demonstration activities and the FN's small grants program. First, FN appears to have inadequate systems for monitoring, evaluating, and providing sufficient technical assistance to grantee to address problems that arise during activity implementation. Second, in Panama and elsewhere in the region, with a few notable exceptions, very few demonstration activities or small grant projects have achieved wide-scale replication and contributed to measurable improvements in land management over entire watersheds. For example, of the many funds allocated through FN since its creation, the team could find limited evidence of initiatives continuing to expand once projects ended. All the AED projects recently began, and the team believes that some of these show promise of sustainability, but only if they receive close follow up and oversight to address unanticipated problems that arise during project implementation.

RECOMMENDATIONS

- Devote effort to analyzing the existing demonstration activities to learn what motivates farmers to reproduce certain practices, what it will cost to induce farmers and watershed residents to adopt more sustainable watershed management practices, and to identify the most effective mechanism(s) for the delivery of services. This information would support policy discussions with the GOP and help fine tune current activities.
- Assist the FN to draw useful conclusions from their long experience with small grants in watershed management and make this information widely available.
- USAID should use its role as program manager to identify lessons learned and encourage the sharing of these lessons between AED and FN to identify common issues that would benefit from more detailed analysis.
- Encourage the FN to participate in the network of conservation funds, RedLAC, that operates in Mexico and Central America. Many conservation foundations and funds were initiated with help from USAID, and RedLAC offers the opportunity to share lessons learned and successful experiences in improved natural resources management and protection.

- Ensure that partners provide for sufficient technical resources and institutional follow up and oversight to address unanticipated problems that arise during project implementation.

5. SECURE GOVERNMENT AND COMMUNITY COMMITMENT TO IMPROVE THE MANAGEMENT OF PROTECTED AREAS

USAID has devoted considerable effort to promote the conservation and management of protected areas within the PCW. These investments reflect the importance of protected areas in the watershed – 38 percent of the PCW is designated as a protected area. The GOP recognizes the potential returns from the sustainable management and conservation of protected areas as part of watershed management efforts in the PCW as demonstrated by the high percentage of the area currently within the SINAP.

Lessons from within Panama and around the world highlight that protection of existing intact resources remains the first and best option for any watershed management program. Rehabilitation of landscapes at any reasonable scale whether via reforestation or changing entrenched land use practices, requires far more resources, is institutionally and socially more complex, and yields fewer positive results. Conservation programs, properly run and focused on the sound management of existing critical areas, have proven far more viable and cost-effective for achieving the goals of any watershed management program.

The evaluation team was quite concerned to observe the poor condition of Soberanía National Park, one of Panama's premier national parks. The team endorses USAID/Panama's plan to work with ANAM to clarify the spirit and practice of the FIDECO fund and how its funds can be used to meet a wider spectrum of operational costs and the maintenance needs of vital infrastructure in protected areas. The team understands USAID's approach of using public-private partnerships as a means to generate supplemental income and develop a broader constituency for improved park management and protection. However, the team believes that the current work in Soberanía National Park overemphasizes the potential revenue that can be generated by eco-tourism to supplement funding for park management and protection. This may stem from the George Washington University/Tourism Development Initiative (GWU/TDI) that focused on the gross receipts rather than on the costs of providing services, and thus presents an overly optimistic net revenue projection. Some GOP officials indicated their belief that private sector operators could finance and operate even the Park's very basic visitor facilities, such as interpretation centers, trails, and bathrooms. How these operators would recover their investment and meet operating costs remains unclear. The GOP needs to clarify whether private operators will be offered additional service concessions or allowed to establish actual facilities (hotels and resorts) within the protected areas.

Another issue associated with the protection of the Soberanía National Park and efforts to build broader-based constituencies for improved park management and protection relates to how local communities benefit from tourist activities. Unless local communities realize some tangible benefits from the eco-tourism activities, experience shows that they will not abandon illegal activities such as hunting, logging, and setting fires in the park. The team visited two eco-tourism sites, Gamboa and Limon. At the Gamboa site, the team noted that the CICA-Avifauna efforts did support help to local indigenous communities. In Limon, a proposed eco-lodge competed with the ideas of local residents to set up an island based tourist and outdoor recreation center on an island in the Gatun River. At this site, these apparent competing interests and the potential of unfulfilled expectations may lead to a backlash that puts the protection of the park at risk.

Finally, these current eco-tourism projects mainly target the higher end tourist market. The potential exists to create a larger conservation constituency in Panama by widening the scope of the eco-tourism development activities to include enhanced outdoor recreation opportunities for the country's

growing middle class. For example, at “El Charco”, local schools use the trail for environmental education. This approach to environmental education helps build broader national recognition of the environmental values of the protected areas, and can lead to greater government support of the protected area system.

RECOMMENDATIONS

- Use the new USAID planning cycle as an opportunity to discuss and identify secure and sufficient sources of funding for protected areas with the ANAM, the ACP, and other GOP ministries. One possibility might be creating a special purpose fund to augment those managed by FN, with the explicit purpose of financing the protection of the protected areas in the PCW.
- Expedite resolution of the MOU between USAID and ANAM to clarify the tasks AED should carry out under IR 2, ideally without recourse to another contract modification.
- Incorporate the analysis and recommendations made by Sam Ham and Anne Baez for ecotourism development in Panama into future program activities and support (See Text Box on page 28).
- Help update the Management Plan for Soberanía and focus this plan on the operational and financial aspects of maintaining and protecting the park’s existing infrastructure and resources.
- Involve local communities in planning eco-tourism activities for the park.
- Build upon and help the GOP improve sites like El Charco to expand environmental education opportunities for local schools.

6. STRENGTHEN THE COORDINATION OF GOP AGENCIES FOR WATERSHED MANAGEMENT AND PROTECTION

FINDINGS

The 1997 Law 19 established the Panama Canal Authority (ACP) to assume the responsibilities of the US Panama Canal Commission. It explicitly broadened the ACP’s mandate to include responsibility for the management, maintenance, use and conservation of the water resources of the Panama Canal Watershed. In recognition of the challenges of the integrated watershed management, Agreement 16 required the ACP to establish the Inter-Institutional Commission for the Watershed (CICH). This body facilitates the integration of efforts, initiatives and resources of the government and private sector organizations that have the most direct roles in managing and conserving the watershed. The challenge facing the CICH and its Technical Secretariat is the coordination of different GOP agency programs as they are carried out within the watershed.

The GOP has taken an important first step toward improved watershed management and protection by placing overall responsibility for the PCW with the ACP. The ACP and the CICH provide the theoretical and institutional framework for the coordination of investments and activities in the PCW. As a relatively new organizational arrangement, these organizations still need to better defined their roles and responsibilities. The logical institutional framework for integrating watershed management will emerge over time as the ACP/CICH relationship develops. USAID and its assistance over the years helped to build this foundation. The ACP/CICH would benefit from continued USAID assistance to refine approaches for the coordination of efforts that will result in more integrated watershed management.

RECOMMENDATIONS

- USAID should use its comparative advantage and grant funding flexibility to provide targeted assistance to strengthen the institutional coordination for integrated watershed management. The team recommends revisiting the US experience coordinating complex natural resources management efforts. The Mission, unlike other donors, can draw upon expertise from a variety of USG and other organizations like the Chesapeake Bay Foundation, Tennessee Valley Authority or other USG inter-agency agreements such as those in which the US Forest Service often participates, for targeted advice to the ACP and CICH on options and approaches for improving the coordination of government programs within the PCW.
- The evaluation team encourages USAID to seek ways, through training, technical assistance and possibly targeted study tours, to strengthen the capabilities of selected CICH member ministries like MIDA (for agriculture, livestock and land-use issues), MINSA (for water and sanitation issues) and the MOP (for improved road building and maintenance). There is still time under the current AED project to incorporate the lessons learned from policy reform activities and pilot projects into the work programs of these GOP agencies.

7. BUILD STRONG LOCAL SUPPORT THROUGH NGO STRENGTHENING AND PARTICIPATORY COMMUNITY INVOLVEMENT

FINDINGS

The program invested considerable effort in successfully building local NGO capacity and involving communities in the identification and analysis of priority environmental and development challenges in the targeted sub-watersheds, and in the selection and implementation of pilot projects to address these challenges. Both the SONDEAR and FUNDEMUN projects in the first phase of the PCW SO involved local NGOs and local governments in designing and implementing projects to improve environmental management. This played an important role in strengthening the participation of civil society to contribute to the management of the PCW in concrete ways and to develop a constituency of NGOs to advocate sustainable development and environmental conservation in Panama. In the current phase of the PCW SO, the IDEAS-FUNDEPROVE demonstration activity supports the organization of “*instancias*” in the two targeted watersheds. *Instancias* provide the organizational framework for integrating watershed management and serve as a mechanism for institutionalizing the consultative process between the CICH, local organizations, communities and residents.

The team recognizes the importance of involving local stakeholders and securing local input and buy-in during the design and implementation of activities. However, the team is concerned that efforts to organize *instancias* have resulted in the formation of overly complex organizations (See Figure 2) with a limited mandate to implement activities. Though the project has successfully expanded local participation through these *instancias*, the evaluation team questions their sustainability beyond the life of the project. Many stakeholders consulted expressed less interest in the planning being carried out by the *instancias* and wanted to see more on-the-ground activities. Further, while the governance structure of the *instancias* include local ministry representatives, experience to date shows that few attend these meetings due to the lack of resources for logistics at the district level.

