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ON A

GRANT

IN THE AMOUNT OF US 5.0 MILLION

TO THE

REPUBLIC OF EL SALVADOR

FOR A

PROTECTED AREAS CONSOLIDATION AND ADMINISTRATION PROJECT

December 26, 2012

Sustainable Development Department
Central America Country Management Unit
Latin America and the Caribbean Region

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ABBREVIATIONS AND ACRONYMS

ADESCO	Community Development Association
COAL	Local Advisory Council
CNR	National Registry Center
CPS	Country Partnership Strategy
FM	Financial Management
GEF	Global Environment Facility
GEO	Global Environmental Objective
GEO	Global Environmental Objectives
GOES	Government of El Salvador
ISTA	Salvadoran Institute for Agrarian Transformation
LACAP	Public Administration Acquisition and Contracting Law
LAP II	Land Administration Project (Phase II)
MARN	Ministry of Environment and Natural Resources
MBC	Meso-American Biological Corridor
M&E	Monitoring and Evaluation
MTR	Mid-term Review
NPAS	Natural Protected Area System
NRM	Natural Resources Management
O&M	Operation and Maintenance
PA	Protected Area
PACAP	Protected Areas Consolidation and Administration Project
PAD	Project Appraisal Document
PCU	Project Coordination Unit
PPR	Procurement Post-review
REE	Rapid Ecological Evaluation
REDD	Reducing Emissions from Deforestation in Developing Countries

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EL SALVADOR

PROTECTED AREAS CONSOLIDATION AND ADMINISTRATION PROJECT

CONTENTS

Data Sheet

- A. Basic Information
- B. Key Dates
- C. Ratings Summary
- D. Sector and Theme Codes
- E. Bank Staff
- F. Results Framework Analysis
- G. Ratings of Project Performance in ISRs
- H. Restructuring
- I. Disbursement Graph

1. Project Context, Global Environment Objectives and Design	1
2. Key Factors Affecting Implementation and Outcomes	4
3. Assessment of Outcomes	12
4. Assessment of Risk to Development Outcome.....	17
5. Assessment of Bank and Borrower Performance	18
6. Lessons Learned	21
7. Comments on Issues Raised by Borrower/Implementing Agencies/Partners	21
Annex 1. Project Costs and Financing.....	22
Annex 2. Outputs by Component	24
Annex 3. Economic and Financial Analysis	32
Annex 4. Bank Lending and Implementation Support/Supervision Processes	47
Annex 5. Beneficiary Survey Results	49
Annex 6. Stakeholder Workshop Report and Results.....	53
Annex 7. Summary of Borrower's ICR and/or Comments on Draft ICR	54
Annex 8. Comments of Cofinanciers and Other Partners/Stakeholders	59
Annex 9. List of Supporting Documents	60

MAPS: IBRD 39700, 39701, 39702

1. Project Context, Global Environment Objectives and Design

1.1 Context at Appraisal

1.1.1 **Country and sector background:** El Salvador's unique setting – highly volcanic and isolated from Central America's Atlantic forests – supports many diverse species of vertebrates, plants, birds and other life which persist despite the country retaining just two percent of its primary forest vegetation. The globally and regionally significant biodiversity within the Natural Protected Areas System (NPAS), managed by the Ministry of Environment and Natural Resources (MARN), is threatened, reflecting population pressures and land-related struggles which have resulted in widespread encroachment into protected areas (PAs) and consequent deterioration and destruction of habitats through forest conversion, pollution, and over-exploitation of natural resources.¹ At the time of appraisal in 2005, some of the smaller protected areas within the NPAS no longer contained sufficient natural/near-natural habitats to merit special protection status. Despite the global, regional and national significance of its biodiversity resources, El Salvador had/has the least amount of land and water area formally protected of all countries in the Mesoamerican Biodiversity Hotspot (about 75,500 ha, 4.6% of the national territory).

1.1.2 **Challenges facing the NPAS:** The NPAS' goal was to protect these remaining areas but it faced many challenges: (i) most NPAS lands - about 118 protected areas totaling about 40,000 ha - were "paper parks" with inadequate legal framework or physical protection and no managed buffer zones; (ii) the institutional framework governing these lands was confusing and even though MARN was responsible for the entire NPAS it had legal title over only 7,072 ha; (iii) the quality and type of environmental goods and services and biodiversity resources protected were not well known, making their management and prioritization difficult. Refinement of the NPAS National Strategy, definition of priorities and greater stakeholder consensus regarding this strategy, and conservation, were essential; (iv) MARN lacked the legal tools to properly manage/consolidate the NPAS and El Salvador lacked experience in addressing human settlements in PAs. A methodology was needed to identify illegal and legal settlements within PAs and regularize the latter;² and (v) MARN's acute resource constraints, both human and financial, threatened its ability to consolidate the NPAS, and land tenure needed clarification. The legal limbo had led to invasions of state-owned, unoccupied lands by poor rural groups.

1.1.3 **Rationale for Bank assistance:** The rationale for the Protected Areas Consolidation and Administration Project (PACAP) was linked closely to the objectives of the second Land Administration Project (LAP) which was to systematically assess land tenure nationwide. This had important implications for the NPAS since proposed LAP II activities included extensive geographic data collection, determination of land rights, and cadaster/registration of all national lands. LAP II provided a unique but limited window of conservation opportunity to advance MARN's biodiversity agenda. Further, the Government of El Salvador (GOES) was keenly interested in working with MARN, CNR and the Bank to take advantage of this opportunity and formally-requested Bank assistance to prepare the PACAP. The Bank's competitive advantage in regional land issues with 20 years of experience in Central and South

¹ The PAD inadvertently used "national" and "natural" inter-changeably throughout for the Spanish acronym SANP (*Sistema de Areas Naturales Protegidas* or Natural Protected Areas System (NPAS)). The ICR opted for "natural" because it is both the wording in the Grant Agreement and an accurate translation of the acronym. Both words refer to the same policy instrument and system.

² Both natural protected areas (NPA) and mangroves were considered PAs in which private or public entities could conduct MARN-approved activities. Mangroves were managed as sustainable use areas where residents could secure land rights as concessions with management plans. In NPAs, the new Law did not permit new human settlement once areas were established as protected, except for the natural reserve category where no human settlement whatsoever was permitted.

America, and in Global Environmental Facility (GEF) operations in the region including the Meso-American Biological Corridor (MBC) also drove the project rationale.

1.1.4 The PACAP was partially-blended with the Bank-supported LAP II, whose planned, massive collection of land-related data was seen as a foundation for large-scale conservation including the consolidation of protected areas, developing a strategy for addressing irregular settlement within the PAs, a link to MARN's information catalog and the data needs of the PA system, and as promoting MARN's agenda of consolidating key conservation areas and other PAs under the NPAS.

1.1.5 GEF support was warranted because PACAP would: conserve globally and regionally-significant biodiversity including critically-endangered species and systems; enhance Salvadoran sections of the MBC and overall NPAS; support piloting and consolidation of two PAs and develop a strategy affecting all of them; capture lessons from the piloting exercise for future scaling up; and, complement the GEF-supported Payment for Environmental Services (PES) Project. Without the GEF increment, local efforts alone had not been sufficient to secure conservation of the PA system.

1.2 Original Global Environment Objectives (GEO) and Key Indicators (*as approved*)

1.2.1 The Global Environmental Objective of PACAP was to conserve El Salvador's globally significant biodiversity by strengthening the natural protected areas system and consolidating two priority protected areas (see footnote 1).

1.2.2 Key performance indicators were:

- Natural protected areas system strategy improved and pilot-tested (see footnote 1);
- Two pilot areas consolidated and effectively managed (Tracking Tool score of at least 40 for 35,600 ha in Bahia de Jiquilisco and 1,917 ha in Lago Guija San Diego-Las Barras);
- Biodiversity benefits established in at least 12,400 ha: (i) for Bahia de Jiquilisco PA, at least 11,000 ha of mangrove or associated humid forest within the core protection zones to have negligible deforestation compared to baseline (less than 1% over five years); and (ii) for Lago Guija San Diego-Las Barras, at least 1,400 ha of dry tropical forest or associated riparian forest to have negligible deforestation compared to baseline (less than 1% over five years).

1.3 Revised GEO (*as approved by original approving authority*) and Key Indicators, and reasons/justification

N/A

1.4 Main Beneficiaries

1.4.1 The beneficiary pool was broadly-defined and inclusive. A participatory social assessment identified project beneficiaries/stakeholders as: (i) specific focus groups such as very poor families mostly with un-regularized land rights and displaced by the civil war, and peasants; (ii) wealthy people holding legal but irregular titles in areas subject to MARN's jurisdiction; (iii) MARN itself; (iv) the National Registry Center (CNR, the LAP implementing agency); (v) municipal offices; (vi) non-governmental organizations (NGO); and (vii) Community Development Associations (ADESCO). All were expected to benefit from knowing the location of NPAS boundaries, the identity of legal titleholders to the land, their rights in regard to this land, and its use restrictions. Other cohorts included were civil society - the local and national population expected to benefit from an improved PA system – and the regional and global populations likely to gain from the conservation of biodiversity.

1.5 Original Components (as approved)

1.5.1 The Project was a grant funded by a US\$5.0 million GEF contribution, partially-blended with the LAP II Bank Loan (P086953) in an amount of US\$5.0 million. Total project cost was US\$13.4 million including Government counterpart of US\$3.4 million. The Project had three components supported by six sub-components, as follows:

Component 1: Strengthening of the NPAS (est. total cost US\$5.4 m of which US\$1.40 m GEF) to enable its long-term sustainable management by consolidating the existing strategy for the NPAS in partnership with all relevant stakeholders and through development of an adequate institutional and legal framework for the administration and management of the NPAS. Sub-components were: (i) Consolidation of the NPAS strategy; (ii) Strengthening of the legal and institutional framework; and (iii) Public dissemination and awareness campaign.

Component 2: Consolidation and Management of Pilot Protected Areas (est. total cost US\$7.1 m of which GEF US\$2.9 m) financed the development, testing and finalization of a methodology to consolidate two pilot Protected Areas including their delimitation, demarcation and regularization, and to develop and implement management plans for their sustainable use. The results of this component were expected to feed into the consolidation of the NPAS Strategy (Component 1). Sub-components were: (i) Characterization and delimitation of pilot PAs; (ii) Legalization and regularization of pilot PAs; and (iii) Management plans for pilot PAs.

Component 3: Project Administration (est. total cost US\$0.9 m of which US\$0.7 m GEF) financed project management mechanisms including project coordination, planning, and monitoring and evaluation (M&E). The M&E system was to be the same as that developed for the LAP II. The system was to be strengthened to include key indicators to measure GEF project performance.

1.6 Revised Components

N/A

1.7 Other significant changes

1.7.1 LAP II was approved by the Bank's Board in March 2005 but never became effective. The Loan Agreement was terminated on September 18, 2006 due to the failure of the National Assembly to ratify the Loan within 18 months of Board approval. This event meant a project focused more tightly on MARN – leveraging CNR support where possible – and unable to capitalize on the information intended to be collected, and the enabling political environment likely to be created by LAP II. PACAP reverted to a design set aside at appraisal.³ The impact on PACAP is discussed further in this report.

1.7.2 The Grant Agreement was amended through a 2nd order Restructuring in May 2010 as follows: (i) created a new disbursement Category 4 for Community Subprojects under Part B of the Project; (ii) reallocated US\$200,000 from Category B to the new Category 4; and (iii) included community participation and quality-based selection as eligible procurement methods (the latter for procurement of consultants). Also, the prohibition on involuntary physical relocation, already in force under the Project was made more explicit in amended legal documents. The justification provided was the inadvertent

³ As stated in the PAD Section 6, “a protected areas project focused only on MARN, without any link to CNR and the LAP II”. This was rejected at appraisal because the Bank Team believed it would miss the opportunity to capitalize on the information collected, and the enabling political environment created, by the LAP II.

omission of community subprojects from the Grant Agreement despite being described in the PAD. Further, communities were part of the Project's Resettlement Process Framework and the restructuring was seen as supporting the Project's Safeguards obligations.

1.7.3 The Bank agreed on May 20, 2012 to extend PACAP's closing date by 12 months to June 29, 2012 to compensate for delayed effectiveness and permit further progress on key activities. A second request for a six month extension was denied by the Bank essentially because Bank management felt that six months would not have been sufficient for the Project to achieve its more ambitious objectives, particularly legal.⁴

2. Key Factors Affecting Implementation and Outcomes

2.1 Project Preparation, Design and Quality at Entry

Background analysis and lessons learned:

2.1.1 A series of events had provided a positive enabling environment for addressing threats to globally significant biodiversity protected within the NPAS. First, the Protected Areas Law, on hold for 25 years, had finally passed in 2005, providing MARN with the legal framework needed to oversee the PAs, as well as significant political capital. Second, the Bank-supported Land Administration Program (LAP) was mid-way through completion of the cadaster and registry of national lands, considered a priority for the new government of the period. Preparation of the LAP II identified the importance of clarifying land tenure issues in and around (potential) PAs without which LAP's efforts to address all national lands would not succeed. CNR, the LAP's implementing agency, had involved MARN in that project including a component for demarcation of three PAs. While MARN's participation in the LAP was historically limited by its capacity, the Bank felt that a partially blended operation with GEF funds would boost consolidation of the NPAS by exploiting opportunities under the LAP.

2.1.2 The Project was also linked closely to the GOES agenda in the *Pais Seguro* Program which defined actions to enhance the environment for future generations and ensure that national development was environmentally and socially sustainable. It also responded to the country's biodiversity priorities as set out in the 2002 National Strategy on Biological Diversity whose priorities included a biological information system and consolidation of the NPAS. The Project also supported the draft Protected Areas Strategy (2005), the proposed National Land Use Development Plan which sought to create 15 Conservation Areas (CA) to incorporate the fragmented NPAS within a larger landscape, and the new PA Law which provided the legal basis to consolidate the NPAS.

2.1.3 The FY05-08 Country Assistance Strategy (CAS) acknowledged the need to consolidate El Salvador's legal and regulatory framework for the environmental sector. The Project would contribute to the third objective of the CAS - enhancing security and reducing vulnerability. By supporting consolidation of the NPAS, along with strengthening its institutional and legal framework, the Project

⁴ The decision-making process was marked by lack of communication between the Bank and Government. MARN maintains that a meeting in San Salvador in 2012 with Bank financial officials and representatives of several Bank-supported projects showed that delayed launching combined with lack of understanding about Bank procurement and FM procedures was common to all of them and that capacity considerations should have been built into implementation plans/schedules.

would contribute directly to addressing biodiversity conservation and sustainable resource use, and to reducing environmental degradation and vulnerability to natural disaster.

2.1.4 Lessons learned: The lessons of other GEF and non-GEF projects heeded in project design were: (i) an adequate, enabling legal and regulatory framework with human resource and institutional capacity-building to boost sustainability; (ii) fostering inter-institutional coordination and avoiding ad hoc approaches, reflected in the planned close collaboration with CNR via LAP II; (iii) activities and projects which clarify legal and physical land rights in/around protected areas, demarcate and consolidate protected areas, and support conservation-friendly productive investments; (iv) creation of conservation areas (CA) to address a primary source of biodiversity degradation and better-manage a highly fragmented PA system; (v) proven sustainability and thus inclusion of alternative activity, biodiversity-friendly subprojects; and (vi) broad stakeholder inclusion as key to conservation success reflected in PACAP's stress on participation, local organizations and consultation.

Project design and quality at entry:

2.1.5 Political events in the country and cancellation of LAP II, along with six other new Bank projects also awaiting legislative approval, led to an effort by Bank management to keep PACAP alive as a standalone grant to preserve a dialogue with GOES at a difficult time in the relationship.⁵ The decision to proceed without LAP II may have affected the Project's quality at entry by: (i) leaving MARN with a complex and innovative project, key elements of which exceeded its capacity and buy-in; (ii) not conducting a reassessment of its feasibility without LAP II/CNR and possibly restructuring it up-front; and/or (iii) not focusing on building ownership for the operation beyond MARN, e.g., involving the Ministries of Fisheries, Tourism and Agriculture. That said, there was reason to believe that important outcomes could be achieved to support the burgeoning conservation agenda in El Salvador.

2.1.6 GEO and Outcome Indicators: The GEO was complex but rational and aligned with country and sector strategies. The PACAP focused on the GEO as an incremental benefit financed with GEF resources.⁶ The higher level objectives – not expected to be measured within the life of the Project – sought to enhance the environment for future generations and ensure that national development was environmentally and socially sustainable. Key Indicators however, did not fully capture the scope or meaning of the GEO and several were unrealistic. For example, for the purposes of this Project, protected areas consolidation and management represented a much broader set of activities than those captured by the Tracking Tool. While this instrument is widely used and recognized, supplementary indicators may have been useful. Similarly, while it could be assumed that reducing deforestation could prevent the loss of biodiversity, more precise measurement was needed to gauge the actual “biodiversity benefits established” as a result of persistent tree/vegetative cover. Further, the Bank Team realized that indicators were deficient in strategic areas: local natural resources management (NRM), participation, biological information and conflict resolution, but no change was made. Some indicators over-reached, e.g., expecting to quantify by end-project the revenues raised from natural resource use concessions, visitor fees and other cost recovery mechanisms from pilot areas within a still-nascent NPAS lacking defined priority areas. The project emphasized adaptive management meaning that high quality M&E was needed to feed results into improving project design during implementation. The two pilot areas were selected as representing the conditions faced by most PAs within the NPAS, thus promoting future replication.

2.1.7 The two main components were effectively inter-dependent, the idea being that outcomes on the ground under Component 2 would feed into the legal, policy and strategic goals under Component 1. The

⁵ PACAP as a Grant needed approval by only a simple majority of the Assembly.

⁶ The Project Development Objective (PDO), also included in the PAD, was intended to be achieved by LAP II.

Project demanded heavy investment in consultants, productive inter-institutional partnerships and communication, and the commitment of local stakeholders, especially the residents in the parks whose support would be captured through a combination of awareness-building, organization and investment incentives. Project design inadvertently omitted from the Grant Agreement a disbursement category, financing and appropriate procurement provisions for planned community investment subprojects in the pilot PAs based on local Management Plans (Component 2, subcomponent 3). Restructuring in 2010 corrected this.

2.1.8 Participation: As mentioned in 1.4.1, a social assessment conducted in each pilot protected area identified all key stakeholders with an interest in project design and implementation, and efforts were made to incorporate them throughout the project cycle. Further, six participatory workshops, national and local, convened national agencies, municipalities, the private sector, ADESCOs and NGOs to gauge how to integrate national conservation objectives with land regularization and PACAP's specific objectives. The Project was committed to early and frequent stakeholder consultation to mitigate or prevent social impacts and potential conflicts arising from regularization activities in the pilot areas.

2.1.9 Risk assessment: Risks were correctly projected based on projects with similar/related design both in El Salvador and other countries, but downplayed in some cases. Mitigation measures were generally sound. Risks related to land tenure conflict were realistic, and in practice, the mitigation measures described were effective in minimizing new conflict and resolving existing conflicts through alternative measures. Counterpart funding was not mentioned as a risk but GOES performance was inadequate in practice. Notably, the vast majority of project activities were procurement-dependent and the MARN/PACAP team had no prior experience with Bank procurement rules/ processes, but procurement capacity was not a stated risk.

