SECTION IV: ADDITIONAL INFORMATION

PART I: OTHER AGREEMENTS

The endorsement and co-financing letters are included in a separate file.

Table 10. – Endorsement Letters

Institution	Sender	Post/Title
SINAC	**Ronald Vargas Brenes**	**GEF operational Focal Point**

Table 11. – Co-financing Letters

Institution	Sender	Post/Title	Co-financing			Components supported or co-financed
			Cash	In-kind	Total	
SINAC	Ronald Vargas	General Director	2,851,320	1,374,160	4,225,480	1,2,3,4,5.
SINAC BID	Ronald Vargas	General Director	13,253,900		13,253,900	1,2,3,4,5.
TNC- Costa Rica	Zdenka Piskulich	Director	1,866,800		1,866,800	1,2,3,4,5.
Government of France (FFEM)			545,280		545,280	1 y 4.
Government of Spain (AECI)			133,323		133,323	1
Pro-Parques			92,000		92,000	4
Private Sector Contributions (various)			193,000		193,000	4

PART II: TERMS OF REFERENCES FOR THE KEY PROJECT STAFF AND MAIN SUB-CONTRACTS

NOTE - This part will be added only after the GEF has approved the project, and before requesting CEO endorsement

(SEE SEPARATE FILE)

PART III: STAKEHOLDER INVOLVEMENT PLAN

I. PDF-B: Stakeholder consultations, information sharing and similar activities that occurred during project preparation

During project preparation, a PDF B-commissioned stakeholder analysis identified key stakeholders with respect to protected area management and biodiversity conservation in Costa Rica. The results of this analysis are described in detail in Table 12 below in terms of their roles and mandates, interest in the project, potential impact on the project and mitigation strategies. During the preparation phase, periodic consultations with these key stakeholders took place, through: Steering committee meetings, workshops with SINAC Conservation Area Directors, logical framework and other technical meetings, interviews, group discussions and site visits. All helped enhance the role of participation in both the preparation and implementation of the Project. Stakeholders can be grouped into three categories, 1) MINAE/SINAC stakeholders, 2) Other institutional stakeholders and 3) Non-governmental stakeholders. MINAE/SINAC stakeholders (MINAE-Vice-ministry, SINAC Director, Department of PA Director, and Conservation Areas Directors) had significant input in project preparation through the Project Technical Committee, which met during PDF B on a weekly basis. Other institutional and non-governmental stakeholders were involved through various consultations and workshops organized during the PDF B studies.

A total of 8 workshops were held in various locations throughout the country, with the participation of 250 people representing government agencies, the private sector and the civil society, including:

- Ministries (MINAE, MAG, IDA, ICT, FONAFIFO).
- SINAC (Director, Conservation Area Director, PA managers).
- CONAC - National Council of Conservation Areas.
- Regional Councils of Protected Areas.
- Municipalities and their Environment Commissions.
- Community Development Associations.
- Members of NGOs including: international NGOs (TNC, IUCN, CI, WWF), second-degree networks (Red de Reservas Privadas-Network of private reserves, FECON-Network of Environmental NGOs, Mesa Nacional Campesina- nacional Farmers Organization) and first-degree organizations (CEDARENA, APREFLOFAS, Asociación de Organizaciones del Corredor Biológico Talamanca-Caribe (CBTC), Asociación de Voluntariado, Investigación y Desarrollo Ambiental (Asociación Ambiental VIDA), Asociación Terra Nostra, Fundación Acceso).
- Private sector (Chambers of Commerce, Tourism Chamber -CANATUR).
- Local communities and neighbours residing near PAs.
- Training and research institutions (INBio, UCI-ELAP, CCT, OTS).
- Other projects (Proyecto FFEM-GEF Isla del Coco, Proyecto BID-ICT-SINAC Sustainable Tourism Project-PTS-, Proyecto BID-Catastro, Proyecto BM-FONAFIFO Ecomercados).
- Park rangers from 20 different PAs (National Parks and Biological Reserves)

Workshops were aimed at:

- Assessing current levels of management effectiveness (attended by 20 people)
- Assessing biodiversity values of existing PAs, identifying gaps in current PAs, describing global biodiversity values in the country, and analyzing pressures and threats on this biodiversity (two workshops were held with the participation of 120 people).
- Analyzing barriers to the implementation of an effective and sustainable NPAS (attended by 60 people)
- Consulting and adjusting proposed interventions to overcome these barriers (1 national workshop with 50 participants).

The project design was constantly adjusted through the incorporation of inputs from workshop participants. These activities promoted spaces where relevant stakeholders could meet and discuss key issues regarding the implementation of the PA System. These activities contributed to bring together and

engage stakeholders involved in conservation of biodiversity and PA management and contributing to existing informal networks of regional and local groups. The consultation process with other key stakeholders actively funding conservation initiatives was also conducive to securing co-funding resources from international, national, municipal and local institutions, NGOs, and other projects. Tangible support for the project is illustrated through the letters of endorsement and co-financing obtained from the key stakeholders to be involved in the project implementation. The list of letters is included above in Section IV: Part I.

II. Full-size Project: Planned stakeholder participation and their involvement in project-related decision making and implementation

Participation has permeated the entire project preparation. The Project Strategy is geared around the consolidation of Costa Rica's already significant national Protected Areas System. It will concentrate on developing institutional and individual capacities to improve the management effectiveness and guarantee the long-term ecological viability of PAs. For this project strategy to succeed the Project Management Unit will need to engage with a wide array of stakeholders, ranging from those public institutions directly involved in PA management, through other institutional and non-governmental players. This will require the establishment of a series of consultative bodies, which will help guide the project and support its decision-making process. The following will play a key role in channeling stakeholder involvement:

The **Project Directorate** (*Comité Director*) will be composed by the two main project partners, i.e. the National Project Director – SINAC Director General- and UNDP Resident Representative. The Directorate will provide the main political oversight for the project, and will ultimately solve project implementation problems. Its main function will include the naming of the National Project Coordinator and approve annual work plans and budgets, approve changes in project program and budget, and approve conventions and agreements with donor agencies for co-financing.

The **Project Steering Committee** (*Comité Técnico)* will provide the Project Management Unit (PMU) with close supervision and with decision-making support. It will be composed of essential SINAC staff, including: (i) the Senior Management (Protected Areas Director, Natural Resources Management Director, as well as Financial/administrative Directors; and (ii) regional directors, in charge of Conservation Areas and (iii) a representative from the CONAC. It will further require the presence of UNDP Costa Rica's Environmental Program Officer for contractual and procurement decisions. Its functions will be to assist the PMU by reviewing TORs, approving staff contracts, as well as decide on procurement and other adjudications. It will also contribute to Annual Work Plans and Budgets. Its main function is to provide internal coordination between the PMU and the rest of SINAC, including Regional Offices in the 11 Conservation Areas.

But the instance that will bring together the greatest number of stakeholders will be the **Advisory Committee** *(Comité Asesor*), which will provide the Project management team will technical guidance for achieving the projects outcomes. It will be composed by the Project coordinator, along with a representative from SINAC senior management, UNDP's Environmental Program Officer, GEF Small Grants National Coordinator, and several other key stakeholders, such as TNC, INBio, IUCN-Regional Office for Mesoamerica, Red de Reservas Privadas, CEDARENA, UCI-ELAP, as well as the project coordinators for several large projects in SINAC and FONAFIFO (Isla Coco, Eco-mercados BID PTS).

According to the Law on Biodiversity, the superior decision-making body of SINAC is composed by the **National Council on Conservation Areas** (CONAC). This national council regroups all the key players in Costa Rica's national PA System. By providing strategic advice to the PMU on the implementation of project activities, CONAC will help ensure alignment with national, municipal and local planning processes and sustainable development and conservation policies and strategies; ensuring inter-agency coordination; ensuring full participation of stakeholders in project activities In this sense, the CONAC

will also provide a key forum to inform key stakeholders of project progress and receive feedback and guidance on how to improve project effectiveness.

Since much of the project's success is predicated upon involving a host of public and private stakeholders (see above) in a partnership for overall project implementation, special effort and distinct activities will continue to be included during project implementation to promote and sustain this essential partnership relationship.

Stakeholder Participation in relevant Outcomes: Whenever possible, project activities will emphasize participatory social and institutional processes in working towards the defined Project Outcomes. Moreover, specific project outputs, such as Management Plans for the PAs, will be carried out in a participatory fashion. The creation of participation will involve a qualification process for the participating actors and the definition of effective participation. Based on these activities, the local technical teams of the project will be formulated. The following outlines some specific project activities with a high degree of stakeholder participation against the specific Project Outcomes:

OUTCOME 1: ***Costa Rica's legal and policy framework is reformed and enhanced to ensure effective management and long-term financial and ecological sustainability of the PA System.***

Globally, the long-term success and sustainability of protected area systems largely depends on a supportive legal, policy and institutional framework. Thus, Outcome 1 will provide a *systemic* framework for building on the **Biodiversity Law**. Activities will address key missing elements and structures required to give optimal effect to existing legislation. Namely, Outcome 1 will provide the legal and policy support - along with the strategic vision - for the institutional re-alignment and strengthening process of SINAC. A Strategic Plan for the overall National Conservation Areas System (SINAC) will be developed, along with a National Policy and a Strategic Action Plan for the national-level Protected Area System within SINAC. The combination of these systemic tools will provide the blueprint for the enhancement and consolidation of Costa Rica's protected areas. The PA System Action Plan **will be for the PA System and its management alone** and will define actions to achieve the PA System's goals, identify prioritised actions and responsibilities, and establish a short, medium and long-term timetable for delivery of the actions. The Plan will further define the relevant regulatory and operational requirements to enable the implementation of the PA System in the short term, while guiding its expansion and sustainability over the mid and long term.

Costa Rica's Law on Biodiversity was recently upheld by the Constitutional Court after 8 years of legal uncertainty. This provides a unique opportunity for SINAC to fully apply its existing legal framework. At the same time, a planned legal review will provide the basis for strengthening of the existing regulatory and legal framework to sustain the PA System. Costs associated with adoption of new legal framework and policies will be covered by the GoCR. In combination with IADB and TNC funds and efforts, GEF funds will contribute to the technical assistance required for developing proposals for the legal reforms. A clear distinction will be established between existing financial mechanisms currently administered by FONAFIFO and new financial arrangements for the sustainability of the PA System.

Output 1.1. A National Policy for a consolidated terrestrial and marine PA System is approved and in force: A Task Force will be established in **this** output for the elaboration of this national policy composed of SINAC staff and members of the National Council of Conservation Areas (CONAC). Basic studies for the elaboration of this national policy will be drafted by national and international consultants, with periodic consultations, workshops and peer reviews from other key stakeholders. As an integral part of this Policy, marine and coastal conservation priorities would be downscaled as a sub-system to the regional (Conservation Area) level and incorporated into local PA Management Plans at the PA site-level. This will require a broad discussion between national and regional-level stakeholders. At the national level, workshops will be held to discuss and review policy principles, as well as to set priorities. Regional

workshops will be held to explore ways of operationalizing these principles established at the national workshop, and for the validation of the national policy.

Output 1.2. Prerequisite legal reforms and a PA re-categorization applied through local and regional planning instruments: This output will seek to define clear rules and regulations for SINAC to operate optimally, through a deconcentrated and descentralized approach. This will also require the participation of a wide range of stakeholders, most of them through National and Regional Conservation Area Councils, which will be supported through Output 5.1. Beyond these established consultative bodies, the Project will also involve in this discussion an array of local stakeholders, such as municipalities, regional and local NGOs, cooperatives and private sectors players, through local chambers of commerce. Through this consultative process, a National Strategy and Action Plan for SINAC will be defined, prepared, and adopted by the government of Costa Rica. Considering that key elements of this strategy require the agreement and coordination of a range of institutions, a high-level national inter-institutional and multidisciplinary commission integrated by MINAE, SINAC, CONAGEBIO, MIDEPLAN, and a cluster of National NGOs involved directly in conservation planning and support to SINAC (INBio,TNC, IUCN, CI, UCI-ELAP plus any other persons or institutions invited for specific inputs) will be established with the assistance of an expert in PA Planning and Management hired by the Project.

Output 1.3. SINAC Strategic Plan (*Plan Estratégico*) officially approved and operational: In this Outcome, a first round of consultation will seek to define the national conservation priorities, as well as to agree on the new territorial make up of Ecological Management Units, and the consequent re-drawing of boundaries of Conservation Areas within SINAC. The Strategic Plan, developed in **Output 1.3**, will also need to redefine the structure and functions of SINAC's regional offices and park staff. This Plan would be based on a clear and officially agreed-to definition, derived from a broad consensus, on what is understood by SINAC's Protected Area System. The Project will organize a number of participatory workshops and activities in order to define how best apply the Strategic Plan. These meetings, orchestrated around the CONAC and selected Regional Councils for Conservation Areas, will allow to shape the main components of this Action Plan, and establish short and medium term measures to be adopted by key institutions involved in PA management. The project will support specific activities to help overcome some reluctance derived from these changes, including workshops to involve staff, in service training courses such as those planned in Output 2.3. These Regional consultative bodies will ultimately be strengthened through Output 5.1, by strengthening partnerships and regional alliances.

Output 1.4. A PA System Strategic Action Plan *(Plan Director Nacional*) officially approved and operationa: These reforms to the structure and nature of Costa Rica's Protected Areas System will require broad-based consultations with a wide array of stakeholders, ranging from national authorities in charge of PA management, to regional councils and local land owners in areas critical for eco-regional conservation. Through support from the project (**Output 1.4**), another Task Force will be established for the elaboration of the Strategic Action Plan headed by SINAC with the support of staff of SINAC and other key institutions, plus temporary national and international consultants. Staggered workshops which will help SINAC determine its strategic priorities, validate and refine methodologies and establish lines of actions, as well as roles and responsibilities in implementing this Plan of Action.

OUTCOME 2: ***SINAC's institutional PA System framework and capacity is enhanced for eco-regional planning and optimal management effectiveness.***

This outcome will develop institutional capacities to set up, re-align and consolidate appropriate arrangements for conducting the planning and effective management of the PA System and its individual PAs from an eco-regional approach, in line with the Law of Biodiversity. This will include the re-structuring of SINAC's institutional structure within its Central offices and within each Conservation Area. Specific attention will be paid to institutional coordination mechanisms so as to maximize administrative efficiency in SINAC and to facilitate better communication and data flow. The Project will

also assist in enhancing appropriate institutional procedures in SINAC, the Conservation Areas and PA site-levels to strengthened human resource management. Staffing tables will be re-aligned with updated functions and competences to enable the staff in these organizations to fulfil their respective roles at different levels. Finally, knowledge management, evaluation and adaptation systems will be developed for the PAS and the Project in order to ensure harmonized approaches to human resource management.

Output 2.1. SINAC's institutional and administrative structure and organization re-aligned and enhanced: This output will center on an exhaustive review and reform of SINAC's institutional and administrative structure. This institutional review was initiated during the PDF B preparatory phase, with two sets of assessments. These aimed at defining SINAC current institutional limitations and the needs to revise its strategic objectives. They were conducted with direct participation of SINAC's senior management, as well as regional directors. However, the implementation of the proposed Strategic Plan (proposed in Output 1.4) will require broader consultations.

Output 2.2. SINAC's intra-institutional coordination mechanisms for effective PA System management developed and operational: In order to devise the best way to improve SINAC's internal organization as well as its relationship with other key entities of Costa Rica's public sector, the project will design action, through **Output 2.2**, aimed at promoting aspects of the PA System and improve levels of intra-institutional coordination with MINAE, FONAFIFO, CONAGEBIO, *inter alia*. Particular focus will be put on enhancing the communication flow and information exchanges between (i) the **National Council of Conservation Areas** (CONAC); (ii) The **Executive Secretariat** or **Central SINAC Administration**; (iii) the administrative structures of the 11 Conservation Areas; and the **Regional Conservation Area Councils** (where they apply). At the individual PA site-level, particular support will be provided to the enhanced operations of **Local PA Councils** (LPACs), as the main scenario for local coordination with participation of municipal governments, local councils, farmer associations, NGOs, and local communities. This will include specific definition of LPAC functions and competences and the development of guidelines to guarantee fair representation of stakeholders, along with rules of procedure.

Output 2.3. Staff profiles, responsibilities and occupational standards for enhanced PA System management defined, clarified or re-aligned: As a result of these consultations, new institutional responsibilities for SINAC will be established. To comply with its new strategic objectives, SINAC will require reviewing its staff profiles and clarifying their roles and responsibilities. **Output 2.3** will focus on this re-profiling process, which will entails close collaboration between SINAC senior management, MINAE authorities (Minister and Vice- Minister) and the MINAE Labor Union. An analysis of gaps in individual capacities will help determine training needs and new staff profiles to be hired by SINAC to improve the PA management efficiency of the system.

Output 2.4. Training Programme for practitioners <u>on administrative, technical and practical skills</u> necessary for optimal PA management effectiveness: The Project will provide targeted training for human resources in SINAC at (i) the central level; (ii) the Areas of Conservation level; and (iii) the individual PA site level. Moreover, the training will also target selective public institutions – such as the municipalities, NGOs and local communities that have a role in PA management <u>in the Pilot Sites</u>. The SINAC-ICT-IADB Tourism Programme will be a key strategic partner on sustainable tourism and will address important all capacity development needs pertaining to recreation and <u>tourism planning and management.</u> The various training activities will be closely coordinated with SINAC and the IADB project team members to ensure cost-effectiveness and to avoid any duplicative efforts.

Output 2.5. Knowledge management, evaluation and adaptation systems developed for the PA System and the Project As part of the planned Training Programme, the project will develop an <u>Information Network</u> for effective management and exchange among public and private Conservation Pas (**Output 2.5**). It will also include networks at the local level as part of the PA System for exchange of management experiences and assistance between public and private PAs and other private interest groups to assist conservation and the public entities located in the same area. The training-related Work

Programmes will be established through workshops to strengthen the actualization of joint actions, in themes such as information sharing; joint surveillance programmes; strategic negotiation with tourism enterprises; etc. Study tours for knowledge-sharing among both public and private PA Staff involved in the RPAS will be organized.

OUTCOME 3: ***SINAC has the financial sustainability to effectively attain its strategic objectives and provide resources for long-term PA System management needs.***

This Outcome will focus on removing one of the main barriers for SINAC's sustainability, by developing a comprehensive PA Financing Strategy and Business Plan. In practice, however, SINAC's financial sustainability also depends on its capacity to negotiate its annual budget, staffing needs and procurement needs with other key players in Costa Rica's public sector. The project will address one of the most critical barriers for the consolidation of the PA System related to SINAC's financial sustainability. Section IV: Part VIII provides a detailed analysis of this issue. A PDF B feasibility analysis[1] carried out illustrates that ***close to half of the activities that SINAC is supposed to realize are currently without funding.*** However, effectively, the scenarios modelled show that despite a significant funding gap, the system has a high potential for generating its own economic and financial benefits in varying degrees. In response, the Project will support the establishment of appropriate legal, policy, and institutional frameworks to enable SINAC's PA financing system to develop. The focus will be on improving the ability of the PA System to secure sufficient, stable and long-term financial resources and manage and allocate them in a timely manner, so that the individual PA units are managed effectively and cost efficiently.

The Project – in close partnership with SINAC, TNC, ICT, IADB and FONAFIFO - will therefore place emphasis on developing strategies and instruments for reducing the current funding gaps for PAs to achieve the optimal operational standards. These financial instruments require the agreement and coordination of a range of institutions. For this reason, a high-level national inter-institutional and multi-disciplinary PA Financing Task Force integrated by MINAE, SINAC, ICT, Ministry of Finance and the Comptroller General's Office will be established. This will provide key stakeholders with the opportunity to contribute to the design and operation of SINAC's new financial system.

Output 3.1. A PA System Financing Strategy adopted and operational: Current financing gaps place serious limitations on management and operations standards of existing PAs. In response, a **National Financing Strategy** and **related Action Plan** for sustainable funding of PAs will be finalized and adopted by the GoCR. SINAC has already initiated the formulation of a Financial Strategy with the technical support of TNC, which seeks to maximize the institution's revenue capture and optimize its spending. The strategy addresses both income generation from the System's PAs and contributions of related stakeholders (i.e. resource "supply"), as well as the minimum funding needs for adequate operations of PAs and the system (i.e. resource "demand"), and the financial planning that is required to balance both sides of the financial equation. While the *preparation* of the Financing Strategy will be funded by SINAC and TNC, complementary GEF funds will support the *operationalization* of this Strategy. This will ensure that it is adequately adopted by the different Conservation Areas and that there is a clear linkage to the Strategic Plan.

TNC will further fund the needed Financing Management Plan for the implementation of a system for collection and control of incomes pertaining to PAs. Such a plan will allow for greater revenue capture and re-distribution of financial resources to Conservation Areas and PA in greatest need. This plan will include clear criteria for establishing investment and capacity development priorities. For details on a related PAS Training Plan, see Output 3.6, and for the Financial and Accounting Information System, see Output 2.5). The project will secure coordination with a range of institutions through the creation of a

[1] PDF B Study: Analysis and Evaluation of the financial sustainability of Costa Rica`s system of Protected Areas, CIESA, 2006.

high-level PA Financing Task Force[2], integrating MINAE and SINAC, as well as ICT, Ministry of Finance and the Comptroller General's Office. This strategy will address major elements which will need government decisions, including: (i) institutional responsibilities to be defined; (ii) revenue retention and allocation; (iii) revenue generation mechanisms; (iv) staffing; (v) incentive structures; (vi) business planning requirements; and (vii) fulfil needed systems and control mechanisms to strengthen the income collection process.

Output 3.2. A PA System Financing Business Plan prepared and operational: A system-wide PAS Financing Business Plan will be developed. This will build on the above Financing Strategy, an assessment of PA System costs and financial gaps, and the business planning experiences within Pilot Sites with a potential for generating financial resources (Outcome 4). This Business Plan will address requirements for cross-subsidization of funds between PA sites of high and low revenue generation potential. The Plan will also provide an operational framework for PA System planners to identify when greater government lobbying is required for increased budgets. Moreover, the Plan will respond to priority areas for tourism development in PAs under the new SINAC–ICT-IADB Sustainable Tourism Programme. This programme – and its partnership with this GEF project - is therefore key in allowing these PAs to fully seek to internalize this benefit and thus move towards financial sustainability. This System-level Business Plan will further act as a guide for future PA site-level Business Plans, for instance, as the source of financial reporting from PA sites feeding into system-level reporting. Reporting on expenditure and results of investments in PAs will be important to show the cost-effectiveness of PA management and the value in budget allocations to improve PA management. Finally, the Plan will provide the foundation for the financing mechanisms to be developed and implemented through Outputs 3.3 and 3.4.