RECOMMENDATIONS

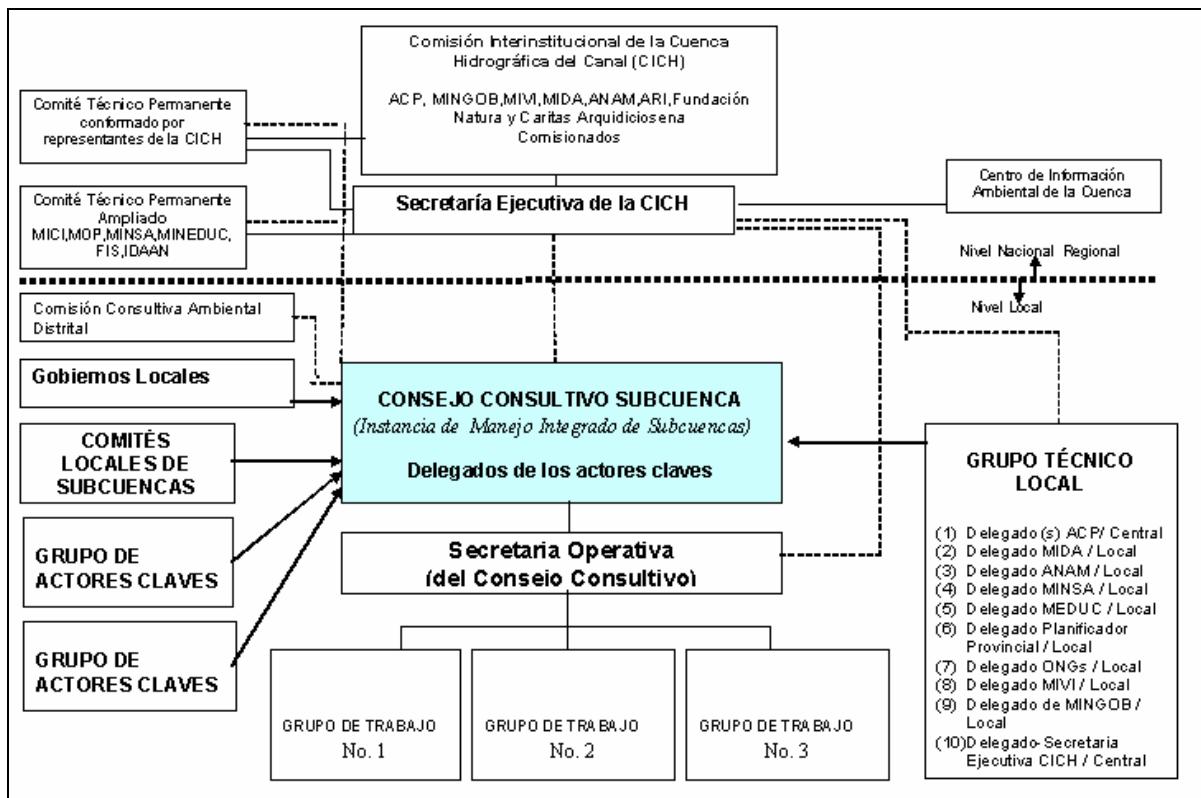
The team recommends that USAID:

- Poll the present set of participants in the *instancias* pilot to gauge their expectations, reasons for participation and suggestions for the future evolution of their work plan that may include more

concrete ways in which civil society can participate in developing and implementing on-the-ground activities.

- Employ an institutional development specialist to work with the NGO IDEAS-FUNDEPROVE and analyze the lessons that can be learned from its efforts to organize and establish the *instancias* that could be used to develop less complex approaches for organizing local input into watershed planning, priority setting and management.

FIGURE 2: PROPOSED STRUCTURE OF THE LOCAL COMMITTEE (INSTANCIA) FOR INTEGRATED WATERSHED MANAGEMENT



CHAPTER FIVE: KEY QUESTIONS FROM THE EVALUATION SCOPE OF WORK

This chapter responds to the fourteen key questions that USAID/Panama outlined in the evaluation scope of work. For clarity, the questions are restated here along with the DAI evaluation team's response. Many of the questions correspond to the activity summaries and analysis, and findings and recommendations detailed in the previous two chapters.

PROGRAMMATIC PERFORMANCE QUESTIONS

1. What remains to be done under the current activity plan? Can the remaining activities be completed prior to September 30, 2006?

Most of the current activities carried out under IR 1 can be completed by the end of the program. The decision to postpone creating the small grants program under Result 2 of Task 1.1 will impact progress. The team recommends revisiting this plan, especially in light of impression that FN staff are overwhelmed trying to manage grants from several funding sources.

In terms of Task 1.2, the team recommends canceling the Colon waste management project and replacing this with an agreement with WWF to fund the Rio Tupiza Community Natural Forest Management project.

The recent amendment of AED's contract that expands the number of tasks under IR2 from five to nine complicates a clear response to this question. A review of the original five tasks led the team to doubt whether these could be completed given the institutional weaknesses within ANAM, policy uncertainties related to private sector investment in protected areas, and the inability of ANAM to retain tourism fees it might collect. It is unclear to the team how AED will complete the additional activities now planned.

To avoid jeopardizing the results achieved to date the team recommends that AED:

- Continue efforts to refine ANAM's SOW to develop a sound understanding of the challenges of managing and administering Soberanía and lay the groundwork for the next strategy period.
- Focus on one or two priority activities under the new Task 2.8 eliminating the following activities: sustainable tourism certification, tourism in protected areas conference, community taxonomist initiative, poison dart frog initiative, protected area tourism forum, and the PCW Protected Areas Exhibition.
- Delete Task 2.9 and the Small Rapid Response Grants component in an effort to streamline AED's administrative and project management burden.
- Update the Soberanía Management Plan, focusing on operational and financial challenges.

A detailed activity plan with corresponding responses is attached in Annex G.

2. What have been the major problems encountered in implementing the program to date?

Indicators not measuring impact

One of the more significant problems is that the indicators for both the IRs are inappropriate measures of progress towards the achievement of desired outcomes and overall program impact.

Lack of clarity in program focus, roles and responsibilities.

In interviews conducted with AED staff, they expressed frustration with the numerous program changes that have complicated program implementation. The program has undergone significant revisions that have forced AED to revise its implementation strategy to respond to these changes. These changes resulted in some delays in implementing the activities. Interviews with key staff at USAID/Panama and at AED also revealed that roles and responsibilities were not clearly outlined when the program was restructured resulting in added confusion and delays in implementation. In addition, staff changes in AED and changes among personnel at key government counterpart institutions also contributed to the delays in implementation decisions and management continuity.

3. What corrective or additional actions need to be taken to improve performance and achieve results prior to the end of this phase of activity?

Focus on documenting good practices and lessons learned

- *Increase the participation of CICH in pilot projects in the sub-watersheds.*
- *Convene a workshop for PCW stakeholders and residents to elicit lessons learned from their experience under the program.*
- *Document the lessons learned and experience gained under the ongoing demonstration activities.*

4. To what extent have partners, customers and other stakeholders participated in the program? How effective has this participation been? What more needs to be done to increase the amount and effectiveness of stakeholder participation

The program has involved stakeholders, from inhabitants in the PCW to government agencies, in all phases of the program since its inception. For example, in 2002, at the level of the pilot watersheds, USAID and IRG involved local stakeholders in a dialog process that resulted in a series of recommended actions for government and stakeholders to mitigate environmental impacts in the watersheds.

At a higher level, USAID has made a special effort to work through the CICH in the design of activities and financing of pilot projects. The \$5 million USAID/ACP matching grant program is an example of this excellent collaboration.

In summary, stakeholders, ranging from the small farmers through the NGOs to the government agencies have been involved in a participatory approach to integrated watershed management. The remaining challenge is to convince local land-users that their investments and commitment to sound watershed management will bring benefits.

5. What are the major lessons learned at this stage?

The lessons emerging from the current work on the PCW confirms lessons learned from past work, both in Panama and elsewhere around the world. These lessons are summarized below. The evaluation team has attempted to integrate many of the lessons into the recommendations of this report, especially as they refer to the design of the next phase.

Don't Reinvent the Wheel

Perhaps the most important lesson learned is that the current program does not incorporate some of these lessons into its ongoing efforts, risking "re-inventing the wheel" as the program works to improve the management and protection of the PCW. Some of these lessons are clearly being employed or constitute the basic thrust behind parts of the current effort in Panama. However, as

stressed throughout this report, the lessons learned from current efforts represent the program's real potential and every effort should be made to ensure that they are captured, well documented and fully applied.

Program Analysis and Strategic Planning

The meaningful proof of success of a watershed project is rarely established during the project or by its close, but rather after several years have passed. The most important indicator of success is whether successful activities continue to spread after the project has finished. A truly successful watershed practice is one that initiates a process that continues to change the landscape long after the project has ended. The current program would benefit by critically analyzing past projects, including those in similar countries, to identify those practices that have continued to spread and those that have not, to identify the reasons for success and failure, and incorporate these lessons into ongoing efforts. The notable lack of interest in sifting through the evidence probably has many reasons, among them poor record keeping that leads to short institutional memory, the pressure of deadlines for forward programming, the shifting winds of development trends, and perhaps the fear of discovering an uncomfortable truth.

With the pressure to show positive changes, many projects neglect protecting land that is still in good condition. Yet maintaining current conditions on such land is the greatest and lowest-cost potential project impact. Therefore, before considering which practices to apply, conservation of effective vegetative watershed cover should receive priority attention. Efforts need to focus on legally declared protected areas, as well as community and private reserves within the watershed, especially in the upper reaches.