2.1.10 GEF Operational Program Goal and incremental costs: The Project contributed to all four GEF Operational Programs (OP) by strengthening the Salvadoran protected area system which included arid and semi-arid, coastal and marine, forest and mountain ecosystems. The Project specifically supported OP2 (Coastal and Marine Ecosystems) and OP3 (Forest Ecosystems). Activities in the Bahia de Jiquilisco Conservation Area were to help the conservation and sustainable use of El Salvador's largest area of mangrove forests; in the Lake Guija San Diego-Las Barras Protected Area Complex the Project would support the conservation and sustainable use of the freshwater biodiversity of Lake Guija and the largest dry tropical forest in El Salvador, a high priority eco-region. The Project also supported GEF's Strategic Priority 1 (Catalyzing Sustainability of Protected Areas). Further, by piloting the conservation of two PAs and heavily stressing learning and adaptive management, it also supported SP4 (Generation and Dissemination of Best Practices), integrating results into a redefined National Protected Areas Policy.

2.1.11 The incremental cost – the difference between the baseline scenario and the GEF Alternative - was US\$10.0 million to be financed partly by the US\$5.0 million GEF Grant which would fund the conservation of globally significant biodiversity, and US\$5.0 million from the LAP II Bank loan to fund data collection, land demarcation and other local benefits.

2.2 Implementation

Factors affecting project implementation:

2.2.1 *The cancellation of LAP II impacted on the Project's ability to achieve its objectives.*⁷ The central issue was how PACAP would be implemented in the absence of broader LAP II activities and CNR's leadership, once the decision was taken to execute it as a standalone. CNR was a strong, technically and politically well-positioned institution with the mandate to address land issues broadly, was the key institution driving the design and approval of the GEF Grant/PACAP, and had a crucial role in technical training.⁸ When LAP II was cancelled, CNR's support evaporated and PACAP was weakened. CNR's relationship with the Project was distant and not always cooperative, despite a signed memorandum of understanding (MOU) between the two institutions. MARN was committed to the PAs – its traditional sphere of influence - but without LAP II, was not in a strong position to lead the political dialogue around land issues and struggled to address them, politically and technically, throughout.⁹ Bank missions tried to promote dialogue with CNR and encourage its support for the Project. The Bank team states that CNR recognized (mostly at the technical level) that its participation made sense and its engagement with MARN on project issues improved considerably in the final year when CNR joined MARN in a new, high-level Technical Roundtable.

2.2.2 *The demise of LAP II took US\$5.0 m of planned blended financing off the table.* These funds were intended to advance the administration of all PAs nation-wide through their delimitation and through cadaster and aerial surveys/data collection for MARN's use. When LAP II did not materialize: (i) core counterpart activities were defined to include only those necessary to achieve GEF-specific objectives and indicators; (ii) "full implementation" came to include only demarcation of the 40 PAs reflected in the relevant intermediate outcome indicator, not PAs nationwide; (iii) on the grounds that the Project's objectives, scope and indicators remained the same, the Bank secured from GOES some US\$2.63 million in counterpart financing to ensure implementation of the now-standalone project, especially Component 2, in addition to US\$2.2 million of in-kind contribution.¹⁰

2.2.3 *Project design, specifically the land regularization and legal aspects, was highly innovative in the Salvadoran context and as a standalone exceeded MARN's technical and operational capacity and failed to achieve its full buy-in.* Further, the policy shift in 2009 from a traditional concept of conservation as intrinsically good, to "inclusive conservation" stressing its social function, was good for and consistent with the Project but it put the onus on MARN to commit to new ideas including legal solutions, regularization of residents inside the parks, and greater focus on risk management. Also, while GOES did not block the Project, nor did it wholeheartedly support it, for reasons associated with the political sensitivity of land regularization. While MARN orchestrated impressive achievements under Component 2 and made some headway under Component 1, it was not sufficiently committed to the legal and policy side to proactively translate the results of the former into the bigger NPAS legal and policy framework goals sought by Component 1, at least during the life of the Project. That said, MARN's formulation of the new National Environmental Policy and Strategy, and its Strategic Action Plan 2013-2018, will draw on specific achievements under Component 2 of PACAP.

2.2.4 *Inter-institutional coordination and communication issues, and bureaucracy, periodically hampered efficient dialogue and decision-making.* Internal communications were difficult and MARN

⁷ The Grant Agreement placed MARN as GOES's representative but contemplated the participation of other institutions, most importantly CNR but also ISTA (Salvadoran Institute for Agrarian Transformation). Once LAP II was cancelled, both institutions viewed PACAP as "just another client", as noted in the Client's Completion Report.

⁸ CNR was intended inter alia, to train MARN/PCU in technical aspects of the cadaster, delimitation and demarcation. Once CNR was out of the picture, there was no institutional support for these functions

⁹ MARN, not CNR, had the mandate to resolve conflicts within state lands. Without MARN's involvement, key parts of the country would remain with unresolved tenure status.

¹⁰ See letter to Recipient of April 10, 2007. LAP II was the additional financing to ensure full implementation of the Project, especially Component 2. Its cancellation saw the Bank ask GOES to allocate some US\$2.63 million to ensure implementation.

senior authorities' efforts to introduce a more effective use of human and financial resources encountered resistance and resulted in personnel turnover. Decision-making tended to be centralized and bureaucratic which impacted negatively on procurement and contract management; as noted elsewhere, the Project was heavily dependent on consultant services. The MTR mission observed communication problems both within the PCU and between MARN and the PCU. MARN personnel were urged to become more involved, creating the institutional ownership essential to strengthening the NPAS over time, and to open up communication on specific, project-related issues both with the Bank and the PCU.

2.2.5 Related to the above, frequent turnover in MARN and PCU personnel affected the Project trajectory but the restructuring of MARN improved PACAP's institutional capital. The Project was prepared and executed under two different Governments, and had four Coordinators from preparation through closing. Similar changes occurred in the Regional Units. Of the eight professional positions comprising the PCU, only two were occupied by the same person for more than one year. Some specialist positions remained vacant for several months. High turnover of key staff in 2011-2012 associated with the looming closure of the Project disrupted project execution. MARN's restructuring improved PACAP's institutional standing as well as internal coordination and synergy in the last phase of the Project.

2.2.6 Consolidation of the Bahia de Jiquilisco pilot PA - a larger and more complex area than San Diego and San Felipe-La Barra - was hampered by delayed delimitation. Due to the socio-economic conditions of many residents of the pilot PAs, their dependence on park resources and uncertainty about project intentions, project delimitation and demarcation efforts and work plans required re-programming to intensify consultation and negotiation with affected communities and private sector groups, to avoid social conflicts and/or preempt their spread. Delimitation was also delayed by major tropical storm systems (Ida, Agatha and 12E) which hit coastal areas including Bahia de Jiquilisco, halting field work. Some inputs from MARN to the firm doing the field work were of poor quality, requiring additional effort to enable use. The firm also lacked resources to pay for sufficient field workers due to MARN's dependence on CNR for review and approval, which was not the latter's priority. To resolve this difficult impasse, MARN and the firm signed a contractual addendum providing for a 70% payment for products received/approved by the PCU, with the 30% balance dependent on CNR approval.

2.2.7 Other issues affecting PACAP's execution: Other factors, bureaucratic and to some extent political, affected project execution. These included: (i) the initial 18-month delay in declaring effectiveness and slow launching period affected hiring of all key personnel at headquarters and in the regional offices; (ii) transition to a new Government in 2009 slowed implementation of project-related activities in MARN to permit the customary review/adjustments of policy priorities by the incoming government; and (iii) GOES was slow to allocate funds for the field work, the Project's core activity, and availability of counterpart funding was delayed.

2.2.8 Mid-term Review (MTR): Principal conclusions of the MTR conducted in April 2010 were the following: (i) implementation status was rated Unsatisfactory due to exceptionally slow execution and disbursement, but its objectives were considered still valid and achievable with an extension and action plan; (ii) MARN's efforts to have GOES reassign some US\$1.7 million to finance urgent technical services had not progressed; (iii) visible activities in the countryside were needed to retain the commitment of local participatory organizations who were growing skeptical of the Project, with the risk of eroding MARN's credibility and ability to conduct further interventions; (iv) many inefficiencies were noted in the administration of contracts which also affected the achievement of project objectives; (v) poor communication between the Project and MARN was noted and the Bank urged improvement to avoid duplication of activities and greater synergy between existing initiatives. The MTR missed the opportunity to restructure some of the more complex, long-term objectives and indicators of the Project – achievable with the support of LAP II – resizing them to the scope of the GEF.

2.2.9 The resulting MTR Action Plan focused on resolving contracting issues upon which many project activities depended, including: hiring permanent FM and Procurement specialists; completing the Prioritization Study; securing an agreement between CNR and MARN, and MARN with ISTA; contracting cadaster, delimitation and demarcation field work; developing and launching the publicity campaign; hiring mapping, local development, land tenancy and legal specialists; and, resolving counterpart funding delays hampering critical field work. With few exceptions, PCU/MARN's compliance with the Action Plan was good when verified by the Bank six months later, demonstrating considerable institutional growth.

2.3 Monitoring and Evaluation (M&E) Design, Implementation and Utilization

2.3.1 **M&E design:** M&E was critical to a pilot project which used adaptive management and needed a flow of results to improve design during implementation. Project M&E was dependent on the newly-designed automated LAP II system which was to track expenditures and progress for both administrative and technical functions. The PACAP M&E system was to be strengthened based on the LAP II model and would have a subsystem generating indicators for physical execution, components, and outcomes of the GEO. A baseline would be established, updated at mid-term and year 5. A Mid-term Review study was required. Data sources for intermediate outcome indicators would be MARN and CNR, field reports by contractors, CNR's Registry and Cadaster Information System, and results from participatory field monitoring. The PCU would have overall responsibility for this system.

2.3.2 **Implementation and utilization:** With CNR out, MARN had to build its M&E capacity independently, and successfully did so. Basic monitoring was conducted through regular meetings with PACAP's Regional Offices in the two pilot PAs and field verification. The Project MIS, managed by a designated unit within MARN, collected, compiled and updated key project databases, presenting each Bank supervision mission with fully-updated Key Performance and Intermediate Outcome Indicators, an excellent performance. This data was used for training, publicity and dissemination, consultation, and analysis, and permitted MARN/PCU to maintain close control over activities and progress. The large number of local and regional workshops convened by MARN/PCU provided an effective forum for dissemination of project experiences and emerging results. However, the M&E experience needed to be institutionalized in MARN to inculcate results-based planning post-PACAP. (See Annex 2).

2.4 Safeguard and Fiduciary Compliance

2.4.1 **Safeguards:** The Project was a Category B with an Environmental Assessment (but not a full Environmental Impact Assessment), and triggered OP 4.01 (Environmental Assessment), OP 4.04 (Natural Habitats), OP 4.11 (Cultural Property), OP 4.12 (Involuntary Resettlement), and OP 4.036 (Forests). The Project EA built on that developed for LAP II, conducted by recognized experts in 2004. Even though no involuntary resettlement was likely to occur under the Project, it was possible that some people living in or adjacent to the project pilot areas might encounter restrictions on access to natural resources. Before effectiveness, MARN signed a letter committing to not carry out involuntary resettlement, and the amended Grant Agreement later included a provision (section 3.01 (f)) in this regard. Also, a Process Framework was developed to assist beneficiaries during the formulation and implementation of their Management Plans.

Results:

Environmental (OP4.01): Environmental evaluations were conducted in all pilot areas before project launching, resulting in a baseline from which to measure environmental indicators. Indicators/targets were exceeded in both pilot sites (Section 3.2 and Annex 2).

Natural Habitats (OP 4.04): The Project effectively protected eco-systems in both pilot areas: (i) In the Guija Complex, the tropical dry forest - a threatened eco-system in the Americas - was protected and extended; (ii) humid and aquatic forests in the Bahia de Jiquilisco pilot area were also protected, ensuring their capacity to provide eco-systemic services including: refuge for commercially valuable marine species (fish, shellfish and crustaceans); protection of the only breeding site in Central America of *Rynchops niger*; and protection of marine grazing/breeding grounds in Bahia de Jiquilisco, e.g., the Carey Turtle (*Eretmochelys imbricate*).

Cultural Property (OP 4.11): Six recognized pre-Hispanic sites in the Guija Complex dating from 600-1525 CE were formalized as touristic and educational resources within the Park, potentially benefiting several local communities with PACAP subprojects.

Involuntary Resettlement (OP 4.12): Delimitation activities in the pilot areas and mangroves in areas of PACAP intervention identified human settlements.

Forests (OP 4.36): The proposed PA National Management Strategy and Management Plans for Protected Areas prepared by PACAP for MARN were developed within the framework of the National Environmental Policy and congruent with MARN's Program for Ecological Restoration of Eco-systems and Landscapes. The draft Management Plan for Bahia de Jiquilisco was also developed based on MARN's proposed Coastal Marine Development Policy.

Fiduciary performance:

2.4.2 Financial management (FM): The Project received regular FM supervision. Initial supervision in 2008 revealed recordkeeping and reporting issues supporting a rating of Moderately Satisfactory (MS), subsequently upgraded to Satisfactory in 2009 but downgraded to Moderately Unsatisfactory in 2010 mainly due to a prolonged vacancy in the Financial Specialist position and resulting lack of updated financial records. The FM rating was upgraded in April 2012 from MU to MS primarily due to the contracting of the specialist, enabling preparation of the required financial reports to a higher standard, although minor shortcomings in FM arrangements remained.

2.4.3 Audit: Audits were generally Unqualified or Qualified Exception with no serious accountability issues, but sometimes delivered beyond the due date as a result of slow contracting of auditors.

2.4.4 Procurement: Procurement post-reviews (PPR) through 2010 found multiple issues affecting procurement performance - mostly internal - despite having organized seminars and workshops on Bank procedures. There was persistent confusion about the Bank's no objection procedures, delays in analyzing technical proposals, and in evaluating, negotiating and executing contracts especially for consultants. Procurement in this period was rated High Risk/Moderately Unsatisfactory (MU) with the Bank expressing concerns about lack of governance. Procurement was affected by the overlapping requirements of Bank procurement rules and those of the Client's Public Administration Acquisition and Contracting Law (LACAP) causing bureaucratic delays. As acknowledged by the PACAP team, these were avoidable as LACAP itself states that excluded from the Law are acquisitions and contracts financed by resources provided under agreements signed by the State with other states or international organizations which have established procurement processes to be followed in their execution. Performance improved over time. The PPR in 2011 found no issues in processes reviewed, while a Procurement Capacity Assessment found that the PCU/MARN was capable of implementing the Project using an interim, MARN-financed procurement specialist but kept the MU rating until the permanent specialist was actually hired. A PPR in April 2012 found no issues in processes reviewed, upgrading the rating to Moderately Satisfactory.

2.4.5 Two issues created tension between the Bank and MARN: (i) as noted in the Client's Completion Report, the Bank's no objection to extension of the closing date was delayed until some 10 days prior to scheduled closing, which obligated MARN to cancel a series of advanced procurement processes due to uncertainty that the Project would continue. Reinstating suspended procurement processes in the remaining period was complicated, exacerbated by the length of the closing date extension which MARN believes curbed PACAP's ability to complete key activities and fully-disburse the Grant right when its implementation capacity had strengthened; and (ii) critical field work in the pilot PAs was delayed due to the contracted firm's inability to pay for sufficient workers (see 2.2.6). Also, the firm selected to do the work was paid 100% with counterpart funds and hence used national procurement rules, processes over which the Bank had no control. The remaining tasks then spilled over into 2012 while the national budget did not. This situation was resolved by using other, unused project funds.

2.4.6 **Projects costs and financing:** Total project costs were lower than expected at appraisal for the GEF portion even without LAP II. Total cost was US\$4.92 million compared to an estimated US\$5.00 comprising GEF Grant funding of US\$3.96 million and Client contribution of just over US\$954,000, about 28% of what was expected at appraisal under the blended operation with LAP II, and 36.3% of the counterpart amount agreed with GOES following LAP II cancellation. Lower costs were due to: (i) over-estimation of areas to be covered by field regularization activities; (ii) the non-completion of certain activities. Subcomponents 1.2 (legal and institutional framework) and 1.3 (public dissemination and awareness campaign) were a fraction of anticipated (11.3% and 8% respectively) due to non-performance; and (iii) time ran out and the Bank did not approve a second extension of the closing date to complete activities. Component 2 costs were about 17% higher, and administrative costs were 28% lower than expected. At the time of ICR finalization, an amount of US\$15,807.79 was pending refund to the Bank.

2.5 Post-completion Operation/Next Phase

2.5.1 **Transition arrangements including O&M:** While the Bank team discussed post-project arrangements with MARN in broad terms, no formal transition plan was agreed. Communities/entities with subprojects were advised about the importance of maintaining the equipment and practices transferred, and received specific training on O&M. In the case of fishing-related subprojects, markedly better fish yields and incomes from improved practices will likely promote good O&M and sustainability.

2.5.2 **Sustaining reforms and institutional capacity:** The sustainability of reforms depends heavily on basic factors such as commitment, capacity and recurrent budget. The NPAS is partially consolidated with much work still to be done. MARN has the capacity and tools (e.g., Strategy, Action Plan, Prioritization Study, delimitation and demarcation models, databases, Park Ranger system) needed to complete consolidation and improve management, but will need to foster close collaboration with CNR and other relevant institutions to establish the legal framework and related aspects, and strive for greater operational efficiency. The MARN/CNR Technical Roundtable and the MARN/ISTA high level forum established before closing are promising developments. As noted earlier, MARN needs to build partnerships with other relevant Ministries including Agriculture, Tourism and Fisheries. At the local level, the COALs and ADESCOs, along with a wide range of civil society entities, have greater awareness of the NPAS' objectives; initial evidence suggests that local buy-in was significant but its durability may be fragile. Nationally, evidence suggests GOES has not promoted conservation-oriented land use outside legal PAs.

2.5.3 **Next phase:** Based on Government's priorities, and as established in the Country Partnership Strategy 2010-2014 (CPS), the Bank does not envisage any follow-on operation, at least for the remaining

period of the CPS.¹¹ The CPS Progress Report notes however, that El Salvador is increasingly embracing the global climate change agenda both on mitigation and adaptation. El Salvador is participating in activities led by the Bank's Forest Carbon Partnership Fund, helping to develop a vision for managing and monitoring its forest resources and to prepare for forest carbon transactions, to which the PACAP achievements have direct relevance. MARN's plan is to move ahead in 2013 to begin restoration of about 1.0 million ha of natural areas, find financing for a planned project under the REDD agenda (Reducing Emissions from Deforestation in Developing Countries), and the Program to Restore Eco-systems and Landscapes in the Bahia de Jiquilisco.

3. Assessment of Outcomes

3.1 Relevance of Objectives, Design and Implementation

Rating: High overall relevance

3.1.1 PACAP's objectives remain highly relevant to El Salvador and to the conservation of globally significant bio-diversity and eco-systems. Its design remains appropriate to achieving those priorities but the original, blended approach and design were more optimal and likely to enhance the depth and sustainability of project achievements. Project objectives are not reflected in the current CPS for the reasons cited in 2.5.3, but this does not reduce their urgency or the need to ensure that NPAS consolidation activities are completed and institutionalized.

3.2 Achievement of Global Environmental Objectives

3.2.1 Achievement of the GEO was partial and is rated as Moderately Unsatisfactory overall, although this does not diminish the Project's many important achievements which the ICR believes position the MU rating at the borderline of Moderately Satisfactory. Lack of commitment to the Project's legal goals and other factors undermining sustainability are the basis for the conservative rating.

