



USAID | PANAMA

FROM THE AMERICAN PEOPLE

ACTION MEMORANDUM FOR THE ACTING MISSION DIRECTOR

FROM: CarolJo Elron, General Development Officer *CJE*
DATE: September 17, 2012
SUBJECT: Close-out Report for Development Objective 525-004, Sustainable Management of the Panama Canal Watershed and Buffer Areas

ISSUE: Per Agency guidance, Automated Directives System (ADS) Chapter 203, Section 3, "Assessing and Learning," Development Objective (DO) teams must produce a brief close-out report for each DO that is either completed or terminated.

The intended audience for the report includes USAID development professionals and partner organizations that seek to learn from Agency experience and apply it in planning or assessing other development efforts. This close-out report summarizes USAID/Panama's overall experience in achieving expected results under DO 525-004.

Per Agency guidance, this report will be shared with the Latin America and Caribbean Bureau Program Office and the Development Experience Clearinghouse.

RECOMMENDATION: That you approve the attached close-out report.

Approved: *[Signature]*
Daniel M. Smolka, Acting Mission Director

Date: 9/17/12

Disapproved: _____
Daniel M. Smolka, Acting Mission Director

Date: _____

Attachment (1)

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CLEARANCE PAGE: Close-out Report for Development Objective 525-004, Sustainable Management of the Panama Canal Watershed and Buffer Areas

Drafted by: NVarela, PROG 9/11/2012

Clearances:

EG/ENV: Rita Spadafora: PS Date: 09/12/2012

FMO, SPatino: SP Date: 9/17/12

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USAID/Panama

Close-Out Report: Development Objective 525-004

Sustainable Management of the Panama Canal
Watershed and Buffer Areas

2012

This close-out report summarizes USAID/Panama's overall experience in achieving intended results under Development Objective (DO) 525-004 and provides references to related materials and sources of information.

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I. Development Objective Basic Identifying Information

SO Number: 525-004

DO Name: Sustainable Management of the Panama Canal Watershed and Buffer Areas

Approval Date: January 2000

Geographic Area: Panama Canal Watershed and Buffer Areas

Total Cost: \$19.5 million. DA \$19.5 million (5-year estimated budget)

Other Partner Contributions: N/A

Counterpart Contribution: Panama Canal Authority (ACP) \$2.5 million in cash; Government of Panama (GOP) institutions \$3.5 million in-kind

I. Principle Implementing Partners

Academy for Educational Development (AED), International Resources Group (IRG), Smithsonian Tropical Research Institute (STRI), Louis Berger Group, The Nature Conservancy, Association for Rural Development, Inc. (ARD), (Tetra Tech firm), *Fundación para el Desarrollo Municipal* (FUNDEMUN), Aguilar and Associates, The Peregrine Fund; Oak Ridge National Laboratory, U.S. Forest Service, Fundación NATURA, Fundación ANDE, National Society for Business and Rural Areas Development (SONDEAR), Asociación para la Conservación de la Naturaleza (ANCON), Centro Internacional para la Capacitación Ambiental (CICA), Sustainable Environmental Management Group (GEMAS)

II. Program Background and Impact Summary

Background: USAID and the Government of Panama shared a long and important working relationship to improve the management of the Panama Canal Watershed (PCW). Efforts began in the early 1970s 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 related 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 Watershed (PCW). The project increased RENARE's capacity by recruiting and training qualified professionals which resulted 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 did strengthen 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 addresses a much wider, national level range of natural resources problems 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 on 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. 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 USAID/Panama's future environmental 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 Fideicomiso Ecológico de Panamá (FIDECO)—a Conservation Trust Fund in 1991. FIDECO provided a stable source of funds for environmental management in Panama and in particular the PCW.
- Organized the Fundación NATURA to manage FIDECO, which 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.
- The Panama Canal Watershed Monitoring Project (PMCC) published an important benchmark survey in 1999 that generated new data on the status of the PCW. 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 financing to cover 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. Nonetheless, 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.

The design document for the SO 525-004 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.

During 2000–2001, activities focused on creating greater awareness and support among the Panamanian population through a series of environmental educational activities related to the Panama Canal Watershed. A baseline was developed for measuring stakeholders' knowledge and awareness of the importance of this critical watershed and its protection. An inter-institutional working group promoted a campaign for sustainable watershed management and launched a mass media program. A better trained ANAM staff successfully carried out ecotourism and interpretation models in the national parks within the watershed. A supply and demand analysis in consultation with tour operators and tourists resulted in the production of a series of promotional materials for ANAM. Environmental management plans in the buffer areas of La Chorrera, Arraijan and Capira provided a guide for decentralized natural resource management and helped identify training needs in these municipalities.

USAID provided technical assistance to the Inter-institutional Canal Watershed Commission (CICH) organizations in policy formulation, planning, capacity development, elaboration of information systems and the design of inter-institutional coordination mechanisms. USAID also supported ANAM's design and implementation of activities to monitor the status of protected areas of Panama. ANAM staff who worked in the protected areas received training on proper procedures for data collection and monitoring. Further, assistance helped strengthen municipal environmental capabilities.

To strengthen environmental NGOs for protection of the PCW, USAID implemented activities that improved the institutional capabilities of the NGO sector; developed network structures and functions; and inserted trained NGOs and their network in the participatory process of the sustainable management of the PCW. Identifying a core group of ten local NGOs based on their leadership and project management capacity left the groundwork for continued NGO involvement in the protection of the PCW. By building the capacity of civil society, NGOs were empowered to actively support the sustainable management of the PCW. In addition, the Parks in Peril Program supported an activity in the Chagres National Park that included the preparation of a conservation area plan, establishment of a coalition of environmental NGOs, the formulation of policies related to protected areas management, and the design of long-term financial mechanisms to ensure the sustainability of the program.

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. None of the communities in the targeted area had any kind of sewage collection or treatment systems. All 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 project was designed to serve 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. As a result, a strategic alliance was formed between the public and private sector including the Ministry of Health, the Institute of National Water and Sewage Systems (IDAAN), the Panama Canal Authority (ACP), Office of the Panama Mayor, the United Nations Environmental Programme (UNEP), and Cementos Mexicanos and Colgate Palmolive in the private sector, to co-finance the treatment of sewage of La Cabima. However, a change in the administration of the GOP delayed indefinitely the implementation of this pilot project.