Output 3.3. The creation and retention of new revenue sources for PAs enabled by national policies New revenue sources for PAs, such as Environmental Service Payments, will be developed through **this output**. This will require close collaboration with the on-going WB-GEF Ecomarkets II with FONAFIFO. While this project has been targeting landowners outside public lands, this project will focus on designing mechanisms for transferring resources from existing payments schemes to cover those environmental goods and services provided by Costa Rica's PAs. This will require close coordination with all key stakeholders in the Ecomarkets II project, specifically with FONAFIFO, ICT among others.

Costa Rica has already developed some very innovative instruments for funding of private conservation and sustainable land use practices through payment for environmental services (PES) produced by forested lands and conserved ecosystems. The Project will develop the policy tools necessary to expand Costa Rica's existing PES Program to incorporate the possibility of financing part of SINAC's PA System. An official PES Policy for Protected Areas would enable SINAC to strengthen its institutional presence to stem the growing threats facing its PAs and to guarantee the long-term sustainability of the PA System. The project will also support that the PA System receives even partial payment for its generation of environmental services, especially through the new Water Tax (*Canon de Agua*) and other PES measures. The Project will further support a process, by which GRUAS II defined in-situ conservation priorities is officially linked to and is compatible with PES priorities under the 2nd Phase of the GEF-WB-FONAFIFO Eco-Markets II Project. Clear coordination mechanisms between SINAC and FONAFIFO will be supported to ensure complementary between the two project approaches. Moreover,

[2] This Task Force will be responsible for: (i) reviewing, fine tuning and expanding the data already generated concerning operational costs, investments and income of the various PAs to be incorporated into the PAS, the institutions involved and the System as a whole; (ii) supervising the valuation and economic evaluation studies in PAs; (iii) developing feasibility studies of the various funding mechanisms identified during the preparation of the Financial Strategy, including market studies to support decision-making for charging PA admission and concessions and the development of productive activities and PAs services; (iv) selecting mechanisms evaluated as being the most adequate and feasible for establishing a diversified financial structure, and (vi) defining the necessary, regulatory and structural framework towards the successful implementation of the various financial mechanisms.

the Project will assist SINAC and FONAFIFO in formulating a joint action plan for PES within PAs. GEF funds will be complemented by funds derived directly from revenue transferred to SINAC from the new Water Fee. As such, this output will seek to reinforce the range of revenue sources for the PA system, including PES in key targeted watersheds and conservation areas.

Output 3.4. System-wide funding mechanisms developed and implemented in the PA System and its constituent PA units: Building on the above PAS Financing Business Plan, to increase long-term income potential of the PA System, the feasibility of and market opportunities for alternative financing mechanisms will be identified and assessed to develop a diversified set of revenue sources for the PAS Financing Strategy and Action Plan. Some of these instruments require a longer period for full evaluation and development, whilst others have a much higher level of viability in the short term. Hence, a two-pronged approach is proposed: (i) The first will test and implement some of the financial instruments identified as being viable in the short term. (ii) The second part will focus on further exploring mechanisms, which will require additional review and political support for their application.

In addition, to gradually address the aspect of privately owned lands for conservation purposes, the Project will explore and define financial needs and possible funding sources for different scenarios and mechanisms, including conservation leases, easements, and the development of incentives for private PAs. Mechanisms will include both direct incentives (whether monetary or in-kind) and indirect incentives (fiscal instruments and service incentives). Among direct incentives the possibility and feasibility of promoting subsidies, soft credits, etc. will be explored. The project will support economic valuation and evaluation studies to determine the values of resources provided by PAs and the opportunity costs for different types of landowners that may wish to implement private reserves. These will enable the definition of criteria and procedures to provide incentives for encouraging private parties in the establishment and management of Pas.

Output 3.5. An online PA System financial information system and fee collection mechanisms designed and established within SINAC: SINAC also requires urgent investments in up-to-date Information and Communications Technology (ICT), since its current communications and computing capacities are well below those needed for an institution managing over 1000 employees, 160 Protected Areas across the country and an annual budget of USD 20 million. In addition, telecommunications are also limited, particularly in those PAs located in remote areas with no access to land lines. An incipient national initiative, led by a private consortium (Proparques), is planning to invest in wireless communications technology (both telephone and internet) in 10 SINAC PAs. Plans for an expansion of this major overhaul in PA communications are currently being discussed.

This Output will build on the assessment already conducted in the context of SINAC's Financial Strategy, and will provide SINAC with the hardware and software needed to increase the efficiency of its current financial and management system. The project will support complementary technical studies to define the equipment needs of SINAC's Central Offices. It will also provide a minimum of two computer terminals per Conservation Area, equipped with the adequate software for online financial information management. This online financial information system will enable SINAC to access information on PA incomes and expenditures in a timely and reliable fashion. Moreover, fee collection mechanisms will be developed and integrated into this new system. Guidelines on how to both utilize the financial information system and apply the fee collection mechanisms will be prepared, along with training through Output 3.6. The integration of the fee collection into the financial information system will allow for monitoring of the progress made in terms of revenue captured. This will be increasingly important as SINAC is allowed to retain more of the revenue it captures, in response to the removal of the identified legal barriers for doing so. This financial information system will be tested through pilot projects in ACT and ACTo, described in Output 4.4 and 4.5. Moreover, in support of Output 5.3, the information pertaining to the bidding system, investments and cost of concessions will all be recorded and monitored.

Output 3.6. Training Programme for SINAC financial administrators at all levels[3] to set up, consolidate and operate financial planning, management and other business systems: Several PDF B studies highlighted that there is a significant gap in Costa Rica in terms of the skills needed to plan and manage the finances of Costa Rica's PAS (see Barrier 4) and in the innovation and vision needed to transform PA values into revenues (see Barrier 3).To help overcome this barrier, this Output will deliver training activities to improve skills and capacity for the PA System financial sustainability. Through joint GEF, IADB and TNC funding, international expertise will train a team of local trainers in key PA financing issues. These trainers will then pass on their knowledge to practitioners at the PA site and system levels. Technical support will also be given to develop knowledge and skills that support good financial management, particular expenditures and procurement. On the revenue side, increased awareness and understanding of all potential revenue sources will enable PA practitioners to select the right combination to meet specific PA conditions.

Initially, training will take place at the central level for SINAC's financial managers and in PA Pilot Sites and later extended to the rest of the system during the life of the Project. In the Pilot Sites (Outcome 4), PA practitioners will receive guidance and support to supplement PA management plans with long-term financial and business planning and the ability to implement these plans in a participatory manner. These plans will act as models for PA managers across the system and, later on, will feed into the system-wide Business Plan to be developed in Output 1.6. In addition, PA practitioners in Pilot Sites will be trained to start developing some of the funding strategies and innovative revenue generation mechanisms identified in their new Business Plans.

OUTCOME 4: ***SINAC tests new and innovative conservation approaches at the Conservation Area and PA levels***

Pilot processes will be key tools in implementation of the planned FSP Stakeholder Involvement Plan (see Section IV: Part III). Part IV: Section IX provides moe details on each Pilot Site. This Outcome aims to apply the new legal and policy frameworks developed in Outcome 1 and 2, while using the new financial mechanisms developed in Outcome 3, to (i) test and develop new tools for enhancing PA management and cost effectiveness; and (ii) for the generation of lessons learned to be shared at the national, regional and global levels. This Outcome also seek to apply and further strengthen many of the new institutional and governance arrangements developed in Outcome 1 through 3 through ground proofing the development of SINAC's regional (Conservation Area level) and sub-regional offices (PA site-level).

Given the focus on supporting SINAC in its de-concentration efforts, 4 out of the 11 Conservation Areas will constitute the Demonstration Sites. These pilot areas will provide an inter-regional platform for the exchange of knowledge and best practices. The Conservation Areas were also selected on the basis of potential co-financing from the IADB-funded Tourism in Protected Areas Program and TNC's activities in Osa. In general, they will be provided with the means and the human resource capacity to apply and operationalize the newly developed management categories, financial and administrative procedures. In these Pilot Areas, new approaches will be tested - both internal to SINAC and external - in terms of partnerships with key stakeholders in and around PAs.

The Project will provide an opportunity for ground testing and for sharing Best Practices for a variety of PA governance models and management types, as part of the strategy to develop a multi-stakeholder PA System. Another aim is to demonstrate how to share the responsibilities and costs of PA management across a broad spectrum of institutions, organizations and individuals. The pilot activities have been specifically designed to enhance the effectiveness of management responses to threats, and thus to threat remediation. The Project will also support the systematization of these experiences in order to draw

[3] The three targeted levels are: (i) Central level; (ii) Regional through emphasis on the 11 Conservation Areas; and (iii) PA site-level.

lessons that could be useful for similar situations in other areas (in terms of land tenure structures, threat scenarios, etc.). The results attained in each site will be made available for other practitioners through the Knowledge Management System (see Output 2.5).

This GEF Project will complement the Tourism Programme by developing joint planning activities in four selected Conservation Areas. Municipal land use plans will be combined with PA management plans to ensure long-term conservation goals, while enhancing tourism opportunities in and around PAs. This Outcome also seeks to engage and develop capacities for SINAC field-based staff in selected Pilot Sites to develop replicable approaches on how best to interact with local stakeholders in a more effective manner. This approach will be geared around two sub-components: 1) Settlement of PA boundary and land titling disputes (Outputs 4.1 and 2) capacity development of local leaders and stakeholders on how to constructively engage with SINAC in more effective PA and Buffer Zone Management schemes. In this way, Outcome 4 will further make a significant contribution towards strengthening the ongoing institutional de-concentration efforts of SINAC.

These Pilot Sites will also provide testing ground for a variety of approaches to PA management through (i) innovative funding mechanisms (such as the operationalization of the SINAC-TNC financial system mechanisms developed in Outcome 3), (ii) Strategic alliances and partnerships with IADB-funded tourism initiatives and cadastral information programs; (iii) New capacities for effective PA management, and (iv) the generation of lessons learned to be shared at the national, regional and global levels (see Output 2.5). In particular, the four pilots will address different facets and management for PA and their surrounding buffer zones.

Output 4.1. PA boundaries legally registered and demarcated for a representative sample of PA units within the PA System: This output will address one of the most pressing legal issues facing Costa Rica's PA System, i.e. land tenure in PAs. Output 2.5 will focus on the development of an Integrated Land Information System for SINAC, which will contain much of the information on State Property within PA, together with a database on pending land payments by SINAC. This output, however, proposes on-the-ground activities to contribute to the legalization and actual physical demarcation of PA boundaries. This will contribute to a reduction in the incidences of land disputes between SINAC and landowners neighbouring PAs.

This output will also build upon the larger ongoing national effort to modernize Costa Rica land titling and cadastral system, supported by the above IADB funding. This large Programme has a component aimed at solving land conflicts, particularly in State-owned areas, or areas under special tenure regime such as PAs, coastal zone, wetlands, and border regions. The IADB-funded Cadastral programme will fund the on-the-ground demarcation and legalization of 10 SINAC PAs. This project will provide additional funding to legalize up to a total of 20 additional PAs. The priority PAs will be defined according to SINAC's criteria for selecting individual PAs to be legalized and demarcated. Once fully registered and with boundaries legally recognized and marked on the ground, a major threat to individual PA Units will disappear. Removing a key barrier - the settlement of land claims and the demarcation of PA on the ground – will make a significant contribution towards long-term security and political viability to the consolidated PA System.

Output 4.2. Infrastructure and accessibility of 10 most visited PAs within PA System improved: SINAC's PAs are notoriously under-staffed and even more under-equipped. SINAC has recently partnered with ICT to invest in communications facilities and infrastructure to improve the services provided to tourists inside PAs. Based on a market analysis, this project has selected 10 highly visited SINAC PAs, in which it will develop their Management Plans in conjunction with tourism development plans. It will also enhance communications between SINAC and the PAs, accessibility through improved roads and paths, and improve the public services and facilities provided to park visitors. This sample of SINAC PAs will be fully equipped and staff will be trained to better service tourists, while also managing conservation goals set by SINAC and GRUAS II. Moreover, the IADB Sustainable Tourism Programme

will channel US$12.8 million in infrastructure investments inside 10 selected PAs. This sub-program will fund investments, such as access roads, parks paths, entrance booths and visitors centers. It will also fund transport vehicles for each of the 10 PAs, and a boat in 5 PAs; and Pre-feasibility and Feasibility Studies (including Environmental Impact Assessments) for the planned investments in infrastructure. So far, investment needs have been calculated for three pilot areas (Manuel Antonio, Corcovado y Braulio Carrillo), and the needs of the rest of the PAs will take place during the onset of the program.

Output 4.3. PA management authority support to community-based businesses tested and institutionalized: Field Demonstration Site: As a Biosphere Reserve, the **Cordillera Volcánica Central Conservation Area (ACCVC)** constitutes the heart of Costa Rica's PA System. Table 34 in Section IV: Part IX provides an overview of this pilot. It is also in the most densely populated area in the country - the Central Valley - where Costa Rica's major cities are located. As a result of its relative closeness to large urban areas, this Conservation Area contains two of the most visited PAs (Poás Volcano, and Irazú Volcano NP). A new local economy is emerging in and around PAs, geared around ecotourism and related service activities. But it also generates considerable pressures on dwindling biodiversity resources, as rapid urban expansion and agricultural practices leads to habitat loss, habitat substitution and waterborne pollution. Moreover, Costa Rica's urban population depends on regular supplies of water from aquifers which are currently protected in the cloud forest and other montane and sub-montane ecosystems of the ACCVC.

Costa Rica has managed to harness the linkages between in situ conservation and ecotourism, by promoting its PAs as major tourist attractions in the country. However, there are still considerable needs for infrastructure and local entrepreneurial capacities to provide all the services needed for a full fledged local economy geared around ecotourism. In close collaboration with the IADB-SINAC-ICT Sustainable Tourism Programme, this project will build on this important development baseline by providing targeted support to ACCVC management to increase its institutional and human resources capacities to cater to a growing tourism industry. The project will also work with other local partners to contribute to local capacity development through SINAC's regional and sub-regional centres in the ACCVC. SINAC staff will be trained to develop better outreach activities, provide guidance to the ecological soundness of certain productive activities, and provide support to innovative buffer zone management approaches. Civic associations, small rural enterprises and local NGOs involved in biodiversity friendly productive activities and ecotourism in the buffer zones of the National Parks of Volcan Irazú, Volcan Poás and Braulio Carrillo will be among the beneficiaries.

Output 4.4. Conservation Area and the tourism industry partnerships for financing PA management tested and institutionalized. Field Demonstration Site: The **Tempisque Conservation Area** (ACT - *Area de Conservación Tempisque*) covers most of the Nicoya Peninsula in Northwestern Costa Rica. Table 33 in Section IV: Part IX provides an overview of this pilot. It harbours important samples of Costa Rica's tropical Dry Forest and Seasonal Moist Forest. It also boasts some of the most important Sea Turtle nesting grounds in the Pacífic (Las Baulas, Ostional), as well as three Ramsar Sites for wetlands of international importance. ACT is moreover characterized by a large number of relatively small Pas.[4] These PAs cover a total of 108,807 ha, of which only 12,351 ha of the terrestrial portions of the PAs are under public administration. Notably, most of the PAs (27,817 ha) in this Conservation Area are in private hands. The Pacífic Coast of the Nicoya Peninsula is also one of Costa Rica's fastest growing tourism destinations, which has made tourism the main driver of Guanacaste's economic development. As a result, ACT has pioneered partnerships with the private sector to secure adequate governance of its PA system at the local level. More specifically, ACT works with 8 municipalities in an area where a booming tourism industry and land markets exert increasing pressure on PAs. Hence, ACT presents considerable opportunities for harnessing linkages with the tourism industry, through innovative partnerships and joint management arrangements with the private sector. These new arrangements

[4] A total of 25, of which 17 have institutional SINAC presence.

require the strengthening of the management and negotiation capacities of ACT staff vis-a-vis a booming tourism industry.

Together with ACT, the Project will focus on enhancing SINAC's administrative capacity at the regional level and its presence on the ground at the PA level. The work of PA staff will be complemented through public-private partnerships with local businesses - particularly related to the tourism industry. This output will also test new and innovative approaches to the management of concessions for non-essential services to the private sector by SINAC. In particular, this output will centre on strengthening ACT capacities to engage with the private sector, through the concessioning of non-essential services and the co-financing of PA management. Support will be provided to increase institutional presence in all ACT PAs, thus increasing the PA management effectiveness, while creating the mechanisms for increasing PA revenue and making this institutional presence sustainable. SINAC field staff and park managers will be trained and a competent outreach unit and business unit to work with local entrepreneurs will be created. An important goal of this pilot is to increase ACT revenue to strengthen its institutional presence and consolidate many of the existing partnerships with local businesses, thereby contributing to the long-term financial sustainability of the PAs, while reducing threats to the areas through collaborative efforts. An exit strategy will increase the capacity for rent capture by the Conservation Area, through user permits and concessions, which progressively will cover the full cost of increased staffing.

Output 4.5. New management approaches and local land use planning tools compatible with eco-regional conservation goals tested with local municipal governments and community based organizations: Field Demonstration Site: The **Tortuguero Conservation Area** (ACTo - *Area de Conservación Tortuguero*) is located in northeastern Costa Rica, and harbours the Tortuguero National Park, an important Ramsar site, on the Caribbean Coast. Table 35 in Section IV: Part IX provides an overview of this pilot. The Park is one of the most visited PAs in the country. The SINAC-ICT-IADB Tourism Programme will be investing in improving infrastructure in the Park, such as visitor centres, etc. This constitutes an opportunity to plan for future growth in tourism visitation, increasing the SINAC field Staff's capacities to attend tourism, as well as to join forces with local municipal governments, NGOs and private sector to improve local service provisions and create much needed employment opportunities. This requires a reinforcement of a territorial approach to eco-regional planning, in order to link and make eco-regional management categories more compatible with municipal level planning tools, such as the land use plan (*planes reguladores*). ACTo has also been one of the few Conservation Areas where the Regional Conservation Area Council has been convened regularly and CORACTo - ACTo's Regional AC Council- has been building its constituency.

With the Tortuguero Conservation Area (ACTo), this Output will hence pilot approaches for land use planning with municipal authorities and community based organizations. New management approaches and local land use planning tools will be tested in selected municipalities (Guácimo) and communities (Tortuguero) in order to align them with eco-regional conservation goals. In partnership with the IADB-SINAC-ICT Sustainable Tourism Programme, SINAC PA staff in Tortuguero National Park will be supported to engage with local municipal and community governments to apply land use planning approaches in order to prioritize investments in tourism infrastructure while guaranteeing land uses compatible with long-term conservation goals. This land use planning approach will also serve as a key conflict avoiding strategy to further ACTo effort for the long term partnerships with local authorities to pursue common development and conservation goals. This Output will also seek to strengthen local partner organizations, particularly those active in buffer zone management, ecotourism and other activities linked to PA management and conservation. In particular, the project will build on the experience developed by Community-Based Management Program in Acto (*Programa de Gestión Comunitaria PGC-ACTo*), which works with buffer zone communities around Tortuguero National Park, through the promotion of sustainable livelihoods and ecotourism. Moreover, this pilot will centre on strengthening CORACTo seeking to promote innovative participation mechanisms, collective action approaches and long-term sustainability.

Output 4.6. New approaches to business plans and concessions for service within PA tested through a TNC-Osa Conservation Area (ACOSA) partnership: Field Demonstration Site: **Osa Conservation Area** (ACOSA - *Area de Conservación Osa*). Table 36 in Section IV: Part IX provides an overview of this pilot. ACOSA has received considerable international attention over the past years, and has benefitted from previous international funding from the GEF and other conservation organizations, such as TNC and CI. The Moore Foundation has provided TNC with an important donation since 2004 to strengthen conservation efforts in Corcovado and in the Golfo Dulce Forest Reserve. With the support of TNC, management plans are currently being created for all seven protected areas in the Osa Peninsula, as well as for the Amistad International Park. Corcovado National Park is one of the ten PA with fastest growing tourism visitation. In order to manage this growth adequately, and provide local entrepreneurs with business opportunities, this output will build on the participatory method already tested by SINAC and TNC's Osa Program, in order to ensure that the communities are adequately empowered, along with the government, to implement these plans.

This Output will test new concession models with the private sector, compatible with the land use and PA management plans. Building on TNC's work under their Osa Program, the project will draft joint municipal land use plans (*planes reguladores*) and PA management plans. Moreover, the plans also respond to the new eco-regional approach that looks beyond the protected area and incorporates the ecological processes in the surrounding areas of influence. TNC will have completed the joint plans, but the implementation and replication of these approaches are still pending. These management plans will not only allow for an innovative approach, but also serve as an important model for the implementation of key strategic planning tools developed through Outcome 1 (see above). The process for creating these management plans is innovative, because it incorporates public participation through the creation of local participatory committees that are receiving training in order to guarantee the adequate implementation of the management plans. Part of the follow up will also include developing concession models and contracts with local and national entrepreneurs for the provision of services in and around PAs in ACOSA. This pilot will serve as a testing ground for new mechanisms for PA-level interaction with the private sector, in particular in developing best practice in managing concessions for non-essential services within PAs and in promoting local investment compatible with conservation goals in the Osa Peninsula.

OUTCOME 5: ***Successful PA System management models are scaled-up and replicated at the systemic level through strategic partnerships with key stakeholders.***

This Outcome seeks to replicate and scale up the successful PA management approaches developed in the Pilot Projects in Outcome 4. It also aims at promoting the implementation of the new strategic reforms in Outcome 1, while taking advantage of the strengthened capacities resulting from Outcome 2 to make changes across the overall PA System. The main goal of this Outcome is to strengthen the governance system in and around PAs with a wide range of stakeholders to improve the long-term management efficiency of the overall PA system in Costa Rica.