Replicating Successful Interventions

Land use decisions in large watersheds like the PCW are made by thousands of farmers, ranchers, forest owners and households scattered across the watershed. Replication is the first step toward sustainability. Even the most generous development programs and projects can only reach a tiny fraction of those who "land managers" that need to be reached and encouraged to improve land use practices. Any outside intervention can succeed only if it acts as a catalyst, initiating a chain reaction that continues to spread on its own with minimal outside support. Unless it spreads spontaneously it will have only a very limited positive developmental and environmental impact no matter how much it may have improved the land or welfare of a few individuals. Demonstration plots, model farms, pilot watersheds and functioning organizations can be created with abundant project resources and technical attention. The real measure of their success is not whether they have been created to specifications, but whether anyone copies these models.

Develop Economic Incentives to Foster Sound Management Practices

Not surprisingly, most of the practices with truly broad impact that have spread spontaneously are market driven. These are practices from which farmers make money or receive some other short-term, tangible benefit. Farmers, like all of us, make changes in response to incentives, and not just any little incentive, but one large enough to compensate for the extra work, investment or additional risk. In the land use context the most common incentive is financial, with the market providing the reward. This reality underscores the importance of a sound financial and economic footing as the take-off point for new interventions or practices.

Recently many people are asking, "Why pay farmers and forest owners only for products? Why not pay them for services as well?" In watersheds, one promising approach is to have downstream users (urban users, hydroelectric works, industry – and of course the ACP) pay for

the environmental services farmers and forest owners provide in the upper watersheds. Certainly, payment for environmental services merits further exploration.

By definition, watershed management often involves the many land-users, owners and residents and a reasonable level of participation in these programs is critical if one wishes to reach a sufficient threshold of change to have real impact. The thrust of participation in a watershed management program must be more than achieving some level of extension program effectiveness. At least two other important objectives can be addressed with a participatory approach to watershed management. First, residents and stakeholders working together develop a greater capacity to diagnose, understand and prioritize the problems of the watershed. With it comes a capacity to more effectively use the support services they need from government (policy adjustments, extension services, access to credit for improved practices, improved infrastructure, basic services) to meet the issues and opportunities of watershed management in their areas. Second, residents come to better understand the fundamental principle of the inter-relatedness among upstream and downstream users, and how what one neighbor does make affect others, thus further reinforcing the thrust behind the replication of sound practices. There is thus a marked consonance with early local efforts at governance; some of the earliest collective governance decisions are often about how local people work together to promote rational land-use so as to ensure safe and secure water supply for their own needs and as a result, for those beyond their watershed.

STRATEGIC QUESTIONS

- 6. What has been achieved under USAID/Panama PCW program during the last 4 years? How have these achievements contributed to sustainable management of the PCW placed in the context of the last few decades of management of the watershed?**

The program has achieved a high level of public dialog on the management of the watershed and protected areas. As a result of USAID's program, important policy matters are now being discussed, more information is available for making sound decisions, many institutions are now

stronger than they were four years ago, and some have recently begun well conceived field activities with the potential for catalyzing wide-spread improvements in land use.

- 7. Are the USAID/Panama strategy and associated activities effective and have they tangibly contributed to improved management of the watershed?**

USAID's approach to improve the management of the PCW has permitted addressing various obstacles simultaneously. However, the approach has led to complex implementing arrangements that require considerable management oversight by the principal technical assistance contractor.

The program has several strengths. The AED project has proved effective employing an adaptive, opportunistic approach to problem solving in the project's complex and changing policy and program environment. The strategy of testing pilot projects that rely on market forces and positively impact farmers incomes, especially for pineapple producers shows promise of improving land management practices.

The strategy of capitalizing on growing interest in ecotourism and outdoor recreation to help protect parks and preserves within the PCW also demonstrates promise. This approach links economic and biodiversity protection interests, and represents a least cost approach to improving the management of the parks and protected areas.

8. Have the development hypotheses and critical assumptions proven to be valid or correct? What might be done to modify or improve these in the next phase of activity?

The development hypothesis has two key elements: One is that more participatory approaches will lead to improved integrated watershed management in the PCW. The other is that the marketplace can generate the investments needed to meet conservation goals, whether land-use or protected area related. Current activities support the validity of these hypotheses. The PCW SO has created interest and raised expectations among many PCW stakeholders, including local residents and landowners, municipal governments, district level ministerial staff, the NGO community, and most importantly, the ACP/CICH. Over the years the program has established the primacy and importance of stakeholder roles and responsibilities, and has worked to refute the perception that the ACP should singlehandedly resolve all the problems of the watershed.

In the time remaining under the current AED Project, greater attention should be given to engaging and encouraging local stakeholders to assume more responsibility for the management of the PCW. The project should also ensure that the lessons learned begin to lay the groundwork for a better understanding of the economics of integrated watershed management.

9. Does the PCW SO program make sense under the current development context? What are the criteria leading to this conclusion?

The current PCW Strategic Objective and program to support the protection and improved management of the Panama Canal Watershed are highly congruent with the current economic interests of Panama and its long-term development, biodiversity conservation, and the strategic interests of the US. The Panama Canal represents one of the highest value economic activities of the country; it generates significant contributions to the national treasury, and also provides Panama with a visible and internationally important asset. The Canal Area and all the concomitant operations make the ACP the single biggest employer in the country and tens of thousands of livelihoods depend on its continued operation.

The long term operation of the Canal depends on a well maintained and healthy watershed. Canal authorities are mindful of the low flows that have disrupted shipping and commerce occasionally in the past, and want to take all measures to prevent this in the future. The critical issues of moderating seasonal low flows and of maintaining water quality depend on sound actions, linked with improved policies and strengthened institutional management. The USAID SO and associated programs direct resources precisely at these issues and the same long term goal as the GOP.

10. How effective is the policy work being conducted? What other policies are needed? What are targets of opportunity in the policy arena?

AED's work to improve policies in the local banking system related to loans for cattle ranchers will improve land use by many ranchers. Policy recommendations about environmentally friendly road construction and maintenance in the watershed areas also hold great promise and should be rigorously pursued. The AED program is also assisting the GOP explore policies and mechanisms for payment for environmental services.

Two foresters currently employed by AED have both the experience and credibility needed to convince ANAM to eliminate policy obstacles to more sustainable forest management. They should be encouraged to proceed on this front. There is also scope to rationalize the reforestation programs and their incentives to ensure that established plantations are properly sited and managed to yield a marketable product.

The more daunting policy obstacles in Panama concern water and sanitation. Growing interest among local communities about water pollution issues, particularly in the peri-urban and industrial areas, represent areas of high potential for GoP interventions and policy changes. The La Cabima pilot project offers the opportunity to generate field-informed feedback which may/should be used to guide policy change in this arena.

11. What should be the focus of an extended SO program to achieve maximum results for improved watershed management and economic growth? What are the highest priorities?

The following themes are suggested as priorities for an extended PCW SO program in Panama:

- *Work with the ACP/CICH to develop mechanisms and leverage funding to scale up successful pilot projects into a more integrated program approach to watershed management in the PCW.*
- *Earmark additional and regular ACP contributions to the GOP budget for integrated watershed management in the PCW and provide support (planning and budgetary) for ministerial programs down to the district level.*
- *Work with ANAM to help it secure the budget resources needed to provide basic protection for protected areas within the PCW*
- *Continue to support market oriented efforts that will offer lower costs approaches for improved watershed management and protection.*
- *Continue to support the GOP's efforts to address the critical issue of water pollution in the PCW.*
- *Nurture success stories as they emerge; document and disseminate best practices and lessons learned from pilot projects in the sub-watersheds.*
- *Use the field based experience from pilot projects to inform a dialogue with the GOP regarding necessary policy changes.*

12. What would be the expected results of the extended program? What would be the anticipated cost to the Mission for these results, in terms of planning and program management?

Important and significant results will require time to achieve. The evaluation team recommends that a follow on program be for at least five years, and focus on achieving the following illustrative results.

- *A long term funding mechanism, in addition to FIDECO, should be established to provide adequate funding for the operation, protection, and management of the Soberanía National Park and consolidation of Chagres National Park.;*
- *Improved, more sustainable land use that is compatible with the long-term objective of supporting the Panama Canal cover at least 50 % of the watershed.*
- *Successful, sustainable approaches for payments for environmental services adopted by ACP and other GOP ministries to encourage landowners to adopt sustainable land use practices in the watershed.*
- *A more complete policy framework put in-place and institutional arrangements developed that result in improved, integrated watershed management and protection of protected areas;*

- Effective household coverage by sewage services increased to 20% in the urban and peri-urban areas with infrastructure funded by other donors and/or through municipal bonds. USAID efforts support the development of local financing mechanisms like clean water revolving funds, and help local and national governments develop plans and approaches that promote the use of cost effective sanitation technologies;
- Finance mechanisms in place, and policies established that encourage industries to invest in appropriate pollution control and clean production technologies
- A regulatory framework in place that provides both incentives and disincentives to industries and households to improve waste management.

Expected Costs: Much will depend on GOP counterpart institution commitment and what can be leveraged in partnership with other donors. USAID can remain a significant and important contributor to improved management of the PCW and achieve the types of results illustrated above with the creative investment of \$4.0 to \$5.0 per year for five years. In addition to program resources, USAID will need to have a dedicated staff of at least one officer with experience in environmental management dedicated to oversee the PCW SO portfolio.

13. Which are the counterpart institutions who should be involved in the next phase of activity?

It is in USAID's interest to broaden its base of program partners to include government institutions, NGOs, and greater involvement by the private sector. The current PCW program emphasizes engagement of NGOs to carry out pilot projects and develop new civil society structures for watershed governance. The shift to using more market forces to drive improved land management practices will benefit from greater private sector input, especially from organizations like CONEP. Key GOP counterparts will remain the ACP, ANAM and CICH member ministries. Additional initiatives aimed at MIDA, MOP, MINSA are worth pursuing to ensure that they can assume a greater role supporting sustainable watershed management. While the ACP/CICH mechanism will continue to remain important, focused support for these individual ministries can positively impact both technology delivery and policy reform efforts.