In 2004, the activities under SO 525-004 were subsumed under the SO 525-022 Economic Freedom: An Open, Diversified and Expanding Economy in the Central America and Mexico (CAM) Regional Strategy.

Overall Impact: USAID's SO 525-004 program followed almost 30 years of support to improve the watershed's management, and focused on improving the integrated management and protection of the watershed. This program had 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 included: (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 PCW program focused on these issues.

Under Intermediate Result 1, key accomplishments included:

- Policy options developed 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;
- Coordination committees of local stakeholders organized in conjunction with the demonstration activities to facilitate participatory integrated watershed management planning and implementation;
- Agreement among the Government of Panama (GOP) agencies facilitated consensus on environmental indicators for monitoring the health of the PCW, and the assignment of responsibilities among these institutions for monitoring specific indicators;
- Wide range of communications materials related to integrated watershed management in the PCW developed, including a project website (www.aedpanama.org).
- USAID and the ACP established a \$5.0 million Incentive Fund to finance grants to local NGOs for demonstration activities in improved watershed management. The activities tested policy reform, demonstration of best

practices, and encouraged active participation of all stakeholders. This \$5.0 million Fund helped catalyzed a \$20 million loan from the Inter-American Development Bank (IDB) for watershed projects in the PCW.

Under IR 2, the most significant accomplishments were:

- Study on the strategy for developing ecotourism in the Soberania National Park completed;
- ANAM drafted a regulation for Administrative and Service Concessions in Protected Areas, which was approved;
- Panamanian Tourism Institute (IPAT) developed a national ecotourism strategy;
- “*Asociación Panamãña de Operadores de Turismo*” (APOTUR) developed a database on business activity around the park;
- Supported ANAM’s development of a Memorandum of Understanding 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 four demonstration activities that supported eco-tourism development; and
- Work in the Chagres National Park yielded several significant results.

III. Prospects for Long-term Sustainability of Impact and Principal Threats to Sustainability

Demonstration activities focused on the right choices for addressing watershed management issues in pilot sub-watersheds and the principal challenges confronting the long-term sustainable management of the Panama Canal Watershed.

The Mission and the ACP formed a strategic alliance and committed 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 significant achievement 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. USAID and the National Environmental Authority (ANAM) agreed to test new approaches to protected area management using the Chagres National Park as a co-management model and the Soberania National Park as an ecotourism model. Furthermore, a grant to The Nature Conservancy helped strengthen protected area management efforts in the Chagres National Park.

USAID helped expand understanding and support for a legal framework and practices that embody an integrated approach to the management of the PCW.

This effort supported a series of workshops and facilitated 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 PROCUENCA Project that USAID/Panama approved in April 2003. Under the PROCUENCA project, 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 – Implement environmentally sound economic opportunities in selected protected areas of the PCW.

IV. Lessons Learned for Application to other USAID Projects

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 this critical watershed.

1. Secure stable financing for sustainable watershed management and protection: The lack of sustained, adequate funding for watershed management and protection contributed to the poor state of some areas of the PCW and undermined USAID efforts to improve the management and protection of the PCW. USAID can help the GOP address this issue by: (i) working with the Panama Canal Authority (ACP) and Inter-institutional Canal Watershed Commission (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 benefits and costs for specific interventions.

2. Target water quality and sanitation programs: The Program 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 small town sanitation and its approaches to demonstrate effective sanitation management services in peri-urban areas; 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.

These demonstration activities and grants resulted in a greater sense of the economics of integrated watershed management at the sub-watershed and household/farm levels. Such analyses help inform policy reform efforts and clarify the incentives/support needed to yield long-term positive economic and environmental benefits. USAID provided 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 benefits and costs to the farmers and residents. This requires 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 underscore 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 (NATURA) and AED both provided 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. Two issues stand out regarding the approach followed by AED and NATURA in their pilot projects. First, NATURA 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 NATURA since its creation, there is little evidence that such initiatives continue to expand once funding ends. Some show promise for sustainability, but only if they receive close follow-up and oversight to address unanticipated problems that arise during project implementation. Analysis of demonstration activities should be required, as well as analyses of NATURA's

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 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 Soberania 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 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. Efforts targeted 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 was still being developed. Thus, it was too early to assess the issues this approach will face in implementation. These challenges can be best addressed 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 took 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. Assistance from USG organizations that have experience coordinating complex intergovernmental programs can benefit this process. Also, strengthening the capabilities of selected CICH member ministries like Ministry of Agricultural Development, Ministry of Health, and the Ministry of Public Works should be considered 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 Strategic Objective, involved local NGOs and local governments in the designing and implementation of 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.

Involving local stakeholders and securing local input and buy-in during the design and implementation of activities were very important. However, efforts to organize consultative councils or committees (*instancias*) resulted in the formation of overly complex organizations with a limited mandate to implement activities. Although the project successfully expanded local participation through these committees, questions remained regarding their sustainability beyond the life of the project. Many stakeholders consulted expressed less interest in the planning carried out by the committees and wanted to see more on-the-ground activities. To build upon the experiences gained, surveying the set of participants in the consultative committees is recommended 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.

V. Summary of Performance Indicators and Usefulness in Performance Management Reporting

The attached performance indicators data sheets for the initial results framework provide the descriptions, plan for data acquisition, data quality issues, plan for data analysis, review and reporting for IR 1, IR 2 and IR 4.

As the initial results framework was revised, so were the performance indicators. The new indicators included the following:

Overall Indicators

- Water Quality Index
- ACP contribution to the GOP Budget

Intermediate Results Indicators

IR 1 Integrated watershed management demonstrated in selected sub-watersheds.

Indicators: Number of demonstration projects; Amount of Financial resources leveraged.

Outcome Policies, technology and financial resources developed for replication throughout the PCW.

Outcome PCW stakeholders perform roles and responsibilities effectively

IR 2 Environmental management of protected areas upgraded.

Indicators: Park management index; Number of tourists in protected areas.

Outcome Sustainable management models for protected areas implemented

Outcome Environmentally sound economic activities in protected areas implemented.