3.2.2 **Indicator 1:** *Natural protected areas system strategy improved and pilot-tested:*¹²

Partially achieved: The following were achieved: (i) an updated Strategy and its Action Plan were finalized using project-tested and generated inputs and experience including the project-financed Protected Areas Rationalization and Prioritization Study (WICE, 2011), the Management Plans (including 24 alternative livelihood demonstration subprojects in the pilot PAs), and broad-based stakeholder dialogue; (ii) the draft Strategy was consulted within MARN and with co-management organizations and other local stakeholders but not (by closing) at the inter-institutional level or with national stakeholders; (iii) the evolving consolidation strategy was pilot tested in San Diego-Las Barras and Bahia de Jiquilisco, with the exception of the regularization of PA residents, with notable achievements in each case; (iv) 68 terrestrial areas and one marine area were delimited (173%) and transferred to MARN as protected areas; (v) preliminary draft regulations for the new Protected Areas Law were updated based on project findings/results and were under review by MARN but not yet approved. Products generated by the project are informing the development of additional, broader policy instruments, e.g., the updated NPAS strategy is supporting development of the National Biodiversity Strategy and the National Environmental Strategy and related Action Plans, to be finalized in 2013; (vi) based on the draft NPAS Strategy, MARN assessed the inter-institutional agreements needed to operate the NPAS under MARN's Ecosystem and Landscape

¹¹ See CPS FY 2010-2014, Report No. 50642-SV, and Progress Report No. 61113 of June 24, 2011.

¹² The PAD Main Text shows the indicator as above, while the Results Framework omits the pilot-testing element. See also footnote 1 regarding use of "natural" vs. "national".

Restoration Program but did not reach the stage of preparing draft agreements; (vii) the publicity/information campaign was finally launched in August 2012. Up till then, the Project conducted local mobilization and training events, and educational field days, to promote conservation themes and stakeholder cooperation. Stakeholder acceptance of a conservation role in the parks was a major project achievement.

3.2.3 Prioritization study: The Rationalization and Prioritization Study for the NPAS includes analysis of conservation- and biodiversity-friendly sustainable activities, as well as modeling the comparative social and ecological “weight” of conservation areas to help MARN estimate recurrent and investment costs of existing PAs and of bringing additional lands in.¹³ The study team also performed a series of rapid ecological evaluations (REE) to identify conservation gaps. The technique is used to get an overall view of the biodiversity in a specific location, but can only detect species which are conspicuous and generally focuses on detecting vertebrates. Species by nature rare, threatened or not visible have low probability of detection using this method. To boost the potential of the methodology, the WICE team conducted REEs in the seven least-studied conservation areas, detecting inter alia, two species of bats not previously reported in El Salvador (*Peroteryx kappleri*, *Diclydurus albus*) and two species of frogs not reported in the last 40 years (*Hyalinobatrachium fleishmanni*, *Incilius ibarraii*). Despite the high degree of fragmentation of ecosystems in El Salvador, these results confirmed the existence of globally important biodiversity validating conservation efforts.

3.2.4 Indicator 2: *Two pilot protected areas consolidated and effectively-managed* (Tracking Tool score of at least 40 for 35,600 ha in Bahia de Jiquilisco and, 1,917 ha in Lago Guija Complex San Diego-Las Barras).

Partially achieved: Tracking Tool scores reached and surpassed revised targets established by the MTR reflecting effective management of the two areas (see Annex 2). For purposes of this Project, however, protected area consolidation encompassed a broader set of activities and requirements than those covered by the Tracking Tool, reflecting the innovative nature of the operation. Specifically, consolidation under the Project included not only the delimitation and physical demarcation of the pilot areas, the development and implementation of participatory management plans, and co-management, but also the regularization of eligible residents through the granting of authorizations for their land use and the issuance of appropriate legal instruments to recognize and allow their presence in the pilot PAs. The Project achieved most of these targets with the exception of: (i) the demarcation of the Bahia de Jiquilisco pilot area (the more critical delimitation was completed); and (ii) regularization of eligible residents. Options for regularization were developed but the draft Regulations to the Protected Areas Law, which incorporate the options, were still under review by MARN at closing.

3.2.5 Additional information: In addition to the gains described above, the Project contributed to the consolidation and effective management of the pilot PAs through the following: (i) development and pilot-testing of elements of the evolving NPAS Strategy to consolidate two pilot PAs with the longer-term goal of applying that Strategy nationwide; (ii) collection of complete socio-economic census data and environmental information for both areas; (iii) completion of aerial photography and mapping of boundaries for both areas; (iv) delimitation and demarcation of the Guija Complex, and delimitation of Bahia de Jiquilisco; options were presented for inscribing mangroves in the CNR registry; (v) a PA Registry was created in MARN (not yet linked to the CNR Registry); (vi) effective conflict resolution using the Project methodology/framework: 95% of the San Diego-Las Barras pilot area was without land tenure conflict by end-Project. Of the four municipalities delimited in Bahia de Jiquilisco (about 50% of

¹³ See *Lineas Estrategicas para la Racionalizacion del Sistemas de las Areas Naturales Protegidas de El Salvador*, Vreugdenhil, Machado, Linares, Cisneros/WICE, San Salvador, 2011.

the total pilot area), 99.7% had no land tenure conflicts by end-Project; and (vii) five areas in San Diego-Las Barras and four areas in Bahia de Jiquilisco totaling 3,815 ha were legally established as PAs through Ministerial resolutions.¹⁴ By end-Project, 29 Park Rangers hired by MARN were operating from the two regional offices, one per pilot area, but recurrent budget is uncertain and these numbers will probably be reduced.¹⁵

3.2.6 Revenue generation: Economic and financial aspects of the Project proved a tough challenge for the PCU/MARN. The Results Framework called for an estimate of “the amount of revenues raised from sustainable natural resource concessions, visitor fees, and other potential cost recovery mechanisms”. This indicator was unrealistic, lagged throughout and was not achieved. A mechanism for full cost recovery was not established, nor was a systematic process for raising revenues in the PAs (admission fees are administered directly by the Ministry of Finance). Immense efforts are still needed to position the PAs for any organized revenue-generating activities. No determination has even been made about where it makes sense to allocate resources, but the important Prioritization Study does set parameters and priorities which will help Government to do this. The planned funding and concession study was not conducted. The Project did strengthen MARN’s institutional capacity for planning the long-term human and financial expenditures needed to sustain the system, and for evaluating alternative financing sources.

3.2.7 Local participation: The strengthening and monitoring of the Local Support Committees (COALs) in municipal forested areas promoted a sense of ownership among local people in the management and use of resources because their involvement was needed inter alia, to help identify, manage and resolve tenure conflicts. Citizen participation in project execution also proved important in channeling reports/complaints of unauthorized activities: deforestation, construction, and timber extraction from mangrove and other forests. It also created an organizational platform for citizen management and coordination and, as it turned out, social capital formation, an important project achievement and sustainability factor.¹⁶

3.2.8 Subprojects: The Project grant-financed 24 alternative livelihood, productive subprojects in Bahia de Jiquilisco and San Diego-Las Barras supporting solidarity groups, NGOs, ADESCOs and fishing cooperatives with financing totaling about US\$240,100, or an average US\$10,000 per subproject. Restrictions on natural resource use contemplated in the Management Plans had the potential to deepen the poverty of park residents who depended on the forests and fishing grounds for subsistence. The solution was to include such populations as active agents in the protection and conservation of the pilot areas, using subprojects as an incentive. Some 45 proposals were received and 24 financed (eight in San Diego-Las Barras and 16 in Bahia de Jiquilisco). Investments were small and unlikely to generate significant income in most cases; their value lay more in demonstrating conservation-friendly ways of performing familiar activities. An exception was artisanal fishing activities using improved practices in Bahia de Jiquilisco where fish yields increased by up to 275%, with similar increases in incomes. Other interesting examples included specialized help to local residents to restore the aquatic eco-system in the Matapan Lagoon, clogged with excessive growth of water lilies, using the lilies as material for crafts and fertilizer. Participating groups/organizations reported that these experiences were formative and that

¹⁴ Mangrove areas are protected through the PA Law and form part of the NPAS. MARN is considering having mangroves registered in the name of the State through an appropriate legal mechanism developed by the project.

¹⁵ Park rangers were paid by the Project in both pilot areas. The Bank team stressed the importance of MARN assuming the cost of contracting the guards and absorbing them into its permanent staff. Government had promised to finance the costs of PA protection.

¹⁶ Social capital formation was not formally measured but extrapolations can be made based on beneficiary responses to wide-ranging questions, behavioral changes, and observed multiplier effects.

executing their subprojects had strengthened organizations especially their capacity to manage/administer resources, had generated income, and built environmental awareness. See also Annexes 2 and 5.¹⁷

3.2.9 **Indicator 3:** *Biodiversity benefits established in at least 12,400 ha.*

Fully-achieved: The minimum acceptable rates of deforestation over 5 years in Guija Complex and Bahia de Jiquilisco (1,400 ha and 11,000 ha respectively) were exceeded with forest cover increasing/regenerating in both target areas. Biodiversity benefits stemmed from the aggregate effects of educational events, training, community mobilization within the parks, participatory field days, and investment incentives to avoid deforestation and destruction of biodiversity in the most important “core” zones.¹⁸ The indicator was measured at end-project using ortho-photos of pilot areas taken in 2009, RapidEye satellite images of the entire national territory in 2011, and the experience gleaned from multiple physical verification events in the countryside throughout the project period. Results were:

- **Bahia de Jiquilisco:** Analysis shows 18,423.89 ha of salt forest cover in good or very good condition, while the 11,000 ha estimated in 2005 were found to still be in equally good condition. Deforestation had been kept to zero in critical conservation sites with an additional 7,423.89 ha of coverage over the baseline in good or very good condition, a recovery of 67.5%.
- **Lago Guija Complex San Diego-Las Barras:** The 1400 ha baseline of dry tropical forest and associated aquatic forest was taken from the 1,387 ha estimated in 2005. Analytical comparison using satellite images revealed 1,603.8 ha of tropical forest, corroborated by field verification, representing a recovery of 216.25 ha or 15.56%.

3.3 Efficiency

3.3.1 **Ex-post economic analysis.** The ICR economic analysis updated the quantitative valuation of some of the benefits in the without and with-project scenarios where current data were available and reasonable assumptions could be made. Quantified benefits included (i) carbon sequestration and (ii) fisheries. The period of analysis was 2005-2024 and the discount rate 12%. For the rest, a qualitative discussion was provided. A key finding affecting the analysis related to the deforestation rate in the pilot areas. Based on information obtained from World Bank and FAO assessments, the pilot areas' deforestation rates in the without-project scenario were significantly reduced. This had a strong effect on the estimated incremental carbon sequestration and fishery benefits.

3.3.2 The analysis shows that avoided loss of the pilot protected areas' carbon sequestration capacity is the largest benefit accruing due to the Project, even taking into account the much more modest deforestation in the without-project scenario than assumed in the PAD. It is estimated at \$4.78 million - \$25.92 million. (The lower figure reflects the voluntary carbon market value, \$4.50/ton of the avoided carbon sequestration loss; the higher value reflects the social value of carbon sequestration, \$20/ton in 1995 terms.) Fisheries benefits are also significant and result from lower deforestation, which reduces sedimentation of the lakes in San Diego-Las Barras and more sustainable fishing practices that are believed to be achieved through extensive public awareness-raising in the project area and specific investment subprojects. Fuel wood benefits could not be estimated due to data unavailability. The sum of

¹⁷ See detailed analysis of the PACAP subproject experience in “*Fases de los Subproyectos, Lineas de Tiempo en el Proceso de Concepcion, Ejecucion y Evaluacion de os Subproyectos*” (MARN/PCU, 2012), with summary of beneficiary attitudes and satisfaction levels in Annex 5.

¹⁸ A recent Bank study on El Salvador describes a dramatic reduction in deforestation nationwide in the period from 2005 to 2012, raising the question of attribution. While this is not intended to diminish project achievements in the pilot PAs, it suggests a broader trend was afoot (but the Ministry of Agriculture and MARN were unable to point to any single policy or program to explain this phenomenon). See: Country Land Assessment: El Salvador, World Bank 2012 (Draft).

the carbon sequestration and fishery benefits exceeds GEF and GOES project expenditures at a net present value ranging between US\$3.64 million and US\$25.56 million.

3.3.3 Financial analysis. An analysis of the post-project financial situation of the Natural Protected Areas System (NPAS) shows that annual variable costs, estimated at US\$7.4 million significantly exceed revenues, which are slightly above US\$2.0 million. MARN relies on budget allocations to cover these costs, while revenues from park user fees, licenses and concessions are being derived from three parks only and amount to some \$54,000 annually only. No such revenues are being collected in the two project beneficiary parks. In conclusion, at this time the financial sustainability of the NPAS has not been established.

3.4 Justification of Overall Outcome Rating

Rating: **Moderately Unsatisfactory**

3.4.1 The justification of overall outcome rating is as follows: (i) Relevance: Project objectives, design and technical approach were and remain directly relevant to the consolidation and sustainability of El Salvador's NPAS. However, project design was complex and highly innovative in the El Salvadoran context and exceeded MARN's capacity to execute it in full and alone without the support of the LAP II operation and CNR; (ii) Achievement of GEO: The project partially achieved its GEO. While the Project had many successes under Component 2, it was unable to translate these outcomes/tools into the important legal, policy and land regularization elements/objectives of Component 1 which was only partially executed. The critical issues are thus sustainability and government ownership of and commitment to the envisaged legal framework. This does not detract from the ongoing dialogue between the Bank and GOES on the Forest Partnership, and on advancing the REDD agenda in which a key counterpart is MARN; (iii) Efficiency: In regard to project efficiency, the economic analysis summarized in 3.3 and Annex 3 shows carbon sequestration and fishery benefits exceeding GEF and GOES project expenditures. In regard to financial benefits, annual variable costs significantly exceed revenues within the NPAS and thus the latter's financial sustainability has not yet been established.

3.5 Overarching Themes, Other Outcomes and Impacts

(a) Poverty Impacts, Gender Aspects, and Social Development

3.5.1 PACAP had no explicit poverty objectives but the testing of small subprojects in the Guija Complex and Bahia de Jiquilisco showed that poor families/communities residing within and around the PAs, with evolving awareness of the goals and rationale for conservation, could become an organized force in improving natural resources management and promoting conservation and biodiversity with the prospect in some cases of income generation, albeit modest. Further, the participatory COALs (Local support Committees) and ADESCOs (Community Development Associations) were able to convene local stakeholders around conservationist themes. Local people were increasingly willing to denounce unauthorized settlement or deforestation activity and to participate in environmental educational events and field days. In aggregate, a marked increase in social capital was demonstrated (see 3.5.4).

3.5.2 Gender was not a project focus but participatory evaluation of the subproject investment experience shows positive results. About 42% of female beneficiaries had participated in administrative decision-making about their subproject and a similar percentage had participated in its planning and execution. Even so, researchers urged greater effort in future to plan specific formative activities and awareness-building on the theme of gender. It is not known how many subprojects were female proposed and led.

(b) Institutional Change/Strengthening

3.5.3 Institutional growth was evident in the evolving capacity of MARN and the PCU to implement complex activities with greater agility and technical skill over time. This was evident in the final year and particularly for MARN through its first experience working directly with park residents through the subprojects. Establishing the MARN/CNR Technical Roundtable was also a sign of institutional maturation. This said, the constant problems of inter-institutional coordination and internal dysfunction associated with unusually high turnover of senior personnel and key technical/other staff, bureaucracy and persistent issues affecting contracting and related functions combined with the complexity of the Project itself, reduced the potential for further institutional growth.

3.5.4 At the local level, improved organization motivated by a sense of empowerment and genuine appropriation of the project's conservation goals boosted the status and legitimacy of the COALs, ADESCOs, participating cooperatives and NGOs. Institutional growth was also demonstrated by the following: increased capacity of groups/entities benefiting from subprojects to manage and administer funds; already demonstrated efforts to seek legalization as cooperatives and to form strategic alliances with the municipalities and other local organizations for commercial, conservation and social purposes; expressed awareness of the importance of maintaining their investments; and new-found readiness to approach local authorities about observed environmental infractions and community needs.

(c) Other Unintended Outcomes and Impacts

3.5.5 The extent of the social capital gains suggested by responses in evaluative workshops designed to capture beneficiaries' views was positive and unexpected although the ICR acknowledges that such impressions are not hard evidence of social capital formation and the durability of these gains is uncertain.

3.6 Summary of Findings of Beneficiary Survey and/or Stakeholder Workshops

3.6.1 **Beneficiary workshops:** A series of workshops using a structured format to gauge beneficiary organizations' attitudes evaluated the 24 alternative production investments. While the evaluation separates the responses by area, the main results are similar for both and the findings below are a synthesis (see also Annex 5): (i) 100% of participants from both pilot areas agreed that quality of life had improved as a result of their subproject and all said their subproject had helped conserve and protect natural resources; (ii) all reported having implemented various activities to restore eco-systems: reforestation, artificial reefs (*arrecifes*); and improved drainage in mangrove areas; (iii) improved fishing practices paid off: in all cases fish yields increased, ranging from 33% to 275%, and incomes increased within this same range; (iv) about 42% of women said they had participated in decision-making on administrative processes, subproject planning and execution; (v) most beneficiaries believed subproject execution had strengthened their community/local organization, capacity to administer financial resources, generate income and understand natural resources conservation and biodiversity; (vi) most organizations felt that institutional strengthening and knowledge acquired from numerous training sessions were the two most valuable benefits; and (vii) among the environmental benefits: increased production of fish from eco-friendly methods, utilization of native species in reforestation, and reduced environmental contamination.

4. Assessment of Risk to Development Outcome

Rating: **Substantial**

4.1.1 The project fell short of establishing the required legal and institutional frameworks, putting the long-term sustainability of project achievements at risk. However, these risks are reduced to varying

degrees by PACAP's infrastructure and capacity-building investments which resulted in: (i) increased awareness and participation of local stakeholders (in particular, residents of the two pilot PAs) in environmental management; (ii) use for decision-making of the environmental and geographical information and data collected by MARN, CNR and others; (iii) collection and organization of land tenure conflict-related information generated by the Project; (iv) actual resolution of conflicts in key cases through field work, awareness-building and information dissemination/workshops; (v) improved collaboration between MARN and CNR in later stages of the Project, permitting expedited approval of PA delimitation plans and their registration in the cadaster/registry system; (vi) substantial completion of the updated strategy for sustaining the NPAS, and its Action Plan; (vii) implementation of 24 sustainable livelihood subprojects by communities within the pilot PAs demonstrating the viability of continuing to live within areas subject to environmental conservation/restriction; and (viii) as noted earlier, products generated by the Project are informing the development of additional, broader policy instruments, e.g., the updated NPAS strategy is supporting development of the National Biodiversity Strategy and the National Environmental Strategy and related Action Plans, to be finalized in 2013.

4.1.2 Regarding financial stability of the NPAS, although a mechanism for full cost recovery was not put in place (and was not an explicit objective), the project strengthened MARN's institutional capacity for planning for the long-term expenditures necessary (human and financial) to sustain the system, and for evaluating alternative financing sources. Budget resources are a critical uncertainty.