14. How will an extended SO program relate to the CAM Regional Strategy and how should it relate to other donor programs?

The current Panama PCW SO is consistent with the Central America and Mexico Regional Strategy. USAID Panama should consider reviewing specific PCW outcomes and activities to determine their overall value to contributing to the larger strategic goals and objectives.

The Central America and Mexico (CAM) Regional Strategy, FY 2003-2008, provides the framework for regional and country-specific programs leading to achievement of the overarching regional goal of a more democratic and prosperous Central America and Mexico, sharing the benefits of trade-led growth broadly among their citizens. The revised Panama Canal Watershed coincides well with this goal. The diagram on the next page shows the alignment with the CAM Strategy Objective Two – Economic Freedom.

The CAM strategy contains four sub-IRs that cover the current work carried out under the PCW SO. The Mission should adopt the CAM Strategy IR and sub-IRs. This will require no real change in current or proposed activities in the PCW. This change will require modifying reporting indicators. Since the current indicators fail to measure sustainable impact or direct progress towards the stated outcomes, this change offers the Mission the opportunity to revisit the indicators and select ones more better suited to measure real change.

CHAPTER SIX: PANAMA CANAL WATERSHED PROGRAM EVALUATION–DOCUMENTATION CONSULTED

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ANNEX A: SCOPE OF WORK

EVALUATION OF THE PCW STRATEGIC OBJECTIVE

(Revised Dec 16, 2004)

USAID Panama has decided to invite short listed firms to submit proposals for conducting a full evaluation of the Strategic Objective “Panama Sustainably Manages the Canal Watershed and Buffer Areas”, in accordance with the following statement of work. The selection criteria are clearly stated in Chapter 7 of the present document. USAID Panama intends to issue a Purchase Order to obtain the services of the selected firm.

1. Strategic Objective to be Evaluated

SO Title: “Panama Sustainably Manages the Canal Watershed and Buffer Areas”

SO Number: 525-004

Funding levels:

FY2000	\$3,500,000
FY2001	\$3,700,000
FY2002	\$4,999,461
FY2003	\$5,005,000

Completion Date: September 30, 2006

Brief Description: As stated in the Mission’s 2000-2006 Strategic Plan, the SO focuses on establishing and maintaining protection and management systems for the Panama Canal Watershed (PCW), to ensure that its land, water, and natural resources are used in a sustainable manner. The objective encourages participation of national and local governments, non-governmental institutions, and citizens in the effective administration of the PCW.

2. Background

The PCW SO was approved in January 2000, to assist the Republic of Panama in achieving sustainable management of the PCW and buffer areas. To achieve this objective, the Mission initially developed a results framework that included the following intermediate results (IR):

IR1 Institutional arrangements for effective PCW functioning

IR2 Natural resources in the PCW and buffer areas managed effectively

IR3 Civil society actively supporting sustainable management of the PCW

IR4 Local government and private sector capacity for environmental management in the PCW and buffer areas increased

The design document emphasized that it is crucial that the interests, activities and energies of numerous stakeholders, including the central government, local governments, the private sector, non-governmental organizations (NGOs) and community based organizations (CBOs), be accommodated and well-coordinated to sustainably manage the PCW and its buffer areas.

During the 2000–2001 period, program activities concentrated on creating awareness and support in the Panamanian population on a virtually unknown subject, the Panama Canal Watershed. Interventions were also directed to launching the Inter-Institutional Panama Canal Watershed Commission (CICH, its Spanish acronym), and strengthening institutional capacity of various actors in watershed management, such as the Panama Canal Authority (ACP, its Spanish acronym), the National Environment Authority (ANAM, its Spanish acronym), the municipalities of Arraiján, Capira and La Chorrera, various corregimientos in the Transisthmian corridor, and a selected group of NGOs to improve PCW management.

While important accomplishments were made during this initial phase and a good foundation laid, it became evident that the SO still needed to be translated into more understandable and manageable terms for all stakeholders, demonstrating through practical on-the-ground activities how concepts and principles supporting integrated, sustainable watershed management operate.

Early in the year 2002, the overall SO program and results framework were reviewed and some adjustments made at the outcome level reducing the number of these from fifteen to eight, and introducing the strategic implementation of “pilot demonstration projects at the sub-watershed level” to address the need for a more practical on-the-ground approach of the SO activities.

Following this review, the Mission undertook a series of actions to obtain GOP approval and commitment of resources to carry out a limited number of pilot activities at the sub-watershed level. These applied research efforts were intended to serve as proof-of-concept laboratories for replicable watershed management interventions. Consultant will also evaluate actions that occurred from 2002 to 2004.

As a result, a letter of intent was signed between the Panama Canal Authority (ACP) and the Mission to establish a seed fund in the amount \$5.0 million (each party contributing \$2.5 million) to finance replicable programs and projects in the pilot sub-watersheds, as a practical means to achieve sustainable management of the PCW. In addition, an agreement was reached with the National Environmental Authority (ANAM) to upgrade the environmental management of protected areas using the Chagres National Park as a model and to diversify into ecotourism by developing a replicable model in Soberanía National Park.

In parallel to the above, the Mission made a decision to drastically reduce the number of implementing units (contractors and recipients) for the PCW SO, in order to increase efficiency and synergies between IRs, simplify coordination with partners and ease the management burden. This has resulted in the contracting of an institutional umbrella contractor to serve as the lead external service provider for achievement of the Mission’s PCW SO during the remaining period of the program. Existing contracts and grants for implementation of SO activities continue through their planned expiration dates. The new umbrella contractor, the Academy for Educational Development (AED), coordinates this process in order to consolidate the gains from experience and accumulated knowledge.

In addition to these changes and due to a requirement to further focus efforts for greater impact and synergy, the Mission completed a thorough review of the SO program and results framework and decided to further consolidate from four intermediate results (IRs) down to two IRs and adopt new performance indicators at the SO and IR levels (see Attachment 3).

As the Mission was beginning to implement this revised SO program, a decision was made in 2003 by USAID/W directing USAID/Panama to conform its current activities to the new Central America and Mexico (CAM) Regional Strategy, which it initiated in the process of developing and approving its new Country Plan in 2004.

In light of the above, Mission's management has deemed it prudent and convenient to conduct an evaluation of the SO program in protected as well as in non-protected areas including an analysis if the synergy between them to measure results and achievements to date and recommend further adjustments, if warranted, to align and integrate this program more closely in support of the CAM Regional Strategy and new Country Plan.

3. Purpose

The purpose of this evaluation is to measure the overall progress towards achievement of USAID/Panama's Strategic Objective of sustainable management of the PCW. Specific emphasis will be placed on activity during the last 4 years, placed in the context of the last few decades of management of the watershed. The analysis will record the justifications and changes made to the original design, measure impact of these changes and overall program effectiveness, and facilitate program alignment with the new CAM Regional Strategy and inform the next five-year strategic planning cycle for the Mission, considering funding expectations and host-country political will.

4. Scope of the Evaluation

As a minimum, the evaluation team will provide factual and analytical answers to the following questions:

Program Performance Questions

- 4.1 What remains to be done under the current activity plan? Can the remaining activities be completed prior to September 30, 2006?
- 4.2 What have been the major problems encountered in implementing the program to date?
- 4.3 What corrective or additional actions need to be taken to improve performance and achieve results prior to the end of this phase of activity?
- 4.4 To what extent have partners, customers and other stakeholders participated in the program? How effective has this participation been? What more needs to be done to increase the amount and effectiveness of stakeholder participation?
- 4.5 What are the major lessons learned at this stage?

Strategic Questions

- 4.6 What has been achieved under USAID/Panama PCW program during the last 4 years? How have these achievements contributed to sustainable management of the PCW placed in the context of the last few decades of management of the watershed?
- 4.7 Are the USAID/P strategy and associated activities effective and have they tangibly contributed to improved management of the watershed?
- 4.8 Have the development hypotheses and critical assumptions proven to be valid or correct? What might be done to modify or improve these in the next phase of activity?
- 4.9 Does the PCW SO program make sense under the current development context? What are the criteria leading to this conclusion?
- 4.10 How effective is the policy work being conducted? What other policies are needed? What are targets of opportunity in the policy arena?
- 4.11 What should be the focus of an extended SO program to achieve maximum results for improved watershed management and economic growth? What are the highest priorities?

4.12 What would be the expected results of the extended program? What would be the anticipated cost to the Mission for these results, in terms of planning and program management?

4.13 Which are the counterpart institutions who should be involved in the next phase of activity?

4.14 How will an extended SO program relate to the CAM Regional Strategy? How should it relate to other donor programs?

5. Evaluation Methodology

As established in ADS 203.3.6.4 there is no standardized methodology for evaluations of USAID programs. Therefore, the evaluation team will determine what evaluation method will be followed for this particular assignment, based on the purpose and specific questions to be answered and using the guidelines provided by the ADS through different TIPS. The proposed work plan will be submitted to USAID/Panama for review and approval before work begins.

6. Team Composition

The consultant will propose a team composition appropriate to conduct the evaluation with the support of relevant Mission and counterpart staff. Team members will be subject to approval by USAID/Panama and will be subject to the following selection criteria.

7. Performance period

The evaluation team is expected to conduct the evaluation on a full time basis over a two month period and complete the assignment in May, 2005. (See Attachment B).