The simplified structure of the revised results framework and the corresponding indicators improved performance management reporting and its usefulness.

VI. Significant Changes in the Results Framework

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) that were in effect until 2002:

IR 1 Institutional arrangements for effective PCW functioning

IR 2 Natural resources in the PCW and buffer areas managed effectively

IR 3 Civil society actively supporting sustainable management of the PCW

IR 4 Local government and private sector capacity for environmental management in the PCW and buffer areas increased

In early 2003, the Mission reorganized the Strategic Objective and consolidated activities around two new Intermediate Results:

IR 1 Integrated watershed management demonstrated in selected sub-watersheds

IR 2 Environmental management of protected areas upgraded

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 approaches that could serve as proof-of-concept laboratories for replicable watershed management interventions and generate field-informed findings for further policy and regulation reforms.

IR 1 combined 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 included research and testing of technologies to address water quality and supply problems.

Activities under IR 2 helped ANAM to test two different approaches for managing and protecting protected areas. In the Soberania National Park, efforts focused 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 aimed to develop a viable co-management model for protected areas that included a mix of public and private lands.

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 align activities to the new Central America and Mexico (CAM) Regional Strategy.

This revision to the Strategic Objective results framework simplified the Mission's program implementation and coordination. It led to the consolidation of the number of technical assistance instruments from 10 to 3, and the selection of Academy for Educational Development (AED) to lead this revised program effort.

VII. Evaluations, Special Studies and Performance Reports

Section 118/119 Biodiversity and Tropical Forestry Assessment of the USAID/Panama Program, Chemonics International, Inc., April 2004

Evaluation of USAID's Strategic Objective for the Panama Canal Watershed, 2000-2005, Development Alternatives, Inc., June 2005

VIII. List of Instrument Close-out Reports for Contracts, Grants and Cooperative Agreements

Institutional Support for Sustainable Environmental Management of the Panama Canal Watershed, October 1, 2002 – January 31, 2003, Final Report, International Resources Group (IRG), January 2003.

GreenCom II/Panama Canal Watershed Management Project, Final Report, Academy for Educational Development, December 2006.

Louis Berger Group, Final Report.

IX. Contact Details for Individuals Involved in Development Objective 525-004

USAID/Panama will close at the end of FY 2012.

For the initial Results Framework, Nilka Varela (IR 1), Rita Spadafora (IR 2) Nila Chu (IR 3), and Sergio Claure (IR 4) served as Activity Managers. Under the revised Results Framework, Rita Spadafora was the Activity Manager for IR1 and IR 2. Carlos Blandon was the Activity Manager for the Peregrine Fund. This staff is no longer with the Agency.

Annexes

1. Initial Results Framework for DO 525-004, January 2000
2. Revised Results Framework for DO 525-004, 2003
3. Performance Indicator Reference Sheets, DO 525-004, 2002

Ref. Close-out Report Development Objective 525-004, Sustainable Management of Panama Canal Watershed and Buffer Areas

Drafted by: MFrancis, USAID/El Salvador, date 1/18/2012; NVarela, PROG revised 9/10/2012

Clearances:

EG/ENV: RSpadafora Date 9/12/2012

FMO: SPatino SP Date 9/17/2012

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Results Framework for Strategic Objective (SO), 2000-2006



SUSTAINABLE MANAGEMENT OF THE CANAL WATERSHED AND BUFFER AREAS

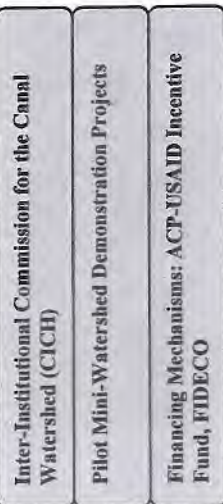
Indicators:

- Ind 1: Percentage of PCW and reverted territories used in accordance with the regional and general land use plans of Law 21.
- Ind 2A: Number of institutional responsibilities that PCW residents can correctly match with the government institution.
- Ind 2B: Number of institutional responsibilities that mid-level employees can correctly match with the government institution.

PCW Development Context:

- Only 47% forest cover remains in the Eastern Region of PCW.
- Population growth rate in some areas of the Watershed exceeds 15% annually. 80% of the PCW population resides along the Trans-Isthmian Corridor. Population growth along the Pan-American Highway bordering the Watershed approaching a magnitude of five times the national rate.
- Water quality degraded during the last 20 years due to population growth, increase in pathogens with a threat to human health and increasing aquatic vegetation posing problems for Canal navigation.
- 12% of all U.S. ocean-going cargo transits the Canal.

Strategic Mechanisms:



Critical Assumptions:

- GOP is committed to manage and conserve the PCW in accordance with laws 19, 21, and 41.
- Funding levels for GOP counterpart institutions are sufficient to complement the SO program.

Intermediate Results

Intermediate Result 1 Institutional Arrangements for Effective Management Functioning

Indicators:

- Number of actions taken by CICW

CICW operating effectively

Legal framework (Law 21 regulations) developed and implemented

Intermediate Result 2 Natural Resources Effectively Managed

Indicators:

- Average score of "Index for Performance Monitoring of Protected Areas"
- Percentage of PCW residents surveyed who report receiving income from ecotourism activities

Management standards of protected areas upgraded

Environmentally friendly income-generating activities developed

Intermediate Result 3 Sustainable Management of PCW Supported by Civil Society

Indicators:

- Average score for outreach capacity met by targeted NGOs

Sustainability of civil society NGOs to advocate for PCW protection improved

Civil society capacity to mobilize resources and impact strategic issues improved

Intermediate Result 4 Local Governmental Management Increased

Indicators:

- Number of local governments that have environmental action plans

Local environmental and land-use planning and implementation improved

Local solid and liquid waste services in targeted areas improved

Activity Types

- Training to CICW secretariat
- TA to CICW to design environmental education strategy
- TA to CICW/CTP to encourage public participation in developing regulations
- TA to CICW for integrated watershed pilots
- Investments
- TA to ANAM to develop signs and for environmental interpretation
- Design and produce external marketing materials for ecotourism for ANAM
- TA to ANAM to develop ecotourism activities
- Long-term training to build capacity of NGOs to promote the PCW
- TA to NGOs to design environmental projects and environmental materials
- TA to municipalities to design local environmental plans
- TA to municipalities on liquid and solid waste
- TA to improve municipalities' capacity for environmental education
- Reforestation activities with children