This scaling-up of local conservation partnerships will require a **two-tiered approach**. A first step will be to consolidate existing consultative bodies, such as the Regional and Local PA Management Councils. According to the Law on Biodiversity, CONAC – **the National Council of Conservation Areas** - is the supreme decision-making body of SINAC. All 11 Conservation Areas should also in theory have set up **Regional Councils for Conservation Areas** – so-called CORACs. In practice, however, so far only a few have been established, partly due to the past drawn out constitutional appeal over the Law on Biodiversity, which was resolved only recently. Hence, the project strategy is to strengthen national and regional consultative and local decision-making bodies through the Regional Councils of Conservation Areas. The strengthening of such regional councils and local PA management boards will be critical for guaranteeing long-term commitment of local stakeholders in biodiversity conservation. As these bodies are now fully backed by the Law, they can provide an important platform to forge long-term partnerships around conservation areas. Several key stakeholders involved in the Pilots (local entrepreneurs, municipalities, NGOs) will be engaged to broaden the scale and scope of their actions. Second, building

on the systemic and institutional capacities strengthened in Outcomes 1 through 3, and drawing lessons from the pilots developed in Outcome 4, the project will extend to the entire system some of the best practices and innovative initiatives with local and regional partners to improve management efficiency and contribute to sustainable livelihoods of populations living in and around PAs.

The project strategy will contribute to the scaling up of best practices in the following thematic areas: (i) Improved Governance of Conservation Areas and PA through consolidated consultative bodies; (ii) Institutional mechanisms for alternative livelihood support to communities in and around PA; (iii) Institutional mechanisms for managing concessions for PA service provision with private sector; (iv) Collaborative Management of selected PA by local partnerships and consortia; (v) Harmonized and integrated land use planning approaches with Municipalities; and (vi) Contribution of the PA System to the consolidation of Biological Corridors. Each of these thematic areas will be addressed by different outputs below to scale up and replicate at the systemic level best practices in PA management and eco-regional planning.

Based on the Pilots in Outcome 4, these Best Practices will be scaled up by translating them into formal institutional mechanisms to improve the overall governance of Costa Rica's PA system beyond the project duration. This will require organizational changes, new procedures and clear rules and regulations. At the heart of SINAC's governance system are the above National and Regional Councils, which will provide the mechanisms for translating best practices gained in one Conservation Area into widespread approaches to PA management in other Conservation Areas. The role of these Councils as conveyor belts for these institutional practices will be key for scaling up local practices. Engagement with regional business councils and chambers of producers will also allow the establishment of clear rules of engagement for the concessions management within PA.

These basic public service providers are key to ensuring an adequate insertion of PAs into local and regional planning. Scaling up of these best practices will be achieved by harnessing these regional platforms for adapting and disseminate innovative approaches to PA management. For instance, many of the innovative approaches to conservation planning with local governments - developed as pilots under Outcome 4 - will be replicated at the national level, through horizontal exchanges between Conservation Areas. This requires this GEF project to remove several legal and administrative barriers within SINAC for enabling greater public participation in PA design and management to be largely addressed in Outcome 1. A new management culture needs to emerge from this component, which can improve the capacities of PA staff to manage its relations with key stakeholders, thereby harnessing the full potential of productive partnerships in conservation.

<u>Output 5.1.</u> Local and regional PA Management Councils function with an integrated and inter-sectoral vision through flexible and inclusive management arrangements: Building PA partnerships requires the strengthening of consultative bodies, which allow PA management teams to interact and engage with local stakeholders. Existing structures - such as the *Regional Councils for Conservation Areas and Local PA Councils* - have participation of environment, agriculture, tourism, and education authorities. They can therefore provide key negotiation platforms for these new partnerships between PAs, local governments and community-based organizations. Yet, many of these regional councils have been inoperative for years, in part due to the above legal challenges, combined with a lack of funds and clear guidelines concerning participation from SINAC staff. Yet, these regional councils have critically important functions as defined by Law which include the approval of strategies, policies and plans proposed by the Conservation Area, deciding in particular on the creation of new PAs to be submitted to CONAC. These councils also have a key role in reviewing management plans and approving collaborative management arrangements and concessions within the PA.

The project will provide the initial impulse for these regional and local councils to come together, and it is expected that they could become instrumental for reaching agreement on specific governance arrangements for long-term conservation at the eco-regional level. This Output will therefore seek to

strengthen these councils by reviewing their composition, by supporting regular meetings and providing them with secretarial support. These decision-making functions are critical elements that need to be strengthened, by providing technical assistance to the Conservation Areas for them to build agendas and hold regular meetings of the regional councils. The long-term sustainability of the councils will also depend on their composition, the relevance of their agenda and their capacity to harness fiscal resources through the charging of fees and fines. Another critical role for the Regional and National Councils will be as conveyor belts of good institutional practices. Building on the experiences developed in Outcome 4, the Project will first work with a cross-section of Conservation Areas (ACCVC, ACT, ACTo and ACOSA), providing support to their Regional Councils. Once these regions have consolidated their consultative bodies, support will be provided to the regional councils of the other six continental Conservation Areas. Only Isla del Coco Conservation Area will not be included, as it is already receiving GEF funds from an ongoing FSP.

Output 5.2. SINAC has institutional capacity for engaging with indigenous communities and for providing alternative livelihood support to communities located in and around Pas: Traditionally geared to tasks of protected and control, parks staff are now required to work with a much wider range of stakeholders, while also attending to tourists, work with local governments, indigenous organizations and local NGOs. This requires a new set of skills for most SINAC field staff, but also clear rules of engagement and policy backing in terms of the legal and administrative boundaries required for managing public goods such as PA. The incorporation of participatory approaches in PA management routines can offer new economic opportunities, increase rent capture and improve the public image of PA staff. Yet, making Costa Rica's PA System more responsive to the needs and opportunities for local development requires a change of organizational culture. This, in turn, calls for increased capacities at SINAC's regional and sub-regional offices to meaningfully engage with local stakeholders. These efforts can also provide the channel for provision of support to alternative livelihoods for communities neighbouring PAs, which would likely help reducing persistent threats to PA integrity.

Strengthening the Councils in Output 5.1 will constitute an important step in increasing participation in the day-to-day management of the PA System. Yet, there is also a need to incorporate participatory methodologies into official SINAC policy at the central and regional level. For instance, SINAC has had limited success in dealing with indigenous territories located in and around PAs. In order to engage with indigenous organizations in a meaningful manner, SINAC will need to develop capacities to address complex issues related to traditional rights to biodiversity, sacred sites, traditional knowledge and access rights. This Output will provide training opportunities to existing SINAC field staff to improve their outreach capacities and adapt management tools that can enhance public participation in PA management. Project-supported Livelihood Specialists will develop guidelines for PA management staff on how to engage with indigenous communities, local stakeholders and to solve problems and conflicts. Through on-the-job training of SINAC field staff, PA management effectiveness will improve over time. In partnership with specialized technical partners (i.e. CATIE, UCI-ELAP), PA managers will be assisted in development of delivery mechanisms to help small rural enterprises and local service providers. These improved outreach capacities will be complemented by the provision of accessible and understandable information to local stakeholders on the different modalities of participation in PA management.

Output 5.3. Institutional mechanisms are put into place through clear rules for the tendering and bidding of concessions and other use permits and opportunities to local entrepreneurs: SINAC has made progress, albeit slowly, in defining rules for the provision of goods and non-essential services, use permits, and other local use conventions. These concessions and use permits can become not only a source of potential revenues for SINAC, but more importantly can sometimes act as key linkages between PA and local economies. This Output seeks to contribute to the improvement of the management capacities of local actors and provide parks staff with the necessary training to negotiate and engage in these partnerships, under clearly agreed upon rules. Successful pilot-tested concession management models (Outcome 4) will be scaled up and replicated. Resources and technical assistance will be provided to Regional Councils to institutionalize approaches throughout the PA System to enable private sector

participation in the provision of non-essential services in and around Pas, such as restaurants, rentals, waste disposal and other non-essential PA functions. New business models based on concessions, use permits and leasings will be explored through a stepwise approach, based on learning-by-doing to define clear rules and regulations for the management of concessions. New business models based on Concessions and Leasings will be explored through a stepwise approach, based on learning by doing. These models will seek to define clear rules and regulations for the management of concessions, from the public tender to the handing out of service contracts to business partners providing key services in and around PA.

The project will also set up adequate monitoring capacities through its Output 3.5, and SINAC's Financial Information System should be able to provide key information to identify revenue sources, monitor income flows and provide key inputs into the management of concessions by Regional Offices. This financial information system will also guarantee transparency and help monitor the compliance and effectiveness of these concessions**.** Follow-up and evaluations of the services provided will also help SINAC to improve the quality of services provided, and develop clear selection criteria for the establishment of concessions. The project will provide the technical assistance to define these criteria and help SINAC develop an Outreach department which could specialize in launching tenders, selecting concessionaries and conducting oversight and quality control of services provided within PA.

Output 5.4. Models for multi-stakeholder PA management boards are institutionalized and replicated in a variety of ecological and socio-economic contexts. Costa Rica still needs to adopt a formal legal figure of collaborative management, which could set down clear rules for participation in the management of State-run PAs. Yet, SINAC has recently published a national policy on collaborative management of PAs. This paves the way for adjusting the legal framework and management guidelines to incorporate models of collaborative management of State-run PA. These models can also be adjusted on the basis of on-going collaborative management initiatives in Costa Rica, such as those in Cahuita National Park and Ballena Marine Park. This output will build on the field-based experiences in Collaborative Management in Costa Rica and develop criteria for selecting PAs with potential for Collaborative Management with the support of IUCN's Regional Office for Mesoamerica. The project will further provide support for the implementation of SINAC's National Policy on Collaborative Management. The project will also work closely with regional SINAC offices and define with Parks Staff, which PAs could qualify for collaborative management arrangements, and where local stakeholders can become involved in PA management through formal management arrangements with local PA councils, associations and similar civil society organizations. These models, tested during the pilots in Outcome 4, will be replicated and scaled up to the national level through a change in regulations and new management categories, which can accommodate greater participation of local stakeholders in PA Management. This participation goes beyond the consultation of the regional and local PA councils, which will be supported through Output 5.1, as it pertains more to specific management responsibilities within PA.

Output 5.5. SINAC PA system is connected through biological corridors which operate under innovative public–private partnership models: This Output will contribute to the consolidation of the national network of biological corridors, incorporating as a complement to SINAC's PA System. To achieve this goal, the project will build on the results left in Costa Rica by the regional FSP GEF project of the Mesoamerican Biological Corridor, which in SINAC led to the creation of the National Program for Biological Corridors, which operates within SINAC. In this sense, Biological Corridors are already a part of SINAC. Yet, much more work in needed for the recommendations of GRUAS II to be adequately implemented. However, the current project will face limitations in terms of its capacity to impact on the productive landscapes beyond PA. Based on the GRUAS II recommendations, the project will select two or three priority biological corridors on which to focus. By building constructive partnerships with Municipalities and local NGOs, the project will enhance the connectivity of the PA system by linking it with the productive landscape. This will be done in coordination with FONAFIFO – through the close collaboration with the WB-GEF Ecomarkets II Project, – the Network of Private Reserves, the GEF Small

Grants Program, ARAUCARIA, *inter alia*. It should be noted that the project will not seek to work directly in environmental service payments. It will however need to work in the linkages between PA and the surrounding productive landscape.

This Output will contribute to developing outreach activities to illustrate how biological corridors function as key biological components of Costa Rica's Protected Areas System. It will also seek to build alliances between existing networks and alliances around biological corridors, particularly related to community-based eco-tourism, as promoted by the GEF Small Grants Program in Costa Rica. In this sense, the role of municipal governments in building and maintaining biological corridors needs to explored, through partnerships at the regional and national level. The project will work with municipalities to develop local land-use plans which will set the ground rules for effectively linking the tourism industry and conservation goals through the promotion of biological corridors. In this output, workshops will be conducted for the development of biological corridors, in accordance with existing PA management plans and land use plans (*Planes Reguladores*), in priority protected areas. As a result of this output, biological corridors would be designated as official parts of the SINAC PA System, and would be subject to land use planning regulations in order to maintain their ecological viability and the provision of environmental goods and services in and around PA. As the entire Outcome 5 is concerned with replication and scaling up, this Output will also seek to work through national and local partners (particularly the GEF-SGP, TNC, IUCN, and CBTC) to replicate and sustain successful experiences in biological corridors.

Output 5.6. Marketing and communication strategy on PA values, vulnerabilities and revenues mechanisms formulated and implemented at the national level: A Strategy for Outreach and Marketing will be developed within SINAC, with GEF and counterpart resources. Although several organizations, such as TNC, have provided support to improve communications and update web-based information, SINAC has yet to have a comprehensive communications tool, which enables it to promote the attractions and services provided by its PA System. To guarantee an adequate implementation of the SINAC-ICT-IADB Sustainable Tourism Programme, the three programme partners – SINAC, ICT and IADB - plan to design and jointly fund a Marketing and Communications Strategy to promote the sustainable management of tourism in PAs through an innovative approach. This Strategy will aim to stimulate visitation to PAs and other complementary activities, which are compatible with conservation goals, by working with the private sector This Marketing Strategy will be fully integrated into the above SINAC Strategic Plan, the PAS Strategic Action Plan and the PAS Financing Business Plan.

The broad marketing and communication strategy will help position SINAC in the nature-based tourism market and provide information about tourist attractions within PAs, with direct participation of the concerned Conservation Areas and PAs. These activities, funded under the SINAC-IADB Tourism Programme, will also enable the publication of guidebooks, prospecti and other promotional material, complementary to ICT's regular promotion of sustainable tourism at the local, national and international level. These activities will be clearly linked to the above Business Plan and the Financial Strategy and will seek to: (i) Inform the public at large of the existence of PAs and of their importance for the economic and social development of the country, while providing a powerful tool for improving the accountability and transparency of SINAC as a public service provider; (ii) Provide a platform for outreach and to receive and process complaints and grievances from PA visitors and consumers in general; (iii) Channel general information and processed scientific data of biodiversity in PA, and provide timely updates of the state of endangered species prote*cted within the P*A System; (iv) Solicit support and voluntary help from civil society, through local and national environmental NGOs, youth movements, and other potential partners in conservation; (v) Promote targeted investments from the Private Sector and sponsors for specific PA, (vi) Promote joint publications and applied research in Conservation Biology and associated disciplines, in partnership with universities and research organizations; (vii) Provide a communications tool and common platform for providing information on projects and programs conducted within SINAC.

III. Impacts on Beneficiaries and Vulnerable Groups, especially Indigenous Communities, Women, and Displaced Households.

In terms of benefits accruing to stakeholders, global benefits of the project will include the securing of long-term protection for globally significant species, habitats, and local communities that are currently stressed and are increasingly threatened by the numerous factors elaborated in the Threat Analysis section. National benefits accruing from the project will include: The enhancement and distribution of PA management capabilities – including to the local communities living within and around the PAs -; the improved collaboration between regional public and private Pas; the consolidation of a sound financial footing to ensure the PAs' sustainability; and the accumulation of transferable knowledge and skills to other contexts. Through **Outcome 2 and 3**, PA administrations and staff in SINAC will benefit from exposure to new management approaches, improvements in the information base, enhanced capacity to effectively manage the PAs, upgraded skills through training opportunities, and improved relations with local communities.

Locally, vulnerable groups - especially indigenous communities, women, and poor private landowners - will benefit from the local territorial planning process, mainly with the introduction, implementation and dissemination of alternative sustainable economic, environmental and technological activities particularly through **Outcome 4.** They will also benefit from the support from conflict resolution processes and rural governance; the development of awareness of environmental values and environmental governance principles; and the increment of the capacity for territorial and environmental management of the PA authority, local government agencies and communities. Through the provision of alternative livelihood options to the resident population, the project will enhance local support for conservation, and will stimulate the development of self-reliance and sustainable economic use of the areas' biodiversity resources. The project will provide these communities with the knowledge and mechanisms to adapt their use of the PAs that optimize their economic and social welfare while sustainably conserving their biodiversity values. In addition, secondary beneficiaries, including NGOs, government agencies and partners in project delivery, will benefit from their own capacity building.

Table 12. – Matrix of main stakeholders involved in biodiversity conservation and protected areas issues

Actor	Institutional Mandate and Responsibilities	Role/Interest in the Project	Potential support/observation or potential resistance to the Project
1. MINAE	Ministry of the Environment and Energy was created in 1994.	• This Project addresses the comprehensive management of Costa Rica's Protected Areas and therefore offers an opportunity for MINAE's new administration (2006-2010) to carry out needed reforms to modify their structure and role. MINAE's political support will be required to advance many of the institutional and financial reforms to SINAC that are proposed in this project. • It is also a chance to link up the management of all PAs in the long term, including their provision of environmental goods and services to productive and services sectors such as tourism, agriculture and hydropower generation.	• There is strong political support for the project. • The project coincides with a proposal to reform MINAE's structure and internal organization. The changes proposed by this project are consistent with the reforms planned at MINAE by its new administration. In establishing SINAC as a key piece of MINAE's institutional puzzle, one must first consider situations of conflict and resistance to change, particularly in regard to job profiles, changes in employee distribution, employment mobility and other contentious issues. • The new GEF RAF mode means that the project is taking potential GEF funding away from other projects, and this has generated resistance by certain interests to the Project in favor of other biodiversity related projects.
2. SINAC Executive Office	The main Project Counterpart, National System of Conservation Areas (SINAC), is part of the Ministry of the Environment and Energy, and its functions are established in the Law of Forests (Law No. 7575) and its Regulation. SINAC was created in 1995, and has a Director General and Assistant Director. It has an administrative unit and two departments: 1) Natural Resource Management Department and 2) Protected Wilderness Areas Department. These are supported by a series of technical units that are also part of the SINAC Office, including: Marketing, projects, information systems, funding, quality, development, control and protection and protected areas. Their main function is to facilitate the efforts of conservation areas to provide high quality service to their users.	• The project is framed around SINAC's development strategies, which are based on decentralization, de-concentration and democratization. The element of decentralization should shift responsibility for park management significantly to municipalities (for example in setting charges and making investments). • Under this approach, PWAs will have at least two facets of management: local and national. This will require municipalities to develop higher capacity levels, which can represent a barrier, along with other difficulties.	• In full support of the project. • Under an eco-systemic approach, special attention must be paid to land use planning processes, which involve many different considerations related to the type of landowners and the type of property and values, among others. With such considerations, the process of land use planning becomes a process of convincing. • At the same time, it is worth noting that the Costa Rican government is highly centralized and sectoralized, when what is required is integrated and inter-sectoral approaches. • Consider that the main stakeholders of PWAs are local inhabitants, who at present are considered the main "injured parties;" and it is these same individuals who must become the main beneficiaries of the PWAs. By becoming economic beneficiaries they must become part of the decision making process in arrangements that are strongly democratic, transparent and truly representative.
3. Directors of Conservation Areas - CAs	SINAC's administration is divided into 11 territorial units called Conservation Areas, which together cover the entire country. Each of these Areas has its own Regional Director, technical	• Interest in the opportunities the Project offers for shared management. It envisions community participation in decision making, contribution of knowledge and	• In full support of the Project. • Agree that PWAs are local development poles. • It is recommended that future PWA management evolve from government

	teams, protected area administrators and park rangers. The management and use of the Area's natural resources (in the case of both public and private lands) is carried out through these units. Three of these units provide services: Development, Control and Protection, and Protected Areas.	resources and participation in offering PWA services.	administration into multi-party, collaborative administration. • A new working arrangement will require: • Improving administrative efficiency in capturing and using resources. • Strengthening SINAC's institutional structure • Ensuring that benefits granted to other stakeholders are in line with the fulfillment of PWA objectives. • Generate improvements in PWAs and in local communities at the same time. • The degree of participation depends on each PWA.
4. National Conservation Areas Council	SINAC's highest decision making body, which includes the Director General, the CA regional directors, employee representatives, users and key stakeholders from each region. It ratifies SINAC's policies, appointments and budget.	• As the highest decision making body, the Council has a special interest in strengthening PWAs. It decides whether or not to create new PWAs and approves the Proposed Budget of the entire system.	• In full support of the project.
5. PWA Administrators	These are SINAC employees who are responsible for the day to day management of Protected Wilderness Areas (PWAs). Their duties include control and protection, as well as (most frequently) attending to tourists and visitors.	• These can be instrumental in strengthening PWAs administratively, financially and organizationally, and can potentially assist them in the fulfillment of their legal responsibilities and duties.	• Support the project.
6. Costa Rican Tourism Bureau (ICT)	This institution is responsible for public policymaking on tourism.	• Concessions should be granted to for-profit businesses. This is closely related to the IDB-funded "Sustainable Tourism" Project. • There is fear because of SINAC's weak knowledge of tourism. • Interested in dialogue with other actors. • Tourism should contribute economic and social benefits and improve the quality of life of local inhabitants.	• Non-traditional stakeholder that could play a key role. A recent positive development was the collaboration with MINAE-SINAC in initiatives such as the IDB tourism project in PWAs. The linkage between tourism and protected areas has been relatively unaddressed to date by ICT and MINAE. With the approval of the IDB-funded Sustainable Tourism Project, for the first time the country will have an initiative that strengthens institutions responsible for promoting tourism and the administration of the natural heritage of the nation, with investments in infrastructure in a few of the most frequented PWAs in the country.
7. Ministry of Agriculture (MAG)	This institution governs agriculture and livestock in Costa Rica. It is the national focal point for land degradation and organic production.	• Strengthen coordination linkages already forged with SINAC. Potential for integrating sustainable agriculture and livestock projects with a more comprehensive approach. Use of surrounding lands and connectivity.	• Support the project.
8. Agrarian Development Institute (IDA)	Autonomous institution created in 1961 (formerly ITCO) for agrarian reform and the administration of national lands.	• As an organization that seeks to assist small farmers who are frequently found around PWAs, the IDA has an interest in	• Support the project.