8. Report

The team will submit first a draft report and then a final report that includes at a minimum, the following aspects:

- *Executive summary:* concisely stating the most critical elements of the larger report (English and Spanish).
- *Introduction:* including background, evaluation purpose, questions and target audience
- *Findings:* based on empirical facts collected by the evaluation team, on performance or factors influencing performance
- *Conclusions:* the evaluators' interpretations and judgments based on findings
- *Recommendations:* proposed actions for management based on conclusions
- *Lessons learned:* broader implications for similar programs and different settings or for future activities
- *Unresolved issues:* a review of what remains to be done or unanswered questions
- *Annexes:* including evaluation methodology, data collection instruments, schedules, interview list, and statistical tables.

The report will be prepared in English. The team will also conduct oral debriefings as necessary or convenient highlighting findings and conclusions.

In addition, as established in USAID ADS 540, the team, through the appropriate channel, will submit one electronic and/or one hard copy of the corresponding document (electronic copies are preferred) to the Development Experience Clearinghouse (DEC) at the following address:

Development Experience Clearinghouse
1611 N. Kent Street, Suite 200
Arlington, VA 22209-2111
Telephone Number 703-351-4006, ext. 100
Fax Number 703-351-4039
E-mail: docssubmit@dec.cdie.org
<http://www.dec.org>

9. Key Reference Documents

- USAID/Panama Strategic Plan FY2000-FY2006
- SO Performance Management Plan (PMP)
- Mission's Annual Reports (R4, AR)
- SO Contractors and Recipients' Progress Reports
- MARENA Project Evaluation Report
- FIDEKO Evaluation Report
- CAM Regional Strategy
- New Country Plan and SOAG

ANNEX B: PANAMA CANAL WATERSHED EVALUATION— APRIL/MAY 2005

TABLE B-1: DETAILED WORK PLAN

Week One: Collect background materials and briefings			
Monday	3/28/05	-	-
Tuesday	3/29/05	9:00 to 11:00 AM	Team Leader Telcon w/ Rick Bossi of AED
Wednesday	3/30/05	-	Review project literature
Thursday	3/31/05	Late PM	Team Leader travels to Washington for briefing and interviews
Friday	4/1/05	8:00 AM 10:30 AM 1:00 PM 4:30 PM	Briefing at DAI Mtg. at AED and briefing by Tito Coleman Mtg. at USAID w/ R. Hilbruner, R. Kahn & M. Rowen (RRB) Admin matters at DAI
Saturday	4/2/05	PM	Team Leader travels to Panama
Sunday	4/3/05	10:00 AM	Mtg. Catterson & Villarreal (she joins team)
Week Two: Mobilize team, assemble documentation and planning & logistical activities			
Monday	4/4/05	10:00 AM 3:00 PM	First Mtg with AED Briefing Mtg. for team Leader at USAID
Tuesday	4/5/05	9:00 AM 3:00 PM	Team planning mtg. Mtg. w/ Bolivar Pou – AED on pilot project comp.
Wednesday	4/6/06	9:00 AM	Mtg w/ L. Castaneda – AED on policy comp.
Thursday	4/7/25	9:00 AM 3:30 PM	Team mtg. for detailed planning Mtg. w/ G Castro – AED on protected area comp.
Friday	4/8/05	- 9:00 AM	Interviews... FODA presentation by AED team
Saturday	4/9/05	-	Preliminary team field trip to the PCW
Sunday	4/10/05	-	Rest Day (supuestamente)...
Week Three: Data collection and preliminary analysis			
Monday	4/11/05	- 7:30 AM 11:00 AM 3:00 PM 5:00 PM -	Interviews... Mtg. w/ O. Vallarino, CICH Mtg. w/ USAID on work plan Dr. L. Castro, Adm. Gen. ANAM Dr. R. Ostia – Dir. Planificación, MIDA Team Member Tschinkel arrives
Tuesday	4/12/05	- 10:00 AM 2:00 PM -	Interviews... Dr. S. Heckadon, STRI Mtg. w/ R. Ibanez, AED Other meetings to be determined
Wednesday	4/13/05	-	Field visit to Los Hules – Tinajones – Canon Quebrado “instancia de manejo integral” and watsan project sites
Thursday	4/14/05	-	Field visit to Los Hules – Tinajones – Canon Quebrado livestock and pineapple sites
Friday	4/15/05	- 7:30 AM 10:00 AM 1:00 PM -	Interviews... Fundación Natura Dra Magaly Linares, Peregrine Fund Ing. D. Ramos, IPAT Team Mtg. w/ USAID to report progress
Saturday	4/16/05	-	Team working sessions to discuss issues and opportunities seen so far and to adjust work plan if necessary
Sunday	4/17/05	-	Rest Day

Week Four: Data collection and preliminary analysis			
Monday	4/18/05	- - 12:00 noon 2:30 PM	Interviews... Team Mtg. Mtg. w/ R. Mangrich, USAID Mtg. w/ Lic. Espino, SONDEAR
Tuesday	4/19/05	- 10:00 AM 12:15 PM 3:00 PM	Interviews... Team Mtg. Mtg. W/ G. Hanily, TNC Mtg. w/ J.H. Diaz, ACP & Colleagues
Wednesday	4/20/05	- 8:00 AM 10:00 AM PM	Interviews... Mtg. w/ B. Rudert, AED Mtg. w/ R. Spadafora, USAID Team member Dodfrey arrives in Panama
Thursday	4/21/05	- 9:00 AM 10:00 AM 12:30 PM 2:30 PM	Interviews... Team Mtg. Participate in AED presentation of PNS APS 2005 Lunch w/ S. Claure, USAID Mtg. w/ Lic. V. Perez, MINSA
Friday	4/22/05	- 10:00 AM 4:00 PM -	Interviews... Mtg. w/ R. Aquilar, ACDI/VOCA Progress Reporting mtg. at USAID Team participation at CADE 2005 – Future of the Panama Canal
Saturday	4/23/05	- -	Team preparations and further development of issues & opportunities list Team participation at CADE 2005 – Future of the Panama Canal
Sunday	4/24/05	- - - -	Rest Day Team participation at CADE 2005 – Future of the Panama Canal Mtg. w/ R. Bossi, AED Presentation of first draft of Issues and Opportunities Paper to USAID & AED

Week Five: Intensive consultations on preliminary findings			
Monday	4/25/05	- 9:30 AM 11:00 AM 1:00 PM 2:30 PM 4:00 PM	Interviews... Mtg. w/ T. Chue, Watsan Consultant Mtg. at GEMAS to discuss watsan pilot Mtg. at FAS to discuss watsan pilot Mtg. w/ D. Delgado, MINSA Mtg. at USAID to discuss Issues & Opportunities paper
Tuesday	4/26/05	- 8:00 AM PM -	Consultations... Mtg. w/ ACP & CICH IR2 presentation by AED staff Discussion of Issues and Opportunities w/ AED staff
Wednesday	4/27/05	-	IR2 related field trip to Parque Nacional Soberania, including - Camino de Cruces carretera Madden - Sede Administrativo PNS (mtg. w/Norma Ponce & staff) - visit to Canopy Tower hotel site - Pipeline road trail - Gamboa Rainforest Resort for mtg. w/ Gamboa Community & Indigenous group Ella Puru - visit to Monkey Island by launch & on to Limon for mtg. w/community group & ecotourism entrepreneur

Thursday	4/28/05	- 10:30 AM 2:00 PM 3:30 PM	Team member H. Tschinkel departs for home Mtg. w/ Raul Fletcher, Municipio de Panama Mtg. w/ J.M. Perez, PRORENA Mtg. w/ R. Brown, Jefe, Servicio Forestal Nacional, ANAM
Friday	4/29/05	- 10:00 AM - 4:00 PM	Consultations Team mtg. to discuss outline of evaluation report - Team Tschinkel participating virtually in report preparation Mtg. w/ USAID to discuss progress - presentation of annotated outline of the evaluation report to USAID
Saturday	4/30/05	- - -	Reporting begins. Team mtg. to discuss drafting responsibilities of final report Team member M. Godfrey departs for home
Sunday	5/1/05	-	Rest Day

Week Six: Development of preliminary findings and draft report preparation

Monday	5/2/05	- - -	Reporting May Day Holiday Team Member Tschinkel participating virtually in report preparation
Tuesday	5/3/05	- 11:00 AM -	Reporting Mtg. w/ Directora de Patrimonio Natural ANAM Mtg. w/ various AED team members
Wednesday	5/4/05	- 2:00 PM	Reporting Mtg. w/ various AED team members
Thursday	5/5/05	- - 3:00 PM	Report Preparation Assembling draft report pieces Mtg. w/ R. Spadafora to discuss IR2
Friday	5/6/05	- - 4:00 PM	Report Preparation Mtg. w/ USAID to discuss progress Mtg. w/ Stanley Heckadon, STRI
Saturday	5/7/05	-	Report Preparation
Sunday	5/8/05	- -	Rest Day First partial draft circulated to team members

Week Seven: Draft report preparation

Monday	5/9/05	-	Report Preparation
Tuesday	5/10/05	-	Report Preparation
Wednesday	5/11/05	- 3:00 PM	Report Preparation Mtg w/ Director IDAAN
Thursday	5/12/05	- 9:00 AM	Presentation draft report to USAID Debriefing mtg. w/ USAID personnel
Friday	5/13/05	-	Team Leader departs for USA
Saturday	5/14/05	-	
Sunday	5/15/05	-	

ANNEX C: LIST OF PERSONS CONSULTED IN THE COURSE OF THIS EVALUATION

Name	Institution/Position	Contact Information
USAID Personnel		
Kermit Moh	Mission Representative- USAID/Panama	Tel. (507) 208-1010; e-mail kmoh@usaid.gov
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Rafael Ostia Rodriguez	Director Nacional, Direccion Nacional de Planificacion Sectorial, Ministerio de Desarrollo Agropecuario	Tel. (507) 207-0776; e-mail asesorias@cwpanama.net
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Kruskaya Diaz de Melgarejo	Jefa del Departamento de Areas Protegidas y Biodiversidad, ANAM	Tel. (507) 315-0869; e-mail k.melgarejo@anam.gob.pa
Norma Ponce	Directora, Parque Nacional Soberania	Tel. (507)