Results Framework for Strategic Objective (SO), 2000-2006



PANAMA SUSTAINABLY MANAGES THE CANAL WATERSHED AND BUFFER AREAS

SO Indicators:
Indicator 1: Water quality index
Indicator 2: ACP contribution to GOP budget

PCW Development Context:

- Only 47% forest cover remains in the Eastern Region of PCW.
- Population growth rate in some areas of the Watershed exceeds 15% annually. 80% of the PCW population resides along the Trans-Isthmian Corridor. Population growth along the Pan-American Highway bordering the Watershed approaching a magnitude of five times the national rate.
- Water quality degraded during the last 20 years due to population growth, increase in pathogens with a threat to human health and increasing aquatic vegetation posing problems for Canal navigation.
- 12% of all U.S. ocean-going cargo transits the Canal.

Strategic Mechanisms:

Inter-Institutional Commission for the Canal Watershed (CICH)

Financing Mechanisms: ACP-USAID Incentive Fund, FIDECO, and TFCA

Critical Assumptions:

- GOP defines PCW designated purposes.
- GOP is committed to manage and conserve the PCW in accordance with existing laws.
- Funding levels for GOP counterpart institutions are sufficient to complement this program.

Intermediate Results

Intermediate Result 1
Integrated Watershed Management Demonstrated in Selected Sub-Watersheds

IR Indicators:
-Number of demonstration activities
-Amount of financial resources leveraged

Intermediate Result 2
Environmental Management of Protected Areas Upgraded

IR Indicators:
-Park management index
-Number of tourists in protected areas

Key Outcomes

Policies, Technology, and Financial Resources Developed for Replication throughout the PCW

PCW Stakeholders Perform Roles and Responsibilities Effectively

Environmentally Sound Economic Activities in Protected Areas Implemented

Sustainable Management Models for Protected Areas Implemented

Illustrative Activities

- TA for development of sound policies at local level
- TA to develop stable funding sources
- TA to promote the use or adoption of environmentally-friendly technology
- TA, training, and funding to implement demonstration activities in sub-watersheds

- TA to develop common vision and mission for integrated management of PCW
- TA and training to improve stakeholders capacity to perform defined roles and responsibilities in the PCW
- Dissemination of lessons learned for replications in other sub-watersheds

- TA to build on-site basic capacity to ensure adequate protection and management of PAs
- TA to develop long-term financial sources and mechanisms
- TA to integrate effectively local population and stakeholders in site conservation and management

- TA to develop sustainable eco-tourism activities with public-private alliances
- Dissemination of lessons learned for replication in other protected areas

Performance Indicator Reference Sheet	
Strategic Objective: Panama Sustainably Manages the Canal Watershed and Buffer Areas	
Intermediate Result: N/A	
OVERALL INDICATOR No. 1: Percent of the Eastern Region of the PCW and reverted territories used in accordance with the Regional and General Land Use Plans of Law 21	
DESCRIPTION	
Precise Definition(s): ▪ "Eastern Region of the Watershed" refers to the 339,649 hectares area currently producing water for Canal operations. ▪ "Reverted territories" is defined as the area formerly under the control and of the United States (also formerly known as the Canal Zone) and turned over to Panama effectively as of December 31, 1999. ▪ "In accordance with the Regional and General Land Use Plans" means that the land is being used for the purpose (such as industrial, residential, agricultural, ranching, or protected forest) provided by the relevant land-use plan. The specific categories are defined by ARI for the Regional and General Land Use plans.	
Unit of Measure: Percent of land area	
Disaggregated by: n/a	
Criteria for Milestone or Index: n/a	
Justification: Land use (and the consistency of land use with planning) indicates the results at the SO level because land use is a reflection of how the PCW is being environmentally managed. Appropriate land use is one of the expected results from USAID training and technical assistance to municipal and other government units responsible for environmental management in conjunction with other stakeholders. Management Utility: An increase in this indicator means that the PCW is increasingly being managed in a sustainable manner—in accordance with Law 21.	
PLAN FOR DATA ACQUISITION BY USAID	
Data Collection Method: 1. ACP takes and analyzes satellite photographs of the PCW to determine how each hectare is used. 2. ACP verifies data in the field by ground truthing 3. ACP compares the actual land use data with the intended land use according to the Regional and Local Plans (Law 21). Note: The 1997 Consorcio InterCarib, S.A./Nathan Associates Inc. study was done for ARI with funding from the Inter-American Bank (IDB). The ACP is funding the 2001 study.	
Method of Acquisition by USAID: USAID is a user, not producer of this data. USAID will request the data from ACP via the CICH.	
Data Source(s): ACP (current land use) and ARI (regional and general plans)	
Frequency/Timing of Data Acquisition: A baseline was developed in 1997. ACP took a new set of satellite photographs and will complete study in August 2002. The study will not be repeated again until 2006 because of the high costs involved in satellite photography and land verification.	
Estimated Cost of Data Acquisition: ACP is funding the study and will share data.	
Responsible Individual(s) at USAID: Sergio Claure, Senior Water Resources Specialist	
DATA QUALITY ISSUES	
Date of Initial Data Quality Assessment: Baseline developed in 97 based on ARI/Nathan Consultants	
Known Data Limitations, Significance, and Actions Planned:	
1. Limitation: Cloud cover limits the accuracy of satellite photography. Action: The ACP plans to verify the data from the photographs with data from field visits on the ground.	
Date of Future Data Quality Assessments: August 2002	
Procedures for Future Data Quality Assessments: In August 2002 USAID plans to critically review the data from ACP: - International standards for quality of satellite photography - On-the-ground verification coverage	

PLAN FOR DATA ANALYSIS, REVIEW, & REPORTING**Data Analysis:** USAID will compare the data from ACP with the 1997 baseline.**Presentation of Data:** ACP will present study in August 2002.**Review of Data:** August 2002 by SO team and adjust future targets as necessary**Reporting of Data:** Portfolio Reviews**OTHER NOTES****Notes on Baselines/Targets:**

- The baseline was set by the 1997 Regional and General Land Use study.
- USAID set target values on the basis of Law 21, which stipulated 20 years to reach full compliance. Incremental targets were set of approximately 2% increase in compliance per year.
- Given pressures to develop new housing, industrial uses and lack of incentives for reforestation and reduction of cattle grazing, data may reflect decrease in conformance. Therefore, it is unlikely that targets will be met.
- Indicator values for 1998 and 2002 are based on photographs taken in 1997 and 2001.