5. Assessment of Bank and Borrower Performance

5.1 Bank

(a) Bank Performance in Ensuring Quality at Entry

Rating: **Moderately Satisfactory**

5.1.1 Project preparation was handled cost-effectively and took just one year. Project design was innovative and consistent with the direction of GOES sector policies and institutional framework as well as the Bank's CAS, integrated/blended with a complementary operation to leverage technical, political and strategic support. While the failure of LAP II could not have been predicted, it immediately focused attention on project complexity, on the unpreparedness of the executing ministry MARN to manage such a project on its own, and on the lack of a contingency plan to support a standalone project. Restructuring might have been explored to reduce scope by eliminating certain complex, longer-term objectives, and rationalizing performance indicators. Even at the Mid-term Review, a more optimal opportunity to restructure given several years of implementation experience, this was not done. The Results Framework matched project objectives in scope and difficulty but the design of indicators to capture the full implications of consolidation and of biodiversity conservation was too limited, while other indicators reflected unrealistic expectations regarding readiness to launch in the pilot PAs.

(b) Quality of Supervision

Rating: **Moderately Unsatisfactory**

5.1.2 Project supervision is rated Moderately Unsatisfactory when looking beyond the strong performance of the supervision team to overall Bank performance where more could have been done to support the project in achieving its results. Basic supervision is rated Satisfactory, characterized by regular, well-documented missions, a focus on fiduciary capacity and performance, and on trying to promote inter-institutional cooperation and internal communication. Team members consistently worked with the Client to track/update all project indicators over time. Project design would have leveraged a normal IDA supervision coefficient but when LAP II was cancelled, the project received only the modest

GEF allocation. The Team raised this as a risk (which it was given the project's land issues) but PACAP's status as a GEF largely precluded additional resources.¹⁹

5.1.3 Balancing these factors: (i) the Bank should have done more to manage the expectations associated with a smaller, standalone GEF project by restructuring it at Mid-Term to eliminate or re-dimension complex elements beyond MARN's capacity. The Bank Team maintains however, that MARN was capable of asserting control over the innovative activities but lacked the commitment; many of the responsibilities to move on land regularization inside the PAs were MARN's irrespective of LAP II;²⁰ (ii) with hindsight, Bank management should have been more involved in finding positive approaches to implementation support; (iii) the Bank's dialogue with GOES could have been more supportive and forceful once that dialogue reopened but the Project had lost priority internally; (iv) more positive, less rigid procurement support should have been provided, thereby possibly avoiding unnecessary delays and tension. An example was the Bank's delayed no objection to project extension causing MARN to have to cancel advanced procurement processes, but it appears this delay was really intended to pressure the Recipient to finally hire a permanent procurement specialist. Finally, there was a lack of clear communication regarding a possible further six month extension. Despite positive signals given during a visit by Bank Executive Directors impressed with the Project, an extension was not granted.

5.1.4 On this last point however, the ICR doubts that the critical legal and regularization activities still pending would have been completed under an extension because the real problem was commitment, not time and resources. The Project team maintains that the less than optimal support from the Bank on the issues mentioned above - especially procurement – did not affect the activities that would have ensured a better sustainability outcome. The Project team encouraged MARN to make progress on the innovative land aspects to achieve greater impact but probably should have accepted that MARN/GOES were not ready and the overall approach should have been more gradual and less ambitious.

(c) Justification of Rating for Overall Bank Performance

Rating: **Moderately Unsatisfactory**

5.1.3 This rating takes into account a Moderately Satisfactory preparation performance which acknowledges the strong rationale for blending PACAP with LAP II but suggests, with some ambivalence given the difficult country context, that the cancellation of the latter might have provoked an immediate revision of PACAP's ambitious vision, scope and scale to avoid downstream problems. Supervision performance involved a more complex series of events where the basic task of team supervision was handled well but undermined to varying degrees at the overall Bank level by missed opportunities, undue rigidity, and erosion of internal support.

5.2 Borrower

(a) Government Performance

Rating: **Moderately Unsatisfactory**

5.2.1 As noted earlier, the Project was prepared and executed under two administrations with divergent visions of national development. Government performed well during preparation and supported the planned collaboration of PACAP with LAP II. However, LAP II's cancellation and its implications for PACAP should have prompted efforts by GOES to persuade CNR (and ISTA) to collaborate with MARN given the importance of the expected integration effects and the need for MARN to grow institutionally. The new administration's relationship with CNR was distant and its understanding of MARN's role

¹⁹ Some supplemental resources were obtained from the GEF Coordinator.

²⁰ The Team also maintains that MARN resisted contracting a consultant to work on regulations to the new Protected Areas Law.

imperfect. In addition, the prolonged stand-off on budget for the delimitation and demarcation activities pushed into 2012 had a negative impact on project execution. Government's ownership of PACAP was and remains, weak. Counterpart funding was problematic, mainly due to Government's delayed allocation of funds to project activities. The result was a difficult implementation environment with repercussions on certain project activities, reflected in disbursement of 80% of the Grant.

(b) Implementing Agency or Agencies Performance

Rating: **Moderately Unsatisfactory**

5.2.2 MARN was instrumental in contributing to the many project achievements. Its main failing was its centralized, bureaucratic decision-making and processing, and difficulty adjusting to new challenges affecting the future of the PAs and their effective management. Its relationship with the PCU fluctuated (the two entities were not synonymous), and internal communication was weak resulting in tension both horizontally and vertically within the agency over time. Its ownership of the Project's important legal reform aspects was weak.²¹

5.2.3 The PCU performed well within the constraints affecting inter alia, its leadership and staffing which suffered repeated turnover. Its institutional capacity had evolved markedly by the final year and under the leadership of a capable, final Coordinator. The Project was technically and operationally challenging and heavily dependent on contracted specialists; the PCU lacked any prior experience with Bank projects and (as with most GEF operations) had to learn on the job. Procurement and contracting were a constant issue. The PCU merits praise for its comprehensive, well-structured approach to the community subprojects and for quality M&E products including a strong Completion Report providing a candid review of factors influencing the project and its outcomes, and an equally good analysis of the community subprojects including beneficiary opinions on key issues.

(c) Justification of Rating for Overall Borrower Performance

Rating: **Moderately Unsatisfactory**

5.2.4 This rating weighs the Recipient's achievements despite the challenging circumstances of a project executed under conditions different to those envisaged at approval, against a mix of technical, financial, operational and institutional factors which affected implementation progress, and limited the achievement of specific activities important for the long-term sustainability of the NPAS.

6. Lessons Learned

6.1.1 The following are among the more important project lessons:²²

This project raised issues concerning blended versus standalone projects and the Bank's effectiveness in delivering on the latter. Dependence on another operation for financing and technical expertise may be risky even when the justification is compelling – as in PACAP's case - the operation is Bank-supported and the lead agencies are influential and well-connected. The justification for the standalone was far weaker and the decision entailed many implementation difficulties. Blended projects should have mitigation measures – including restructuring if appropriate - should such an operation not proceed or for some other reason, the linked approach does not function.

²¹ The MARN/PCU Team feels that while the initial phase of the Project saw difficulties integrating PACAP into the Ministry and deciding the structure of the nation's natural patrimony, the Project was steadily assimilated over the period and project management stabilized over time, despite intra-institutional tensions.

²² See Client Completion Report (MARN/PCU 2012) for additional lessons.

Inter-institutional coordination and open internal communication are essential for conservation and biodiversity interventions which rely on broad consensus and solidarity to maintain momentum. While the fallout from electoral turnover is usually beyond a project's control, the Bank can play an important supportive role in fostering inter-agency partnerships to expand the network of stakeholders able to support agencies involved in difficult and controversial operations, and to expand the institutional partners for the longer-term sustainability of critically important frameworks such as the NPAS.

Changes in higher level positions within the project coordination unit must be accompanied by an intense, accelerated induction process to build understanding concerning the project concept, methodology, stage of achievement, and difficulties encountered prior to the changeover. This is essential to generate and strengthen channels of communication among project authorities and related institutions, and garner commitment.

Mobilizing citizen participation can have major impacts on the sustainability of otherwise controversial conservation activities. Local buy-in stemmed from a mix of mobilization efforts around environmental themes, education and hands-on field training, direct investment incentives and participatory analysis of project experiences. The pay-off was park communities' willingness to detect and report deforestation, clandestine settlements and other damaging activities in the PAs. It also created an organizational platform for local project management and coordination, for conflict resolution, and for piloting successful alternative activities. The unexpectedly strong indications of social capital formation were an important collateral benefit of the Project.

7. Comments on Issues Raised by Borrower/Implementing Agencies/Partners

(a) Borrower/implementing agencies ²³

(b) Co-financiers N/A **(c) Other partners and stakeholders** N/A

²³ The draft ICR was sent to the Borrower for comments on November 30, 2012. Following a video-conference (held on December 12, 2012) between the Bank and Recipient teams to discuss the Bank's draft ICR, the Bank received a set of informal written comments from the Recipient team, all of which were incorporated or taken into account during finalization of the ICR. However, the Recipient did not subsequently send the requested formal letter and thus no additional comments are presented in Section 7 above or letter entered in Annex 7. The informal comments are filed in the Project archive/WBDOCS.

Annex 1. Project Costs and Financing

(a) Project Cost by Component (in USD Million equivalent)²⁴

Components	Appraisal Estimate (USD millions) ²⁵	Actual/Latest Estimate (USD millions)	Percentage of Appraisal
1. Strengthening of the National Protected Areas System (NPAS)	1.35	1.41	104.44
1.1 Consolidation of NPAS Strategy	0.48	1.32	275.00
1.2 Strengthening of Legal and Institutional Framework	0.62	0.07	11.29
1.3 Public Dissemination and Awareness Campaign	0.25	0.02	8.00
2. Consolidation and Management of Pilot Protected Areas	2.64	3.08	116.66
2.1 Characterization and Delimitation of Pilot PAs	0.12	--	
2.2 Legalization and Regularization of Pilot PAs	0.67	--	
2.3 Management Plans for Pilot PAs	1.85	--	
3. Project Administration	0.60	0.43	71.66
Total Baseline Cost	4.59	4.92	107.19
Physical Contingencies	--	--	
Price Contingencies	--	--	
Total Project Costs	4.59	4.92	107.19
Project Preparation Facility (PPF)	--	--	
Front-end fee IBRD	--	--	
Total Financing Required	5.00	4.92	98.4

²⁴ Original cost estimated included US\$5.00 million from the LAP II Project but that project did not become effective. Under the blend arrangement, GOES would contribute US\$3.4 m. as counterpart. Once LAP II dropped out, GOES was required by the Bank to contribute US\$2.63 million.

²⁵ As shown in PAD, Annex 5.

(b) Financing

Source of Funds	Type of Co-financing	Appraisal Estimate (USD millions)	Actual/Latest Estimate (USD millions)	Percentage of Appraisal
Borrower/Client		3.40	0.95	27.94
Global Environment Facility (GEF)		5.00	3.96	79.20

Annex 2. Outputs by Component

2.1 The Project was a grant funded by a full-sized US\$5.0 million GEF contribution, partially-blended with the LAP II Bank Loan (P086953) in an amount of US\$5.0 million. Total project cost was US\$13.4 million including Government counterpart of US\$3.4 million. The following presents the outputs from each component/subcomponent and summarizes the context and experiences where relevant. Annex 1 shows the planned and actual costs of each component/subcomponent.

2.2 **Component 1: Strengthening of the NPAS** (est. total cost US\$5.4 m of which US\$1.40 m GEF) to enable its long-term sustainable management by consolidating the existing strategy for the NPAS in partnership with all relevant stakeholders and through development of an adequate institutional and legal framework for the administration and management of the NPAS.

Sub-component 1.1: Consolidation of the NPAS Strategy

- Rationalization and Prioritization study of the NPAS was completed;
- Products delivered: Work Plan; preliminary criteria for PA prioritization; updated eco-systems map; rapid ecological evaluation report; final preliminary criteria report; conservation objects; preliminary proposed NPAS models; and proposed strategic lines of action for NPAS management.
- Update of the NPAS Strategy and its draft Action Plan were completed, and the draft strategy was consulted within MARN, but there was insufficient time to hold consultations at the national level with institutional stakeholders.
- Delimitation of PAs surpassed the Project target (at least 40 PAs and mangroves delimited) – 68 terrestrial areas and one marine (mangrove) area.
- These areas were transferred to MARN and declared as PAs.

Subcomponent 1.2: Strengthening of the Legal and Institutional Framework

- Options for regularization of residents of PAs were developed.
- The project team updated draft Regulations for the new Protected Areas Law based on project results and submitted draft to MARN for review but was unable to get draft Regulations finally approved and in effect by closing.
- High level forum was established between MARN and ISTA to facilitate the exchange of information and expedite the transfer of potential PAs.
- MARN-CNR technical round table was established to expedite approval of field work products.
- Based on the draft, updated NPAS Strategy, MARN would assess the inter-institutional agreements required to operate the NPAS.

Subcomponent 1.3: Public Dissemination and Awareness Campaign

- Aide Memoires suggest that the original indicator was considered too difficult to measure and was substituted by the call for a communications campaign.
- A baseline survey indicated that public knowledge of the NPAS Law was zero.

- Communications campaign was launched in August 2012.²⁶ The contract for its design was terminated as the draft product presented by the firm did not correspond to MARN’s vision and strategy. A new proposal was prepared before closing and MARN obtained funding for its execution. The campaign was too late to benefit the Project but will be an important sustainability factor in keeping the project vision and methodology in front of diverse national, regional and local stakeholders.

2.3 Component 2: Consolidation and Management of Pilot Protected Areas (est. total cost US\$7.1 m of which GEF US\$2.9 m) financed the development, testing and finalization of a methodology to consolidate two pilot Protected Areas including their delimitation, demarcation and regularization, and to develop and implement management plans for their sustainable use. The results of this component were expected to feed into the consolidation of the NPAS Strategy (Component 1).

Sub-component 2.1: Characterization and Delimitation of Pilot PAs

- Socio-economic and environmental diagnoses/census were completed for both pilot PAs (San Diego and San Felipe La Barra, and Bahia de Jiquilisco).
- Mapping of official boundaries was completed for both pilot areas.
- The cadaster and registry were completed for one pilot area (San Diego and San Felipe La Barra).
- MARN also created a Protected Areas Registry which by closing had not yet been linked to the CNR database.
- Delimitation and physical demarcation of one pilot area (San Diego-Las Barras) completed; 115.72 km were demarcated (100%), equivalent to an area of 18.7 km².
- Delimitation of second area (Bahia de Jiquilisco) was completed but physical demarcation had not occurred (delimitation is far more important).

2.4 Pilot-testing supporting an updated NPAS Strategy: The Project developed and pilot-tested elements of the evolving NPAS Strategy to consolidate two pilot PAs with the longer-term goal of applying that Strategy nationwide. The results of and lessons learned from pilot testing were used to further inform/enhance the Strategy (see Component 1 above) under a process of feedback. The updated Strategy thus included elements related to Project activities on the technical side (e.g., data collection, management plans, alternative sustainable livelihoods), and institutional side (e.g., more broad-based stakeholder dialogue, agreements for effective implementation of the Strategy). In addition, the Project helped to start analyzing the human and financial resources which would be needed to implement the Strategy and its associated Action Plan.

Subcomponent 2.2: Legalization and Regularization of Pilot PAs

- Options for the regularization of PA residents were developed and reviewed by MARN but had not been adopted by closing (which was to occur through approval of the Regulations of the new PA Law).
- Five areas (pilot area of San Diego La Barra, and four areas of Bahia de Jiquilisco (Chaguantique, Nancuchiname, Isla San Sebastian, and Hacienda Caballito – 3,815 ha) were legally established

²⁶ This output would be expected to support the goal of “at least 10% of the national population is aware of the new Protected Areas Law and regulations”.

by Ministerial Resolution as PAs, corresponding to 79% of the total area to be declared as PA; the only remaining area to be declared was Normandia.

- Mangrove areas are protected through the PAs Law (art. 9) and form part of the NPAS, and as such do not require a separate decree for their legal protection. However, MARN is considering having mangroves registered in the name of the State to enhance legal protection, through an appropriate legal mechanism developed by the project.
- Tracking Tool scores demonstrating improved consolidation and management of the two pilot PAs met or exceeded all targets (as adjusted by Mid-term Review), as shown below:

Table 2.2.1: Tracking Tool Scores in Pilot PAs

Pilot Area	Specific Area ²⁷	Target	Baseline March 2005	MTR Revision Feb 2010	Final Result June 2012
Guija Complex (GC)	(a) National Park of San Diego and San Felipe-Las Barras (Land)	40	37	58	59
Guija Complex	(b) Guija Complex (Aquatic)	40	2	24	35
Bahia de Jiquilisco (BJ)	(a) Weighted average: Seasonally-saturated Forests	40	26	49	48
Bahia de Jiquilisco	(b) Weighted average: Salt Forests	40	15	39	58

- Information on land tenure conflicts within the PAs was collected and systematized with some conflicts being resolved through alternative conflict resolution mechanisms.
- The percentage of pilot PA lands with no unresolved tenure issues was as follows: 90.5% of San Diego La Barra with no land tenure conflicts; and, 99% of the area delimited (four municipalities) by closing (about 50% of total pilot area of Bahia de Jiquilisco).
- Field survey work in Bahia de Jiquilisco pilot was completed by end-project.
- The following table shows the status of populations in the two pilot PAs including conflicts. Data is preliminary and some field research is not yet reflected.

Table 2.2.2: People in the Parks and Conflict Status (Preliminary)

Name	Perimeter of Natural Area (Core Areas and Islands) in Conflict	Area		Perimeter		Area occupied by Tenancies and Possessions		Comments
		Area in conflict (ha)	% of total	Length of Perimeter in Conflict	% of Total	Area (ha)	% of Total	
National Park San Diego and San	4 (13 total)	-	-	-	-	84.36	4.51	The area and perimeter length will be

²⁷ The Tracking Tool applied in 2012 contained a higher number of indicators than the version applied in 2005 and 2010 and thus comparisons might be affected by the different methodologies, explaining the apparent reduction of the points assigned to BJ (a) and the lower points for GC (b).

felipe Las Barras, Metapan								quantified based on legal and technical steps needed
Bosques Dulces, Usulután	3 (7 total)	-	-	-	-	246.61	12.44	The area and perimeter length will be quantified based on legal and technical steps needed
Bosques Salados, Usulután, Bahía de Jiquilisco	44 (138 total)	540.83	2.02	69.74	7.05	2,125.83	9.27	Defined conflicts compared to Line 73
TOTAL	51 (158 total)	540.83 (26,766.43 total)	2.02	69.74 (1,144.16 total)	7.05	2,456.85 (26,766.43 total)	9.17	

Subcomponent 2.3: Management Plans for Pilot PAs.

- The number of protected area field staff in each pilot PA by closing was as follows: 5 park rangers in San Diego La Barra and 24 in Bahía de Jiquilisco, hired by MARN; and,
- Fully-staffed regional project offices were established in each pilot area.
- No progress was made on establishing cost recovery mechanisms or raising revenues from the parks. This goal was overly ambitious for a nascent NPAS still under construction and certainly for the pilot areas.
- Implementation of existing Management Plans resulted in 24 community subprojects (see 2.4).

Community Subprojects:

2.5 The Project grant-financed 25 alternative livelihood, productive subprojects in Bahía de Jiquilisco and the Guija Complex, supporting solidarity groups, NGOs, ADESCOs and fishing cooperatives with financing totaling about US\$240,100, or an average US\$9,600 per subproject. Subprojects were grounded in a Social Assessment which identified the demographic and socio-economic characteristics, forms of organization and social participation, and possible risks of conflict from project operations - especially from land legalization activities – in the two project areas. Restrictions on natural resource use contemplated in the Management Plans had the potential to deepen the poverty of park residents who depended on the forests and fishing grounds for sustenance. The solution was to include such populations as active agents in the protection and conservation of the pilot areas, using subprojects as an incentive.