Name	Institution/Position	Contact Information
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Dario Delgado	Director del Subsector de Agua Potable y Alcantarillado Sanitario, MINSA	Tel. (507) 212-9131; e-mail ddelgado@minsa.gob.pa
AED Task Order Personnel		
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Personnel of Other Sector Related Organizations		
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Name	Institution/Position	Contact Information
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Marcelo de la Rosa	Gerente de Medio Ambiente, Agua y Saneamiento, Oficina Regional LAC, Louis Berger Group	Tel. (507) 317-0604; e-mail mdelarosa@louisberger.com
Jose Manuel Perez	Director, a.i., PRORENA	Tel. (507) 212-8239; e-mail perezj@tivoli.si.edu
Fernando Maduro	Ecotourism Entrepreneur, Limón	Tel. (507) 226-8375; e-mail femaduro52@gatun.com
Tomas Chue	Independent Consultant- Water and Sanitation	Tel. (507) 220-5869; cell- 617-3861; e-mail tachue@cwpnpanama.net

Pilot Project Participants met in the course of Field Trips

Meeting to discuss the Pilot Project on the “Instancia Local de Manejo Integral de Cuencas– Llanito Verde, April 13 am

Cristina Vergara	F.A.D.E.C. (a local NGO in the Tinajones watershed area)	
Maria Alonso	F.A.D.E.C. (a local NGO in the Tinajones watershed area)	Tel. (507) 244-9173
Celso Lorenzo	JAAR- Comité de Salud	Tel. (507) 625-2902
Marino Moron	Agricultura Sostenible	
Rutilia Orejuela	Agricultura Sostenible	
Juan de Dios Gonzalez	Coordinador, Proyecto “Instancia”, IDEAS-FUNDEPROVE	Tel. (507) 998-0320; e-mail ideasong@cwpnpanama.net
Milagros del C. Duarte	FUNDEPROVE	Tel. (507) 650-1864
Edna B. de Vergara	Comité Local	Tel. (507) 613-6928
Alberta de Diaz	Comité Local	Tel. (507) 244-5468
Ricardo Chiari	MIDA Region 5	Tel. (507) 253-5848
Damaso Herrera	MIDA Region 5, PMAD	Tel. (507) 680-6474
Juan de Dios Gonzalez	Coordinador, Proyecto Piloto, IDEAS-FUNDEPROVE	Tel. (507) 671-5725
Daniel Valdes	Comité Local ...	Tel. (507) 627-2203
Roberto Gutierrez Bravo	Alcalde Suplente, Alcaldía Chorera	Tel. (507) 254-2935; e-mail rogutbra@hotmail.com
Jose del Cid Murillo	Representante del Municipio	Tel. (507) 254-3227

Meeting to discuss Water and Sanitation Pilot Project in Llanito Verde, April 13 pm

Segunda Solazar	Vocal, JAAR, Cerro Cama	
Cristobalina Carrion	Vocal, JAAR, Cerro Cama	
Maria Guadalupe Padilla	Suplente de la Comité de Salud, Los Hules Abajo	Tel. (507) 646-1068
Donsi??? Rodriguez	Secretario, JAAR, Los Hules Abajo	
Itza Kenia Rodriguez	Tesorera, JAAR, Los Hules Abajo	Tel. (507) 574-0601
Gertrude de Quintero	La Colorada	Tel. (507) 428-2694
Bethzabel de Miranda	MINSA, Pro...Oeste	Tel. (507) 253-0704

Name	Institution/Position	Contact Information
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Denis Hernandez	Coordinadora, Proyecto de Agua & Sanamiento, GEMAS	Tel. (507) 270-0933; e-mail igemas@cwpanama.net
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Ricardo Javier Raymore	GEMAS (Comp. Sanitario)	Tel. (507) 671-0716; e-mail.....
Rosalino Rivera	Acueducto de Agua	Tel. (507) 635-6973
Meeting to discuss Livestock Pilot Project in Cano Quebrado		
Belinda Diaz de	FUDIS, Tecnico del Proyecto	Tel. (507) 260-3108; e-mail Cadlico@hotmail.com
Catalino Montenegro	Productor	
Prudencio Sanchez	Productor	
Viviano Sanchez	Productor	
Graciela M. Martiz	Coordinadora del Proyecto Ganaderia, FUDIS	Tel. (507) 260-3108; e-mail fudis@fudis.info
Lucas Fernandez	FUDIS, Tecnico del Proyecto	Tel. (507) 260-3108; e-mail lucas_fernandez_s@hotmail.com
Damaso Ortega	Productor, Mendoza	
Meeting to discuss Pineapple Cultivation and Conservation Pilot Project in Zanguenga		
Martin Caicido	SONDEAR, Tecnico del Proyecto	Tel. (507) 260-2880; e-mail tnspa@sinfo.net
Vidal Carrasco	Productor de Pina	
Rodolfo Florez	Productor	
Teodoro Martinez	SONDEAR, Tecnico del Proyecto	Tel. (507) 260-2880
Arial Ramos	Productor de Pina	
Maritza Jaen	Coordinadora del Proyecto Conservacion Pinera, SONDEAR	Tel. (507) 260-2880; e-mail tnspa@sinfo.net
Field Trip to Gamboa and Limon sites around Soberania National Park		
Judith Dixon	Comunidad Gamboa- Fundación Eco Gamboa	
Gladys Lanzinni	Comunidad Gamboa- Fundación Eco Gamboa	
Joel Miranda	Comunidad Gamboa- Fundación Eco Gamboa	
Rufino Hidalgo	Comunidad Gamboa- Fundación Eco Gamboa	
Julia Zarco	Comunidad Gamboa- Fundación Eco Gamboa	
Luis Cabezon	Comunidad Ella Puru (Embera)	
Agustin G.	Comunidad Ella Puru (Embera)	
Melio Tocamo	Comunidad Ella Puru (Embera)	
Rufino ...	Comunidad Ella Puru (Embera)	
Sr. Arrocha	Comunidad de Limon- Asociación Eco Turistica	
Andres Luna	Comunidad de Limon- Asociación Eco Turistica	

ANNEX D: DOCUMENTATION EVALUATION OF THE PANAMA CANAL WATERSHED STRATEGIC OBJECTIVE

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ANNEX E: NETWORK OF AGRO-ECOLOGICAL AND ENVIRONMENTAL PEASANT ORGANIZATIONS (ROCCA)

Core Leader NGOs	Project Executing NGOs	Base Community Organizations
Asociación Mujeres Siglo XXI (AMSXXI) <i>Note: voluntarily withdrew from Project in June 2002</i>	Asociación Nacional de Técnicos Forestales de Panamá	Grupo Nuevo Agricultor - Las Claras Abajo - Distrito de Capira
Asociación Panameña para la Sostenibilidad de la Agricultura y los Recursos de la Naturaleza (APASAN)	Cáritas Arquidiocesana	Sociedad San Isidro Labrador - La Honda - Distrito de Capira
Asociación para la Promoción de Nuevas Alternativas de Desarrollo (APRONAD)	Centro de Estudios y Acción Social de Panamá	Asociación de Productores San Juan de Dios - Río Indio Centro - Distrito de Capira
Asociación Producción Orgánica y Comercialización Solidaria (PROCOSOL)	Centro Empresarial de Inversión Social	Sociedad Unión Agrícola de Cirí Grande - Las Gaitas - Distrito de Capira
Centro de Desarrollo de la Mujer (CEDEM)	Centro Latinoamericano de Periodismo	Asociación Renacer Campesino - La Bonga Arriba - Distrito de Capira
Fundación Acción Social por Panamá (FAS PANAMÁ)	Colegio de Ingenieros Forestales de Panamá	Comité de Acción Solidaria - La Bonga - Distrito de Capira
Fundación para el Desarrollo Integrado Sustentable (FUDIS)	Fundación NATURA	Grupo Agroforestal de Bonga Centro - Bonga Centro - Distrito de Capira
Fundación para la Promoción de la Mujer (FUNDAMUJER)	Fundación Pro Niños del Darién	Sociedad Unión Agrícola de Cirí Grande - Arenas Blancas - Distrito de Capira
Grupo para la Educación y el Manejo Sostenible (GEMAS)	Museo de Arte Contemporáneo	Sociedad 20 de Abril - Jordanal - Distrito de Capira
Sociedad Audubon de Panamá (SAP)	Parque Natural Metropolitano	Los Compadres - Río Indio de Los Chorros - Distrito de Capira
	Patronato de la Ciudad del Niño	Grupo Despertar Campesino - Círculo Abajo - Distrito de Capira
	Patronato del Servicio Nacional de Nutrición	Asociación San Juan de Dios - Río Indio Centro - Distrito de Capira