Location of Data Storage: Panama Canal Authority (ACP) Remote Sensing Unit, data shared with USAID**Other:** None**PERFORMANCE INDICATOR VALUES**

Year	Target	Actual	Notes
1997		55%	Study conducted by Consorcio Intercarib, S.A. and Nathan Associates, Inc. with IDB financing.
2000	63%	63% (E)	(E) Estimate based on administrative decisions to re-allocate reverted territories. Source: ARI
2001			To be reported by Aug 2002 based on ACP study for year 2001
2006	75% (E)		Based on set incremental target of approximately 2% in compliance per year

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Performance Indicator Reference Sheet	
Strategic Objective: Panama Sustainably Manages the Canal Watershed and Buffer Areas	
Intermediate Result: N/A	
Overall Indicator No. 2A: Number of institutional responsibilities that PCW residents can correctly match with the government institution	
DESCRIPTION	
Precise Definition(s): Institutional responsibilities means 12 aspects defined by USAID as critical for a sustainable PCW management (i.e., solid waste collection, management of protected areas and safeguarding of water quality among others). Specifically, this indicator counts number of times survey respondents correctly answered the question: "which government institution is responsible for...?".	
Unit of Measure: Average number of responsibilities (0 = minimum, 12 = maximum)	
Disaggregated by: n/a	
Criteria for Milestone or Index: n/a	
Justification/Management Utility: An increase in the indicator means more people have an awareness and understanding of the role and responsibility of the different government agency functions in the PCW. We assume that increased awareness will lead to more demand for the public services and increased accountability of government agencies.	
PLAN FOR DATA ACQUISITION BY USAID	
Data Collection Method: An interview is administered by the Academy of Educational Development/GreenCOM to a scientifically selected random sample of 500 residents of the PCW. This number represents 0.25% of the 200,000 inhabitants of the PCW according to the year 2000 census, and gives a +5% of error margin. Each interviewee is chosen from a different, randomly selected census district, as defined for the 2000 Census. No person previously surveyed is included in the subsequent year sample. AED contracts local firm to administer survey. Trained interviewers provided by the local contractor administer the survey. It includes 12 questions about institutional responsibilities and approximately 40-50 additional questions, which can vary each year according to USAID needs to plan or evaluate specific programs.	
Method of Acquisition by USAID: Survey report submitted to USAID by the Academy of Educational Development (AED).	
Data Source(s): AED subcontracts local firm to administer the survey to the 500 PCW residents.	
Frequency/Timing of Data Acquisition: Annually, in January	
Estimated Cost of Data Acquisition: \$15,000, included in the Academy for Educational Development, an on-going USAID funded activity	
Responsible Individual(s) at USAID: Gerald Bauer, CTO	
DATA QUALITY ISSUES	
Date of Initial Data Quality Assessment: January 2002 by "Centro de Estudios Latinoamericanos" (CELA)	
Known Data Limitations and Significance: Due to no clear limits between responsibilities of the agencies in the PCW, there is an overlap of institutional roles. Listing various institutions for the same responsibility is considered to be an incorrect response in the data collection. The numbers may be lower than expected.	
Actions Taken or Planned to Address Data Limitations: Questionnaires for the 2003 survey will specify that only one institution can be named for each responsibility.	
Date of Future Data Quality Assessments: February 2003	
Procedures for Future Data Quality Assessments: Starting in 2003, USAID/Panama's contractor will analyze annually the data and data collection procedures and identify other limitations.	

PLAN FOR DATA ANALYSIS, REVIEW, & REPORTING			
Data Analysis: Comparison of past and current years.			
Presentation of Data: USAID contractor will present a written report in English and Spanish, including tables and graphs, summarizing all survey questions.			
Review of Data: SO Team reviews report and gives feedback to Academy for Educational Development.			
Reporting of Data: Portfolio Reviews			
OTHER NOTES			
Notes on Baselines/Targets: Baseline set from year 2000 survey. Targets set based on empirical assumption that changes will occur over time in small increments. After five years of surveys, longer-term assumptions can be made to adjust targets to more scientific data.			
Location of Data Storage: Academy for Educational Development (AED)/GreenCOM report to USAID			
Other: none			
PERFORMANCE INDICATOR VALUES			
Year	Target	Actual	Notes
2000		4.0 (34%)	Baseline
2001	4.5 (38%)	4.5 (38%)	Source: GreenCOM Program/AED 2001 Survey
2002	5.0 (42%)		
2003	5.4 (45%)		
2004	6.0 (50%)		
2005	6.0 (50%)		
2006	6.0 (50%)		
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Performance Indicator Reference Sheet	
Strategic Objective: Panama Sustainably Manages the Canal Watershed and Buffer Areas	
Intermediate Result: N/A	
Overall Indicator No. 2B: Number of institutional responsibilities that mid-level employees can correctly match with the government institution	
DESCRIPTION	
Precise Definition(s):	
▪ Institutional responsibilities means 12 aspects defined by USAID as critical for a sustainable PCW management (i.e., solid waste collection, management of protected areas and safeguarding of water quality, among others). Specifically, this indicator counts number of times survey respondents correctly answered the question: "which government institution is responsible for...?" ▪ Mid-level employees are those who function as the head of a department or unit when the head of this department or unit is absent. This applies to the central and regional offices of the institutional members of the CICH. ▪ The CICH, Inter-institutional Commission for the PCW, is conformed by six government agencies (PCA, ARI, MIDA, ANAM, MIVI, Gobierno y Justicia) and two non-governmental organizations (Caritas and Fundacion NATURA)	
Unit of Measure: Average number of responsibilities (0 = minimum, 12 = maximum)	
Disaggregated by: n/a	
Criteria for Milestone or Index: n/a	
Justification/Management Utility: This indicator reflects how the institutions are aware of their responsibilities regarding the different variables of the management of the PCW. It gives to USAID a monitoring of the achievements of its institutional development goals. We chose to measure mid-level employees because this job level offers more likelihood of stability.	
PLAN FOR DATA ACQUISITION BY USAID	
Data Collection Method: AED administers a written questionnaire in each institution, to staff identified as mid-level employees by the directors of their units potentially involved, directly or indirectly, in PCW management. The number of these mid-level employees, selected by the directors, totaled 150 interviewees.	
Method of Acquisition by USAID: USAID contractor compiled survey analysis report	
Data Source(s): Questionnaire Survey	
Frequency/Timing of Data Acquisition: Annually, in January	
Estimated Cost of Data Acquisition: \$15,000, included in the Academy for Educational Development contract, an on-going USAID funded activity	
Responsible Individual(s) at USAID: Gerald Bauer, CTO	
DATA QUALITY ISSUES	
Date of Initial Data Quality Assessment: January 2002 by "Centro de Estudios Latinoamericanos" (CELA)	
Known Data Limitations and Significance (if any): Institutional mandates overlap. Listing various institutions for the same responsibility is considered to be an incorrect response in the data collection. The numbers may be lower than expected. Lessons learned from the previous year's questionnaire, tempered by inconsistency in participation from year to year due to staff turnover or unavoidable absences.	
Actions Taken or Planned to Address Data Limitations: The questionnaire for the 2003 Survey will specify that only one institution for each responsibility can be identified. Efforts are made to interview the same employees if they are still employed in the same position.	
Date of Future Data Quality Assessments: February 2003	
Procedures for Future Data Quality Assessments: Starting in 2003, USAID contractor will analyze the data and data collection procedures and will identify further limitations.	
PLAN FOR DATA ANALYSIS, REVIEW, & REPORTING	
Data Analysis: Comparison of past and present years	