2.6 **Methodology:** Park communities were consulted on suitable types of investments and a minimum structure for their proposal and execution which included a 15% beneficiary contribution in cash or kind. Subprojects financed were consistent with local Management Plans. Strategic areas of support were biodiversity, low impact tourism, aquaculture and agro-forestry activities. Subprojects were expected to also capture three cross-cutting themes: territorial governance through participation and social capital formation; human development focusing on gender; and environmental education to change attitudes and practices affecting natural resources. Legal community organizations were publicly invited

to submit proposals and eligibility criteria applied to both the type of subproject and proponent organizations. Financing of US\$5,000 to US\$10,000 was available, up to a maximum of US\$25,000 in exceptional cases. Importantly: (i) each subproject came with training including operation and maintenance; (ii) each was evaluated by the PACAP area technical teams inter alia, for compliance with Bank Safeguards and for positive impact on beneficiaries' living conditions; and, (iii) results were disseminated at participatory "subproject achievement fairs" including beneficiaries, municipal authorities, government representatives and NGOs.

2.7 **Results:** Some 45 proposals were received (13 in San Diego-Las Barras and 32 in Bahia de Jiquilisco) and 24 were financed (eight and 16 respectively). Investments were small, unlikely to generate significant income in most cases, and valuable more for demonstrating conservation-friendly ways of performing familiar activities. Even so, fishing activities using improved practices in Bahia de Jiquilisco saw increased fish yields ranging from 33% to 275% with similar increases in incomes. An emblematic example is fishing using explosives. In Bahia de Jiquilisco, local organizations helped to identify and locate groups using such methods, built awareness through education on the protection of marine coastal resources, then supported change with financial and technical incentives/subprojects and organizational support. It is estimated that this effort reduced by 60% the number of fishermen using explosives, reduced the physical risk to fishermen, and limited the destruction of mangroves for shrimp cultivation. Similarly, excessive growth of water lilies in the Metapan Lagoon (San Diego - Las Barras) was disrupting navigation, tourism and productive activities. Specialists designed methods to help local residents restore the aquatic eco-system and use the lilies as material for crafts and soil fertilization. Participating groups/organizations felt they had experienced a formative process and executing their subprojects had strengthened organizations, capacity to manage/administer resources, generated income, and built awareness of natural resource protection and conservation. See table 2.5.1.

Table 2.7.1: Subprojects - San Diego-San Felipe-Las Barras and Bahia de Jiquilisco

San Diego/San Felipe - Las Barras	General Objective	Specific Objectives
1. Artisanal fishing	Contribute to improving quality of life for fishermen using improved fishing methods in Lago de Guija	-Improve fishing method fish by strengthening capture of permitted fish and reducing capture of non-commercial species. -Protection activities in the Ostua River neighboring the La Barra Humid Forest
2. Improved management of artisanal fishing	Contribute to better practices which support social, economic and environmental development to improve quality of life of Las Conchas community	Better management of artisanal fishing through acquisition and use of standard aperos in las Conchas sector of Lago de Guija
3. Ecological tourism	Improve incomes of members of the Cooperative Association of Agro-livestock Production of the Cerro las Figuras Fishing Cooperative by developing low impact tourism in the Igualtepec community, Metapan	Strengthen community capacity of 20 members with sustainable low impact tourism activities in Igualtepec community
4. Strengthen capacity to attend to natural resource tourists, and management of solid wastes	Strengthen capacity of El Caserio population in eco-tourism, natural resources conservation and management of solid wastes	Strengthen local capacity of 30 leaders in tourist, gender, eco-systems and local development. Conduct community participation activities to recuperate dry forest eco-systems (reforestation and fire-

		breaks). Conduct activities to improve solid waste management, coordinating with local institutions including mayors.
5. Eco-tourism	Develop eco-tourism activities to improve quality of life by strengthening capacity in Azacualpa	Strengthen ADEZCONUAZ by providing infrastructure for tourism. Develop community capacity to produce local crafts Support basic sanitation on Lago Guija beaches
6. Socio-economic development of cooperative	Develop socio-economic capacity of 23 members of cooperative (Cooperative Association of Livestock Production and Fishing of "Navegadores de Guija".	Develop activities to support productivity on 23 agricultural parcels neighboring San Diego-La Barra. Economic and social development of association members through better practices
7. Improved fishing methods	Improved economic incomes and food supply and improve the aquatic quality of the Guija Lake.	Contribute to aquatic life not being over-exploited and capacity to grow until suitable for commercialization. Reforestation of parts of the lake shore to make it more attractive for tourists and avoid erosion. Improve conditions in the Metapan Lagoon by extracting water lilies.
8. Improved environmental conditions in Metapan Lagoon.	Improve socio-economic conditions through environmental activities in Pacheco and Metapan Lagoon.	Extract water lilies thereby encouraging fish breeding Train local people to use the lilies to make products and improve incomes.
Bahia de Jiquilisco	General Objectives	Specific Objectives
1. Protect resources by establishing artificial <i>arrecifes</i> (ponds) to strengthen family agriculture		Carry out better practices for sustainable fishing by installing 120 concrete structures for <i>arrecifes</i> (habitat structures). Establish a plant nursery and increase the population of the curil species. Train artisanal fishermen to better manage coastal resources with emphasis on fish and bivalves.
2. Strengthen the solidarity group El Atun through better fishing practices in water bodies of the Jiquilisco and Usulután Municipalities.	Strengthen artisanal fishing to increase production and conservation of fish and marine fauna in Bahía de Jiquilisco	Strengthen artisanal fishing through viable strategies to protect distinct species and improve family incomes of members of Puerto El Triunfo community
3. Protect marine coastal resources and promote eco-tourism by establishing artificial <i>arrecifes</i> to increase habitat. Development and production of species, sustainable use and research on species in Punta Molontique, Usulután	Establish artificial <i>arrecife</i> and tourist infrastructure to protect, conserve and production. Sustainable use of marine coastal resources, Punta Molontique, Usulután.	Protect and recuperate marine coastal populations via artificial <i>arrecifes</i> to regulate fishing and establish sustainable fishing in Estero El Tigre, Usulután. Construct a floating platform to attract and receive tourists Promote sustainable fishing.

4. 56 wood-saving eco-stoves. Reforestation of 11,200 linear metres of live fence.	Diminish environmental contamination and reduce deforestation via use of appropriate technology and reforestation.	Reduce environmental contamination and respiratory illnesses via use of technologies such as wood-saving stoves (eco-cocinas) Conserve natural forest by reducing wood consumption using wood-saving stoves and reforesting sweet forest
5. Construct 52 latrines aboneras in Mesitas community	Improve sanitation conditions of Las Mesitas to de-contaminate soil, air and water	Reduce environmental contamination through correct disposal of human waste by building latrines <i>aboneras</i> and disposing properly of rainwater and waste water. Achieve greater awareness about rational use of natural resources through a training plan.
6. Provide 56 wood-saving stoves and re-forest 4.75 <i>manzanas</i> of sweet land in San Hilario community	Reduce environmental contamination and reduce deforestation by re-planting trees	Reduce environmental contamination and respiratory illnesses by using appropriate technology such as wood-saving stoves
7. Strengthen better fishing practices	Contribute to the conservation and sustainable use of mangrove eco-systems by developing “clean fishing” to improve habitat conditions and quality of life of direct users.	Strengthen knowledge of conservation and sustainable use of mangroves. Strengthen clean fishing to reduce impact on biodiversity of illegal fishing methods Develop monitoring, supervision and evaluation to identify adverse impacts on biodiversity and obtain information to improve fish management.
8. Clean fishing in mangrove areas of Puerto El Flor, Bahia de Jiquilisco	Establish a clean fishing system with an eco-system focus to improve conditions in natural habitats and quality of life of local populations.	Strengthen community knowledge of sustainable use of mangroves and sustainable fishing Initiate “clean fishing” to reduce adverse impacts on biodiversity.
9. Increase area of artificial <i>arrecifes</i> to increase habitats for the growth, development and reproduction of marine fish, Isla Espirito Santo, Usulután	Create adequate habitats for growth, development and reproduction of marine fish.	Contribute to recovery of marine fish species in Canada El Nance zone and create new artificial habitats. Reduce the pressure on fish populations, punches, curiles, and <i>cascos de burros</i> , creating an alternative fishing with <i>anzuelo</i> for member associations. Increase economic incomes of people directly dependent on extraction/marine fish.
10. Improve fishing at greater depth through fishing equipment and construction of a rack for mending nets	Fishing equipment and a activities to improve quality of fish products caught at greater depths through fishing equipment and a mending rack for nets	Donation of equipment to coop members to avoid use of illegal nets; net mending rack to provide work and improve family economic conditions; protect coastal marine resources through use of clear nets and extraction of bigger fish at greater depth to avoid fishing in fish development and reproduction areas, improving family incomes.

11. Improve fishing conditions and reduce exploitation of coastal resources, Marinos de Isla de Mendez	Recuperation of coastal resources of the Isla de Mendez community.	Implement an awareness-building plan with fishermen who use explosives. Practice sustainable use of marine coastal resources
12. Adapt Lutjanos Colorado to growing conditions in <i>Jaulas de Flotantes</i> , Usulután	Determine if this species can be adapted to conditions in <i>jaulas flotantes</i> .	Evaluate adaptation of <i>Jaulas Flotantes</i> submitting them to three different densities. Measure the development in size and weight of <i>L. Colorado</i> in <i>Jaulas Flotantes</i> . Evaluate percentage of survival of <i>L. Colorado</i> .
13. Adapt <i>Lutjanus guttatus</i> to growing conditions in <i>Jaulas Flotantes</i>	Determine if <i>Lutjanus guttatus</i> can be adapted to conditions in <i>Jaulas Flotantes</i> .	Evaluate adaptation of <i>Lutjanus guttatus</i> ; Measure development in size and weight; Evaluate percentage survival in <i>Jaulas Flotantes</i> ; Register and evaluate physical-chemical parameters For growth of the species.
14. Biological study of <i>Jaiba Callinectes arcuatus</i> and <i>Callinectes toxotis</i> in the Bahía de Jiquilisco Biosphere Reserve	Biological study of <i>Jaiba Callinectes arcuatus</i> and <i>Callinectes toxotis</i> in the Bahía de Jiquilisco Biosphere Reserve	Determine the areas, capture seasons and influence of salinity and temperature on distribution and abundance in Bahía de Jiquilisco. Determine composition by size, weight, sexual proportion, and first sexual maturity. Estimate capture by unit
15. Establish an artificial reef for sustainable use, protection and reproduction of marine fauna on Isla Rancho Viejo, Usulután	Establish an artificial reef to protect, conserve and sustainably use coastal marine resources, improving the eco-system and living conditions	Construct an artificial reef (2,000 meters square) to protect, conserve and sustainably use coastal marine resources. Establish mechanisms for improved fishing to respect the biological cycle of the fish and increase their numbers. Increase incomes of members by improving production and developing marketing channels.
16. Establish 30 manzanas of Casile Mangrove and improve management of solid waste and environmental sanitation in Isla de Jobal.	Contribute to the protection and consolidation of natural resources by establishing 30 manzanas of Casile Mangrove and adequate management of solid waste.	Establish 30 manzanas of Casilar Mangrove. Collect, classify and transport solid waste to final destination in Puerto El Triunfo.

Source: MARN/PCU 2012

2.8 **Component 3: Project Administration** (est. total cost US\$0.9 m of which US\$0.7 m GEF) financed project management mechanisms including project coordination, planning, and monitoring and evaluation (M&E). The M&E system was to be the same as that developed for the LAP II. The system was to be strengthened to include key indicators to measure GEF project performance.

- All required project reports were submitted;

- Regular performance and impact monitoring reports were produced and disseminated as per annual work plan schedules and were up to date at closing;
- The Mid-term Review (MTR) was conducted as planned and results were transmitted to the Bank;
- The Client produced a very good quality Completion Report which was reviewed by the Bank and found to be Satisfactory.

Annex 3. Economic and Financial Analysis

General Comments on the PAD Economic and Financial Analysis:

3.1 The PAD economic and financial (E&F) analysis consisted of an economic analysis of the project on various sectors in the pilot project areas and a financial analysis of the MARN Natural Protected Areas System (NPAS) that the project aimed to strengthen. This chapter reviews both analyses and updates them to the extent possible.

Original Economic Analysis

3.2 The economic analysis prepared at appraisal was detailed and comprehensive, covering various sectors on which the project was expected to have an economic impact. Specifically, for each of the protected areas, project benefits were derived from: (i) avoided loss of carbon sequestration as a result of reduced deforestation; (ii) conversion to sustainable fishing coupled with reduced deforestation; (iii) sustainable firewood production; and, (iv) sustainable agriculture and aquaculture. The assumptions made in the calculations were generally reasonable, although some appeared questionable, as discussed in more detail below. More importantly, a major shortcoming of the analysis appears to be its failure to include the economic benefits that would have accrued in the without-project scenario from the conversion of mangroves and other forested areas to alternative land uses, although the cost of their conversion in terms of reduced carbon sequestration and reduced support to fisheries was estimated. Alternative land uses that generated economic benefits before the project and would have continued to do so without the project included notably agriculture, urban settlements, and fishing. Their exclusion from the analysis led to an overestimation of project benefits.

3.3 At a discount rate of 12 percent and a 50-year period of analysis, the net present value of incremental project benefits was estimated at US\$34.9million.

Ex-post Analysis

3.4 The ICR economic analysis updated the quantitative valuation of some of the benefits in the without and with project scenarios where updated data were available and reasonable assumptions could be made. The with-project scenario was updated based on hindsight on which project inputs, outputs, and outcomes actually occurred and when, and which outcomes are likely to occur in the future. Similarly the without-project scenario was updated partially based on information on similar areas outside the project areas. Quantified benefits included: (i) carbon sequestration and (ii) fisheries, both of which depended strongly on the rate of deforestation assumed. For the rest, a qualitative discussion was provided.

3.5 Where the benefits and costs for both scenarios could be quantified, 2005-2024 was adopted as the period of analysis. This shorter period is justified since (i) any values after about 20 years are “discounted away” by the 12percent discount rate; and, (ii) a 50-year period of analysis necessitates assumptions about investments that would have to occur to ensure that benefits continue to accrue; yet he project has no control over whether such investment would be actually carried out. Unlike the PAD analysis, commodity price data were not adjusted to inflation, because the prices are all quoted in US Dollars.

Deforestation

Bahia de Jiquilisco

3.6 The PAD E&F analysis assumed a constant 1,128 ha annual deforestation in the mangrove areas in the without-project scenario. This area was equivalent to a 5.8 percent deforestation rate in 2005; but the percentage increased each year as the assumed remaining mangrove area declined. This assumption was based on the findings of Vaglio et al (2003)²⁸, from which the analyst estimated nationwide annual mangrove deforestation rates of 0.8 percent until 1996 and 5.8 percent from 1996 onwards. However, the findings of the 2010 *FAO Global Forest Resources Assessment* and a 2012 World Bank *El Salvador Country Land Assessment* differ significantly from these figures. Specifically, in the FAO Assessment, the average annual deforestation rate was 1.43 percent from 2000 to 2005 and 1.47 percent from 2005 to 2010. The World Bank Country Land Assessment, based on satellite images and ground verification, found that deforestation occurred at an annual rate of 1.5 percent from 1998-2008 and 0.17 percent from 2008-2011. Comparing the two Assessments, the World Bank Assessment concludes that the sharp decline in annual deforestation rates likely started after 2005 but no later than 2008. The maps presented in the Country Land Assessment clearly indicate significantly lower deforestation in the two project protected areas between 2008 and 2011. However, they also show similar reductions in other protected areas in the country, suggesting that even without the project deforestation might have been significantly lower than assumed in the PAD analysis.

3.7 Therefore, in this analysis, for the without-project scenario, for the mangrove areas a lower annual deforestation rate of two percent is assumed. For the non-mangrove forests the corresponding rate assumed is 1.5 percent. These assumptions take into account both the PAD analysis finding that the mangrove deforestation may have been higher than the non-mangrove deforestation and the World Bank finding on the overall country-wide deforestation rate before 2008, the year when any project activities would become effective in counteracting deforestation.

3.8 In the with-project scenario, it is assumed that mangrove deforestation is reduced gradually from two percent in 2005 to zero percent from 2008 onwards. Consequently, the mangrove forest area remains 18,492 ha from 2008 on, which is consistent with the project outcome that 18,424 ha of mangrove forests are in good or very good status, reported in the *Informe Final de Implementacion de Proyecto* (August 2012). A similar assumption is made for the broadleaf forests, except from 2008 the annual deforestation rate will be 0.17 percent to account for the fact that most broadleaf forests are outside the core conservation area. Both assumptions are consistent with Map 6.2 in the World Bank Country Land Assessment, which shows that minimal to no deforestation occurred from 2008-2011. It is assumed that the deforestation rate during 2008-2011 will continue throughout the period of analysis (Table 1).

Table 1: Assumptions on Annual Deforestation Rates in Jiquilisco and Dan Diego

	PAD Analysis		Ex-post Analysis	
	Without Project	With Project*	Without Project	With Project
Jiquilisco Mangroves	1,128 ha (= 5.8% in 2005, 80% in 2021)	0% from 2006	2.0% from 2005-2024	2% in 2005 and 2006 1.0% in 2007 0% from 2008-2024
Jiquilisco Non-mangrove forests	361 ha (=2.4% in 2005, 4.4% in 2024)	0% from 2006	1.50% from 2005-2024	1.5% in 2005 and 2006 1.0% in 2007 0.017% from 2008-2024
San Diego – Las Barras	49.5 ha (=2.8% in 2005) from 2005-2010	0% from 2006	1.50% from 2005-2024	1.5% in 2005 and 2006 1.0% in 2007

²⁸ Edwin Alpizar Vaglio et al, “Evaluacion del Potencial de Mitigacion del Sector Forestal en la Republica de El Salvador, Ante el Cambio Climatico, Mediante Practicas de Reforestacion y Forestacion”, Febrero de 2003.

	Add. 1% each year from 2011-2036			0.017% from 2008-2024
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*These rates were not stated explicitly in the text and were implicit in the benefit calculations.

San Diego – Las Barras

3.9 The PAD E&F analysis assumed annual deforestation of 49.5 ha, which was equivalent to 2.8 percent of the forest area in 2005, from 2005-2010. It further assumed that from 2011, the deforested area would increase by one percent until the entire area would be deforested in 2036.

3.10 In the ICR ex-post analysis, for the without-project scenario an annual rate of deforestation of 1.5 percent is assumed. For the with-project scenario, it is assumed that from 2005 to 2008 the rate will decrease from 1.5 percent to 0.17 percent. The latter rate is assumed to persist through the end of the period of analysis (Table 1).

Carbon Sequestration

3.11 Deforestation causes loss of capacity to sequester carbon. As in the PAD E&F analysis, it was assumed that per hectare carbon sequestration is 200 tons in the case of mangroves and 213.48 tons in the case of broadleaves. These figures were applied to the annual lost forest areas to derive the volume of carbon lost annually, which was then assigned an economic value using two different prices:²⁹ (i) the average price of a emission reduction right in the voluntary carbon market - \$4.5/ton as in the PAD analysis; and (ii) the social value of carbon sequestration, calculated to take into account the damage caused by climate change - \$20/ton in 1995 prices, adjusted by the US consumer price index, to current years. (The PAD analysis used a constant \$20 value.) The same method was applied to both with and without project scenarios in both project areas. The annual benefits thus calculated are presented in Tables A1 and A2.