		supporting the capacity for action.	
9. Private reserves network	Established in 1995, this non-profit association represents the interests of its membership, more than 100 private natural reserves, which together cover more than 55,000 Ha, mostly in the country's biological corridors.	• Interest in participation that involves decision making. • Interest in integrating private landowners (small, medium and large) into the PA system through training in the optimum use of their lands, access to loans and expert advice. • As many of their lands are contiguous with PWAs, they are interested in developing mutually beneficial strategic alliances with PWAs. • Interested in making use of ecosystems present in private but not public protected areas. • Interested in multi-party administration in partnership with the State	• Totally support the project (they see it as highly important) • Challenge: To reverse the mindset that private participation is a threat.
10. Regional Conservation Area Councils	The Law of Biodiversity N° 7788, establishes these councils as the bodies responsible at the regional level for supporting the National Conservation Area System in managing conservation areas. Both councils include representatives of stakeholder sectors present in the conservation area. Currently, only a few conservation areas are supported by such councils, mainly because of a lack of clarity in the representation of some sectors. Councils that were created by the Law of Biodiversity were constitutionally challenged, arguing that some of their legally assigned functions come into conflict with other general laws and powers that may only be held by the State. Since 2006, when the ruling in favor of these councils was handed down by the IV Constitutional Chamber, these regional conservation area councils may be legally established under the Biodiversity Law. They are bodies for consultation and debate between the conservation area administration and key regional stakeholders.	• Can impact public policies. • There is participation of other stakeholders in decision making. There is an inter-sectoral approach. Operation centered more in concrete activity and greater management capacity and commitment.	• They are natural allies of the Project, although their organizational development is quite incipient and constitutes the main weakness, which could hinder the fulfillment of their expected role.
11. Municipalities	Created by Costa Rica's Constitution, the country's municipalities are local governments with full jurisdiction over land use planning, collection of land taxes and the administration of local public services. They are also responsible for	• Diverse interests and different perspectives that range from indifference (Municipality of Santa Cruz) to high involvement (Municipality of Sarapiquí), as a source of income, local development and water	• One of the cornerstones of the project; for obvious reasons they must be at the center of PWA management, but they currently have mutually un-constructive relationships with MINAE-SINAC personnel that are based on

	some aspects of environmental management, protection of water resources and promoting payment for environmental services.	resource protection.	negative stereotypes. Their main weakness is management, especially, in this case, environmental management.
12. Community Development Associations	These public, non-profit associations have legal status under DINADECO (National Office for Community Development). In Constitutional terms, they are a lower ranked local authority that represents active players and local leaders at the community level.	• That PWAs provide opportunities for employment and self-employment. • That revenue from national parks is reinvested in the same parks. Development associations denounce environmental problems, and therefore could be given training in regard to the PWAs, so they may help landowners to maintain their properties. What they can expect or receive if tourism infrastructure increases. They can collaborate with the projects.	• They are natural allies of the Project, although they will require training, particularly in management skills, in order to successfully assume the responsibilities of shared management and concession of services.
13. Environmental Commissions and Cantonal Environmental Committees	These local level technical advisory bodies have been established in many municipalities of the country. They set policy and municipal bylaws for environmental management and attend to land use disputes, including those involving protected areas and local pollution.	• They see it as an opportunity for coordination with MINAE, and greater technical assistance. • Consider that the Project will funnel more resources to MINAE for following up on protection projects and actions • They will wait to see the results in the short term. To the association, a project such as this one could give them access to resources to enable them to develop projects that will improve the quality of life of those who are being asked to carry out conservation. • They fear that conflicts will make the community seem the enemy of the PWA, and also that the community will be made responsible while receiving nothing in exchange for its conservation efforts.	• Support the Project. • Need to pay attention to viewing the community as allies of PWAs and not enemies (presently a source of conflict).
14. Watershed Commissions	To date, only a few water basins have such commissions (Virilla, Reventazón, and Tempisque) and these have been relatively inactive. If the proposed Water Code bill that is currently in congress is passed, these commissions will gain great importance in defining watershed balances, allocation of water quotas and the collection of new water taxes.	• Interest in more systematic approaches (the water basin as a unified system). Interest in projects that add force to initiatives already underway to improve the environmental health of basins in which PWAs (above all those located in the middle and high watershed) play a key role in recharging the aquifer. • Expect support for water basin management plans and projects. • Hope that this will be an opportunity for improving quality of life. • A profile for sustainable basin management is being formulated.	• Support the project.
15. The business community	The tourism sector is largest revenue source in the	• Investment, more information,	• Constitute a key, non-traditional stakeholder

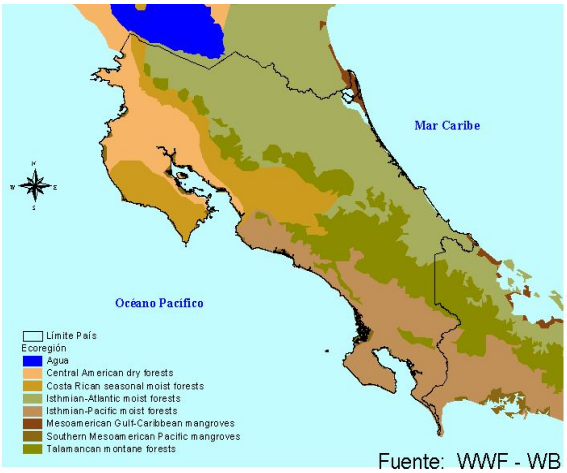
and local and national Tourism Chambers	country, and as such tourism industry leaders and their different professional associations play an important role in promoting sustainable tourism, which capitalizes on what the country has to offer in regard to both public and private protected areas.	involvement and opportunities for collaboration. • That parks are linked to other services and chains and that the PWAs are poles of attraction to the region. • Guarantee protection services. • That the region as a whole is promoted, and not only the PWA. • That revenues from national parks are reinvested in the same parks. CANATUR: ▪ Improve the quality of non-essential services ▪ Take advantage of the coverage they have (40 affiliates) ▪ Municipalities are not, but should be involved in the project ▪ Park entry fees should not be increased as this decreases their competitiveness ▪ Income from national parks should be invested in the same national park. NATIONAL CHAMBER OF ECO-TOURISM: ▪ Leads the Centroamérica Verde (Green Central America) initiative ▪ Achieve publicity and marketing standards among eco-tourism companies that comply with conservation and social responsibility requirements.	that should and can play a leading role in the project. • The main challenge will be to negotiate new ways that they can contribute and assume their responsibility in generating benefits. Some local business sectors have expressed concern that PWAs offer services that compete with service providers in the surrounding community. • CANATUR specifically has had difficulties in its relationship with municipalities.
16. Community productive groups (organizations of tourist guides)	Many local tourist guide associations have arisen in recent years, particularly those linked to the most-visited PWAs.	• Employment and self-employment opportunities. • Generate income for families. • Support protection and collaborate with PWAs. • When more resources become available, ensure there are better protection mechanisms, better oversight and guarantees for the existence of resources.	• In full support of the Project, demanding high levels of participation.
17. Associations of Water Canals and Sewer System Administrators (ASADAS)	These local associations have enabled the extension of the country's drinking water coverage. These usually administrate rural canal systems and ensure the protection of drinking water sources at the local level.	• At this time ASADAS provide a key service but are not directly related to PWAs.	• Support
18. Environmental NGOs that generate knowledge or	Environmental NGOs have played a key role in biodiversity conservation through actions such as	• Development of alliances with PWA institutional structure, neighboring	• In full support of the project, with many of their members already closely involved.

resources/Local Conservation Associations	the promotion of sustainable forms of tourism and production in Costa Rica. International organizations including TNC, CI, UICN and WWF are strongly represented in the country, and there are many national and local associations that present a range of approaches and environmental management options.	communities and other partners. • Strongly depend on PWAs for fulfillment of their mission (research, education and strengthening environmental management) and for obtaining cooperation funds. • Some local conservation associations are interested in attracting tourism. • Information • Training • Maintaining and building upon the tourism resource	
19. Community leaders	Much local development in Costa Rica is being driven by community level initiatives centered on ecotourism, an important component of which are the PWAs, which link the provision of services of site recovery, lodging and concessions of tourism destinations.	• Seek to protect the environment and therefore PWAs as well. • They are the drivers of organizations and leaders in their communities. • They coordinate with institutions and are promoters within the community for developing positive attitudes towards the PWA. • For them, the project will bring support to community projects, greater resources for protection and the possibility of capturing alternative income by taking advantage of the existing environment, which will motivate them to protect it. • Expect strengthening of MINAE, leading to an increased capacity to attend to and offer support and responses to communities' needs. • Also expect that resources are managed transparently.	• Support the Project as long as the PWAs do not compete with their tourism initiatives but complement them. They demand participation at all project stages.
20. Indigenous associations	Costa Rica's main indigenous associations are located in the south part of the country and include, most notably, ADI in Bribri and Cabécar in Talamanca and the the ADIs of Conde Burica in the Brunca region in the southwest zone of the country.	• Has co-management agreements with MINAE for turtles. • Is interested in obtaining more information and improving their quality of life. • Clarify land ownership. • Access to incentives.	• Supportive as long as the Project respects their cultural identity and decision making structures and as long as it supports them in accordance with their needs.
21. Indigenous Board	This is a second level organization that brings together the country's major indigenous organizations as well as other stakeholders like CONAI (National Commission for Indigenous Affairs).	• Co-management implies ceding ancestral and historical rights that are already damaged. • They are not listened to by the government, they wish to settle and build viable proposals. • That indigenous territories be constitutionally protected. • Establish that there are some elements of historical rights that are being violated.	• Support the Project as long as they are respected and allowed to participate in decision making.

		• Interested in: a) solving biological piracy, genetic looting, intellectual property rights. b) access to and benefits from any eventual exploitation of indigenous areas, control over who is involved, how it is undertaken and what is done to ensure transparency in the sharing of benefits and ensure that indigenous communities have access to dignified work opportunities. • Want to define a plan and legal framework for PAs.	
22. National Commission for Indigenous Affairs (CONAI)	CONAI is the public institution that governs the administration of indigenous reserves in Costa Rica.	• A governmental institution whose objectives include the development of participatory strategies for the sustainable management and use of water, flora, fauna and biodiversity. Also seeks to ensure the protection of PWAs located on private, municipal and indigenous lands.	• Support the project.
23. Natural Resource Watchdog Committees (COVIRENAS)	These are 1500 local committees coordinated by MINAE's Civil Society Office. They are run mostly by volunteers who receive an official forest ID from MINAE that allows them to complement the control and protection activities carried out by SINAC staff.	• Fulfillment and recognition of its role and greater protagonism in conservation. • Could act as link between the institution and SINAC.	• Totally support the project and strongly expect to participate.
24. National Commission for Biodiversity Management– CONAGEBIO-	Created by the Organic Law of the Environment N° 7554 as a MINAE agency, CONAGEBIO sets policy for the management and conservation of Costa Rica's biodiversity and regulates access to genetic and biochemical biodiversity resources.	• Interested in training and knowledge transfer by researchers. • Charged with enacting standards and regulating genetic resources in PWAs. • Interested in improvements in the system and effective and efficient use of economic resources in regard to PWAs.	• Support the project.
25. Universities / Research Centers	Costa Rica's public and private universities have a significant installed capacity: Most scientific investigation is financed and undertaken by public universities, and a number of national and international consortiums work directly with and in some cases administrate PWAs (CCT, OET)	• Main interest is access to research opportunities and enabling conditions for research. Generation of public awareness on conservation and PWAs are also factors. Highly heterogeneous composition.	• In general, they support the project. Are open to new management alternatives as long as protection is guaranteed.

PART IV: GLOBAL SIGNIFICANCE OF COSTA RICA BIODIVERSITY

ECOREGIONS OF COSTA RICA Source: WWF, 2004



<u>Map 2.</u> - Main Continental Eco-regions of Costa Rica

Central American Dry Forest: - This eco-region extends in patches from the dry forests of southeast Mexico through Guatemala, Honduras, El Salvador, and Nicaragua, ending in the transition zone of dry to moist forest in Costa Rica. These unique ecosystems represent dry habitat "islands" embedded in moist forests, pine-oak forests, and xeric habitats, and are important in the migration routes and life cycles of many species. Most dry forest areas are in the lowland plains. Generally, these forests are smaller in structure and simpler in composition than the neighbouring moist forests, although many endemic species do occur here. This is the habitat for several large vertebrates, including White Tailed Deer, Tapir and Cougar. Dry forests are also important to migrating birds, because fruiting seasons often coincide with migrations (WWF, 2001).

Costa Rican Seasonal Moist Forest: - Nestled between the dry forests of the Pacific Coast and the highlands of the Tilarán central mountain range, the Seasonal Moist Forest is borne in the partial rain shadow of numerous volcanoes. Many migratory birds use these forests as a stopover point on their long journeys from North to South America - and back again. This habitat provides a seasonal refuge for migrating species and links the neighbouring dry forest areas to the west with the cloud forests to the east. During the dry season, many species migrate to this eco-region from the dry forests, including birds such as Trogons, Long-tailed Manikins, Rufous-and-white Wrens, White-throated Robins, Ruddy Wood Creepers, and Golden-crowned Warblers.

Isthmian Atlantic Moist Forest: - Blanketing the lowland regions of South eastern Nicaragua, Costa Rica and Panama, the Isthmian-Atlantic Moist Forests feature huge buttressed trees, abundant palms, and lush understory vegetation. This is the typical tropical rainforest, with high annual rainfall ranging from 100 inches (250 centimetres) per year in central Panama to more than 200 inches (500 centimetres) in Nicaragua. Temperatures hover around 75° F (24° C) throughout much of the year. Moisture-rich air from the Caribbean Sea delivers high humidity. This eco-region contains a variety of habitats, from coastal mangrove forests to swamp forests to lowland evergreen forests. These lowland forests are the only home of the Snowy Cotinga, Sulfur-rumped Tanager, Stripe-cheeked Woodpecker, and the Streak-crowned Ant Vireo. It is also a habitat for large felines, such as jaguars and ocelots, which prey on small herds of Collared and White-lipped Peccaries and Baird's Tapirs.

Isthmian Pacific Moist Forest: - This eco-region stretches from sea level to the mid-elevations of Costa Rica and central Panama. Located on a land bridge between North and South America, it contains a mixture of plants and animals from both continents. Earthquakes and volcanoes have disrupted the region periodically, creating variations in the topography. Together, variations in topography, climate, and seasonal rainfall have produced high habitat diversity within this eco-region. An important habitat is the very wet forest on and around the Osa Peninsula in Costa Rica, where several endemic animals and plants live. The Isthmian-Pacific Moist Forests feature a rich community of tropical forest trees, with tall, buttressed trees draped with lianas and other vines. This eco-region is also the home of the Central American Squirrel Monkeys, Costa Rica's most endangered primate. Large vertebrates and intact habitats also attract jaguars and other forest cats.

Volcanic Range and Talamanca Mountane Forests: - The dramatic topography of the Talamanca Montane Moist Forests indicates a variety of habitats, many isolated from similar areas, which in turn support a variety of plant and animal species with local ranges. These mountain forests host a great wealth of plant species from giant oaks to diminutive orchids. It is also the key habitat for the Quetzals. The high humidity and rain, steep slopes, and active volcanoes have limited agriculture and urban development here, helping to make these highland wet forests one of Central America's most intact eco-regions.

Pacific Mangrove Forests: - Patches of mangroves dot the shores along the Pacific coast of northern Costa Rica from the Gulf of Nicoya to northern Nicaragua. Along the shores, mangroves thrive in the numerous protected coves, river mouths, and scattered inlets where the wet season bring tidal floods. These mangrove forests are home to a host of bird species, including the Yellow-naped Parrot and other seabirds. Yet, this eco-region also hosts some of the largest contingents of free-ranging primates, particularly Squirrel Monkeys (Mono Titi) and White-throated Capuchins. Estuaries and inlets are also feeding grounds for reptiles, such as the American Crocodile and mammals such as the Crab-eating Racoon. The sandy beaches of the Pacific Coast are the prime nesting grounds of the largest living species of sea turtle - the leatherback - as well as other species of sea turtles.

Eastern Tropical Pacific Islands: - Cocos Island rises more than 2,000 feet (640 m) above the Pacific Ocean, with waterfalls flowing down its sheer cliffs into the ocean below. Covered with tropical vegetation and overflowing with fresh water, life abounds on this island. Cocos Island is dominated by dense, lush tropical rainforests, much like those seen in Costa Rica's south Pacific mainland rainforests. However, the island lacks the high levels of diversity seen in mainland forests because of its isolation. But relatively lower levels of biodiversity are compensated by high levels of endemism due to its insular characteristics. The island is home to three endemic birds - the Cocos Island finch, Cocos Island Cuckcoo, and the Cocos Flycatcher. Many seabirds also roost and nest on this island, including Frigate Birds, White Terns, Masked Boobies, Red-footed Boobies, and Brown Boobies. Great Blue Herons, Green Herons, and Peregrine Falcons can also be found on the island in certain seasons. As on many isolated islands, there are no native mammals or amphibians, but there are two endemic lizards and several freshwater fish.

Table 13. – Diversity of Species by Taxonomy Group in Costa Rica (approximate figures), updated by March 2006

Grouping	No of known species globally	No of anticipated species for Costa Rica	No of known species for Costa Rica	% known of the anticipated species for Costa Rica	% known in Costa Rica of the species known globally
Virus	1,500	8,000	125	**2**	**8,3**
Monera (bacteria and some microalgae)	8,276	26,350	213	**1**	**2,6**
Protozoa	40,000	8,000	670	**8**	**1,7**
Algae	40,000	4,350	564	**13**	**1,4**
Fungi (lichen, macrofungi, microfungi)	80,000	65,000	2,355[5]	**4**	**2,9**
Insects	950,000	360,000	66,865[6]	**19**	**7,0**
Other invertebrates	375,000	17,235	5,219	**30**	**1,4**
Plants	270,000	11,000	9,555	**87**	**3,5**
Vertebrates:	**48,123**	**3,073**	**2,419**	**79**	**5,0**
Inferior vertebrates	60	2	1	**50**	**1,7**
Fish (marine and land)	19,056	1,522	916	**60**	**4,8**
Amphibians	5,743[7]	215	182	**85**	**3,2**

[5] 11 species new to science have been added per year for the last 4 years (total: 44 species)
[6] 150 new species have been added per year for the last 4 years (total: 600)
[7] Numerous species registered globally as Amphibians, Reptiles, Birds and Mammals updated using the Millennium Ecosystem Assessment (MEA), 2005 b)

Reptiles	8,613	230	225	**98**	**2,6**
Birds	9,917	854	857	*Surpassed*	**8,6**
Mammals	4,734	250	238	**95**	**5,0**
Total	**1,947,899**[8]	**503,008**	**87,985**	**17,4**	**4,4**

Source: Elaboration by INBio (PDF-B Study) based on Obando, V. 2002. The updating of the number of vertebrates is based on: Savage, 2002; Solorzano, A. 2004; Rodriguez, Chinchilla and May-Collado, 2002; Laval and Rodriguez, 2002: Costa Rican Ornitology Association, 2002.

Table 14. – Number of endemic species in the major taxonomy groups in Costa Rica. Comparative Data 1992-2006

Groups	N° of species			% of endemism among groups for Year 2006
	1992	2001	2006	
Reptiles	17	36	12	5.3
Amphibians	37	36	29	16
Freshwater Fish	-	19	19	14
Birds	6	7	7	0,8
Mammals	-	6	6	2.5
Plants	-	1,100	1,102	10
Total		**1,204**	**1,175**	**1.3 (for the known total)**

Source: MINAE, MNCR, INBio, 1992; Obando, V., 2002; INBio, http://www.inbio.ac.cr; Unidad de Botánica, INBio. 2005.

Table 15. – Summary of the status of endangered species in Costa Rica according to national and international instruments/measures and recent expert recommendations

Instruments	Number of species included	Percentage of total number of species in the group
National:		
Decreto N° 26435-MINAE on species with threatened and endangered populations (from December 1997 and updated in 2005, without major modifications)	1,606 species: **Species with threatened or reduced populations:** 5- minor invertebrates (4 corals and 1 spider) 83-birds, 14-mammals, 81-amphibians, 28-reptiles, 1,303-plants **Species with populations in danger of extinction:** 16-birds, 13-mammals, 2-amphibians, 8-reptiles, 40-plants	2% of all species described for the country. **Vertebrates**: 8.5% and 1.6% of those described, respectively (threatened and endangered), 10% in general. **Plants:** 13.6% and 0.4% of those described, respectively (threatened and endangered) **Amphibians**: 45.5% of populations are threatened and 1.12% are in danger of extinction. **Reptiles**: 12% of populations threatened and 3.5% are in danger of extinction. **Birds:** 9.6% of populations are threatened and 6% are endangered. **Mammals**: 6% of populations threatened and 5.5% endangered.
Proposed Decree Banning Extraction of Species	Extraction of 40 species in danger of extinction banned	0.4% of all known plant species for the country (9,555) 13% of the country's woody species (300)
International:		
Current CITES list (2004)	184 vertebrate species including: 6 amphibian, 15 reptile, 126 bird and 37 mammal species	0.21% of all species described for the country. **Vertebrates**: 7.6% overall **Amphibians:** 3.3 % **Reptiles:** 6.7 % **Mammals:** 15.5% **16%** of the 184 species in **Appendix 1** (29 species in danger of extinction)
IUCN List (as of 2004)	398 species: 118 vertebrates**:** 1-amphibian, 24-bird, 49-mammal, 11-fish, 9-ray, 14-shark, 10-reptile species (9 turtle and 1 crocodile) and 158 plant species	**0.45%** of all species described for the country. **5%** of all vertebrates **1,5%** of all plants described The only list that includes fish and similar species.

Source: INBio PDF B Study, 2006

[8] Annual global rate of species description is approximately 15,000; 135,000 new species described since 1995. 100,000 species of mollusks (MEA, 2005).