Presentation of Data: USAID contractor will present a written report in English and Spanish, including tables and graphs, summarizing all survey questions.

Review of Data: SO Team reviews report and gives feedback to Academy for Educational Development

Reporting of Data: Portfolio Reviews

OTHER NOTES

Notes on Baselines/Targets: Baseline set from year 2000 Survey. Targets set based on empirical assumption that changes will occur over time in small increments. After five years of surveys, longer-term assumptions can be made to adjust targets to more scientific data.

Location of Data Storage: Academy for Educational Development (AED), report to USAID

Other: None

PERFORMANCE INDICATOR VALUES

Year	Target	Actual	Notes
2000		7.7 (64%)	Baseline
2001	8.2 (68%)	8.3 (69.5%)	Source: GreenCOM Program/AED, 2001 Survey
2002	8.6 (72%)		
2003	8.6 (72%)		
2004	9.6 (80%)		
2005	9.6 (80%)		
2006	9.6 (80%)		

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Performance Indicator Reference Sheet	
Strategic Objective: Panama Sustainably Manages the Canal Watershed and Buffer Areas	
Intermediate Result: IR-1, Institutional Arrangements for Effective Management Functioning	
Indicator 1.1: Number of actions taken by CICH	
DESCRIPTION	
Precise Definition(s): Action means <i>approvals</i> by CICH Commissioners of <i>policy or programmatic recommendations</i> proposed by the Permanent Technical Committee that <i>contribute to the establishment of a permanent system of integrated watershed management</i>. Examples do include action plans, strategies, and projects. In some cases (such as inter-institutional agreements among some of the CICH member institutions, i.e., the PCA-ANAM Monitoring Protocol), not all of the CICH Commissioners need to approve the recommendation(s). Examples do not include number of meetings convened, number of press releases issued, budget decisions made or personnel actions taken.	
Unit of Measure: Number of actions	
Disaggregated by: n/a	
Criteria for Milestone or Index: n/a	
Justification: Provides objective and cost-effective performance measurement of progress in establishing the processes for consultation although it does not capture the implementation phase and the effect of policies. Management Utility: Approval of policy and programmatic recommendations signals that CICH is functioning in its role to coordinate and oversee activities in the PCW and achieving consensus amongst stakeholders. An increase in the number of actions shows that the mechanisms for government institutions and other entities to reach consensus are progressively improving.	
PLAN FOR DATA ACQUISITION BY USAID	
Data Collection Method: Implementing contractor collects the data on approvals by CICH Commissioners from Minutes of Meetings	
Method of Acquisition by USAID: Contractor Progress Reports	
Data Source(s): CICH and contractor	
Frequency/Timing of Data Acquisition: Annual, January for the previous CY	
Estimated Cost of Data Acquisition: \$3,000, included in the International Resources Group Task Order, an on-going USAID funded activity	
Responsible Individual(s) at USAID: Nilka Varela, CTO and IR-1 Team Leader	
DATA QUALITY ISSUES	
Date of Initial Data Quality Assessment: February 2001	
Known Data Limitations and Significance (if any): Lack of an appropriate methodology could take away measurement objectivity. Not all the quality standards would be met.	
Actions Taken or Planned to Address Data Limitations: Pre-established parameters (boundaries or limits) will set the range and type of actions reported. A year-by-year analysis of criteria used in the selection of the number of actions will be presented.	
Date of Future Data Quality Assessments: February 2002	
Procedures for Future Data Quality Assessments: Spot checks of data by CTO	
PLAN FOR DATA ANALYSIS, REVIEW, & REPORTING	
Data Analysis: USAID IR-1 Team Leader and CICH Executive Secretary will review the official minutes of meetings at the Commissioners' level to determine what actions were taken during the reporting period.	
Presentation of Data: Summary Abstract from Minutes of Meetings	
Review of Data: SO, IR-1 Team	
Reporting of Data: Portfolio Reviews	
OTHER NOTES	
Notes on Baselines/Targets: CICH was established in CY 2000 therefore there were no actions taken by this coordinating body prior to CY2000.	