ANNEX F: DEMONSTRATION ACTIVITIES BEING IMPLEMENTED UNDER THE PCW SO

TABLE F-1: DEMONSTRATION ACTIVITIES BEING IMPLEMENTED UNDER THE PCW SO

NGO	Project Title and Summary	USAID Contribution	Cost Share	LOP months
DEMONSTRATION ACTIVITIES				
FUDIS	<p>Silvopastoral Project and Environmental Management.</p> <p>Purpose: To promote the adoption of sustainable and replicable environmental practices in cattle ranching systems of the Los Hules—Tinajones and Caño Quebrado sub-watersheds to counteract soil erosion and to reduce contamination of the water resources.</p> <p>The accomplishment of this shall be executed through four mechanisms: a) Diagnosis and formulation of management plans for the farms; b) Establishment of cleaner production pilot farms "(FP P+L)", c) Training and dissemination of knowledge; d) Reinforcement of the local organization.</p> <p>Expected Impact:</p> <ul style="list-style-type: none"> Developed good practices of sustainable cattle ranching practices. Improved local governance through strengthening and promoting participation of stakeholders for integral watershed management. <p>Cattle ranching policy review and reform proposed by key stakeholders.</p>	\$240,000	\$57,185	24
SONDEAR	<p>Soil Management and Conservation in Pineapple Production Areas</p> <p>Purpose: To promote adequate soil management through demonstrating environmental and economic benefits of soil conservation practices, in order to ensure sustainability in pineapple production and water quality in the Los Hules-Tinajones and Caño Quebrado sub-watersheds. In order to increase efficiency, competitiveness, and agricultural sustainability, and to minimize deterioration of the natural resources. It is designed to promote policies that will be tested during the execution of the project, and which may be validated or redefined in accordance with the results.</p> <p>Expected Impact:</p> <ul style="list-style-type: none"> Developed good practices of farm planning and soil conservation in pineapple farms. Improved local governance through strengthening and promoting participation of stakeholders for integral watershed management. <p>Soil use and conservation policy review and reform proposed by key stakeholders.</p>	\$200,830	\$50,370	18
FAS/UTP	<p>Water and Sanitation, Spark of Life</p> <p>Purpose: The general purpose of this activity is to improve water and sanitation facilities in 15 communities and schools in the Rio Caño Quebrado sub-watershed and environs through community participation and strengthening community organizations</p> <p>Expected Impact:</p> <ul style="list-style-type: none"> Developed good practices of improved domestic environmental sanitation systems, hygiene and water resource protection practices. Improved environmental governance in the water and sanitation sectors by increased community participation in day to day problem solving and decision making. <p>CBOs internal regulations reviewed and improved.</p>	\$290,523	\$115,761	18

NGO	Project Title and Summary	USAID Contribution	Cost Share	LOP months
GEMAS	<p>Water, Health and Sanitation Project.</p> <p>Purpose: To improve water and sanitation facilities in the Los Hules and Tinajones sub-watershed using appropriate technologies, and to train the public and CBOs in order to guarantee maintenance of the facilities, and to educate on environmental sanitation.</p> <p>Expected Impact:</p> <ul style="list-style-type: none"> Developed good practices of improved domestic environmental sanitation systems, hygiene and water resource protection practices. Improved environmental governance in the water and sanitation sectors by increased community participation in day to day problem solving and decision making. Reviewed and improved CBOs internal regulations. 	\$396,215	\$46,130	18
FUNDICEP FADE TERRA-NOVA	<p>Implementation of Best Agricultural Practices using Agrochemicals.</p> <p>Purpose: This project will implement best agricultural practices for the safe and sustainable use of agrochemicals in pineapple producing farms in the Los Hules/Tinajones/Cano Quebrado sub-watersheds.</p> <p>Expected Impact:</p> <ul style="list-style-type: none"> Developed good practices for agrochemical use in pineapple farms. Developed an agrochemical use policy. 	\$130,709	\$36,313	18
IDEAS	<p>Sustainable Agriculture for Soil Conservation.</p> <p>Purpose: To promote new and best practices for sustainable agriculture for soil conservation in the Los Hules/Tinajones sub-watersheds.</p> <p>Expected Impact:</p> <ul style="list-style-type: none"> Developed good practices for soil conservation. Developed policy to improve coordination and cooperation among the institutions active in the area, including local committees and duly elected local authorities and local agriculture organizations. 	\$164,191	\$55,276	20
CONEP	<p>Establishment of a National Center for Clean Production.</p> <p>Purpose: The purpose of this project is to establish the first national center for clean production in Panama to improve the environmental performance of mid to small industry and small producers with emphasis in the Canal watershed. This project is in line with Panama's efforts to improve competitiveness in the productive sector and to comply with FTA industry standards.</p> <p>Expected Impact: By establishing the National Center for Clean Production, Panama will have a mechanism to promote best industrial practices that are responsive to norms and regulations of the National Environment Authority (ANAM).</p>	\$300,000	\$140,800	20
IDEAS FUNDE-PROVE	<p>Integrated Watershed Management, and Strengthening of Local Committees in Los Hules, Tinajones and Caño Quebrado Sub-watersheds.</p> <p>Purpose: This is an initiative aimed at establishing and validating a representative organization for local participants in the management of related watershed areas of the Los Hules Tinajones and Caño Quebrado rivers. Formation and operation of this consulting resource will commence by strengthening the existing Local Committees and the incorporation of regional technical elements of the state central organizations, municipal and district authorities, and regular citizens.</p> <p>Expected Impact:</p> <ul style="list-style-type: none"> Developed good practices of participation in integral sub-watershed management. 	\$189,810	\$61,650	20

NGO	Project Title and Summary	USAID Contribution	Cost Share	LOP months
	<ul style="list-style-type: none"> Local environmental governance enhanced with possibilities for replication to other sub-watersheds. 			
APRONAD	<p>Surveillance and control plan for resolving clandestine rubbish dump conflict in Los Hules-Tinajones and Caño Quebrado sub-watersheds.</p> <p>Purpose: To assess the situation of clandestine rubbish dumps and design and put into action a surveillance and control plan in order to resolve the problem with the participation of local authorities and all stakeholders. Project outcomes are:</p> <ul style="list-style-type: none"> Assessment of clandestine rubbish dumps in Los Hules- Tinajones and Caño Quebrado sub-watersheds. Surveillance and control plan designed and agreed upon by stakeholders and local authorities. Rules and regulations necessary to activate control plan developed. A local technical group has trained to implement the Plan and all institutions, authorities, communities and stakeholders are aware of the regulations. <p>Expected Impact:</p> <ul style="list-style-type: none"> Developed good practices of improved control over clandestine rubbish dumps. Improved environmental governance in the management of solid waste through involvement of all local and government stakeholders in the establishment of a control system. 	\$49,674	\$16,431	10
ANAPOR *	Clean Production technologies demonstrated in pig farms located within the pilot subwatersheds	\$150,000	\$38,000	16
CREA CATIE	Validation of new methodologies to promote best agricultural practices among farmers in Trinidad subwatershed.	\$136,180	\$32,870	14
Total		\$2,248,132	\$650,786	

TABLE F-2: DEMONSTRATION ACTIVITIES IMPLEMENTED UNDER THE COMPLEMENTARY FUND

NGO	Project Title and Summary	USAID Contribution	Cost Share	LOP months
FAS Panama	<p>To provide families within the Cirí Grande and Trinidad Sub-watersheds with improved living conditions through better domestic and environmental sanitation.</p> <p>Expected Impacts</p> <p>Developed good practices of improved environmental sanitation systems (latrines, wash water disposal systems, improved biomass stoves) and family oriented environmental sanitation education by community promoters.</p> <p>Improved local governance for promotion and improvement of environmental sanitation through building capacity in community organizations and key stakeholders, and by developing NGO, Ministry of Health and local Municipality alliances.</p>	\$165,306	\$9,432	24
FUNDECO PANAIDIS	<p>The project builds upon previous work by Aguilar & Associates. The project consists in promoting improved management of solid and liquid waste through the implementation of sound environmental technologies such as latrine construction and micro landfills at the household scale for the disposal of non-toxic inorganic solid waste and production of organic fertilizers.</p> <p>Expected Impacts</p> <p>Developed good practices of domestic waste management systems to reduce contamination of water resources.</p> <p>Improved local governance for integrated waste management through strengthening of community organizations.</p>	\$90,000	\$31,000	24
Fundación Panama	<p>To reduce contamination of surface and ground water resources by improved latrine construction, expansion of rural aqueducts and construction of micro-landfills. Population-awareness programs through educational campaigns and by training CBO members on basic sanitation.</p> <p>Expected Impacts</p> <p>Developed good practices of improved domestic environmental sanitation systems, hygiene and water resource protection practices.</p> <p>Improved local governance for promotion and improvement of environmental sanitation through strengthening community organizations</p>	\$88,025	\$62,300	12
PROCOSOL	<p>To reduce environmental contamination caused by agricultural activities, improve water quality, and strengthen the local capacity for water management in the sub-watersheds.</p> <p>Expected Impacts</p> <p>Developed good practices of agricultural techniques to reduce water contamination and soil degradation.</p> <p>Improved local governance for integrated, sustainable watershed management through capacity building of community organizations.</p>	\$112,306	\$97,126	24
APASAN	<p>Validate the use of bamboo as an alternative for the protection of the soil and as an economic alternative in substitution of “paja canalera.” Though bamboo is not a native specie of Panama, it is a native specie of Central America. Establishment and management of 20 hectares of bamboo and the development of a training program with aspects in community organization, leadership, organic agriculture; establishment of nurseries, forestry, construction and bamboo craftsmanship.</p> <p>Expected Impacts</p> <p>Developed good practices of agroforestry techniques in Bamboo production that help reduce contamination and degradation of soil and water resources in the Canal Watershed.</p> <p>Best practices of establishment of an ecologically viable income generating source by developing bamboo products and markets.</p>	\$91,047	\$49,280	24
	Total	\$546,684	\$249,138	