Table 16. – Conservation Status of the 52 Different Vegetation Macrotypes in Costa Rica[9]

Code	Vegetation Macrotype	Absolute Surface (km2)			Relative Surface (%)	
		Natural Status	Non-natural Status	Total	Natural Status	Non-natural Status
1	Semi-deciduous-deciduous, with scrubland, xerophylic in exposed zones, with evergreen vegetation, mainly in lower elevations and above watercourses.	130.9	176.3	307.26	42.6	57.4
10	Semi-deciduous lowland forest, on broken topography with mountain ranges, narrow valleys and ravines	92.1	91.2	183.28	50.2	49.8
11	Seasonal evergreen lowland forest on broken topography of mountains and narrow valleys.	30.1	7.9	38.01	79.1	20.9
12	Bush vegetation with isolated clumps or patches of savanna vegetation	191.8	594.3	786.16	24.4	75.6
13	Semi-deciduous lowland forests. On alluvial sediment, moderate topography with slopes of 5-20%.	19.0	95.9	114.94	16.6	83.4
14	Tropical ombrofila alluvial forest with vegetation particularly rich in high grasses, associated with poorly or undrained soils.	50.3	15.6	65.83	76.4	23.6
14a	Typha swamps and reedbeds	217.4	184.8	402.23	54.1	45.9
14b	Mangrove forests	136.1	29.7	165.82	82.1	17.9
15	Alluvial tropical rainforest with fluvaquentic hapludoll soils	9.2	14.6	23.81	38.8	61.2
16	Seasonal evergreen lowland forests with savannah and scrubland vegetation zones and water sources with hydromorphic vegetation.	49.9	102.9	152.76	32.6	67.4
17a	Premontane tropical evergreen rainforest	5,104.5	4,339.8	9,444.32	54.0	46.0
17b	Premontane tropical evergreen rainforest	55.7	317.7	373.45	14.9	85.1
17c	Premontane semi-deciduous forest	52.6	63.0	115.68	45.5	54.5
18	Montane tropical/subtropical rainforest	2,835.2	1,040.6	3,875.79	73.2	26.8
19	Tropical/subtropical rainforest/cloudforest	837.0	78.7	915.72	91.4	8.6
2	Semi-deciduous-deciduous forest. Sparse, with xerophylic scrubland in exposed zones.	2,167.5	938.7	3,106.21	69.8	30.2
20	Highmountain wetland vegetation	188.3	13.2	201.49	93.4	6.6
21	High savannah	12.0	1.1	13.07	91.5	8.5
22	Seasonal evergreen tropical forest	468.6	707.0	1,175.68	39.9	60.1
23	Seasonal evergreen tropical forest	77.2	116.9	194.08	39.8	60.2

[9] See INBio PDF B study for additional details

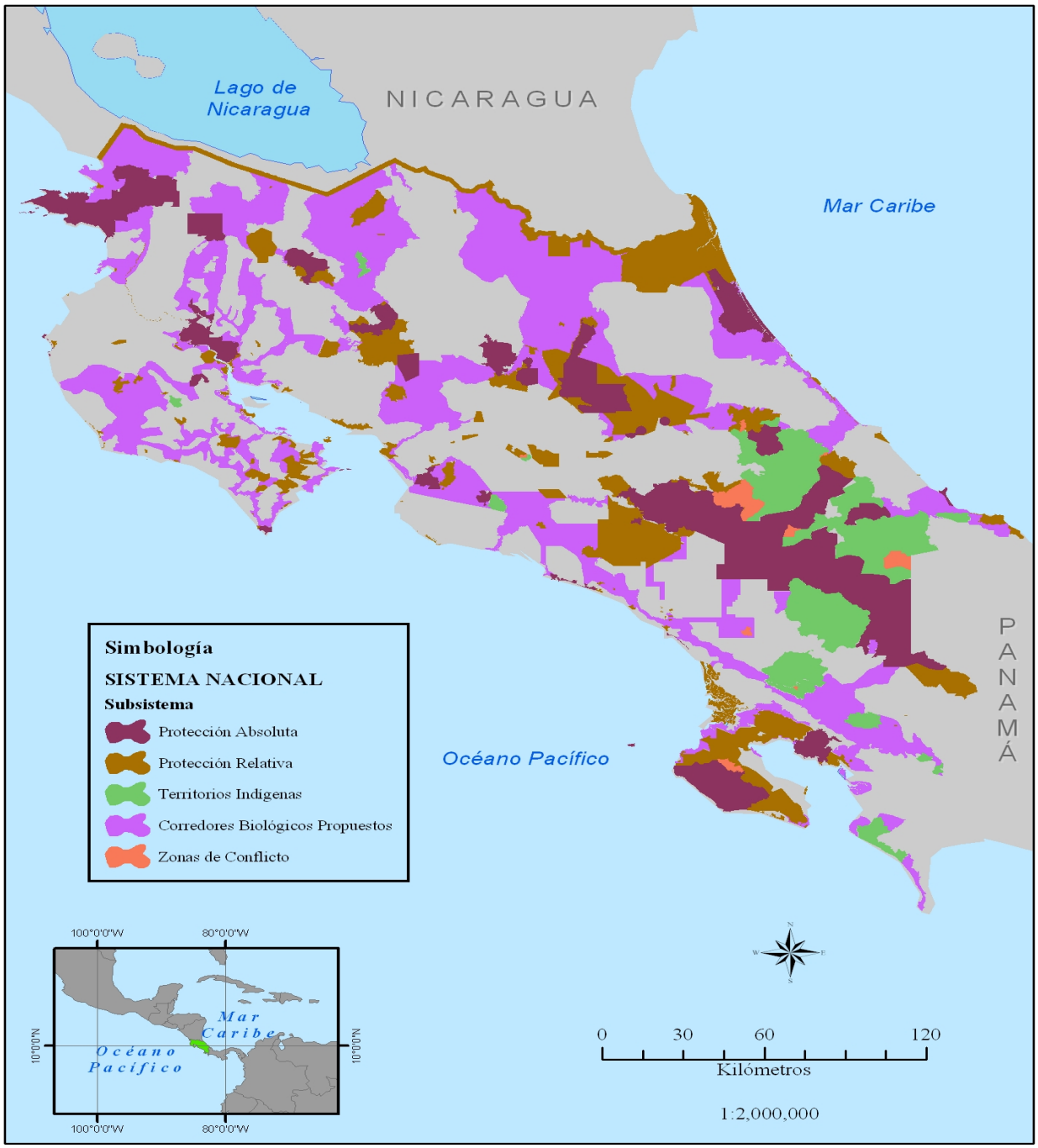
Code	Vegetation Macrotype	Absolute Surface (km2)			Relative Surface (%)	
		Natural Status	Non-natural Status	Total	Natural Status	Non-natural Status
25	Treed savannahs	137.8	213.6	351.48	39.2	60.8
26	Lowland tropical rainforest	483.2	1,114.8	1,597.96	30.2	69.8
27	Lowland tropical rainforest	978.4	329.9	1,308.27	74.8	25.2
28	Lowland tropical rainforest	452.2	213.4	665.61	67.9	32.1
29	Lowland tropical rainforest	385.0	388.8	773.87	49.8	50.2
3	Lowland deciduous forests	398.2	675.8	1,074.06	37.1	62.9
30	Lowland tropical rainforest	15.0	11.9	26.87	55.9	44.1
31	Alluvial tropical moist vegetation	70.9	94.7	165.54	42.8	57.2
31a	Grassy swamp	96.4	167.5	263.93	36.5	63.5
31b	Igapoide flooded jungle	52.7	11.8	64.56	81.7	18.3
31c	Mangrove forest	190.8	56.8	247.53	77.1	22.9
32a	Alluvial tropical rainforest	90.4	88.6	178.91	50.5	49.5
32b	Alluvial tropical rainforest	62.9	84.4	147.32	42.7	57.3
33	Lowland tropical rainforest	3,887.3	3,266.9	7,154.23	54.3	45.7
34a	Pre-montane tropical rainforest	45.5	428.6	474.09	9.6	90.4
34b	Pre-montane tropical rainforest	237.2	598.9	836.13	28.4	71.6
35a	Pre-montane tropical rainforest	469.9	178.3	648.15	72.5	27.5
35b	Pre-montane tropical rainforest	21.1	751.1	772.22	2.7	97.3
36	Lowland tropical rainforest	310.3	672.5	982.77	31.6	68.4
37	Lowland tropical rainforest	385.2	416.7	801.88	48.0	52.0
38	Lowland tropical rainforest	308.7	381.2	689.91	44.7	55.3
39	Lowland tropical rainforest	255.8	707.7	963.49	26.5	73.5
4	Semi-deciduous lowland, tropical forests. On forms of volcanic origin with moderate topography: plains, flat and concave in some zones, on rugged terrain (with 5-30% slopes).	1,305.6	2,056.4	3,362.06	38.8	61.2
40	Alluvial tropical moist vegetation	330.9	384.4	715.28	46.3	53.7
40a	Igapoide flooded jungle	291.5	153.4	444.86	65.5	34.5
40b	Grassy swamps	662.7	440.7	1,103.40	60.1	39.9
40c	Mangrove forest	7.6	2.4	9.94	76.3	23.7
5	Treed savannah	265.3	263.3	528.64	50.2	49.8
6	Open savannah with grasses	57.7	42.6	100.31	57.6	42.4

Code	Vegetation Macrotype	Absolute Surface (km2)			Relative Surface (%)	
		Natural Status	Non-natural Status	Total	Natural Status	Non-natural Status
7	Semi-deciduous forests. On sedimentary forms of marine origin (amorphous limestone, reef relics).	141.2	85.4	226.58	62.3	37.7
8	Intermediate forest between lowland ombrofila and semi-deciduous.	44.3	29.5	73.80	60.1	39.9
9	Seasonal evergreen lowland forest.	861.8	1,532.2	2,394.02	36.0	64.0
	Water	9.1	26.7	35.78	25.5	74.5
	N.D.	-	0.0	0.01	-	100.0
	Total	26,038.3	24,800.7	50,839.05	51.2	48.8

Source: INBio 2006. Based on above Vegetation Macro-type map (Map 2) and Costa Rica Land Cover map 2002 (Map 3).

PART V: OVERVIEW OF COSTA RICA'S PROTECTED AREAS SYSTEM

<u>Map 3</u>. – The National System of Protected Areas of Costa Rica, INBio 2006



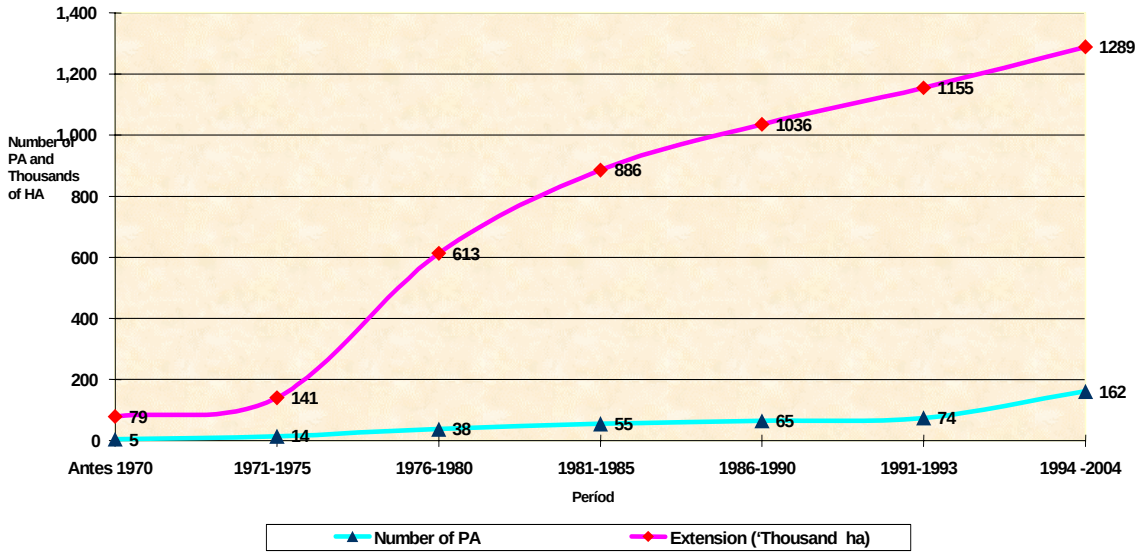


Fig. 1. - Evolution of Costa Rica's Protected Area Systems, in number and extension of protected areas (thousands of ha.) Prepared by INBio based on SINAC-MINAE. 2003.

Evolution of the Protected Area System (PAS)

Costa Rica's existing Protected Areas System (PAS) is the result of a process that started in the early 19th Century, which has continued to this date. Three different phases may be observed throughout the process. The **first phase** covers the period before the first Forest Law (No.4465 of 1969) was enacted, when various measures were taken to mitigate the destruction of natural resources. This phase was characterized by an in-effectiveness in most efforts to set up PAs, due to a lack of institutions responsible for them and a lack of resources for their management. Exceptions to this were the Cabo Blanco Absolute Biological Reserve (created in 1963 under the auspices of the Institute for Land Development (*Instituto de Desarrollo Agrario*, IDA) and the Río Macho Forest Reserve (created in 1964 under the Costa Rican Electricity Institute (*Instituto Costarricense de Electricidad*, ICE.)

The **second phase** covered from 1970 to 1986. During this phase, main efforts were focused on "saving and protecting" natural resources through the creation of a Protected Areas System (PAS). This initiative was promoted by a small group of Costa Ricans with a long-term vision. This period was characterized by a rapid growth of PAs in terms of both number and extension. By the end of 1979, the PAS covered nearly 50% of the country's current land surface (see above Fig. B-1a). During this phase, the PAS was managed in the form of two sub-systems that operated independently from one another, with little coordination and disparities in terms of resource allocation. The sub-system of National Parks[10], which was managed by the ***National Park System*** (PAS) and the sub-system of ***Forest Reserves, Protection Zones and Wildlife Refuges***[11], which was managed by the General Forest Directorate (*Dirección General*

[10] Included both National Parks and Biological Reserves. From the beginning, both applied important management strategies: i) Lands were put under state jurisdiction, and ii) From the time of their creation there was an institutional presence in each protected wildlife area.

[11] Included Forest Reserves, Protection Zones, and Wildlife Refuges. From the beginning, the issue of land ownership was not clear enough, nor was there an institutional presence in each of the areas created, and therefore management efforts were not altogether successful. It should be pointed out that many of the protected wildlife areas created under this subsystem served as resource preserves, thereby facilitating their subsequent reclassification as National Parks.

Forestal, DGF.) The state provided significant economic and political backing at the beginning of this period, but this gradually waned.[12]

The **third phase** began towards the end of 1986, with the creation of the Ministry of Natural Resources, Energy and Mines (MIRENEM), presently the ***Ministry of the Environment and Energy*** (MINAE.) Thus, greater priority was given to administration of renewable resources, including the PAS. A number of actions were developed at this point leading to a proposal for a new scheme for PA administration. During this period, a discussion began on the necessary mechanisms to save most of existing biodiversity, which included assessing the role of the PAS.[13] It should be acknowledged that, to a great extent, the PAS has fulfilled its role of "saving and protecting". Nevertheless, discussions were initiated on the measures that should be adopted for "saving and protecting" this Natural Patrimony over the medium and long term, so as to tackle the pressures resulting from the rapid growth in the tourist industry; population growth; decrease in raw materials (natural forest); size and form of PAs, as well as other uses not compatible for conservation purposes.

These discussions concluded that the best way of preserving the country's rich biodiversity would be by putting it at society's avail for economic, social, educational, spiritual and ecological purposes, and that knowing about it would be essential to this end. Furthermore, a need started to emerge to integrate management of adjoining and nearby areas, so as to render biodiversity conservation more viable over the long term. As a result of these changes, new public and private actors started to emerge, along with new needs for the administration of financial resources, and new challenges in the area of biodiversity. Thus, the centralized scheme that was so effective during the first stages of PA development turned obsolete.

This phase culminated in 1989 with a decision to implement a new concept of PA administration, the so-called ***National System of Conservation Areas*** (*Sistema Nacional de Áreas de Conservación*, SINAC). This scheme is intended to serve a number of purposes: (i) Integrating administration of all PAs under a single entity; (ii) decentralizing and de-concentrating administration through "Regional Conservation Units", which subsequently gave rise to the present 11 "Conservation Areas"; (iii) grouping together adjoining or neighboring PAs for administrative purposes; (iv) creating collegiate structures for decision-making; (v) providing for agile financial mechanisms (including patrimonial funds), and (vi) integrating research and planning efforts as management and decision-making instruments.

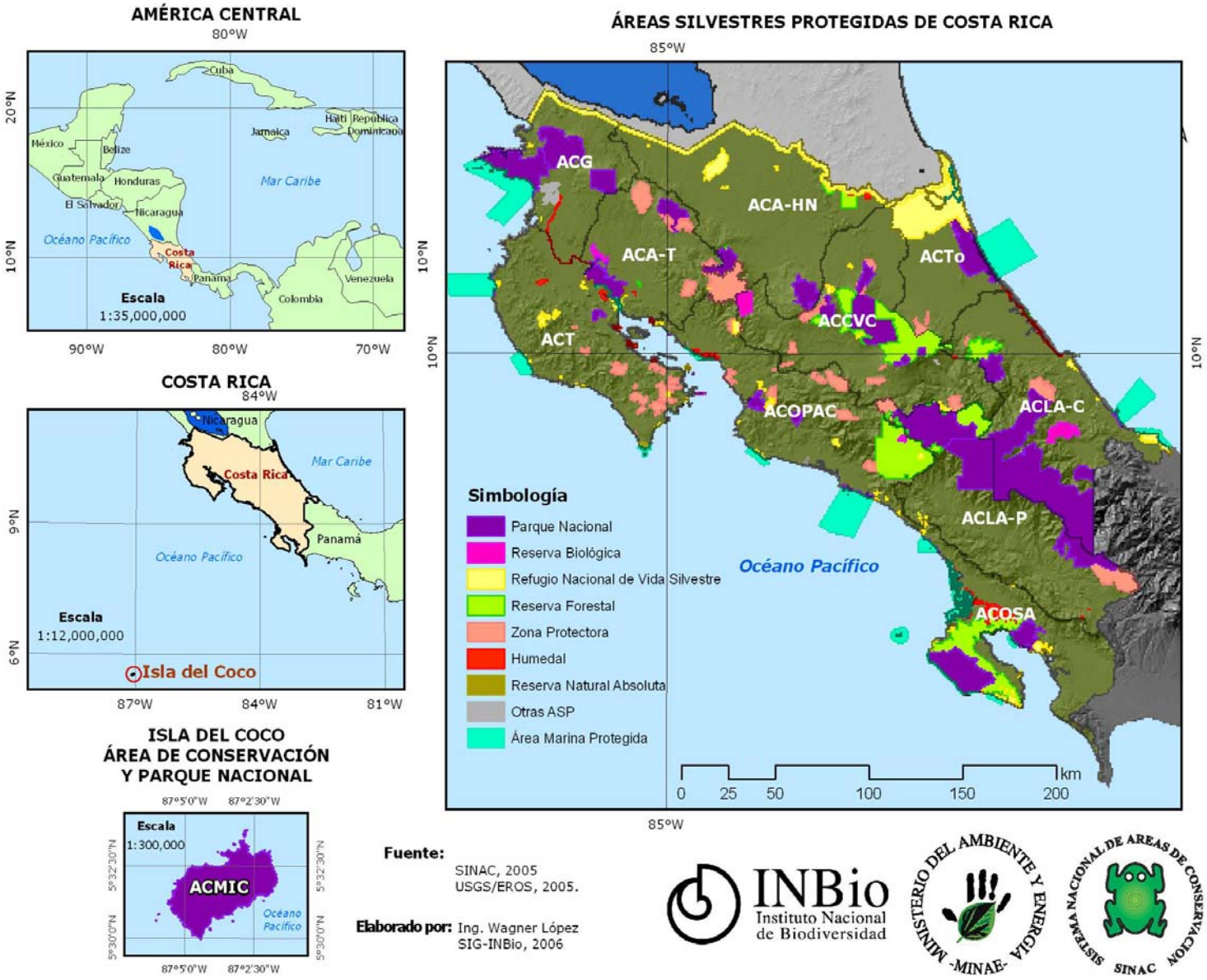
The modality of Conservation Areas to facilitate PA administrative management and the protection of the country's biodiversity was officially adopted in 1998, by means of the ***Biodiversity Law*** (*Ley de Biodiversidad*), leading to the creation of today's SINAC. Under this scheme, PAs are brought together under a single Protected Areas System (PAS), which in turn is part of a broader system that also provides for the management of natural resources found outside them. A gap found in the System of Conservation Areas is that its management has been based on an eminently administrative dimension, without viewing the functional dimension as the thread for natural resource management –both within and outside PA.

Then in 1995 Costa Rica's ***Framework Law on the Environment*** (*Ley Orgánica del Ambiente),* was ratified, which created the above-mentioned ***National System for Conservation Areas, SINAC.*** Notably, the ***Organic Environmental Law*** No 7554 (*Ley Orgánica del Ambiente*, 1995) makes reference to the same management categories as the first and second Forest Laws, without defining each category's objectives or characteristics, in addition to creating the category of natural monument. This Law outlines PA objectives.

[12] This decrease was brought about by the financial crisis at the beginning of the 1980s (international oil price increases and regulatory policies introduced by international financial organizations), followed by the emergence of more obstacles and operating restrictions (Public Administration Law), limiting the capacity of growth of institutions charged with PAs.
[13] Today divided into three independent subsystems: National; Forest Reserves and Protection Zones and Wildlife Refuges.

By 1996, the first Technical Proposal for Territorial Planning for Biodiversity Conservation in Costa Rica was developed - through the GRUAS Project[14], - which provided a proposal for improving the coverage, connectivity and representativity of the PAS (García, 1996). GRUAS also introduced the concept of biological corridors and private conservation areas as elements of the national in-situ conservation system, emphasizing landscape-level conservation goals. In 1998, the MINAE approved a ***National Policy for Protected Areas*** in Costa Rica (MINAE, 1998) which has provisions for institutional development of the country's protected areas system.

<u>Map 4</u> - Geographical Distribution of Conservation Areas and the Protected Area Units within these in Costa Rica



Fuente: SINAC, 2005
USGS/EROS, 2005.

Elaborado por: Ing. Wagner López
SIG-INBio, 2006

INBio
Instituto Nacional de Biodiversidad

MINISTERIO DEL AMBIENTE Y ENERGÍA -MINAE-

SISTEMA NACIONAL DE ÁREAS DE CONSERVACIÓN SINAC

[14] Phase II of Propuesta Tecnica de Ordenamiento Territorial con Fines de Conservacion de la Biodiversidad en Costa Rica.