Location of Data Storage: USAID, Office of Sustainable Development, SO/IR-1 Files			
Other:			
PERFORMANCE INDICATOR VALUES			
Year	Target	Actual	Notes
2000	3	3	CICH held 7 meetings and minutes were produced for all of these. Three actions were taken by CICH: (1) Establishment of a Permanent Technical Committee (PTC), (2) Approval of CICH internal operating procedures, and (3) Signing of Inter-Institutional Agreement between Ministry of Agriculture (MIDA) and the Panama Canal Authority (ACP) on land titling.
2001	5	5	CICH Report on Goals and Achievements for 2001. The following key actions were taken by CICH: (1) Inter-Institutional ANAM-ACP Agreement on PCW Monitoring Program, (2) Expansion of the Permanent Technical Committee to include Ministry of Health, Ministry of Commerce and Industry, Ministry of Public Works, Ministry of Education, Social Investment Fund and the National Sewerage and Aqueducts Institute, (3) Environmental Information Data Center (CIAC) for the PCW established in the CICH, (4) Base document of draft bill of the regulations of Law 21 was developed under the leadership of three CICH member institutions (Inter-Oceanic Regional Authority (ARI), Ministry of Housing (MIVI) and Ministry of Agriculture (MIDA)), (5) CIAC designed draft of web page for the CICH and presented it to the Permanent Technical Committee (CTP) for review.
2002	8		
2003	10		
2004	12		
2005	15		
2006	18		
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Performance Indicator Reference Sheet	
Strategic Objective: Panama Sustainably Manages the Canal Watershed and Buffer Areas	
Intermediate Result: IR-2, Natural Resources and Buffer Areas Managed Effectively	
Indicator 2.1: Average score of "Index for Performance Monitoring of Protected Areas"	
DESCRIPTION	
Precise Definition(s):	
The "Index for Performance Monitoring of Protected Areas" means, in this context for USAID/Panama, a subset of five parameters from the composite index "Sistema de Monitoreo" for performance monitoring of management activities in protected areas. The five parameters are: (1) public participation of stakeholders, 2) acquisition of equipment necessary for management of protected areas, 3) staffing of protected area, 4) whether an updated management plan is in place, and 5) whether a long-term financial plan is in place. The individual scores for these five parameters are averaged and reported together in this indicator. Detailed information about the parameters can be obtained at the ANAM Office of Monitoring for Protected Areas. Background: The "Sistema de Monitoreo" is used in USAID programs in many Central American (CA) countries, with modifications specific to each country. It has been developed by all CA Environmental Ministries with technical and financial support from USAID, The Nature Conservancy, Central American Commission for Environment, and the International Union for Conservation of Nature. The Index is composed of 35 parameters (which measure minimum protection, long-term management, long-term financing, and public participation). Although other countries may report the average score for all 35 parameters, USAID/Panama is only tracking a subset of 5 parameters in this indicator.	
Unit of Measure: Average Index Score (minimum = 1, maximum = 5) (0-100%)	
Disaggregated by: Each Protected Area (currently 6)	
Criteria for Milestone or Index: The methodology and criteria for the full "Index for Performance Monitoring of Protected Areas" can be found in the technical report "Estrategias para el monitoreo del manejo de areas protegidas de centroamerica" by Jose Courrau, 1999, for The Nature Conservancy.	
Justification: In order to simplify the index for USAID/Panama reporting purposes, it was determined that a subset of the 35 parameters would be chosen. ANAM staff selects, with technical assistance from TNC, a subset of five parameters. This subset is expected to measure more effectively progress in the management of protected areas (PA).	
Management Utility: This index assists the protected area manager in understanding the strengths and weaknesses of management. The data will be used by ANAM to assist with making future budget allocations and other management decisions. An increase in the value of this indicator will demonstrate that more efficient and effective management is taking place.	
PLAN FOR DATA ACQUISITION BY USAID	
Data Collection Method:	
1. The ANAM/FIDECO Project Director, with assistance from each park manager and staff, collects data through structured interviews and provides final scores using agency reports on each park. 2. For more information on methodology refer to Jose Courrau Report mentioned above.	
Method of Acquisition by USAID: ANAM/FIDECO Report	
Data Source(s): ANAM, FIDECO	
Frequency/Timing of Data Acquisition: Annually, June	
Estimated Cost of Data Acquisition: \$15,000, ANAM collects data and shares it with USAID.	
Responsible Individual(s) at USAID: G. Bauer, CTO	
DATA QUALITY ISSUES	
Date of Initial Data Quality Assessment: February 2002, ANAM	