ANNEX G: STATUS OF IMPLEMENTATION UNDER THE AED TASK ORDER

TABLE G-1: RESULTS FRAMEWORK: PANAMA SUSTAINABLY MANAGES THE CANAL WATERSHED AND BUFFER AREAS

SO Level Indicators: ACP Contribution to GOP Budget and Water Quality Index		
Intermediate Result and Task	Expected Result	Evaluation Team's Assessment of Program Progress
Intermediate Result No. 1		
Integrated Watershed Management Demonstrated in Selected Sub-Watersheds		
Task 1.1 Incentive Fund for Demonstration of Sustainable Integrated Watershed Management.	Result 1 Select and manage at least 8 small grants to pilot projects in selected sub-watersheds.	This activity is on track to meeting its objectives by September, 2006. AED has issued nine small grants for pilot projects.
	Result 2 Good and sustainable management of a USAID grant program by ULA (Panamanian NGO) and according to USAID regulations.	Plans for AED to work with the FN to create a small grants program based on AED's were postponed. Some aspects of AED's current program will be of particular use to FN, especially establishing administrative processes to conduct regular audits and calculate and set indirect cost rates for future work with USAID. Interviews with FN personnel revealed that they are currently overwhelmed with work related to their several funding sources. This aspect of the program should be revisited by USAID and AED in close consultation with FN to identify how best to assist them. As a result of the postponement of activities neither AED nor FN will reach this result's milestones by September 20, 2006.
	Result 3 At least 6 public-private alliances established for implementation of pilot projects.	To date, the program has supported the development of public-private partnership and is helping develop five more. These PPAs provide a mechanism for sharing best practices and lessons learned with the government and the private sector, encouraging others to replicate the lessons learned in the pilot projects, and for leveraging additional support for integrated watershed management. This activity is on track to meeting its objectives by September, 2006.
	Result 4- Communication strategy for the fund designed and implemented.	This set of activities is on target and achieving the anticipated result. The team recommends improving the organization of the overall AED documentation. Making AED's documents available on AED's web site would be a cost effective means of disseminating best practices and lessons learned throughout the region and beyond.
Task 1.2 Complementary Integrated Watershed Management Projects within the PCW		AED is implementing 5 pilot projects with a total value of \$500,000. Modification 13 of the AED task order includes two pilot projects: the Darien Sustainable Livestock Project, and the Colon Waste Management activity. The Darien project is in the early stages of implementation, and given its late start date, the evaluation team doubts this pilot project will achieve its objectives and complete activities by September 2006. The Colon Waste Management project has not yet begun. The evaluation team recommends canceling the Colon project given the late start date and limited resources available to realistically address the city of Colon's sanitation problems. The evaluation team suggests that USAID replace this project with an agreement with WWF to finance the proposed Rio Tupiza Community Natural Forest Management project.

Task 1.3- Legal, Regulatory and Policy Reform and Administration of Justice for Improved Environmental Management	<p>Result 1. At least 2 amendments developed and promoted to correct deficiencies of political instruments at the local, regional and national levels.</p> <p>Result 2. At least one new regulatory instrument development and promoted to improve sustainable management of the Panama Canal Watershed</p> <p>Result 3. Actions to improve administration of justice and the application of environmental law in at least two pilot sub-watersheds.</p>	<p>AED has submitted three policy recommendations on livestock, plantation forestry and natural forests, and tertiary road construction and maintenance.</p> <p>AED has completed a proposal for payment for environmental services for a hillside livestock area within Chagres National Park.</p> <p>AED conducted a base study to analyze the administration of environmental justice in Panama. AED shared its findings with representatives of ANAM, the judiciary and the Ministry of Governance, Justice as well as with representatives of select local governments and the NGOs. As a result of their interest, AED has prepared terms of reference for how pollution cases can be adjudicated in a uniform and expeditious manner, and set aside \$400,000 to contract a consultant team to implement this activity. AED expects to get it operational during the present quarter.</p> <p>This activity is on track to meeting its objectives by September, 2006.</p>
Task 1.4 Local Governance, Planning and Land Use Regulation	<p>Result 1 Institutional strategy for sustainable management developed and implemented in at least 2 sub-watersheds.</p> <p>Result 2 Participatory decision making processes for IWM evaluated, validated and adopted as a replication model in at least 4 sub-watersheds in the PCW.</p> <p>Result 5 Create awareness and leadership among Local Management Committees and Consulting Committees on the Environment in at least 2 minor watersheds to take action on priority environment issues.</p>	<p>AED has prepared a Local Organization Watershed Management Manual for the CICH.</p> <p>The program has developed and tested the Instancia organizational model for IWM. This model supports participatory decision making for IWM. The overall complexity of this model demands considerable commitment from local people, and may be unsustainable. The evaluation team found that although the local ministry representatives are members of the Instancias, they attend meetings irregularly due to a lack of resources at the District level. The evaluation team believes that opportunities exist for synergy between these Local Committees (the Instancias) and the Public-Private Alliances that would increase the likelihood of replicating successful practices and enlist other key stakeholders in efforts to improve and integrate watershed management. Stakeholders will be more likely to adopt good practices and seize new opportunities if encouraged and supported by both the producer associations and the major ministries. Modification 13 to the AED task order directs AED to support the preparation of another set of watershed management plans. Local people interviewed in Los Hules-Tinajones and Caño Quebrado sub-watersheds expressed their interest in activities rather than more planning.</p> <p>AED has prepared an initial set of outreach materials including fact sheets, brochures, leaflets and program presentations, completed a basic environmental library, developed a knowledge management manual, and trained local NGOs in the use of this manual. The team could not determine whether these efforts were improving the awareness of environmental issues among the local management committees.</p>

Task 1.5- Environmental Monitoring and Information	AED helped the ACP and ANAM to develop a complex environmental monitoring and evaluation system for the PCW. To date, both ACP and ANAM have agreed to carry out activities related to the system's indicators. The system is ready to be implemented by the ACP/CICH, which has the best capacity to implement environmental monitoring. Once an agreement is signed regarding the transfer of this monitoring system to the ACP/CICH, AED will have met its target for this task.
This activity is on track to meeting its objectives by September, 2006.	

Intermediate Result No. 2 Environmental Management Models Developed in Selected Protected Areas		
Task 2.1- Ecotourism Pilot Project in Protected Areas	A clear vision, strategy and detailed action plan for sustainable eco-tourism activities and initiatives developed for the Soberanía National Park (SNP), including support for early implementation.	<ul style="list-style-type: none"> • AED helped ANAM staff formulate a shared vision for activities in the SNP, and organized meetings with the Sustainable Tourism and Environment Committee on the SNP. One of the greatest challenges facing the project is ANAM's declining capacity to protect the protected areas, especially the Soberanía National Park as reflected in its declining staff, equipment and infrastructure; <p>This activity appears on track to meet its objectives by September, 2006.</p>
Task 2.2- Enabling Environment for Environmentally Sound Revenue Generation in Protected Areas	<p>Result 1. Strengthened policies, regulations and environmental management to promote income generating opportunities and income for protected areas.</p> <p>Result 2. A pilot model for income generation for the management of the SNP through eco-tourism activities.</p>	<p>AED has worked with several NGOs and GOP institutions to develop recommendations for ANAM on a new draft law for protected areas.</p> <p>Program also has provided recommendations for improving the administration and collection of income for the SNP. ANAM will test a fee system in Soberanía soon, but has no means to retain these fees to improve park management and maintenance</p> <p>This activity does not appear on track to meet its objectives by September, 2006.</p>
Task 2.3- Public-Private Alliances for Development of Environmentally Sound Revenue Generation in Protected Areas	PPPs established for the promotion of ecotourism or other activites to generate income for the SNP.	Project has signed an MOU with the IDB business cluster development project to develop an Ecological Route Between Two Oceans business cluster. However, considerable uncertainty remains regarding the proposed role of the private sector as concessionaires in the protected areas, as well as how the public/private relationship would be operationalized and financed.
This activity does not appear on track to meet its objectives by September, 2006		
Task 2.4- ANAM Management of Environmentally Sound Revenue Generation in Protected Areas	ANAM management of environmentally sound revenue generation in protected areas.	AED sponsored the preparation of a sustainable tourism training plan, and trained one official on innovative financial mechanisms to guarantee financial sustainability of forests. Team concerned that GOP officials have unrealistic expectations for the financial resources that can be generated as a result of promoting "ecotourism" services within Soberanía.
This activity does not appear on track to meet its objectives by September, 2006		
Task 2.5- Incentive Fund to Improve Management of Protected Areas	An incentive fund established for financing ecotourism projects in the SNP and other protected areas and buffer zones.	AED has signed grants with the Fundación Panamá and Audubon, and prepared an Annual Program Summary to issue more grants for community-based eco-tourism activities. It is unclear how the project, by funding direct grants, will establish an incentive fund for improving the management of protected areas.

This activity does not appear on track to meet its objectives by September, 2006

The latest modification in AED's contract increases the number of tasks from 5 to 9. These modifications resulted from staffing changes in the Government and within ANAM, as well as the Mission's desire to achieve sustainability by focusing efforts on turning Soberanía National Park into a "world class ecotourism destination". It is important to note that ANAM has specified that they will carry out Tasks 2.1, 2.3 and 2.4 with their own resources. **The team doubts that the new tasks under IR 2 can be completed by September 20, 2006.**

Recommendations to avoid jeopardizing the results achieved to date:

- Continue efforts to refine ANAM's SOW to develop a sound understanding of the challenges of managing and administering Soberanía and lay the groundwork for the next strategy period.
 - Focus on one or two priority activities under the new Task 2.8 (Catalytic initiatives promote sustainable tourism activities in protected areas). Recommend eliminating the following activities: sustainable tourism certification, tourism in protected areas conference, community taxonomist initiative, poison dart frog initiative, protected area tourism forum, Panama tourist card, the Protected areas Challenges, and the PCW Protected Areas Exhibition.
 - Delete Task 2.9 and the Small Rapid Response Grants component in an effort to streamline AED's administrative and project management burden.
 - Update the Soberanía Management Plan, focusing on operational and financial challenges.
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