3.12 The present value of incremental carbon sequestration benefits in the with-project scenario over the without project scenario were calculated as \$3.74million - \$25.66million for the Bahia de Jiquilisco and as \$37,000 – \$257,000 for San Diego Las Barras.

Fishery benefits

Bahia de Jiquilisco

3.13 The PAD E&F analysis estimated averted loss in fisheries revenues thanks to the halting of mangrove destruction in the with-project scenario, by assuming a linear relationship. It further assumed that the fishing level was five percent higher than the sustainable level and would, under the project, be reduced to sustainable levels. In the without-project scenario, the fishing levels would remain constant through 2008 despite the decreasing mangrove area; then in 2009 it would be reduced by 17 percent and then decrease at the same rate as mangrove destruction.

3.14 In the ICR analysis, the without-project mangrove destruction rate is less than assumed in the PAD analysis, as discussed above. Consequently, the sustainable level of fishing decreases at a lower rate.

²⁹ In calculating the lost carbon sequestration capacity as a result of deforestation, the PAD E&F analysis incorrectly multiplied the total area of forests in the protected area with the per hectare tonnage of carbon sequestered. Rather it should have multiplied the annual area lost to deforestation with tonnage of carbon sequestered per ha.

Furthermore, the ICR considers the PAD assumption that overfishing would continue to increase relative to the sustainable level, resulting in a 33% overfishing rate in 2008, unrealistic. Rather the ICR assumes that actual fishing would be five percent above the sustainable level throughout the analysis period. For the period 2012-2024 an average annual inflation rate of 3.5 percent, which was the average in 2001-2011, is assumed. In the with-project scenario, it is assumed that between 2008 and 2012, overfishing declined gradually to the sustainable level, and from 2010 fishing levels are sustainable, reflecting increased awareness among the fishermen and stricter controls. In both scenarios, it is assumed that the relative shares in overall catches of artisanal and industrial fishing stayed as in 2003. The flow of total fishing values are presented in Table A3.

3.15 The present value of the incremental benefits of the project is estimated as \$2.13 million.

San Diego – Las Barras

3.16 The PAD E&F analysis made two critical assumptions: i) In the without-project scenario, the fishing volumes in Guija and Metapan would decrease at the same annual rate as the assumed rate of deforestation, based on the presumption of a strong relationship between the pollution of the two lakes and the rate of deforestation. It is noted that the PAD analysis assumed no overfishing. (ii) in the with-project scenario, the fishing volumes would remain at the 2005 level, consistent with the assumption that deforestation would stop as soon as the project began in 2005. The implicit assumption is that the volume of fishing in 2005 corresponded to sustainable levels.

3.17 In the absence of contradicting information, the ICR analysis adopted the same assumption about the without-project scenario. For the with-project scenario it also assumes that the fishing volume will trend in the same manner as the forest area. The present value of the incremental benefit was estimated as \$308,000.

Fuelwood

Bahia de Jiquilisco

3.18 The PAD E&F analysis estimated the value of fuel wood extracted from the protected natural areas for the without and with-project scenarios. For the without project scenario, the PAD analysis assumed consumption of 40m³ per family for two significantly different assumptions on the number of families living in the protected area's core and buffer zones and using firewood (2,166 vs. 7,050 families in 2005). Under the lower population estimate the firewood use was found to be below the sustainable extraction level, while under the higher population estimate, 2.4 times the sustainable level was extracted. The analysis predicted that given this level of use, available fuel wood would run out in 2020 and 2017, respectively. (But this projection is based on the use of an incorrect annual population growth rate of 7% as opposed to the correct rate of 1.7% indicated in the report.) In the with-project scenario, it was assumed that each family would be allocated a fuel wood extraction quota, which would be in line with sustainable use levels in 2005. Furthermore, the project would provide soft loans to families for the purchase of gas stoves. In both cases, the benefits were valued using the price of gas stoves and kerosene used to achieve the same amount of cooking value as with fuel wood.

3.19 An ex-post analysis quantitative analysis was not possible as information about the actual populations in and around the protected area was not available to the ICR team. It can be said however, that the incremental benefit of the project is likely to have been less than estimated in the PAD E&F analysis since the deforestation rate was likely much lower in the without-project scenario than assumed, as discussed earlier. Furthermore, the project did not assign any quotas for wood extraction. Nevertheless,

the project through its provision to resident families of 112 “ecological stoves”, which burn wood more efficiently, will likely have reduced wood extraction rates and thereby helped reduce deforestation.

San Diego – Las Barras

3.20 In the PAD E&F analysis, the population figure, 36,266 or approximately 7,716 families was estimated based on the 1993 census. The fuelwood benefits in the without-and with-project cases were estimated using a similar methodology as in Jiquilisco.

3.21 The ICR considered that the population estimate of the PAD analysis was unreliable given large population movements between 1993 and 2005. In the absence of updated figures, a quantitative analysis could not be carried out. It is noted, however, that as in Jiquilisco, the fuelwood related benefit and cash flows are likely to be much smaller than in the PAD analysis given the lower deforestation rate assumed in the without-project scenario. Unlike Jiquilisco, in San Diego Las Barras no ecological stoves were provided to the residents.

Other Impacts

3.22 **Foregone alternative land uses in both pilot areas.** In the without-project scenario, deforestation caused by people clearing land for agriculture, dwellings and other purposes would lead to positive values associated with these land uses. This value could not be estimated due to data unavailability.

Bahia de Jiquilisco

3.23 The PAD E&F analysis predicted that without the project, the loss of forest cover may lead to such *depletion of groundwater reservoirs* and thus drinking water wells that by 2020 it would be necessary to put in place infrastructure to transfer drinking water from outside the area for the families living in and around the protected natural area. The present value of the cost of such investment was estimated at \$615,000 over a 50 year period. With the project this cost would be averted. In this analysis, this averted cost was not considered since, in hindsight, deforestation is unlikely to have been so dramatic, as discussed above.

San Diego – Las Barras

3.24 The PAD analysis estimated the cost of *soil erosion*, which it assessed as 19 metric tons for hectare per year in the without-project scenario, by valuing one metric ton at \$100. For the with-project scenario, the analysis assumed that 140 producers would adopt soil conservation measures, which would result in a 90% reduction of erosion. The ICR concluded that the project did not lead to this benefit since none of the sub-projects introduced soil conservation practices. Regardless, the ICR considers the assumptions related to the effectiveness of such practices, namely 90 percent reduction, unrealistic.

National level benefits

3.25 The project invested in the strengthening of the national level MARN/NPAS. As discussed in the main part of the ICR, the investments led to limited capacity improvement. This capacity, if strengthened further with necessary legal and institutional backing, would help El Salvador conserve its biodiversity values and ensure sustainable natural resource use in and around the pilot and other protected areas.

Small grant sub-projects

3.26 Annex 1 presents a detailed account of the sub-projects in both pilot protected areas. Given their small size and limited financial information available about them, it was not possible to conduct any type of economic or financial analysis of them.

Project Costs

3.27 The total project cost was \$4.91million, of which \$3.96million was funded by the GEF and \$0.95million by the Government of El Salvador. The approximate disbursement of these funds is presented in Table 2.³⁰ At a 12% discount rate, the present value of the project expenditures as of 2005 is \$2.57million.

Table 2: Project Costs (\$ million)

	2005	2006	2007	2008	2009	2010	2011	2012	Total
GEF	0	0	0.40	0.60	0.50	0.70	1.20	0.56	3.96
GoES	0	0	0.10	0.14	0.12	0.17	0.29	0.13	0.95
Total	0	0	0.50	0.74	0.62	0.87	1.49	0.69	4.91

Conclusion

3.28 The ICR analysis has shown that avoided loss of the pilot protected areas' carbon sequestration capacity is the largest benefit accruing due to the project, even taking into account the much more modest deforestation in the without-project scenario than assumed in the PAD. It is estimated at \$4.78million - \$25.92million. (The lower figure reflects the voluntary carbon market value, \$4.5/ton of the avoided carbon sequestration loss; the higher value reflects the social value of carbon sequestration, \$20/ton in 1995 terms.) Fisheries benefits are also significant and result from lower deforestation, which reduces sedimentation of the lakes in San Diego Las Barras and more sustainable fishing practices that are believed to be achieved through extensive public awareness-raising in the project area and specific subproject investments. Fuel wood benefits could not be estimated due to data unavailability. The sum of the carbon sequestration and fishery benefits exceeds GEF and GoES project expenditures at a net present value ranging between 3.64 million and 25.56 million (Table 3). The NPV would be somewhat lower if the value of the alternative land uses in the without-project scenario could be estimated.

Table 3: Summary Net Incremental Benefits(\$)

Item	Jiquilisco	San Diego-Las Barras
Carbon sequestration	3.74 million - 25.66 million	37,000 – 257,000
Fisheries	2.13 million	308,000
Sub-total	5.87 million - 27.79 million	345,000 – 565,000
Total PV of incremental benefits	6.21 million - 28.13 million	
PV of project costs	2.57million	
NPV	3.64 million – 25.56 million	

³⁰ The annual disbursement figures of the GEF funds were read off Section I. Disbursement Profile in the Data Sheet. The GoES disbursements were approximated to follow the same disbursement profile.

Financing of the MARN Protected Natural Areas System

3.29 At the PAD stage, a financial analysis of MARN's Protected Natural Areas System (PNAS) was undertaken to assess its financial viability. The analysis included a cash flow assessment with a projection until 2015 that included the incremental revenues and costs associated with the PNAS consolidation. The sum of (i) projected incremental costs, including investment, personnel and operations and maintenance (O&M) costs, and (ii) strategic investments, such as management plan development, ecotourism infrastructure development, awareness-raising, ranged from \$0.43million in 2006 to \$3.23 million in 2015.³¹ In comparison, MARN's total general budget, allocated by the Ministry of Finance and made available from various environmental funds, amounted to \$3.8 million in 2005. The PAD therefore pointed out the need for additional revenue sources and suggested park entrance fees, sale of authorizations and concessions, as well as taxes for international air departures, water consumption and hydroelectric energy use. The Project Results Framework included as one of the outcome indicators for Component 2 "Amount of revenues (in US\$) raised from sustainable natural resources use concessions, visitor fees, and other potential cost recovery mechanisms".

3.30 Post-project financial situation, MARN/NPAS' annual variable costs significantly exceed its revenues.³² The variable costs are estimated at \$7.4million and include salaries and social contributions for 246 staff members and O&M costs (Table 4). Costs would increase significantly if investments in the parks, estimated at appraisal at more than \$6.5million over a 9 year period, were included. Revenue sources include

- 5 allocations from the national budget; and
- 6 entrance fees, cabin rentals, and sports hunting licenses, and sale of plants and timber. Such revenues are collected only at three of the country's parks, namely Montechristo, Conchagua and Impossible. They are transferred to a central extra-budgetary Fund for Special Activities at MARN, from where they are allocated to various activities and investments across the PNAS.³³

Table 4. MARN/NPAS Annual Costs

Cost item	Annual amount (\$)
Salaries and social contributions	1,412,300
O&M	6,000,000
Total	7,412,300

Source: MARN

3.31 Revenues from these two sources amounted to slightly over US\$2.0 million (Table 5) annually in 2010-2011. Additionally, MARN counts on international projects, such as the Environmental Investment Fund for the Americas, the Environment Fund of El Salvador, and the GEF UNDP Small Grants program, for investments in the park buffer zones. The MARN communication estimates the annual flow of funds from these sources at US\$5.0 million, although it does not provide details on these funds and the small investment projects they have financed or plan to finance.

³¹Source: Pipe, Roger Daviss, 2005. *Análisis Económico y Financiero del PACLAP*. Proyecto Consolidación de Áreas Naturales Protegidas y Administración de Tierras PACLAP. El Salvador 10 de agosto de 2005. Page 61.

³²This section relies on *Sostenibilidad del Sistema de Áreas Naturales Protegidas*. Received by email from Rene Ramos Gross on November 21, 2012. "MARN communication"

³³ Excel file titled "Detalle de ingresos al FAE por mes 2010-2011.xls" received from MARN on October 30, 2012, also lists sale of coffee from some of these parks generating additional revenues of about \$10,000 annually.

Table 5. MARN Revenues

Revenue item	Annual amount (US\$)
Transfer from national budget	2,012,300
Fees for park entrance, cabin rentals, and sports hunting licenses, and sale of plants and timber	54,500*
Total	2,066,800

Source: MARN

* Average over 2010-2011.

3.32 At the level of the two project beneficiary protected areas, annual staff costs amount to over \$100,000 in Bahia de Jiquilisco and about \$32,000 in San Diego Las Barras (Table 6). In addition, operations and maintenance costs are incurred, which were not specified in the MARN communication. These costs have to be funded from the NPAS overall budget as neither of these parks collected any user or concession fees in 2010 or 2011.

Table 6: Staff Costs at the Project Protected Areas

	Technical staff		Rangers		Total
	Number	Salary costs	Number	Salary costs	
San Diego Las Barras	1	14,400	5	18,000	32,400
Jiquilisco	1	14,400	24	86,400	100,400

3.33 MARN has informed the ICR team of its strategy to increase NPAS revenues through a larger budgetary allocation and increases in user charges, and by increasing the productive capacity of the protected areas that have such potential through partnerships with the private sector and municipalities. MARN developed in cooperation with UNDP the Incorporation of Biodiversity in fishing and tourism project and the Water Fund Program aimed at protecting watersheds, which will contribute to the strengthening of protected areas (income generation for some protected areas and sustainable conservation activities of water resources). MARN is also working on finance management through the Ecosystem Restoration and Landscapes with Jiquilisco township, Cerron Grande, and Montaña being the geographic areas of focus.

Cost Effectiveness Analysis

3.34 A quantitative cost effectiveness analysis is extremely difficult in the case of biodiversity projects given due to difficulties in quantifying outcomes related to biodiversity conservation. The GEF therefore advises to qualitatively assess alternative approaches that would yield the same result, in a manner similar to the “alternatives considered” framework in the World Bank PAD (GEF, 2005). An attempt is made at such an assessment ex post looking at the alternatives identified in the PAD.

3.35 The PAD considered three alternatives to the design that the project supported and concluded that none would achieve the objective as well as the blend of the GEF grant and the LAP II project: Of these, a “stand alone” project focusing only on MARN, without any link to CRN and the LAP II is most intriguing, because it is the approach that the project resulted in when LAP II was canceled. As discussed in the main body of the ICR, consequently the project outcomes could not be realized to their full extent.

3.36 Another interesting point relates to the *attributability* of one of the key project outcomes to project interventions. As discussed in detail at the beginning of the annex, the reduction in deforestation, which is associated with biodiversity benefits, is likely have to have occurred largely even without project

interventions, notably the delimitation of protected area boundaries, employment of guards in the park area enforcing the boundaries and non-use regulations, and public awareness raising. This brings to mind the possibility that the same result may have been achieved at a lower cost. However, it should be kept in mind that the external factors that led to reduced deforestation across the country may subside again making these interventions indispensable for continued limited or no use of core forest areas.

Table A1 Carbon Sequestration Benefit Flows in Jiquilisco

Ex-post WITHOUT project Perdida de Capacidad de Secuestro de Carbon											
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
1	Area of mangrove loss	389	381	374	366	359	352	345	338	331	324
2	Areas of forest loss	361	361	361	361	361	361	361	361	361	361
3	Area perdida anual	750	742	735	727	720	713	706	699	692	685
4	Volume of carbon loss mangrove (tons)	77,796	76,240	74,715	73,221	71,757	70,321	68,915	67,537	66,186	64,862
5	Volume of carbon loss forest (tons)	77,066	77,066	77,066	77,066	77,066	77,066	77,066	77,066	77,066	77,066
6	Total carbon loss	154,862	153,306	151,781	150,287	148,823	147,387	145,981	144,603	143,252	141,928
7	Valor social	4,123,975	4,056,479	4,129,969	4,245,607	4,189,355	4,218,228	4,309,359	4,377,124	4,444,643	4,513,661
8	Valor mercado	696,879	689,877	683,016	676,291	669,701	663,243	656,914	650,712	644,634	638,677
Ex-post WITH project Perdida de Capacidad de Secuestro de Carbon											
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
1	Area of mangrove loss	389	381	187	-	-	-	-	-	-	-
2	Areas of forest loss	226	223	146	2	2	2	2	2	2	2
3	Area perdida anual	615	604	333	2	2	2	2	2	2	2
4	Volume of carbon loss mangrove (tons)	77,796	76,240	37,358	-	-	-	-			
5	Volume of carbon loss forest (tons)	48,273	47,549	31,224	525	525	525	525	525	525	525
6	Total carbon loss	126,069	123,789	68,581	525	525	525	525	525	525	525
7	Valor social	3,357,217	3,275,456	1,866,100	14,845	14,790	15,035	15,505	15,896	16,291	16,695
8	Valor mercado	567,310	557,050	308,616	2,365	2,364	2,364	2,364	2,363	2,363	2,362
Incremental carbon benefits of the project (averted loss)											
Incremental social value (\$ million)		0.77	0.78	2.26	4.23	4.17	4.20	4.29	4.36	4.43	4.50
Incremental market value (\$ million)		0.13	0.13	0.37	0.67	0.67	0.66	0.65	0.65	0.64	0.64

Table A1 continued: Carbon Sequestration Benefit Flows in Jiquilisco (\$)

Ex-post WITHOUT project Perdida de Capacidad de Secuestro de Carbon											
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
1	Area of mangrove loss	318	311	305	299	293	287	282	276	270	265
2	Areas of forest loss	361	361	361	361	361	361	361	361	361	361
3	Area perdida anual	679	672	666	660	654	648	643	637	631	626
4	Volume of carbon loss mangrove (tons)	63,565	62,294	61,048	59,827	58,630	57,458	56,309	55,182	54,079	52,997
5	Volume of carbon loss forest (tons)	77,066	77,066	77,066	77,066	77,066	77,066	77,066	77,066	77,066	77,066
6	Total carbon loss	140,631	139,360	138,114	136,893	135,696	134,524	133,375	132,248	131,145	130,063
7	Valor social	4,584,216	4,656,344	4,730,084	4,805,476	4,882,560	4,961,377	5,041,970	5,124,382	5,208,658	5,294,844
8	Valor mercado	632,839	627,119	621,512	616,018	610,633	605,357	600,186	595,118	590,151	585,284
Ex-post WITH project Perdida de Capacidad de Secuestro de Carbon											
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
1	Area of mangrove loss	-	-	-	-	-	-	-	-	-	-
2	Areas of forest loss	2	2	2	2	2	2	2	2	2	2
3	Area perdiad annual	2	2	2	2	2	2	2	2	2	2
4	Volume of carbon loss mangrove (tons)										
5	Volume of carbon loss forest (tons)	525	525	525	525	525	524	524	524	524	524
6	Total carbon loss	525	525	525	525	525	524	524	524	524	524
7	Valor social	17,109	17,534	17,970	18,416	18,873	19,341	19,822	20,314	20,818	21,335
8	Valor mercado	2,362	2,362	2,361	2,361	2,360	2,360	2,360	2,359	2,359	2,358
Incremental carbon benefits of the project (averted loss)											
	Incremental social value (\$ million)	4.57	4.64	4.71	4.79	4.86	4.94	5.02	5.10	5.19	5.27
	Incremental market value (\$ million)	0.63	0.62	0.62	0.61	0.61	0.60	0.60	0.59	0.59	0.58