Table 17. - Extension of protected marine and marine/coastal areas in Costa Rica

Name	Conservation Area	Category	Area (Ha)		
			Coastal	Marine	Total
Santa Rosa	Guanacaste	National Park		46,391	46,391
Cahuita	La Amistad-Caribbean	National Park		23,290	23,290
Gandoca-Manzanillo	La Amistad-Caribbean	Wildlife Refuge		4,984	4,984
Cocos Island	Marine of Cocos Island	National Park		194,831	194,831
San Lucas Island	Central Pacific	Wildlife Refuge		726	726
Marine of Playa Blanca	Central Pacific	Wetland	4	5	*9*
Playa Hermosa	Central Pacific	Wildlife Refuge	372	3,655	4,027
Manuel Antonio	Central Pacific	National Park		42,016	42,016
Puntarenas Estuary and Mangrove	Central Pacific	Wetland	2,880	4,376	7,256
Ballena Marine	Osa	National Park	315	5,230	*5,545*
Térraba-Sierpe Mangrove	Osa	Wildlife Refuge	13,287	5,532	18,819
Río Oro	Osa	Wildlife Refuge		1,719	1,719
Piedras Blancas	Osa	National Park		1,356	1,356
Caño Island	Osa	Biological Preserve		5,207	5,207
Corcovado	Osa	National Park		2,045	2,045
Ostional	Tempisque	Wildlife Refuge	463	8,056	8,519
Cabo Blanco	Tempisque	Absolute National Preserve		1,630	1,630
Las Baulas in Guanacaste	Tempisque	National Park	357	25,336	25,693
Tortuguero	Tortuguero	National Park		52,682	52,682
TOTAL			**17,678**	**429,067**	**1.1.1.1.1.1.1.1 446,745**

Source: Adapted from CIMAR-CI, SINAC 2005, Ambiente Marino Costero de Costa Rica (2006) and map of protected areas.

Table 18. – Costa Rica's PA Management Categories according to the international classification by IUCN

International PA Management Categories as per IUCN			Costa Rica PA Management Categories	
Category	**Type**	**Management Objectives**	**The PA Management Category Equivalent**	**No. of PA's in this category**
I	**Strict Nature Reserve / Strict Conservation Reserve**	a. Protect natural heritage and conserve natural processes. b. Foster scientific studies, environmental monitoring and educational activities. c. Maintain genetic resources in a dynamic, evolutionary state.	**Biological Reserve** **Absolute Natural Reserve**	8 2
II	**National Park**	Protect relatively extensive natural areas and areas of scenic beauty of national and international interest for scientific, educational and recreational use.	**National Park** **National Monument**	27 1
III	**Natural Monument**	Conserve natural sites of national importance and preserve their unique characteristics.	**Natural Monument**	1

International PA Management Categories as per IUCN			Costa Rica PA Management Categories	
Category	**Type**	**Management Objectives**	**The PA Management Category Equivalent**	**No. of PA's in this category**
IV	**Managed Natural Reserve / Wildlife Sanctuary**	Protect species of national importance, species groups, biotic communities and/or physical features of the territory when specific management measures are required to prevent its disappearance.	**National Wildlife Refuge** **Wetland**	67 13
V	**Protected Landscape**	Maintain significant natural landscapes characteristic of the harmonious interaction of humans and their environment, promoting tourism and recreational uses in line with local customs and existing economic activities in those areas.		
VI	**Resource Reserve (today Managed Resource Protected Area)**	Protect natural resources for future use and stop or limit development projects that could affect these resources, through management plans based on the appropriate knowledge.	**Forest Reserve** **Protection Zone**	9 31

Source: Adapted from INBio PDF B Study and MINAE. National System of Conservation Areas (SINAC). National Report. II Mesoamerican Congress of Protected Areas. 2006.

Table 19. – Areas with an international declaration in Costa Rica

Denomination	Name
I. Wetlands of international importance (Ramsar Sites)	1. Potrero Grande Mangroves
	2. Tamarindo National Wilderness Refuge
	3. Palo Verde National Park
	4. Terraba Sierpe National Wetland
	5. Cano Negro National Wilderness Refuge
	6. Arenal Reservoir
	7. Cocos Island National Park
	8. Respingue Lagoon
	9. Gandoca Manzanillo National Wilderness Refuge
	10. Northeast Caribe Wetland
	11. Talamanca Peat Bog
II. Biosphere Reserves	1. La Amistrad Biosphere Reserve
	2. Central Volcanic Range Biosphere Reserve
II. World Heritage Sites	1. Cocos Island National Park
	2. Guanacaste Conservation Area
	3. Talamanca-La Amistad Mountain Range

Source: MINAE. National System of Conservation Areas (SINAC). National Report. II Mesoamerican Congress of Protected Areas. 2006.

Table 20. - Extension in Hectares of PAs by management category and by percentage under public and private land tenure respectively

Management Category	Extension Total ha	State Property (ha)	State Property (%)	Private Property (ha)	Private Property (%)
National Parks*	864,829	795,505	92%	69,324	8%
Biological Reserves	27,093	24,196	89%	2,897	11%
Forest Reserves	286,079	74,188	26%	211,891	74%
Wildlife Refuges	150,819	56,182	37%	94,637	63%
Protected Zones	162,569	24,785	15%	137,784	85%
Other Categories	28,255	22,937	81%	5,318	19%
Total	**1,519,644**	**997,793**	**66%**	**521,851**	**34%**

Source: Elaborated from M. Adamson 1998 with data from the Management of PA's
*/ Revised in 2005 based on data from the Management of PA's.

Table 21. - Analysis of the basic characteristics of PAs within the various sub-systems making up Costa Rica's PA System

Characteristic/ Sub-system	Absolute Protection	Relative Protection	Indigenous Territories	Biological Corridors
Comprehensiveness (Ecosystems)	39 vegetation macro-types included, but only *12 macro-types* are adequate in size (at least 15% of their share of surface)	46 vegetation macro-types included, but only *14 macro-types* are adequate in size.	24 vegetation macro-types included, but only *5 macro-types* are adequate in size.	49 vegetation macro-types included, *34 macro-types* are adequate in size.
Representativeness (Species)	Out of 180 globally threatened species found in Costa Rica, 166 are estimated to be found in this subsystem.	13 out of 180 globally threatened species are estimated to be found in this subsystem.		
Balance among Ecosystem Types	All 12 macro-types adequate in size cover areas ranging from 1,119-181,000 ha.	All 14 macro-types adequate in size cover areas ranging from 190 -125,250 ha.	All 5 adequate in size cover areas ranging from 43.8-1,334 km^2.	All 34 macro-types adequate in size cover areas ranging from 5.3-2,447.7 km^2.
Viability (Extension is Viable for Populations)	Requirements in terms of area/habitat are unknown for most species usually viewed as priority for conservation. 21 out of 34 NPs and BRs should to be expanded.	Requirements in terms of area/habitat are unknown for most species usually viewed as priority for conservation.	Requirements in terms of area/habitat are unknown for most species usually viewed as priority for conservation.	Requirements in terms of area/habitat are unknown for most species usually regarded as priority for conservation. Most are designed to achieve a structural connectivity (coverage), rather than according to special requirements.
Connectivity	Depends on corridors and other management categories	Relevant for some FRs and PZs.	Some are relevant as core areas of biological corridors.	General objective of most biological corridors.
Complementarity (contribution of each site to the	12 macro-types larger than 15%	9 macro-types different from Subsystem 1, larger	4 macro-types are different from subsystems 1 and 2.	21 macro-types are different from subsystems 1,2 and

Characteristic/ Sub-system	Absolute Protection	Relative Protection	Indigenous Territories	Biological Corridors
whole) *46 macro-types have an adequate size of 15%*	One macro-type is exclusive (100%)	than 15%	All 4 macro-types are exclusive.	3 larger than 15% One macro-type is exclusive.
Consistency (management/ objectives)	Most lack any specific objectives for their creation, thereby limiting possibilities to assess their contribution to the whole.	Most lack any specific objectives.	Objectives for their creation not related with biodiversity conservation.	Most lack any specific conservation objectives relating to species or habitats.

TABLE 22 - THREAT ANALYSIS FOR A SUSTAINABLE NATIONAL PROTECTED AREAS SYSTEM (PAS) FOR BIODIVERSITY CONSERVATION IN COSTA RICA

THREAT LEVEL: (i) High; (ii) Medium; or (iii) Low

TENDENCY: (i) Increasing; (ii) Decreasing; or (iii) Static

N/A = not applicable or insufficient information; **PA =** Protected areas (both public & private); **Landscape =** outside protected areas

ECO-REGION / THREATS	*1. Central American Dry Forest (ACG-ACT)*				*2. Costa Rican Seasonal Moist Forest (ACT-ACOPAC)*				*3. Isthmian Atlantic Moist Forest (ACHN-ACTO) -*			
	PA		**Landscape**		**PA**		**Landscape**		**PA**		**Landscape**	
	Level	***Tendency***	***Level***	***Tendency***	***Level***	***Tendency***	***Level***	***Tendency***	***Level***	***Tendency***	***Level***	***Tendency***
I. Over-exploitation and unsustainable harvesting of forest products												
1. Selective legal logging	Low	Static	Low	Static	Medium	Static	Medium	Increasing	Medium	Static	Medium	Increasing
2. Illegal logging	Low	Static	Low	Static	Medium	Decreasing	Medium	Decreasing	Medium	Static	High	Increasing
3. Extraction of flora and fauna	Low	Static	Low	Static	Medium	Decreasing	Medium	Decreasing	Medium	Static	Medium	Increasing
II. Habitat degradation												
1. Forest fires	High	Increasing	High	Increasing	Medium	Decreasing	High	Decreasing	Low	Static	Low	Static
2. Unsustainable hunting/fishing	Medium	Increasing	Medium	Increasing	Medium	Decreasing	Medium	Static	Medium	Static	High	Increasing
3. Water/coastal pollution and wetlands drainage and sedimentation	Low	Increasing	Low	Increasing	High	Increasing	High	Increasing	High	Increasing	High	Increasing
III. Habitat substitutions												
1. Replacement of native forest with plantations	Low	Static	Low	Increasing	Medium	Static	High	Increasing	Low	Static	High	Increasing
2. Replacement of native forest with crops	Low	Static	Low	Static	Low	Static	High	Increasing	Medium	Increasing	High	Increasing
3. Replacement of wetlands with aquaculture ponds	Low	Static	Low	Static	Low	Static	High	Increasing	Medium	Increasing	Medium	Increasing
IV. Human settlements and activities												
1. Inappropriate location of infrastructure (e.g. industry)	Low	Static	Medium	Increasing	Medium	Static	High	Increasing	Medium	Increasing	High	Increasing
2. Highways and roads	Low	Static	Low	Static	Medium	Static	High	Increasing	Medium	Increasing	High	Increasing
3. Unsustainable tourism/ Over visitation	Medium	Increasing	High	Increasing	High	Increasing	High	Increasing	Medium	Increasing	High	Increasing

ECO-REGION / THREATS	*4. Isthmian Pacific Moist Forest (ACLA-P - ACOSA)*				*5. Volcanic Range and Talamanca Mountain Forests (ACCVC-ACLA-C-ACLA-P)*				*6. Pacific Mangrove Forests (ACG-ACOSA-ACOPAC-ACT)*			
	PA		**Landscape**		**PA**		**Landscape**		**PA**		**Landscape**	
	Level	***Tendency***	***Level***	***Tendency***	***Level***	***Tendency***	***Level***	***Tendency***	***Level***	***Tendency***	***Level***	***Tendency***
I. Over-exploitation and unsustainable harvesting of forest products												
1. Selective legal logging	Medium	Static	High	Increasing	N/A	N/A	Low	Static	Low	Static	Medium	Increasing
2. Illegal logging	Medium	Increasing	High	Increasing	N/A	N/A	Low	Static	N/A	N/A	High	Increasing
3. Extraction of flora and fauna	Medium	Decreasing	High	Increasing								
II. Habitat degradation												
1. Forest fires	Low	Increasing	Medium	Increasing	High	Increasing	Low	Static	Low	Increasing	High	Increasing
2. Unsustainable hunting/fishing	Medium	Increasing	High	Increasing	High	Increasing	Low	Static	Medium	Increasing	High	Increasing
3. Water/coastal pollution and wetlands drainage and sedimentation	Low	Increasing	Low	Increasing	High	Increasing	Medium	Increasing	Low	Increasing	Low	Increasing
III. Habitat substitutions												
1. Replacement of native forest with plantations	Low	Static	High	Increasing	High	Increasing	High	Increasing	Low	Static	High	Increasing
2. Replacement of native forest with crops	N/A	N/A	Medium	Increasing	High	Increasing	High	Increasing	Low	Increasing	Medium	Increasing
3. Replacement of wetlands with aquaculture ponds	Low	Static	Medium	Increasing	Low	Static	Low	Static	Meidum	Static	High	Increasing
IV. Human settlements and activities												
1. Inappropriate location of infrastructure (e.g. industry)	N/A	N/A	High	Increasing	High	Increasing	High	Increasing	Low	Increasing	Low	Increasing
2. Highways and roads	High	Increasing	High	Increasing	High	Increasing	High	Increasing	N/A	N/A	Low	Static
3. Unsustainable tourism/ Over visitation	Meidum	Increasing	Medium	Increasing	Medium	Increasing	High	Increasing	Medium	Increasing	High	Increasing

ECO-REGION / THREATS	*7. Eastern Tropical Pacific Islands (ACMIC - ACOSA)*			
	PA		**Landscape**	
	Level	***Tendency***	***Level***	***Tendency***
I. Over-exploitation and unsustainable harvesting of forest products				
1. Selective legal logging	N/A	N/A	N/A	N/A
2. Illegal logging	N/A	N/A	N/A	N/A
3. Extraction of flora and fauna	Medium	Decreasing	High	Increasing
II. Habitat degradation				
1. Forest fires	Low	Static	Low	Static
2. Unsustainable hunting/fishing	Medium	Increasing	High	Increasing
3. Water/coastal pollution and wetlands drainage and sedimentation	Low	Increasing	Medium	Increasing
III. Habitat substitutions				
1. Replacement of native forest with plantations	N/A	N/A	N/A	N/A
2. Replacement of native forest with crops	N/A	N/A	N/A	N/A
3. Replacement of wetlands with Aquaculture ponds	N/A	N/A	N/A	N/A
IV. Human settlements and activities				
1. Inappropriate location of infrastructure (e.g. industry)	N/A	N/A	Medium	Increasing
2. Highways and roads	N/A	N/A	N/A	N/A
3. Unsustainable tourism/ Over visitation	Medium	Increasing	High	Increasing

PART VI: ECO-REGIONAL APPROACH

To manage the unique natural heritage of Costa Rica, there is a need to strengthen eco-regional and institutional planning. The existing Protected Area System (PAS) within SINAC and its individual PAs fulfill complementary functions in terms of biodiversity conservation and other environmental services, depending on the particular characteristics of the individual eco-regions. Due to Costa Rica's unique climate, topology and natural history, each eco-region contains area-specific biodiversity and offers different environmental services. Management of each PA will therefore need to be closely associated with and in response to the distinct biodiversity and the ecological functions of the respective eco-region. Moreover, this planning process should be complemented with increased financial investment in the PAS. As highlighted by the PDF B Studies, there is scope for a sharp increase in SINAC's annual revenues if the environmental services of PAs were properly reflected in tariffs and fees.

Costa Rica already has an incipient eco-regional approach, which was established by the GRUAS I initiative. More specifically, Costa Rica has been divided into 11 Conservation Areas, which constitutes SINAC's overall territorial jurisdiction. The PAS therefore constitute a sub-system within SINAC. Notably, this territorial land division provides a unique opportunity for regionalizing protected areas and buffer zone management. Yet, it has been increasingly acknowledged in the country that this approach should be reviewed by a panel of experts in various fields in order to further expand this. Although Costa Rica hosts a number of ongoing local experiences – including pioneering experiences in the management of biological corridors and the payment for environmental services - the legally mandated de-concentration process of SINAC has been limited and remains incomplete due to several of the barriers identified (see the barrier analysis in Section I, I-9). While many of these barriers are due to policy and legal issues that go beyond SINAC's mandate, a clear need for increasing institutional capacity and coordination persists, and is within SINAC's grasp.

In response to the above, and as part of the PDF Project Preparation, an analysis of the Protected Areas System (PAS) was carried out. For the purposes of analyzing the state and ecological viability of biodiversity, the PAS was divided into the following sub-systems:

i. **Absolute protection:** National Parks (NP), Biological Reserves (BR) and Absolute Natural Reserve (ANR);
ii. **Relative protection:** Wildlife Refuges (WR), Wetlands (WL), Forest Reserves (FR), Protection Zones (PZ) and National Monument (NM.);
iii. **Indigenous territories**; and
iv. **Biological corridors** as proposed by the SINAC.

The PDF-B study pointed out the importance of integrating all conservation initiatives in Costa Rica to provide the basis for the ecological sustainability of the country's protected areas, especially national parks and biological reserves. Furthermore, the analysis concluded that many of the sites selected as "biological corridors" not only play a connectivity role; they are also important for "habitat" protection, as the 23 macro-types found in these areas not represented in the other sub-systems show (see Environmental Context Section). Hence, from the standpoint of their viability and ecological integrity, the various sub-systems play important roles for the overall PA ecological sustainability, not only in their own right, but especially when viewed as an integrated whole. Subsequently, the other relevant aspect stressed by the analysis is that if PA internal management fails to consider these areas' functional dimension beyond the PA boundaries, their long-term sustainability will also be affected. It should be noted that the utilized landscape analysis shows that natural ecosystems located within PA have become more fragmented and smaller PA have grown in number, with impacts on the various analyses conducted.

The ecological viability of Costa Rica's PAS and its individual PA sites will depend on the way conservation efforts are managed in the country, with PAs being only one part of this process. In this

context, it is essential to have an integrated, systemic view of the PAS under the various sub-systems, as well as on other measures contributing to conservation, such as indigenous territories and biological corridors in their current role,[15] and even the system of payment for environmental services for conservation. In other words, a different management model is needed that envisions what is happening both within and outside PA, considering the biophysical processes taking place in larger landscape units.

Based on these findings, the PDF –B study proposed a new integrated and more holistic Bio-regional Approach to re-align Costa Rica's PAS. This approach would involve a review of the PA management categories within an Ecological Management Unit framework (see Figure 1 below) according to their function, so as to ensure bio-physical processes. In this context, the current PA management categories and other conservation measures applied in the country over the past years should be re-structured as follows:

1. **Essential Conservation Areas**: Core areas with particular bio-physical elements and enough area for ecosystem functioning.
2. **Areas of Interest for Conservation Purposes**: Areas located near essential conservation areas, which complement ecological representativeness and create buffer zones.
3. **Areas of Interest for Connectivity Purposes**: Areas required for maintaining the genetic flow and biological processes.
4. **Singular Areas**: Usually small areas required to preserve certain species or restricted habitats.

This Project will assist SINAC in implementation of this Approach by building on SINAC's existing territorial structure of Conservation Areas, regional and sub-regional offices to develop an Eco-regional Management level that can guarantee the ecological viability of the PAS. This Eco-regional Management Program will parallel SINAC's existing structure, but will also depend of the **National Council of Conservation Areas** (CONAC) and **SINAC Secretariat.** Figure 1 provides an overview of this proposed structure.

The eco-regional Approach proposes an integration of the *administrative* dimension (financial and institutional sustainability) with the *functional* dimension (Ecological Management Units) to ensure PA ecological sustainability, involving both land and marine/coastal environments. To implement this approach it will be necessary to define major **Ecological Management Units**, as well as the flow of goods and services (natural capital) they provide to society and, based on this, to set out the necessary conservation measures (in both time and space) to ensure a sustainable and continuous flow of these goods and services.

Moreover, as a result of the GRUAS II process, the management categories for specific protected areas have been changed and others have been adapted to incorporate these eco-regional planning criteria. This process will contribute to defining the conservation goals and objectives for Costa Rica, and the system by which to achieve them. This implies analyzing the system as a whole, and identifying mechanisms for integrating into the PAS both public and private lands. Through assistance from this Project, the Government of Costa Rica will seek to settle the legal status of privately-owned, non-expropriated lands within protected areas, by envisioning innovative public private partnerships for conservation.

It is hoped that by the end of this project, functionally defined biological corridors will be operating under duly harmonized, responsible public-private management models, linking different components of the PAS through biological corridors and the new revised PA management categories. Gaps in the ecosystem representativity will also be addressed, and a marine/coastal conservation sub-system will be defined and implemented, through priority measures –including management plans and other land use planning tools.

[15] This means not only as mechanisms to allow for the flow of genes and species, but also in their role of protecting habitats and ecosystems, as noted in the above sections.

Finally, the eco-regional approach adopted by this project will seek to incorporate the functional dimension of ecological processes taking place within and outside protected areas into management efforts. This will also enable to effectively link the PAS to the provision of environmental goods and services. The project will facilitate and lead land planning processes at the regional (Conservation Area) and local (Park Administration) level, in order to facilitate the continuity of ecological functionality by using formal participation instruments and enhancing existing consultative bodies, at the regional, municipal levels.

Figure 2. - Proposal to integrate administrative and functional boundaries within SINAC.