Known Data Limitations and Significance (if any): none			
Actions Taken or Planned to Address Data Limitations: none			
Date of Future Data Quality Assessments: June 2002			
Procedures for Future Data Quality Assessments: Spot checks and site visits by CTO			
PLAN FOR DATA ANALYSIS, REVIEW, & REPORTING			
Data Analysis: Data will be analyzed to determine weakness and strengths in each protected area, which will help USAID/Panama focus future technical assistance.			
Presentation of Data: Text data sheet showing results			
Review of Data: IR-2 Team			
Reporting of Data: Portfolio Reviews			
OTHER NOTES			
Notes on Baselines/Targets: New baseline/targets TBD in June 02.			
Location of Data Storage: An electronic database has been installed at the "Sistema Nacional de Areas Protegidas de Panama", "Sistema de Monitoreo", National Environment Authority (ANAM) has been installed to store and analyze data.			
Other: none			
PERFORMANCE INDICATOR VALUES			
Year	Target	Actual	Notes
2001		49% (Jun/Dec 01)	New targets TBD (%) in June 2002, upon completion of first year of data compilation, based on the five selected criteria
2002	TBD		
2003	TBD		
2004	TBD		
2005	TBD		
2006	TBD		
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Performance Indicator Reference Sheet	
Strategic Objective: Panama Sustainably Manages the Canal Watershed and Buffer Areas	
Intermediate Result: IR-2, Natural Resources and Buffer Areas Managed Effectively	
Indicator 2.2: Percentage of PCW residents surveyed who report receiving income from ecotourism activities	
DESCRIPTION	
Precise Definition(s):	
▪ Ecotourism activities mean "responsible travel to natural areas that conserves the environment and sustains the well-being of local people". ▪ Income means any financial benefit the resident reported receiving.	
Unit of Measure: Percentage of residents	
Disaggregated by: Gender	
Criteria for Milestone or Index: n/a	
Justification/Management Utility: Simple straightforward means of measuring results. As ecotourism activities in the PCW increase, it is assumed that the number (percentage) of people in the watershed who will derive income from ecotourism related activities will increase.	
PLAN FOR DATA ACQUISITION BY USAID	
Data Collection Method: An interview is administered by AED to a scientifically selected random sample of 500 residents of the PCW.	
Method of Acquisition by USAID: Contractor Report	
Data Source(s): Local communities	
Frequency/Timing of Data Acquisition: Annually, January	
Estimated Cost of Data Acquisition: \$20,000, included in the Academy for Educational Development contract, an ongoing USAID funded activity	
Responsible Individual(s) at USAID: Gerald Bauer, CTO and IR-2 Team Leader	
DATA QUALITY ISSUES	
Date of Initial Data Quality Assessment: January 2000 Report from AED/GreenCOM to USAID	
Known Data Limitations and Significance (if any): Survey is limited in scope thus underreporting may occur. Some residents may not desire to report income generated to survey, also leading to underreporting.	
Actions Taken or Planned to Address Data Limitations: In future investigations, observation of new business related to ecotourism in the watershed will be used for measuring impact.	
Date of Future Data Quality Assessments: Annually, January	
Procedures for Future Data Quality Assessments: Spot checks and site visits by CTO. Evaluate survey instrument and determine if more questions or different questions need to be asked. AED/GreenCOM to review and report to USAID Panama.	
PLAN FOR DATA ANALYSIS, REVIEW, & REPORTING	
Data Analysis: Data will be collected through local contract or thru ongoing USAID contractor on an annual basis	
Presentation of Data: Text data sheet showing results	
Review of Data: SO, IR-2 Team	
Reporting of Data: Portfolio Reviews	
OTHER NOTES	
Notes on Baselines/Targets: New baseline in year 2003 after 2 years of collection of data	
Location of Data Storage: Academy for Educational Development (AED), Report to USAID	

Other: The data table reflects new baseline and target values resulting from a survey of stakeholders improved in response to concerns from USAID-Washington as well as from within USAID-Panama about the 1998 indicator measurement. The new indicator measurement is more reliable, more repeatable, more representative of our program, simpler, and less costly to measure. It will provide an efficient way of assessing changes in attitudes and practices of PCW stakeholders throughout the life of the Strategy.

PERFORMANCE INDICATOR VALUES			
Year	Target	Actual	Notes
2000		2.6	Baseline
2001	3.9	1.8	Report to USAID by AED/GreenCOM
2002	5.2		
2003	6.5		
2004	7.8		
2005	9.1		
2006	10.4		

Year	Target	Actual	Notes
2000		2.6	Baseline
2001	3.9	1.8	Report to USAID by AED/GreenCOM
2002	5.2		
2003	6.5		
2004	7.8		
2005	9.1		
2006	10.4		

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Performance Indicator Reference Sheet	
Strategic Objective: Panama Sustainably Manages the Canal Watershed and Buffer Areas	
Intermediate Result: IR-4, Local Government Capacity for Environmental Management in PCW and Buffer Areas Increased	
Indicator 4.1: Number of local governments that have environmental action plans	
DESCRIPTION	
Precise Definition(s):	
▪ "Environmental plans" is defined as plans with environmental programs and projects that are in conformance with land uses outlined in the Regional and General Plans. These environmental plans may be part of an overall strategic development plan for the district. Environmental action plans are those produced with the active participation of local government officials or formally adopted by the Municipality's Consejo Municipal. ▪ "Local governments" are defined as the "corregimientos" that form part of the municipalities of Capira, La Chorrera, Arraijan, Panama and Colon that are partially or totally within the Eastern Region of the Watershed.	
Unit of Measure: Number of local governments having environmental action plans (Minimum = 0, maximum = 33)	
Disaggregated by: n/a	
Criteria for Milestone or Index: n/a	
Justification/Management Utility: An increased number of plans is a measurement tool to gauge the effectiveness of sound democracy and good governance at the lowest local government level and are indicative of increased sound environmental management in the PCW.	
PLAN FOR DATA ACQUISITION BY USAID	
Data Collection Method: Direct collection from USAID contractor and grantee	
Method of Acquisition by USAID: Contractor and grantee reports	
Data Source(s): Local government decrees, promulgated environmental plans	
Frequency/Timing of Data Acquisition: At a minimum, annually in December.	
Estimated Cost of Data Acquisition: \$5,000, part of on-going USAID funded activities	
Responsible Individual(s) at USAID: Sergio Claire, CTO and IR-4 Team Leader	
DATA QUALITY ISSUES	
Date of Initial Data Quality Assessment: 1999	
Known Data Limitations and Significance (if any): Because environmental offices or plans may develop independently of USAID Panama assistance, reports from USAID Panama contractors and collaborators may not include all plans or offices. Conversely, contractor and collaborator reports may overstate achievements of their program of local government.	
Actions Taken or Planned to Address Data Limitations: Frequent contact between USAID staff, designated contractors, and local government will ensure good data quality.	
Date of Future Data Quality Assessments: March 2003	
Procedures for Future Data Quality Assessments: Spot checks and site visits by CTO	
PLAN FOR DATA ANALYSIS, REVIEW, & REPORTING	
Data Analysis: Comparison of past and current years performed by designated contractors	
Presentation of Data: Report/Presentations	
Review of Data: SO, IR-4 Team	
Reporting of Data: Portfolio Reviews	
OTHER NOTES	
Notes on Baselines/Targets: New quality assessment will be done in 2003 and baseline/targets will be adjusted, as necessary.	
Location of Data Storage: Contractors and grantees, report to USAID	
Other: None	
PERFORMANCE INDICATOR VALUES	

Year	Target	Actual	Notes
1999 baseline		1	At the end of 1999, the Corregimiento of Chilibre had an environmental plan that conformed with the Regional Plan.
2000	4	5	Four additional "corregimientos" finalized environmental plans: Buena Vista, San Juan, Limon and Nueva Providencia.
2001	8	6	The Corregimiento of Escobal finished their environmental plan in January 2001.
2002	10		
2003	12		
2004	14		
2005	16		
2006	18		
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