Table A2 Carbon Sequestration Benefit Flows in San Diego- Las Barras

Ex-post WITHOUT project Deforestacion y Perdida de Capacidad de Secuestro de Carbon en San Diego - La Barra																				
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Area de bosque (ha)	1,790	1,763	1,737	1,711	1,685	1,660	1,635	1,610	1,586	1,562	1,539	1,516	1,493	1,471	1,449	1,427	1,406	1,384	1,364	1,343
Perdida anual del bosque	26.9	26.4	26.1	25.7	25.3	24.9	24.5	24.2	23.8	23.4	23.1	22.7	22.4	22.1	21.7	21.4	21.1	20.8	20.5	20.1
Volumen de carbon perdido (73.9TmC/ha)	1,984	1,954	1,925	1,896	1,868	1,840	1,812	1,785	1,758	1,732	1,706	1,680	1,655	1,630	1,606	1,582	1,558	1,535	1,512	1,489
Valor social	52,840	51,715	52,383	53,569	52,579	52,655	53,496	54,032	54,553	55,078	55,608	56,143	56,683	57,229	57,780	58,336	58,897	59,464	60,037	60,614
Valor mercado	8,929	8,795	8,663	8,533	8,405	8,279	8,155	8,033	7,912	7,793	7,677	7,561	7,448	7,336	7,226	7,118	7,011	6,906	6,802	6,700
Ex-post WITH project Deforestacion y Perdida de Capacidad de Secuestro de Carbon en San Diego - La Barra																				
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Area de bosque (ha)	1,790	1,763	1,737	1,719	1,716	1,713	1,711	1,708	1,705	1,702	1,699	1,696	1,693	1,690	1,687	1,685	1,682	1,679	1,676	1,673
Perdida anual del bosque	26.9	26.4	17.4	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.8
Volumen de carbon perdido (73.9TmC/ha)	1,984	1,954	1,283	216	216	215	215	215	214	214	213	213	213	212	212	212	211	211	211	210
Valor social	52,840	51,715	34,922	6,102	6,070	6,161	6,344	6,494	6,645	6,800	6,958	7,120	7,285	7,455	7,628	7,805	7,987	8,173	8,363	8,557
Valor mercado	8,929	8,795	5,775	972	970	969	967	965	964	962	960	959	957	956	954	952	951	949	948	946
Incremental carbon benefits of the project (averted loss)																				
Valor social	-	-	17,461	47,467	46,509	46,494	47,152	47,538	47,908	48,278	48,650	49,023	49,398	49,774	50,152	50,531	50,910	51,292	51,674	52,057
Valor mercado	-	-	2,888	7,561	7,435	7,310	7,188	7,067	6,948	6,831	6,716	6,602	6,491	6,381	6,272	6,165	6,060	5,957	5,855	5,754

Table A3 – Fishery Benefit Flows in Jiquilisco

Ex post WITHOUT project	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Area de manglar (ha)	19,449	19,060	18,679	18,305	17,939	17,580	17,229	16,884	16,546	16,216
Cosecha equilibrio calculado (kg)	3,714,855	3,511,205	3,440,981	3,372,161	3,304,718	3,238,624	3,173,851	3,110,374	3,048,167	2,987,203
2.1 Artesanal	833,269	787,589	771,837	756,401	741,273	726,447	711,918	697,680	683,726	670,052
2.2. Industrial	2,881,586	2,723,616	2,669,144	2,615,761	2,563,446	2,512,177	2,461,933	2,412,694	2,364,441	2,317,152
Cosecha real dependiente del manglar (kg)	3,900,598	3,686,765	3,613,030	3,540,769	3,469,954	3,400,555	3,332,544	3,265,893	3,200,575	3,136,564
2.1 Artesanal	874,933	826,969	810,429	794,221	778,336	762,770	747,514	732,564	717,913	703,554
2.2. Industrial	3,025,665	2,859,797	2,802,601	2,746,549	2,691,618	2,637,785	2,585,030	2,533,329	2,482,663	2,433,009
Precio promedio de pescado (\$/kg)										
2.1 Artesanal	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
2.2. Industrial	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96
Valor cosecha sin proyecto (\$millones)	13.06	12.34	12.10	11.85	11.62	11.38	11.16	10.93	10.71	10.50
Ex post WITH project										
Area de manglar (ha)	19,449	19,060	18,679	18,492	18,492	18,492	18,492	18,492	18,492	18,492
Cosecha equilibrio calculado (kg)	3,714,855	3,511,205	3,440,981	3,372,161	3,338,440	3,338,440	3,338,440	3,338,440	3,338,440	3,338,440
2.1 Artesanal	833,269	787,589	771,837	756,401	748,837	748,837	748,837	748,837	748,837	748,837
2.2. Industrial	2,881,586	2,723,616	2,669,144	2,615,761	2,589,603	2,589,603	2,589,603	2,589,603	2,589,603	2,589,603
Cosecha real dependiente del manglar (kg)	3,900,598	3,686,765	3,386,765	3,372,161	3,338,440	3,338,440	3,338,440	3,338,440	3,338,440	3,338,440
2.1 Artesanal	874,933	826,969	759,676	756,401	748,837	748,837	748,837	748,837	748,837	748,837
2.2. Industrial	3,025,665	2,859,797	2,627,089	2,615,761	2,589,603	2,589,603	2,589,603	2,589,603	2,589,603	2,589,603
Precio promedio de pescado (\$/kg)										
2.1 Artesanal	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
2.2. Industrial	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96
Valor cosecha con proyecto (\$millones)	13.06	12.34	11.34	11.29	11.18	11.18	11.18	11.18	11.18	11.18
Difference in value	-	-	(0.76)	(0.56)	(0.44)	(0.21)	0.02	0.24	0.46	0.68

Table A3 continued: Fishery Benefit Flow in Jiquilisco.

Ex post WITHOUT project	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Area de manglar (ha)	15,891	15,573	15,262	14,957	14,658	14,364	14,077	13,796	13,520	13,249
Cosecha equilibrio calculado (kg)	2,927,459	2,868,910	2,811,532	2,755,301	2,700,195	2,646,191	2,593,268	2,541,402	2,490,574	2,440,763
2.1 Artesanal	656,651	643,518	630,647	618,034	605,674	593,560	581,689	570,055	558,654	547,481
2.2. Industrial	2,270,809	2,225,393	2,180,885	2,137,267	2,094,522	2,052,631	2,011,579	1,971,347	1,931,920	1,893,282
Cosecha real dependiente del manglar (kg)	3,073,832	3,012,356	2,952,109	2,893,066	2,835,205	2,778,501	2,722,931	2,668,472	2,615,103	2,562,801
2.1 Artesanal	689,483	675,694	662,180	648,936	635,957	623,238	610,773	598,558	586,587	574,855
2.2. Industrial	2,384,349	2,336,662	2,289,929	2,244,130	2,199,248	2,155,263	2,112,158	2,069,914	2,028,516	1,987,946
Precio promedio de pescado (\$/kg)										
2.1 Artesanal	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
2.2. Industrial	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96
Valor cosecha sin proyecto (\$Milliones)	10.29	10.08	9.88	9.68	9.49	9.30	9.12	8.93	8.75	8.58
Ex post WITH project										
Area de manglar (ha)	18,492	18,492	18,492	18,492	18,492	18,492	18,492	18,492	18,492	18,492
Cosecha equilibrio calculado (kg)	3,338,440	3,338,440	3,338,440	3,338,440	3,338,440	3,338,440	3,338,440	3,338,440	3,338,440	3,338,440
2.1 Artesanal	748,837	748,837	748,837	748,837	748,837	748,837	748,837	748,837	748,837	748,837
2.2. Industrial	2,589,603	2,589,603	2,589,603	2,589,603	2,589,603	2,589,603	2,589,603	2,589,603	2,589,603	2,589,603
Cosecha real dependiente del manglar (kg)	3,338,440	3,338,440	3,338,440	3,338,440	3,338,440	3,338,440	3,338,440	3,338,440	3,338,440	3,338,440
2.1 Artesanal	748,837	748,837	748,837	748,837	748,837	748,837	748,837	748,837	748,837	748,837
2.2. Industrial	2,589,603	2,589,603	2,589,603	2,589,603	2,589,603	2,589,603	2,589,603	2,589,603	2,589,603	2,589,603
Precio promedio de pescado (\$/kg)										
2.1 Artesanal	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23	1.23
2.2. Industrial	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96	3.96
Valor cosecha con proyecto (\$Milliones)	11.18	11.18	11.18	11.18	11.18	11.18	11.18	11.18	11.18	11.18
Difference in value	0.89	1.09	1.29	1.49	1.68	1.87	2.06	2.24	2.42	2.60

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The Global Environment Facility, 2005, *Cost Effectiveness Analysis in GEF Projects*

Annex 4. Bank Lending and Implementation Support/Supervision Processes

(a) Task Team members

Names	Title	Unit	Responsibility/ Specialty
Lending			
Ann Jeannette Glauber	Co-TTL/Environmental Officer	LCSEN	
Frederic de Dinechin	Co-TTL/Snr. Land Officer	LCSER	
George Ledec	Lead Ecologist	LCSEN	
Anna Corsi	Operations Analyst	ESDVP	
Elena Correa	Snr. Social Specialist	LCSEO	
Jorge Villegas	Consultant	LCSEN	
Luis Prada	Procurement Specialist	LCOPR	
Fabienne Mroczka	Financial Management Specialist	LCOAA	
Joseph Formosa	Loan Officer	LOAG1	
Monica Lehnhoff	Procurement Analyst	LCOPR	
Teresa Roncal	Operations Specialist	LCSER	
Fabiola Altimari	Country Lawyer	LEGLA	
Selpha Nyairo	Legal Associate	LEGLA	
Ketty Morales	Project Assistant	LCSER	
Mary Lisbeth Gonzalez	Social Consultant	LCSOS	
Roger Pipe	Economic Consultant		
Simon Milward	Junior Professional Associate	LCSEN	
Mark Zimsky	Snr. Biodiversity Specialist	GEF	
Supervision/ICR			
Keisgner De Jesus Alfaro	Senior Procurement Specialist	LCSPT	
Elena Correa	Consultant	LCSSO	
Anna Corsi	Land Administration Specialist	LCSAR	
Fernando Galeana	E T Consultant	LCSAR	
Ann Jeannette Glauber	Senior Environmental Specialist	AFTN3	
Mary Lisbeth Gonzalez	Senior Social Development Spec	LCSSO	
Alvaro Larrea	Senior Procurement Specialist	LCSPT	
George Campos Ledec	Lead Ecologist	AFTN3	
Monica Lehnhoff	Procurement Analyst	LCSPT	
Alberto Leyton	Special Asst. to R.V.P.	LCRVP	
Ketty Morales	Language Program Assistant	LCSAR	
Lyle Morton	Junior Professional Associate	LCSEN	
Fabienne Mroczka	Financial Management Specialist	LCSFM	
Maria E. Nikolov	Senior Program Assistant	LCSSD	
Luis R. Prada Villalobos	Senior Procurement Specialist	MNAPC	
Teresa M. Roncal	Operations Analyst	LCSAR	
Claudia Sobrevila	Senior Environmental Specialist	AFTN3	
Violeta Tan-Kuong	Temporary	WBISP	
Ricardo Antonio Tejada	Senior Financial Officer	TREVP	

Manuel Antonio Vargas Madrigal	Sr. Financial Management Specialist	OPSOR	
Luz A. Zeron	E T Consultant	LCSFM	
Anna Roumani	Consultant	LC SER	
Tijen Arin	Snr. Environmental Economist	EASER	

(b) Staff Time and Cost

Stage of Project Cycle	Staff Time and Cost (Bank Budget Only)	
	No. of staff weeks	USD Thousands (including travel and consultant costs)
Lending		
FY05	11.39	52.20
FY06	15.88	60.00
Total:	27.27	112.20
Supervision/ICR		
FY06	7.00	22.95
FY07	16.01	51.00
FY08	22.77	98.57
FY09	23.83	87.91
FY10	16.92	95.32
FY11	15.28	72.84
FY12	10.03	63.63
FY13	1.20	1.20
Total:	113.04	496.73

Annex 5. Beneficiary Survey Results

5.1 MARN/PCU organized a series of meetings in each pilot PA to obtain the views of individual beneficiaries which were then consolidated. The goal was to find out if threats to the integrity of biodiversity were reduced and how PACAP contributed to the sustainable development of communities and population in the pilot areas. The following are aggregate results of workshops conducted for each pilot PA.

Bahia de Jiquilisco

5.2 Three meetings were organized based on where beneficiaries were located in each pilot PA. Meetings were presided by a speaker, secretary and moderator. Ten people from each participating beneficiary organization were invited to attend.

General:

- 50% said their subproject was their first experience in direct execution of a subproject. Participation was divided 264 men and 231 women representing 314 boys and 372 girls under 18.
- 100% agreed that quality of life had improved as a result of their subproject and 100% said their subproject had helped conserve and protect natural resources.
- Participants considered they had contributed to reducing environmental contamination through environmental education days, campaigns to clean water bodies; implementation of dry latrines; and, wood-saving stoves.
- All participants agreed that they had been influential in keeping vigil over natural resources and reporting infractions;
- All reported having implemented various activities to restore eco-systems: reforestation, artificial reefs (*arrecifes*); and improved drainage in mangrove areas.
- From the organizations reporting economic results: fish yields increase ranging from 33% to 275%, and incomes rose according to much the same range.
- About 47% of men and 44% of women considered that the experience strengthened their intellectual capacity.
- Most believed subproject execution had strengthened their organization, capacity to manage funds, administer financial resources and generate income, and built awareness about natural resources conservation.
- About 42% of women said they had participated in decision-making about administrative processes, and about the same percentage had participated in planning and execution decisions.

Main obstacles:

- Late disbursement of funds to beneficiaries was a dominant theme of responses about problems, along with turnover in administrative staff responsible for a subproject; problems with financial settlement of the subproject (e.g., submission of accounts); and lack of clarity in the subproject *formatos*.
- Implementation obstacles included lack of technical capacity to implement subprojects, and difficulties purchasing certain materials not available in El Salvador.

Main achievements:

- Organizational strengthening, capacity to manage resources and projects.
- Environmental awareness-building and protection.
- Increased technical capacity.
- Reduced incidence of respiratory ailments and drainage of stagnant water areas.
- Increased production and incomes (in selected cases) and greater family economic security.
- Beneficiaries agreed that they had improved their fishing practices, reduced deforestation and destruction of mangroves, and damage to local fauna.
- Community members trained in environmental matters tended to transmit that information to other members.

Productive capacity:

- Families with low resources were able to generate additional income;
- Four groups had organized as a cooperative since their subproject of which two groups had formerly fished using explosives;

Synergies created via subproject execution:

- Numerous examples of cooperation from mayors and public authorities in providing environmental education and training, clean-up campaigns, security and transportation of artificial reefs.
- Cooperatives exchanged experiences, youth groups provided environmental awareness-building to the local population.
- Many cases of local bodies, churches, ADESCOs participating in subproject execution.

Strategies for continuing after the Project closed:

- Most beneficiary groups said they planned to seek support from other institutions to strengthen their subproject and increase their incomes.
- Local organizations/cooperatives are helping with maintenance services, overseeing use of the eco-stoves and keeping vigilant on deforestation, planning to prepare new projects and train communities.

Beneficiary evaluation of PACAP Team:

- Beneficiaries were generally very satisfied with support received from the PACAP Team especially technical assistance and level of communication.
- Financial training was particularly appreciated, as was basic training in administration.
- Attendance at meetings and timeliness was however, criticized by beneficiaries.

San Diego and San Felipe Las Barras

- Most subprojects in this pilot PA executed subprojects falling into two strategic areas: low-impact tourism and biodiversity.
- Numbers of participants in the workshops were 785 men and 640 women (representing 80 boys and 77 girls under 18), a much larger number than Bahia de Jiquilisco in a smaller pilot area.

- All reported strengthened capacity to administer, execute and account for resources.
- Six of the eight participating organizations had never directly executed a subproject while the other two had over three such experiences each.
- Leaders of organizations which had implemented subprojects considered their subprojects had reduced environmental contamination through sanitation improvements, community-wide clean-up, and cleaning of waterways.
- The eight organizations had received a total 57 environmental training events.
- Participants had conducted a series of activities to reduce pressure on forests most commonly: clean-up campaigns, new fishing techniques.
- The three forest eco-systems - dry, alluvial and humid - were benefited by organizations executing subprojects. Clean-up campaigns in all three types of forest were part of beneficiaries' counterpart contribution and helped keep areas clean and attractive for visitors.
- Five of the eight organizations had conducted reforestation on a total 24.5 ha.
- One organization with a fishing subproject using improved nets permitted by law had doubled fish yields and trebled income since the before-subproject situation.
- 87% of beneficiaries reported that their intellectual capacity had increased since the experience.
- 49% of men and 51% of women representing the eight organizations had participated in different themes imparted through the preparation, decision-making, administration and execution processes.
- All participants felt the subproject experience had strengthened their financial skills and this was evident in early errors committed which were shown to be overcome in the second round of financial reporting.
- 57% of men and women said they had participated continuously in administrative processes.
- 46% of women said they had participated continuously throughout the subproject period.

Main obstacles:

- All eight organizations agreed unanimously that the main obstacle was the protracted delay in each of the disbursements (subproject financing was paid in installments).
- Due to this situation, many activities could not be carried out as planned and there was a huge delay between the start of a subproject and its completion, with pending activities conducted at other times.
- Review of financial reports (by MARN/PCU) was also very slow and acquisitions encountered difficulties because providers in Metapan would not accept checks for small purchases.
- Among the more significant limitations of executing organizations was their weak administrative capacity.

Main achievements:

- Most organizations felt that institutional strengthening and knowledge acquired from training sessions were the two most valuable achievements.
- Beneficiary groups felt that the goods acquired, intellectual strengthening and new practices learned, were also valuable and strengthened them institutionally.
- Among the environmental achievements, beneficiaries cited: increased production of fish, utilization of native species in reforestation, reduced environmental contamination.

- Increased production and incomes (where relevant), benefits at both the individual and family level, and improved living conditions were cited by all participants.

Synergies with other activities/programs:

- Many local and national governmental agencies participated in numerous supportive ways to work with beneficiary organizations including through training, education, evaluation, local environmental clean-up, and formalization of credentials of some organizations such as new cooperatives.

Sustainability:

- Most of the organizations participating in the workshop believed that seeking other sources of support after PACAP was a sound option and some are already looking for strategic alliances with other local organizations which have certain activities in common.

Beneficiaries' views on the PACAP PCU:

- A majority said PACAP support – monitoring, supervision and technical assistance delivered from the two PACAP regional offices - was excellent.
- They found that the regional coordinator and specialist personnel provided timely attention and technical oversight in the countryside, and support to technical reports.
- They found the objective support provided by the technical staff valuable, although MARN's financial specialist did not provide technical assistance for the management of funds, just training.

Lessons learned from both pilot areas:

- Cooperatives learned the value of training in simple accounting as valuable for their access to future, similar opportunities.
- The organization is the development base of the community and beneficiaries learned to bring forward ideas to help the community. Organization also enables communities to tackle more difficult projects, and they now know how to prepare the documents needed to apply to other programs with resources.
- Strength lies in unity and when organized as cooperatives, they have greater weight when they approach institutions. They can now move ahead because they don't need to go back to fishing with explosives.
- Coordination/collaboration with other community associations results in better management of projects.