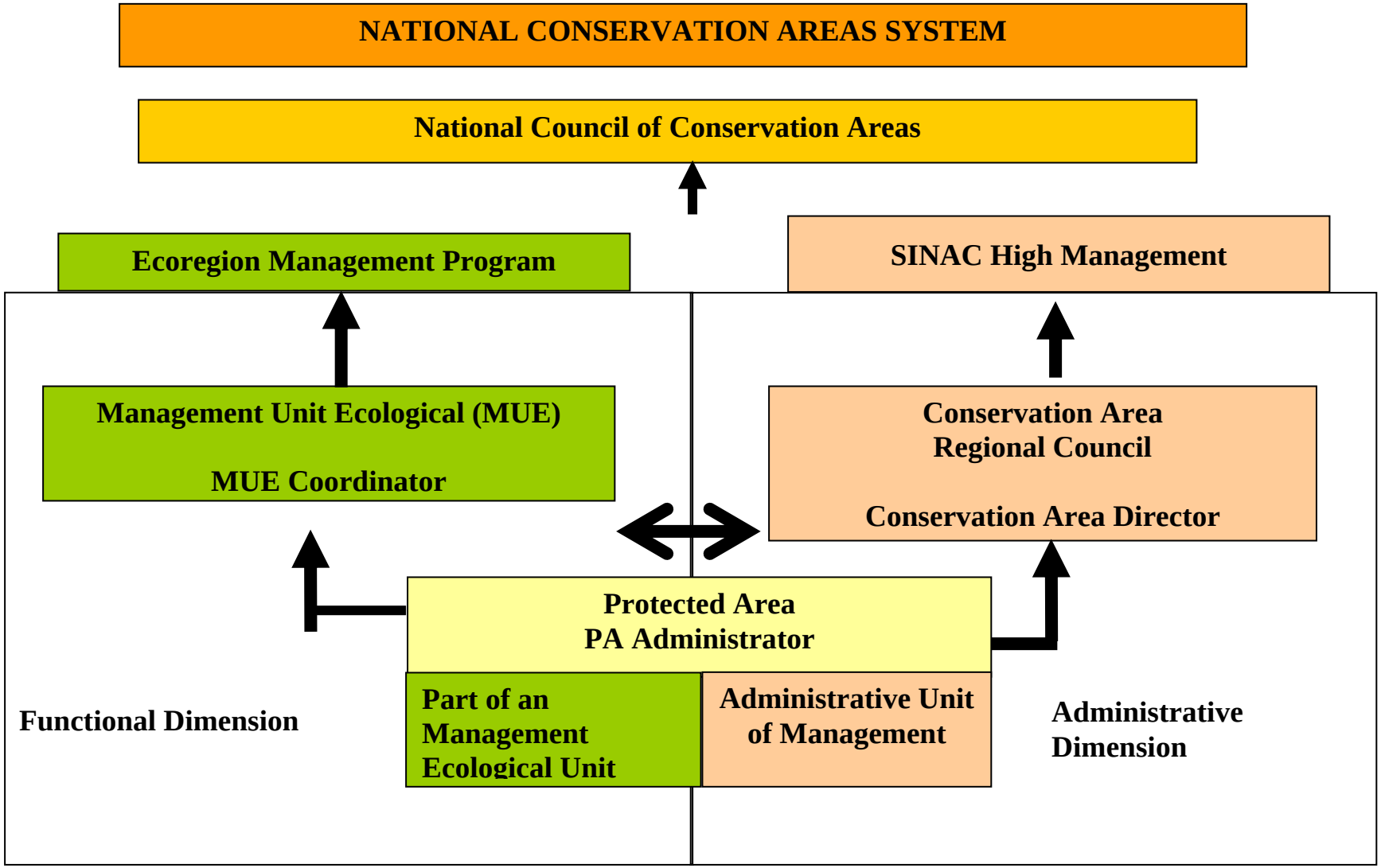
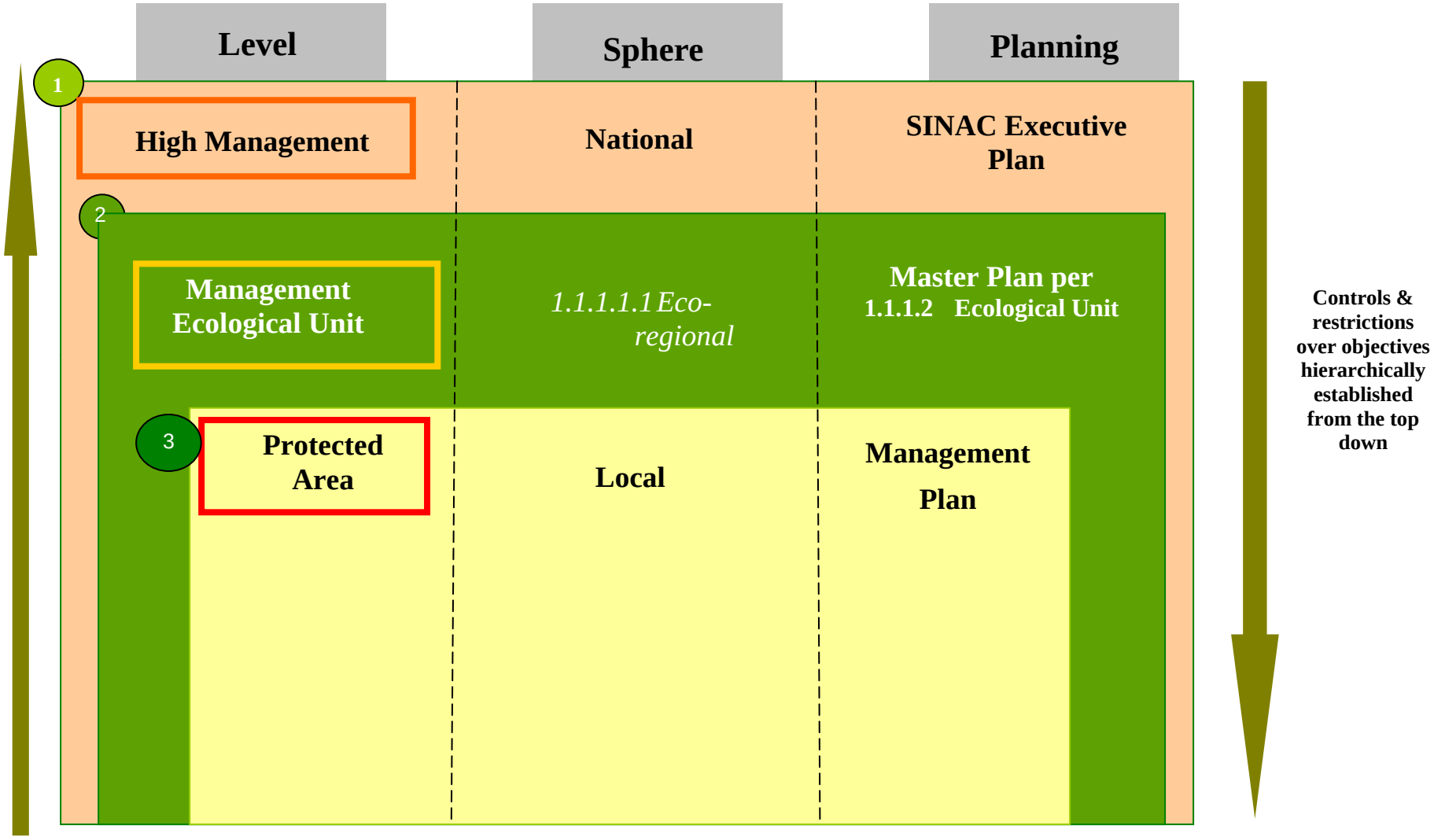


Figure 3. - SINAC planning model in cascade fashion based on hierarchically defined objectives



PART VII: LEGAL AND INSTITUTIONAL CONTEXT

Table 23. Selective key national regulations on the environment and biodiversity that – either directly or indirectly – determine the legal framework for PA management.

	Law or Regulation	Summary	Competent Authority
General	**Organic Law of the Environment** No. 7554 – (13/11/1995)	This law lists but does not define all protected area categories, indicating common objectives for all areas. The law affirms that **"…the Government shall set a series of interrelated, harmonized objectives aimed at improving the environment and adequately managing its natural resources. To ensure these objectives are achieved, they must be accompanied by specific decisions and actions and supported by standards, institutions and procedures that make such policies functional."** Article 32 of this law grants the Executive, through the Ministry of the Environment and Energy, the power to create and administrate protected wilderness areas.	MINAE, MAG, MINSALUD,
About MINAE	**Decree 30077, General Regulations of the Ministry of the Environment and Energy** 21/12/2001	This law describes the structure of MINAE and defines the administrative arrangement of its entities in pursuit of the fulfillment of the duties and powers assigned to it by the respective laws and the executive regulations that ensure their implementation.	MINAE
	Executive Decree No. 32629- MINAE, January 5, 2005	This decree officially approves the Regulations governing the operation of the National Conservation Areas Council, and provides a broader, more detailed description of its functions than that established in the Law of Biodiversity.	SINAC
Flora & Fauna (incl. Forestry) and Protected Natural Areas	**Law of Wildlife Conservation** No. 7317 – (14/10/1992)	Establishes regulations for wildlife in the following areas: hunting, extraction and collection, fishing in marine and inland waters, **wildlife refuges** and the importing, exporting and transport of wild species.	MINAE
	Forest Law No.7575 – (16/4/1996)	Establishes the essential function and high priority of the State to ensure the conservation, protection and administration of natural forests and the production, use, industrialization and development of the country's forest resources developed for this purpose, in line with the principle of sound, sustainable use of renewable natural resources. It also introduces the concept of State-owned Natural Heritage, defining it as the sum of all forest resources in all State-owned lands. Furthermore, this law defines the concept of protected wilderness areas and even declares their protection to be in the "public interest."	MINAE
	Law of Biodiversity No. 7788 – (30/04/1998)	This law seeks to conserve biodiversity and ensure the sustainable use of Costa Rica's resources and the fair distribution of their associated benefits and costs. It creates the National System of Conservation Areas (SINAC) and empowers MINAE to grant private concessions in national parks, restricting these to non-essential activities and services.	MINAE
	Decree 26435: Law of Wildlife Conservation Regulations.	Identifies which species are to be included on the flora and fauna conservation list. Regulates the importation of exotic species and the organization and jurisdiction of the Wildlife General Directorate.	MINAE

	03/12/1997	Establishes the procedures for obtaining concessions, permits and licenses. Also governs the listing of species on the National Register of Flora and Fauna, as well as the protection of species with reduced or threatened populations.	
	Law on Land Use, Management and Conservation No.7779 – (21/05/1998)	Promotes environmental inventory-based planning to achieve balance between usage capacity and productive potential in land use, thereby improving the quality of life of the population. It also encourages the active participation of communities and producers in decision making for land conservation and management, and fosters agro-ecology for the aims of agricultural production and conservation of land and water resources.	MAG & MINAE

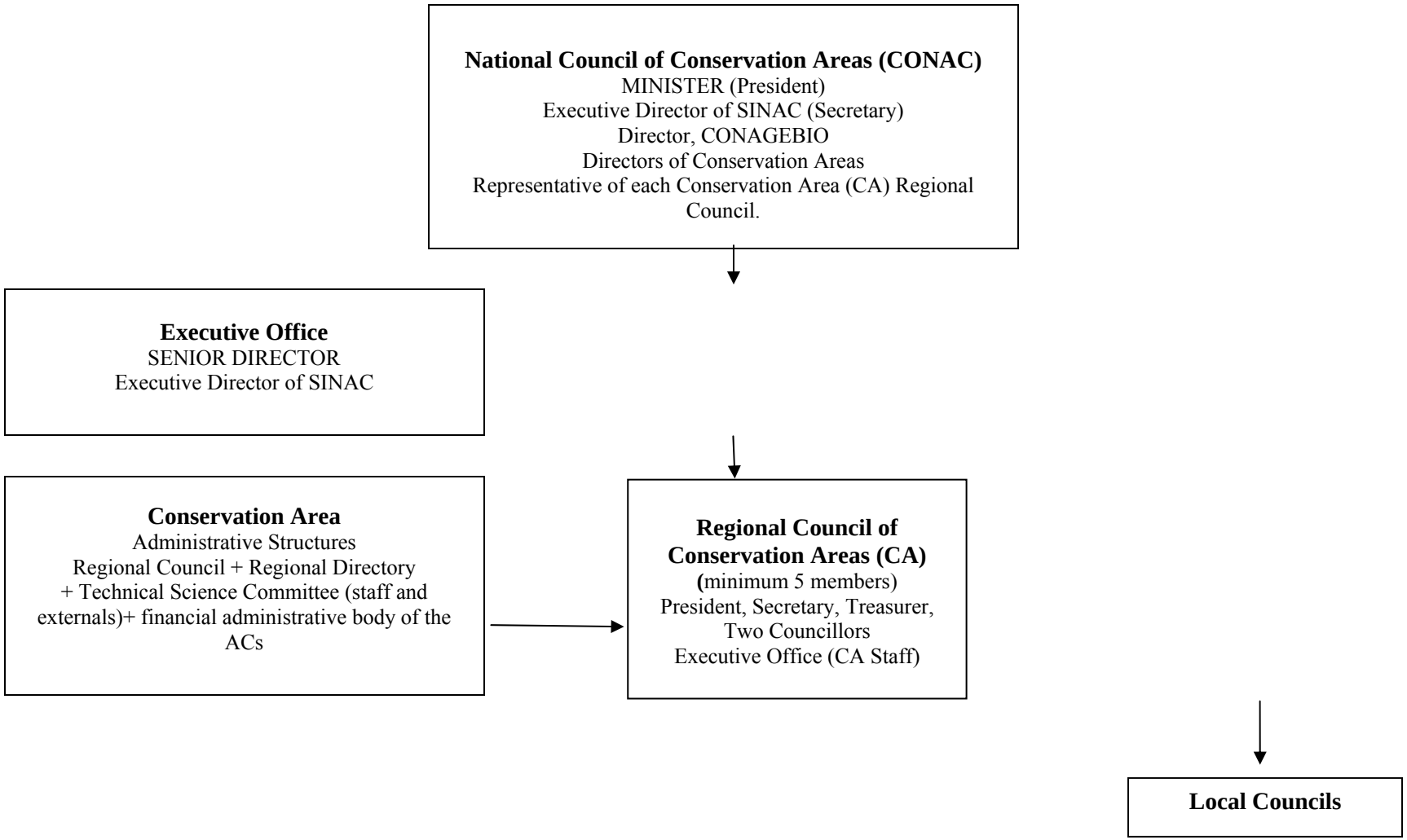
Source: Adapted from CEDARENA database by Silvia E. Chaves. Costa Rica. 2006

Table 24. - Main international environmental agreements ratified by Costa Rica with importance for the legal framework for PA management.

CONVENTION/AGREEMENT AND ADOPTION DATE	YEAR OF RATIFICATION
Convention for the Protection of Flora, Fauna and the Natural Scenic Beauty of the Countries of America	1942
Convention on International Trade in Endangered Species of Wild Flora and Fauna, Washington, March 3 1973	1975
Convention concerning the Protection of the World Natural and Cultural Heritage, November 23, 1972	1977
Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region	1983
Central American Convention for Environmental Protection	1989
Protocol Concerning Specially Protected Areas and Wildlife to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region	1990
Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention), Ramsar, February 2, 1971	1992
United Nations Convention on the Law of the Sea, Montego Bay, December 10, 1982	1992
Convention for the Conservation of the Biodiversity and Protection of Wilderness Areas in Central America	1992
Convention on the Management and Conservation of Natural Forest Ecosystems and Planted Forests	1993
Convention on Biological Diversity, Nairobi, May 22, 1992	1994
Central American Alliance for Sustainable Development	1994
United Nations Framework Convention on Climate Change, New York, May 9, 1992	1994
United Nations Convention to Combat Desertification in Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa, Paris, June 17, 1994	1998

Source: Observatorium of Development, University of Costa Rica in *GEO Costa Rica 2002, MINAE/UNEP*

Figure 4. - GENERAL ORGANIGRAM - NATIONAL SYSTEM OF CONSERVATION AREAS (SINAC)
(Sistema Nacional de Áreas de Conservación)
(re: Article 23, Biodiversity Law)



PART VIII: FINANCIAL SUSTAINABILITY OF COSTA RICA'S PA SYSTEM

Budgetary problems have been identified as a critical barrier for the long-term sustainability of Costa Rica's PA System and the natural heritage it seeks to protect. In response, SINAC has already initiated the process of establishing an institutional process and mechanisms to guarantee its financial sustainability. In 2003, with the technical and financial support of TNC, SINAC started formulating its *Sustainable PA Financing Strategy*, which seeks to maximize the institution's revenue capture and optimize its spending. This Project will support the finalization and official adoption of this Financing Strategy (see Logframe, Output 3.1), while ensuring this strategic planning is operationalized through the formulation of a related *PA System Business Plan* (see Output 3.2)**.**

The Financing Strategy is in the process of being formulated according to a three-phase approach: (i) Development of a *Financial Needs Plan* (costs), which determines the spending requirements of the System for the period of 2004-2006; (ii*) Projection of Revenue Flows* (revenue), which identifies the main revenue sources of SINAC for the said period; and (iii) the *Estimation of Future Financial Needs* (funding gap), which calculates the gap between spending and the revenues for the same period.

It should be noted that financial data for the planned project period of 2007-2010 are currently not available. Hence, this Annex combines the information accumulated by the above ongoing work to date[16], a recent SINAC publication[17] and a PDF-B Study[18], which was undertaken to assess the possibility of achieving sustainable, long-term financial management of Costa Rica's PA System and its individual PA Units. The two former sources provided information for the financial needs and the revenue flows, which provided data for calculating the financing gap. The latter source was used to identify potential for increasing SINAC's revenue capture. Below summarizes the main findings and conclusions.

I. The Financial Needs/Requirements of SINAC

The SINAC Needs Plan is designed as a basic instrument for identifying the System's financial requirements to facilitate the allocation and channelling of limited resources to strategic action priorities. The objective was to design a needs plan for the National Conservation Area System that identifies all resources—human, logistic, equipment and infrastructure—required to adequately fulfil these strategic action priorities and that guides efforts aimed at capturing resources to finance the system. The definition of **financial needs** was limited to all human, logistic, equipment and infrastructure resources required to adequately fulfill strategic action priorities. Furthermore, it was decided that information would be collected by each **operational unit**, defined as each PA, Conservation Area (CA) or regional office. It was also decided that the **time horizon** would be the 2004-2006 period. Forms were filled out for each operational unit for the years 2004-2006 and the information was classified in the three broad categories below. The information generated by each CA was consolidated, reviewed and analyzed in the Financial Needs Plan 2004-2006 SINAC, Costa Rica.

1. Essential Operational Capacity: Activities that cannot be legally delegated and that are implemented both within and outside of PA boundaries. These seek to ensure and monitor the sustainability of natural resources and address and process complaints against those who provoke such damages. They include: (a) granting of permits and licenses, (b) carrying out patrols, (c) inspections, (d) over flights and audits, (e) enforcement of hunting seasons, (f) control of illegal logging and protection of wildlife, (g) the prevention and control of forest fires, (h) staff training, (i) investigations, and (j) training for volunteer groups that carry out monitoring and security actions.

[16] Plan de Necesidades Financieras 2004-2006, SINAC, Costa Rica (MINAE-SINAC, TNC, PROARCA), 2005.
[17] El Sistema de Areas Silvestres Protegidas de Costa Rica, Informe Nacional, MINAE-SINAC, II Congreso Mesoamericano de Areas Protegidas, Panama 24-28 April 2006.
[18] PDF B Study: Analysis and Evaluation of the financial sustainability of Costa Rica`s system of Protected Areas, CIESA, 2006.

2. Institutional Management: Activities to be executed in protected areas and in regional and sub-regional offices, designed to provide services to clients such as tourists, students, researchers, educators, institutions, forest industry representatives (extraction, sawmills and processing), forest owners, hunters, fishermen, etc. This includes actions such as: (a) outreach, (b) dissemination, (c) environmental education, (d) research, (e) tourist services, (f) human resources development, (g) institutional coordination, (h) marketing, (i) project design and funding proposals, (j) administrative support and logistics.

3. Land-use Planning: Include activities, such as: (a) the formulation of general management plans for protected areas, (b) property assessment, (c) location of farms, (d) topographical surveys (administrative and legal transfers), (e) survey and registration procedures, (f) fundraising for land purchase, (g) demarcation of territorial borders, (h) establishment of buffer zones, (i) design of territorial databases, (j) zoning of protected areas, (k) design of biological corridors and (l) allocation of payment for environmental services (PES).

The projection of expenditures (Financial Needs Plan) was further disaggregated into the following budgetary items: 1) Personnel; 2) training; 3) operational costs; 4) equipment; 5) infrastructure; 6) maintenance of equipment and infrastructure; and 7) land acquisitions. The following provides details about each of these categories.

1) Personnel: Projections of staffing needs took into account both current and future staffing needs. In terms of basic operating capacity, a minimal institutional presence was considered (for example, the minimum number of employees for manned and unmanned control points required to protect a given sector or to provide services currently offered but that must be improved).

Regarding institutional management, the minimum number of staff required was calculated, taking into account that services for tourists will be administered by concession holders or by third parties under terms set out in their respective contracts. For land use planning it was necessary to specify the period of time during which staff will perform the work.

In calculating projected staffing costs, the Manual of Job Classifications published by the Civil Service was used, broken down as follows:

- Base salary established for each staff position.
- Professional qualification. Points assigned according to the type of degree (licentiate, masters or doctorate). In addition, work experience in informal teaching and training related to the position was recognized, as well as publications.
- For exclusive dedication, 20% above base salary for positions requiring a bachelor's degree and 55% for licentiate, masters or doctoral degrees.
- Yearly bonus corresponding to 8.33% of annual salary by fiscal year, or one month's salary per year employed, paid in December. This included all rights additional to the base salary.
- Educational bonus, equal to the yearly bonus.
- Zoning allowance according to internal norms and the amount assigned by the Comptroller's Office.
- Annual payment, by job category.
- Family separation allowance, 40% above base salary.
- Social payments, 26% of total salary. Includes personal and employer C.C.S.S. contributions, Banco Popular, supplemental pension and labor development fund.
- Legal services, which include a specific amount set aside for cases of employee dismissal.

2) Training: Training needs was determined by the priority activities to be implemented and in accordance with the profile of employees established in the SINAC 2003-2006 Training Plan. The following training expenditures was included: (i) Professional fees for hiring facilitators or trainers where required; (ii) logistical services related to transporting employees to the training location, (iii) food, (iv) lodging, (v) training materials and printing costs, among others.

3) Operational Costs: These were projected in accordance with budget items and sub-items established by the Ministry of Finance and the Contraloría General de la República (Comptroller General), using the following: 102, 104, 106, 112, 114, 122, 124, 126, 128, 132, 134, 142, 144, 150, 152, 190, 202, 204, 206, 212, 214, 220, 232, 234, 240, 252, 254, 260, 270, 282, 284, 286 and 290.

Formulas for calculating some operational costs:

- Building lease: Amount set out in the contract plus the incremental percentage provided for by law.
- Telecommunications: Average of all phone bills paid over the last three months.
- Electricity: Average of all power bills paid over the last three months.
- Domestic travel expenses: # of employees x trip x trip duration (in days).
- Insurance: Annual Premium established on the policing risk of employees who work in protection and enforcement activities.
- Gas: # of gallons x vehicle x unit price.
- Diesel: # of gallons x vehicle x unit price.
- Clothing and textiles: At least three complete uniforms annually per employee working in PWAs.
- Non-staffing services: Contracts for cleaning, computer maintenance and other miscellaneous services.