Annex 6. Stakeholder Workshop Report and Results
(if any)

N/A

Annex 7. Summary of Borrower's ICR and/or Comments on Draft ICR

A. Executive Summary of Client's Completion Report (Informal Translation)

Background:

7.1 El Salvador contains an impressive diversity of species and ecosystems with consequent potential to provide eco-systemic services represented by over 19 different eco-systems according to UNESCO's eco-system classification. However, this natural wealth has not been appreciated or supported adequately to diminish the environmental and social vulnerability which affects the country, particularly in regard to global climate change which threatens Central America.

7.2 However, the natural eco-systems in El Salvador with the least human intervention are highly fragmented and dispersed in 13% of the national territory, and less than 1% is under any form of management which guarantees the protection of its capacity to provide eco-system services. This situation has led to recent Governments, and particularly the current, to change the paradigm concerning management of natural protected areas, which has historically been focused on protecting natural spaces from the threats resulting from human occupation, alteration of forests, and the contamination and over-exploitation of natural resources. Given that these conditions exist, they are the product of unordered development models of development which obligate a re-thinking of the management of natural areas as promoters of processes to restore landscapes which galvanize the provision of eco-system services to decrease national vulnerability.

7.3 In response, the Government of El Salvador (GOES) implemented the Consolidation and Administration of Protected Areas project (PACAP), approved by the World Bank Board of Directors on November 29, 2005. PACAP was financed through a non-reimbursable Grant of US\$5.00 million from the Global Environment Facility (GEF) complemented by GOES funding of US\$2.632 million. The designated Government executor was the Ministry for Environment and Natural Resources (MARN) with the participation of other institutions, principally the National Registry Center (CNR) and the Salvadoran Institute of Agrarian Transformation (ISTA) in accordance with the Grant Agreement TF055925 between GOES and the World Bank signed on 15 May 2006 and published in the Official Diary Volume No. 375 of June 7, 2007, which marked its operational launch. PACAP was planned to conclude in five years on June 30, 2011 and was extended to June 29, 2012.

7.4 The global environmental objective (GEO) was to conserve globally significant biodiversity in El Salvador, strengthening the NPAS and consolidating the two priority protected areas. The indicators expected from the GEO were:

- 7 Natural Protected Areas System strategy improved and pilot tested;
- 8 Two pilot areas protected, consolidated and effectively administered (Tracking Tool score of a min. 40 for 35,600 ha in Bahia de Jiquilisco, and 1,917 ha in the Lake Guija Complex San Diego-La Barra);
- 9 Benefits of biodiversity established on a minimum 12,400 ha:
 - For the Bahia de Jiquilisco Conservation area, a minimum 11,000 ha of mangroves and associated humid forest within the protection zones of the nucleus/core will have deforestation below 1% over 5 years.

- For the Guija Complex, San Diego-La Barra, a minimum of 1,400 ha of dry tropical forest or associated riparian forest will have deforestation below 1% over 5 years.

7.5 To achieve these indicators, the Project had three components:

Component 1: Strengthening the Natural Protected Areas System (NPAS), focusing on promoting an efficient and sustainable administration over the long term in natural protected areas, as well as the use of their resources, using an eco-system approach and with the inclusion and participation of all relevant actors. Component 1 was divided into three sub-components:

- 1.1: Consolidation of the NPAS strategy
- 1.2: Strengthening the legal and institutional framework
- 1.3: Public Information campaign and awareness-building

Component 2: Consolidation and Administration of Pilot Protected Areas designed to consolidate pilot areas through the development, validation, and application of an innovative methodology for the management of natural protected areas. Pilot areas for PACAP intervention were:

- Guija Complex in Matapan, Santa Ana Department
- Bahia de Jiquilisco, Department of Usulután

The consolidation of pilot areas included the delimitation and demarcation of natural areas and the regularization of eligible residents through strategies, mechanisms and rules for the occupation of State lands. The results of this component were used to consolidate the entire protected areas system included under the first component. Component 2 was divided into three sub-components:

- Characterization, delimitation and physical demarcation of pilot natural areas;
- Legalization and regularization of two pilot natural areas;
- Implementation and updating of management plans for two pilot natural areas.

Component 3: Project Administration focused on the mechanisms for administering the Project, including planning, financial administration and procurement, as well as monitoring and evaluation.

Factors affecting project implementation:

7.6 Various factors affected the achievement of sub-component targets. Some were under the control of the Bank, others by GOES/MARN, and other factors were beyond the control of any agency.

7.7 The main factors within the Bank's control which affected project implementation were changes in the composition of the Bank team and consultants who brought different opinions and directions for PACAP implementation, and the lack of monitoring of recommendations of the MTR which suggested extension of the Project to June 2013, and subsequently not permitting further extension to December 2012.

7.8 GOES affected project implementation by not doing more to build ownership in complementary Government institutions which could have supported MARN, which was part of

the commitment established by the Grant Agreement. This is reflected in the scant participation of ISTA and the complicated/complex participation of CNR. MARN, as Government's implementing agency, affected project performance through its slow, centralized decision-making.

7.9 To these factors one can add extreme climatic factors such as tropical storms in the Pacific Ocean (Ida November 2009) and Agatha (May 2010), and the tropical depression 12E (October 2011) affected the continuity of fieldwork in general.

Results, Effects and Impacts:

7.10 Despite factors which affected the implementation of 100% of expected targets, all environmental indicators were achieved and financial execution was 80.4% of the Grant. The principal results were:

Component 1:

- Rationalization Study of the natural protected areas and analysis of conservation gaps;
- Management Strategy for the natural protected areas and Biological Corridors of the country;
- Legalization of 69 natural protected areas;
- Draft regulations for the Protected Areas Law

The PACAP publicity campaign was not carried out in full, but the project financed a campaign to protect forest life and produced 5,000 copies of the Protected Areas Law.

Component 2:

- Management Plans for both pilot sites;
- Delimitation, demarcation and monumentation (signs) of the National Park San Felipe Las Barras (1,870.16 ha);
- Delimitation of the mangrove forests of the Bahia de Jiquilisco PA (22,919.57 ha), and associated humid forests (1,876.4 ha) of Nancuchiname, Normandia, Ghaguantique, Isla de Mendez and Hacienda El Caballito;
- Implementation of 24 productive subprojects with local communities to improve their economic incomes through the use of sustainable natural resources;
- Consolidation of the COALs in all natural protected areas and mangroves

7.11 Locally in both pilot sites active social "platforms" were established as a result of 192 dissemination events in which participated some 2,410 women and 5,260 men. MARN intervened, with the Public Ministry, in over 200 cases of denunciations of environmental damage in the PAs which resulted in preventing deforestation and new, irregular human settlements without transgressing the rights of anyone and complying with all the Bank's Safeguards through participatory conflict resolution mechanisms.

7.12 The information generated by PACAP and the active participation of its members was used for other development processes prompted by GOES such as the Territories for Progress, FOMILENIO 2, Consultations of the National Environmental Policy, and formulation of the National Coastal-Marine Development Policy.

Evaluation of the performance of the World Bank and GOES:

7.13 The World Bank has criteria to evaluate the performance of the Bank in the design and supervision of the Project, and to evaluate Government's performance in implementing the project, and of the local implementation agency. These criteria are described in the Guide to the Preparation of Implementation and Results Reports, updated October 5, 2011.

7.14 In regard to the design of PACAP, the Bank showed Highly Satisfactory performance, although its supervision is rated Moderately Satisfactory. In the general context of GOES participation in project implementation, GOES' performance is rated Moderately Satisfactory, as is MARN as the local implementing agency. Based on the Guide's criteria both the Bank and GOES/MARN demonstrated Moderately Satisfactory performance.

Lessons learned and recommendations:

7.15 Changes in senior project staff in key posts such as the General Coordinator should have been accompanied by an intense process of induction from MARN and the Bank to build understanding in the shortest period concerning the difficulties and changes needed by PACAP during its previous implementation stage. This would have generated a better channel of communication within a framework of greater understanding between different authorities and institutions and the Project's General Coordinator/Coordination.

7.16 GOES in general and MARN in particular have a centralized decision-making structure, probably induced by the responsibilities implied in trying to achieve Laws and complying with requirements of the State Controller – Court of Accounts of the Republic of El Salvador. This centralization provoked major delays in decision-making, and for MARN Titulares, in this case, taking decisions required analysis of the processes by corresponding functionaries; these same were total over-worked and the processes were reviewed by various levels of intervention in incredible detail to ensure that no law was transgressed that could be detected by the Court of Accounts. Probably, decision-making processes in GOES and monitoring responsibilities for execution and the consequences of same, merited re-engineering to delegate operational decisions and/or increase the number of staff of government institutions which verify the validity of the processes for those responsible for making decisions.

7.17 The financial and procurement processes of the Bank and GOES have points of coincidence/similarity and differences. Throughout the Project, there were delays in these processes due to interpretation of the rule to be applied, such as: the *Ley Organica de Administracion Financiera del Estado (Lei AFI)*, the Law for Acquisitions and Contracts of the Public Administration (LACAP), and Bank rules. Training events provided by the Bank in Bank procurement and financial management rules, need to be continuous, at least annually and when there is a change of personnel, and should be directed not only to project staff but to all government staff related to these processes so that all are clear on the respective rules and when each of them should be applied, and including financial management and procurement units within MARN, other implementing agencies, Ministry of Finance and the Ministry of External Relations.

7.18 Processes for land administration related to the determination of title of tenancy, delimitation and cadaster, among others, are closely related themes in MARN. The identification and qualification of lands with potential to come in under the NPAS, the management of conflicts between *colindantes*, owners, tenants and occupants, the declaration of a PA and its inscription in CNR, are continuous processes in MARN for which this Ministry should have an land

administration unit with professionals specialized in geodesic techniques, cadaster, and land legislation. Such a unit would permit MARN to address denunciations/complaints about contamination, deforestation, inadequate management of solid waste and requests for concessions with geo-referenced field data and with precise analysis. This unit should be composed of a team of trained professionals similar to the team supervising the delimitation under PACAP.

7.19 During PACAP implementation opinions circulated about the need or not to declare salt forests as PAs because the existing legislation gives them protection. Analysis by the legal assistant and the land administration specialist, based on discussions with CNR in the technical round-table and the consultancy in management of the residents of the PAs led people to conclude that, even though the PA Law confers protection on these forests, there are legal gaps which permit the registry of State property with CNR on behalf of individuals, obliging MARN to pursue judgments to prove that the land belongs to the State, and protection of these forests if there would have been changes in land use. However, declaration of PA status for salt forests and their consequent registration with CNR would impede the registration of these properties with CNR by individuals adds a solid legal surety which will save the State the effort and cost.

B. Client's Comments on the Bank's Draft ICR

The Recipient/MARN did not send a letter following its review of the Bank's draft ICR. See Main Text, footnote 23.

Annex 8. Comments of Cofinanciers and Other Partners/Stakeholders

N/A

Annex 9. List of Supporting Documents

Project Appraisal Document (PAD), Report No. 33759-SV

Credit Agreement

GEF Appraisal Document

Supervision Aide Memoires

Safeguards documents

Implementation Supervision Reports (ISR)

Financial Management Supervision reports

Procurement Reports and Post-reviews

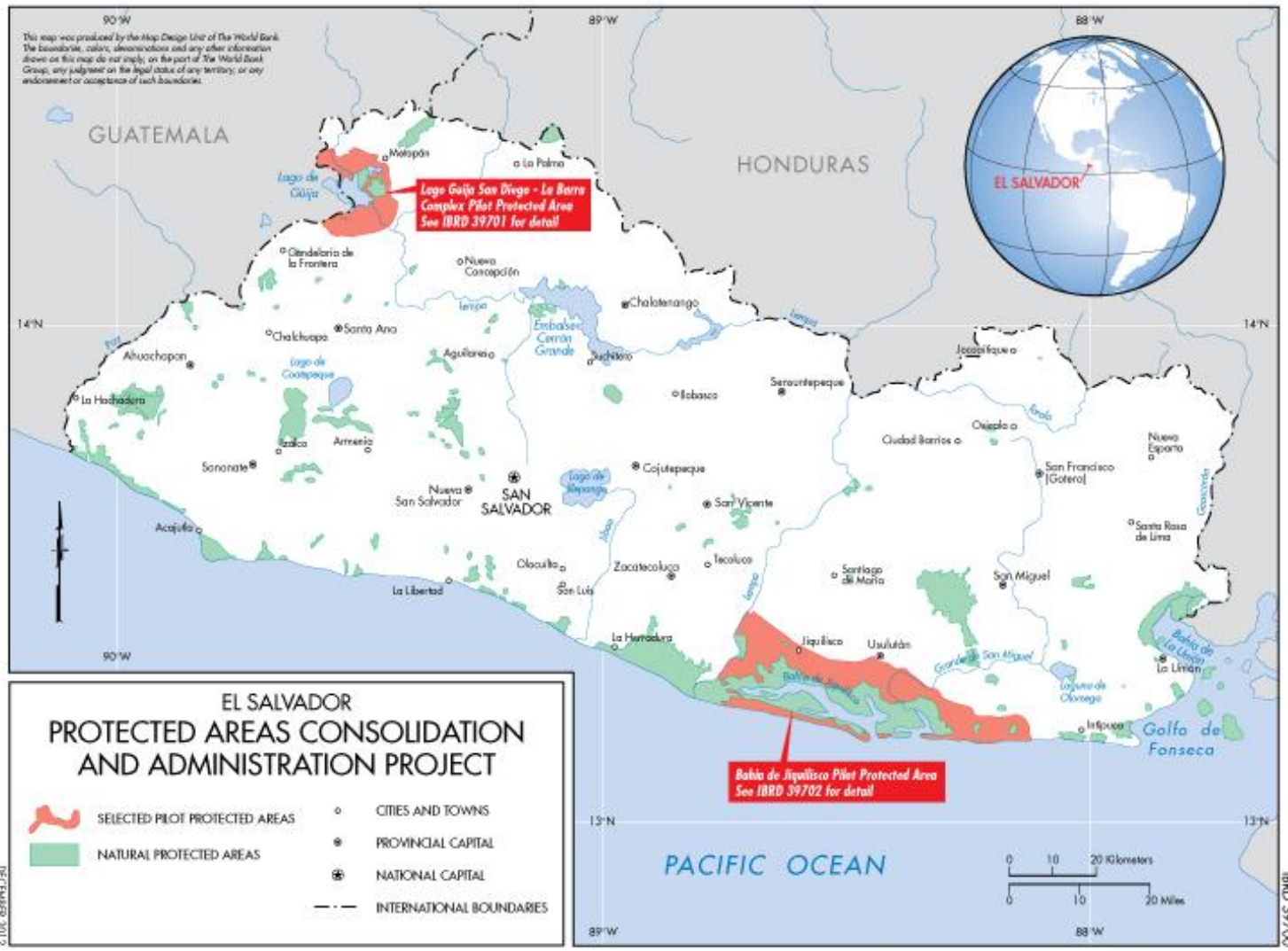
Restructuring Paper

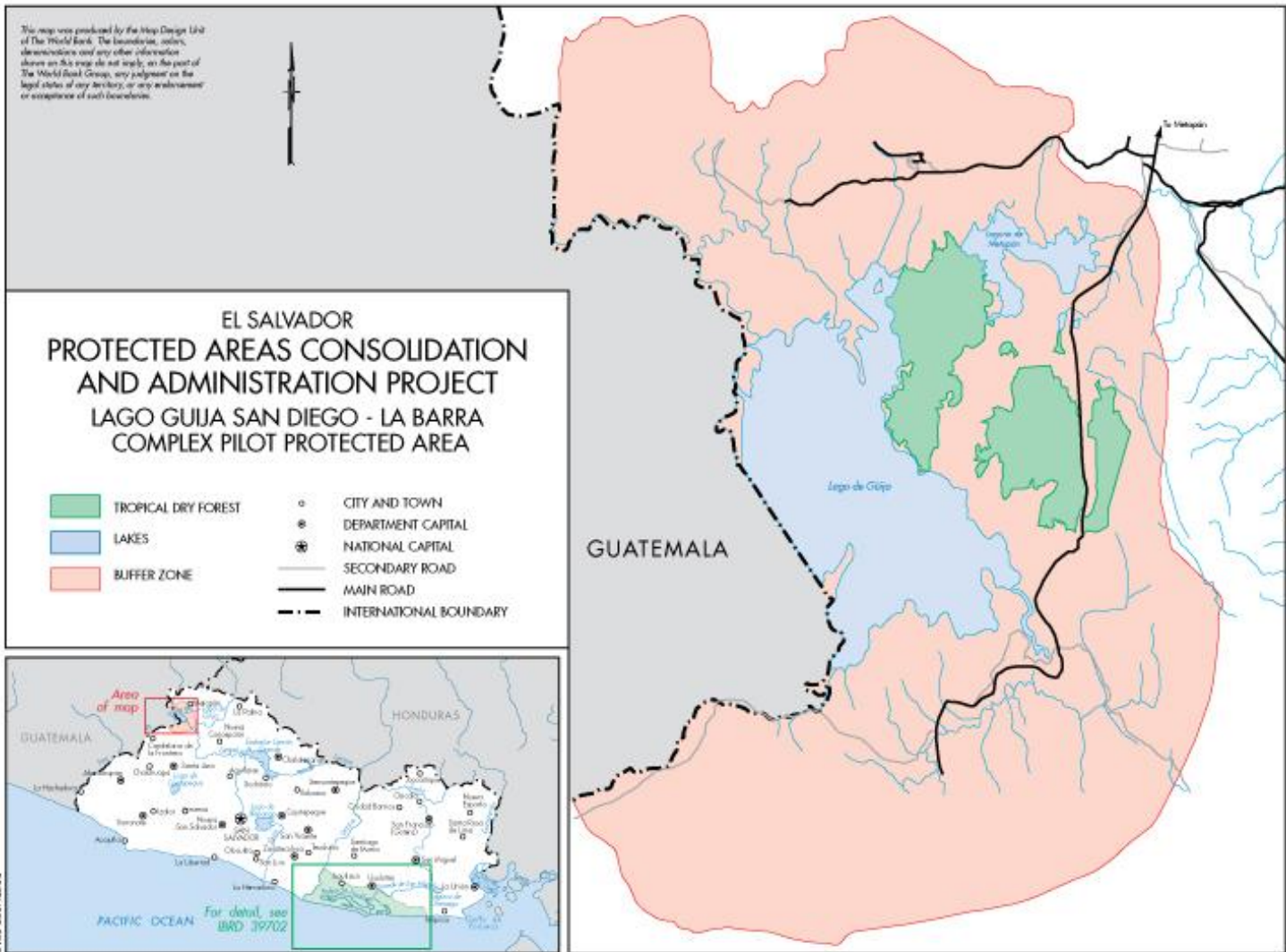
Correspondence and Memoranda

Client Completion Report: “Informe Final de Implementacion de Proyecto”, MARN 2012

Lineas Estrategicas para la Racionalizacion del Sistemas de las Areas Naturales Protegidas de El Salvador: Vreugdenhil, Machado, Linares, Cisneros, WICE, San Salvador 2011

Fases de los Subproyectos Lineas de Tiempo en el Proceso de Concepcion, Ejecucion y Evaluacion de los Subproyectos, MARN/PCU 2012





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