4) Equipment: This category specified the current state of all communications equipment, computers and program licenses, educational equipment, office equipment, semi-mobile property, and transportation equipment (vehicles, motorcycles, outboard motors, boats and minor equipment). Based on this status report real needs were to be identified.

5) Infrastructure: Infrastructure costs were calculated in one of two ways: when the job involves an external contractor, only the total amount is used; when the job is performed internally, the total cost is broken down into separate categories: labor, material, equipment and others.

6) Maintenance of equipment and infrastructure: The cost of a minimum level of preventive maintenance for all equipment and infrastructure was calculated. This information was included under budget sub-items 172, 174, 182, 184, 199 and item 5.

7) Land acquisition: To project this expenditure a list was drawn up of all properties to be acquired. Their respective prices will be determined by referring to Ministry of Finance assessments of neighboring properties.

Generally, all calculations were made in thousands of colones with an assumed annual inflation rate of 10%. The result of this exercise is summed up in the below Table 25 in three different ways (I, II and III). In sum, the table shows that for the examined period of 2004-2006, SINAC would need an average of about **US$ 40 million annually – for its overall operations**. ***It should be noted that at present SINAC is not in a position to provide specific figures for its protected management activities alone.***

Table 25. – SINAC Financial Needs Plan: Period 2004-2006 (Numbers in million US$ and related approximated percentage)

	2004 US$*	%	2005 US$ *	%	2006 US$ *	%

I. NEEDS AS PER DIFFERENT CATEGORIES						
Essential operational capacity	28.5	66	27.7	68	23.0	64
Institutional management	12.3	28	11.7	28	11.7	32
Land use planning	2.4	6	1.3	4	1.3	4
TOTAL	**43.2**	**100.0**	**40.7**	**100.0**	**36.0**	**100.0**
II. NEEDS AS PER TYPES OF EXPENDITURES						
Personnel	17.1	40	19.2	47	20.7	58
Training	2.3	5	1.2	3	1.2	4
Operational Costs	5.2	12	5.3	13	5.3	15
Equipment	8.2	19	6.2	15	2.4	7
Infrastructure	7.4	17	6.2	15	3.6	10
Maintenance	3.0	7	2.6	7	2.8	8
TOTAL	**43.2**	**100.0**	**40.7**	**100.0**	**36.0**	**100.0**
III. NEEDS AS PER SINAC'S DIFFERENT OPERATIONAL UNITS (HQ & CONSERVATION AREAS)						
Executive Office	2.6	6	2.9	7	4.1	11
ACTO	2.2	5	2.3	6	2.5	7
ACT	3.1	7	2.8	7	2.6	7
ACOSA	5.2	12	5.4	13	4.5	13
ACOPAC	8.8	20	5.9	15	4.3	12
ACMIC	0.9	2	1.3	3	1.4	4
ACLA-P	2.6	6	3.3	8	2.9	8
ACLA-C	1.8	4	1.5	4	1.6	5
ACG	3.2	8	3.0	7	2.6	7
ACCVC	6.7	15	6.7	16	4.4	12
ACA-T	3.2	8	3.2	8	2.5	7
ACA-HN	2.9	7	2.4	6	2.6	7
TOTAL	**43.2**	**100.0**	**40.7**	**100.0**	**36.0**	**100.0**

***Exchange rate used for reference:** 2004: US$ 1 = colones 437.9; 2005: US$ 1 = colones 477.8; 2006: US$ 1 = colones 501.2
Source: The exact/non-rounded up figures can be found in the Financial Needs Plan 2004-2006, SINAC

II. The Revenue flows of SINAC/PA System

The following provides an overview of the main revenue sources of SINAC. The same period of 2004-06 used above was examined to enable (i) a comparison between SINAC's costs and revenues; and (ii) the below calculation of the funding gap. As can be seen below in Table 26, SINAC gets its regular revenue from two major sources: (i) Fiscal or Ordinary Budget of the Republic (*Presupuesto Ordinario de la República*); and (ii) budget from Trust Funds or special funds. It is assumed that these two annual revenue sources will remain stable in the foreseeable future. The below figures therefore provides a reliable projection for SINAC's annual revenue in the short term beyond 2006. Beyond these funds, SINAC is also relying on additional temporary/non-regular revenue from a third source: (iii) Temporary budget from national projects (Table 27).

A. Fiscal or Ordinary Budget

Table 26. – Overview of Ordinary Budget (fiscal) and Budget from Special Funds (non-fiscal) of SINAC for the period of 2004-2006

	2004	2005	2006
A. Ordinary Budget (fiscal) for SINAC+			
	Funds assigned (in million USD)*	**Funds assigned (in million USD)***	**Funds assigned (in million USD)***

Sub-total	**7.8**	**8.1**	**8.1**
B. Budget for Special Funds (non-fiscal) of SINAC+			
Special Funds:	**Funds generated (in USD* thousands)**	**Funds generated (in USD* thousands)**	**Funds generated (in USD* thousands)**
1. National Parks Fund (*Fondo de Parques Nacionales*)	8.7	11.5	12.0
2. Forest Fund (*Fondo Forestal*)	1.7	1.0	1.0
3. Wildlife Fund (*Fondo de Vida Silvestre*)	0.2	0.02	0.02
Sub-total	**10.6**	**12.52**	**13.02**
TOTAL (A + B)	**18.4**	**20.62**	**21.12**

+ The amount of 2004 corresponds to real execution, 2005 to the approved budget and 2006 is a projection with a 7% annual increment in relation to 2005.
*Type of reference exchange rate: 2004: US$1= colones 437.9; 2005: US$1= colones 477.8; 2006 US$1= colones 501.2
Source: Financial Strategy of SINAC, Phase II (2005)

The above Table 26 shows how the Ordinary Budget covers the major part of the SINAC staffing, including staff in protected areas. In addition, it is important to note that over the last three year period public funds have been allocated from this budget to purchase lands from landowners who successfully litigated against the State), adding these to other fixed expenses that are regularly charged to this budget. For the period of 2004-2006 the Ordinary Budget (Part A) represents between 44% and 48% of SINAC's total revenue, according to the budget.

a. Budget of Trust Funds or special funds

As Table 25 above shows, the 3 Trust Funds created by special laws complement the above fiscal investment of the State and represent between 34% and 39% of SINAC's total budgeted income (period 2004-2006). With these funds SINAC covers the major part of its **overall** operative budget items, such as fuel, materials and provisions, equipment and travel. The fund that provides the largest support (between 42% and 45% of the total real revenue *generated* by SINAC as an institution) is the National Parks Fund, which derives revenue from charges and entry fees to protected areas and other tariffs for the use of the diverse services offered by the said areas. On their part, together the Forest Fund and the Wildlife Fund constitute between 4% and 9% of the total *generated* revenue by SINAC. In relative terms, the National Parks Fund generate between 82% and 92% of the real revenue corresponding to the three special funds.[19]

C. Temporary budget from national agreements and projects

Table 27. – Budget from Cooperation (Agreements and Projects) of SINAC (period 2004-06)

	2004	**2005**	**2006**
A. Budget from Cooperation (Agreements and Projects) l) of SINAC+			
	Funds assigned (million USD)	**Funds assigned (million USD)**	**Funds assigned (million USD)**
Amount	3.1	3.9	3.0

+ All amounts are in whole thousands. The amount of 2004 corresponds to real execution, 2005 to the approved budget and 2006 is a projection with a 7% annual increment in relation to 2005.
*Type of reference exchange rate: 2004: US$1= colones 437.9; 2005: US$1= colones 477.8; 2006 US$1= colones 501.2
Source: Financial Strategy of SINAC, Phase II (2005)

[19] Financial Strategy of SINAC, Phase II, 2005.

Beyond the above regular annual fiscal and non-fiscal budget resources, it is estimated that the financial resources from private sources in above Table 27 – revenue essentially gained through agreements and projects of local, national and international origin - represents between 13% and 22% of the total funds that SINAC is counting on for the period 2004-2006. These figures may even be conservative, as it is difficult to account for each and every local scheme that exists (see below Table 28).

Table 28. – Private agreements of subscribed cooperation

Type of Agreement	# of Agreements	Proportion (%)
With associations	13	11.21
With foundations	14	12.07
Trust Funds	10	8.62
Local Cooperation	16	13.79
International Cooperation	0	17.24
National Agreements (SINAC-MINAE)	43	37.07
TOTAL	**96**	**100**

Source: Office of Financial Development of SINAC, 2006

III. SINAC's Funding Gap - The Estimation of Future Financial Needs

The following table provides a Summary Overview of the above sections:

Table 29. - Summary Overview of total needs and revenues for all SINAC operations - Period 2004-2006:

	2004 (million USD)*	2005 (million USD)*	2006 (million USD)*
I. TOTAL NEEDS:			
Total needs for all SINAC operations	**43.2**	**40.6**	**36.0**
II. TOTAL REGULAR ANNUAL REVENUE:			
A. Ordinary Budget (fiscal) Sub-total	7.8	8.1	8.0
B. Budget for Special Funds (non-fiscal) Sub-total	10.6	12.4	13.0
Revenue Sub-total (A + B)	**18.4**	**20.5**	**21.0**
III. FUNDING GAP A:	**24.8**	**20.1**	**15.0**
C. Budget from Cooperation (Agreements and Projects) Sub-total	3.1	3.9	3.0
Revenue Total (A + B + C)	**21.5**	**24.4**	**24.0**
IV. FUNDING GAP B:	**21.7**	**16.2**	**12.0**

As seen above, the financial needs of SINAC amount to between US$ 36 - 43.2 million annually for the period 2004-2006. Based on these calculations, a fair projection for SINAC's short-term future needs would be about US$ 40 million annually to cover SINAC's overall operations. Based on the above regular annual revenue figures (sub-total A + B), when comparing the above projections for SINAC's overall financial needs with its current revenue flows it illustrates that for 2004 the deficit – or funding gap – was more than 57% (US$ 24.8 million); for 2005 it was 49% (US$ 20.1 million); and for 2006 it came to 41% (US$ 15 million). While the trend is a decreasing funding gap, this **still amounts to an average of 49%**, meaning that ***close to half of the activities that SINAC is supposed to realize are currently without funding***. While this funding gap is minimized to some degree by the additional temporary funds from cooperation (Part C above), the shortage of funds remains significant (see above

funding gap B). In this regard, it should be noted that the personnel expenditures - which fluctuate between 40 and 58% (see above Table 25) - is a very high recurrent spending, especially when compared to the operational costs, which ranges between only 12 and 15%.

It should be noted that it is not possible to calculate the specific funding gap for PA management activities per se, given that SINAC presently is in no position to provide specific figures for financial needs for its PA management activities alone. This fact stresses the importance of the strong financial management support that this project will provide to SINAC's PA System and its individual PA units.

IV. Analysis of financial and economic feasibility of Costa Rica's PA System

The following sections present forecasts and models resulting from the PDF B Study on economic and financial feasibility of the PA System. Income and expenditures were forecasted for a horizon to 2020, using different econometric models and scenarios to model income from (i) taxes; (ii) user fees; and (iii) internalization (water and PES); as well as for expenditures. These forecasts, and their analysis in terms of Net Present Value (NPV), present the different possibilities that the SINAC PA System faces in **three different scenarios** – (i) Baseline; (ii) Medium and (iii) High, - and are meant as important element inputs into SINAC's long-term financing strategy planning (2020). The detailed results of the forecasts by scenario for both income and expenditures, along with specific methodologies, are detailed in Sections I to IV of the Study Report. This section (IV) presents a summary of the entire study, as well as the forecasts.

IV.a. Brief description of the forecasting scenarios used

Table 30. - Overviews of Projection Scenarios

	BASE	MEDIUM	HIGH
		ENTRY, RIGHTS AND TAXES	
Group		VISITATION	
A	Visitation trend fixed at 2005 maximum capacity	Short term modified growth rate	Modified historical growth rates
B	Modified historical growth rates	Modified historical growth rates	Growth rates 30% above medium scenario growth rates
C	Visitation trend	Historical growth rates	Growth rates 30% above medium scenario growth rates
C'	Growth rate of 10% for Costa Rican nationals and 5% for foreigners	15% growth rate for Costa Rican nationals and 10% for foreigners	Growth rates of 20% for Costa Rican nationals and 15% for foreigners
Group		PARK ENTRY FEES/TARIFFS	
A	Calculated using base	20% increase above base tariffs for Costa Rican nationals and 40% for foreigners	Tariffs from Group A medium scenario
B	Calculated using base	20% increase over base tariffs for Costa Rican nationals and 20% for foreigners	Increase over base tariffs of 20% for CR nationals and 40% for foreigners
D	Calculated using base	Calculated using base	Increase over base tariffs of 20% for CR nationals and 40% for foreigners
C'	Calculated based on Group C	Calculated based on Group C	Calculated based on Group C
		INCOME FROM EXTERNALITIES	
	Income from water: 25%	Income from water: 35%	Income from water: 50%
	ESP Payments: 25%	ESP payments: 35%	ESP payments: 50%
		INCOME FROM TRANSFERRED SURPLUS	

100% of Group A income	80% of income generated by CR nationals and 60% of income from foreigners in Group A Pas	80% of income generated by CR nationals and 60% of income generated by foreigners in Group A PWAs
INCOME FROM PRO PARQUES STAMP TAX AND OTHER PARK FUNDS		
8% growth rate of Pro Parques stamp tax Other income is a fixed percentage of total Park Fund income	12% growth rate of Pro Parques stamp tax Other income is a fixed percentage of total Park Fund income	15% growth rate for Pro Parques stamp tax Other income is a fixed percentage of total Park Fund income
INCOME FROM FORESTRY STAMP TAX (FORESTRY FUND)		
4% growth	6% growth	8% growth
INCOME FROM THE WILDLIFE FUND (FVS)		
2% of all other system income	2% of all other system income	2% of all other system income
TOTAL EXPENDITURES		
Growth rate of 2% over the previous year, as of 2006	Growth rate of 5% over the previous year, as of 2006	Growth rate of 7% over previous year, as of 2006

Source: M. Adamson, CIESA 2006

The paragraphs below present a general explanation of how the scenarios were designed.[20] The overview in table 30 presents the basic structure of the scenarios: (i) variations in park entry fees; (ii) taxation revenue; and (iii) income from water rates, PES and expenses. They show different results from following different economic and/or financial strategies, to obtain NPVs that are positive (sustainable) or negative (unsustainable) for the System. The generation and capture of the benefits directly generated by SINAC is divided into two groups: **a)** captive; and **b)** those that depend on their direct management and "sale," such as the sale of visitation rights and rates. Captive income is income from taxes such as the *Pro-parques* stamp tax and the forestry tax.

On one hand, the long-term financial sustainability of the PA System depends both on the resources allocated in the ordinary budget and on the benefits they generate; on the other hand they depend on the efficiency with which expenditures are executed. Therefore, when assessing income it was critical to consider (on the income side) the variables of visitation, entry fees, tax revenue and economic income from internalization, and (on the expenditure side) the variable of growth and resources for payment of human resources and the investment required for land purchase. The economic-financial assessment took into account these variables (see PDF B Study for details).

In regard to environmental services provided by the PA system, when the structure and dynamic of PA visitation were examined, three groups of PAs were clearly noted. Hence, the following Groups were used throughout the Study:

- **Group A:** are PAs that make a significant contribution (60%), yet their visitation growth has stalled as the carrying capacity has reached saturation level. The 3 PAs included were: The National Parks of Poas Volcano; Irazu Volcano and Manual Antonio.
- **Group B:** Individually these make a relatively low contribution to the generation of environmental services by PA. However, they have recently shown a very high visitation rate, which offers an important opportunity for diversification of income sources – and therefore of risks – as a response to the elevated concentration and threat of stalling of income generated by the PAs in Group A. The 8 PAs included were: The National Parks of Tortuguero; Rincon de la Vieja; Marino Ballena; Isla del Coco; Arenal; Cauhita; and Biological Reserves of Isla Cano and Carara;

[20] Foot notes indicate the corresponding sections in the related PDF B Study where the detailed calculations for each one can be found.

- **Group C** (subdivided into four sub-groups): A large number of PAs that make relatively small individual contributions and with visitation rates ranging from dwindling (C) to fast rising (C'). The 12 PAs included were: National Parks of Santa Rosa; Tapanti Macizo De I.; Corcovado; Br. Carillo; Chirripo; Barra Honda; Palo Verde; M. Las Baulas; the Gayabo National Monument; and the Forest Reserves of B. Nino; Hitoy Cerere and Cabo Blanco.

I. Base Scenario (BS): for the calculation of income from rights and charges, the model used relatively moderate growth rates for visitation trends and projected visits for Groups B and C': For Group C, zero growth was assumed; and in Group A as of 2005 visits are pegged to the 2004 trend, which also does not show growth, given that the models reproduce the saturation over load capacity shown over the last few years. Overall, for the entire forecast period, as a result of the modeling, visits end up **growing at an average rate of 3.4%** for the period 2006-2020.[21]

Entry fees to the PAs for this scenario correspond to those implied or calculated for each group, except Group C´, which maintains that of Group C under all scenarios.[22]

Income from transferred surpluses correspond to 100% of income collected in Group A in this scenario, as the PDFB Study found that the fees in these PAs were undervalued by 100%. In regard to income from each fund (see above in the revenue section in Table 25) in the Base Scenario, the National Parks Fund (FPN) grew by 8% in the *pro parques* stamp tax and for all other scenarios income was calculated using the respective proportion, which was stable in regard to total income from the park fund. The Forest Fund (FF) grew by 4% over the previous year and the Wildlife Fund (FVS) represents 2% of all income across the system, which represents a very stable participation in historical records.[23]

For the assessment of internalization, this scenario includes a fraction (25%) of the benefits produced by water externalities based on the charge of 1.9 colones/m3 approved for ESPH by ARESEP, above water capacity; it also includes a partial (25%) internalization by PES for the PA forest, at a rate of 13,200 colones/ha/year.[24] Total expenditures in the Base Scenario grew by 2% over the previous year after 2005, with their corresponding breakdown.[25]

II. Medium Scenario (MS): visits grow at higher rates than the baseline scenario. For the entire forecast period (2005-20) modeling shows visits **growing at an average rate of 6.4%.** Notably, entry fees under this scenario was increased for Group A by 20% for Costa Rican nationals and 40% for foreigners, in Group B by 20% for nationals and 20% for foreigners and in Groups C and C´ they remain the same as the baseline scenario for the purpose of promoting price substitution among parks in these groups.

In the National Parks Fund (FPN), the *pro parques* stamp tax for this scenario grows by 12%, the Forest Fund (FF) by a rate of 6% and the Wildlife Fund (FVS) stays the same, at a proportion of 2% in regard to all other income for the system. For the evaluation of internalization, this scenario includes a fraction (35%) of the benefits produced by water externalities at a rate of 1.9 colones/m3 approved for ESPH by ARESEP, above water capacity; as well, it includes a partial (35%) internalization for the PES of the PA forest at the rate of 13,200 colones/ha/year.[26] Given the increase in the Group A rates, income from transferred surplus correspond to 80% of the income collected from Costa Rican visitors and 60% of that from foreign visitors in Group A. Total expenditures in the Medium Scenario grow at a rate of 5%.

[21] Details of growth rates in visits for each group in each scenario are presented in PDF B Study, section 3.9.2.
[22] Details of the calculation of base rates for each park and each group can be found in PDF B Study, section 3.9.4.
[23] For details of the calculation of income forecasts from the park funds, see sections 2.2 for FPN, section 2.3 for FF and 2.4 for FVS.
[24] The details of these calculations can be seen in section II.
[25] See section 2.5.
[26] Details of these figures can be seen in section II.

III. High Scenario (HS): Visitation increases at higher rates than in the medium scenario and overall ends up **growing at an average rate of 9.3%** for the 2005-2020 period. Entry fees were increased by 20% over the medium scenario only for foreigners from Group B, while in Group C they increase by 20% for Costa Rican nationals and 40% for foreign visitors and stay the same for Groups A and C´.[27]

In this scenario the National Parks fund (FPN) *pro parques* stamp tax grows by 15%, the Forest Fund (FF) grows at a rate of 8% and the Wildlife Fund (FVS), like in the other two scenarios, represents 2% of the total system income. In this scenario as the fees in Group A do not change from those in the MS, the surplus transferred is also the same. For the evaluation of internalization, this scenario includes a fraction of the benefits produced from water externalities at 50% above the same rate; as well as a partial internalization of 50% for the Payment for Environmental Services (PES) of the PA forest.[28] Expenditures of the system under this scenario end up growing by 7% annually.

*Notably, **none of the above scenarios includes income from international cooperation** (which could be for research, etc.) as it was not possible to obtain suitable data to project these amounts to 2020. However, some specific data in this regard is shown in the Study in Section II.*

IV. b. Presentation of the results: economic sustainability versus financial sustainability

This analysis presents the results of **(a)** the economic sustainability of the PA system and **(b)** the financial sustainability of the PA system. A total of 132 possible alternatives were evaluated (3 possible scenarios and 11 possible income situations, and four alternatives for including expenditures) for which Net Present Value (NPV) is estimated.

In the first case (a), the economic valuation of hydrological services generation is included in the sustainability analysis, as well as valuation of the environmental functions considered in PES. Other income generated by the system is also included in the evaluation of economic sustainability, in addition to the economic valuation of these externalities. These include, as mentioned, income from park visits (under different entry fee and visitation level scenarios), and a fraction of income generated from visits (under different visitation and entry fee scenarios) that are transferred as surplus (transferred surpluses) to consumers, especially for the PAs of Group A; and the taxation revenue (*pro parques* stamp tax and forestry stamp tax) under different scenarios, with the same objective as the visitation revenue calculations, to generate (i) a Baseline Scenario (BS); (ii) a Medium Scenario (MS); and (iii) a High Scenario (HS).[29]

In the second case (b), in which **purely financial sustainability** is evaluated, the results of the income evaluation are presented without incorporating internalization from externalities (neither generation of water resources nor valuation of PES in the PAs). In other words, **it includes only income generated by the PAs through visits and taxation revenues, as well as surpluses transferred**, which can be appropriated through monopolistic practices or fee adjustments. The estimation, based on econometric models, enables the assessment of the impact of different internalizations, incomes and expenditures on the Net Present Value.

[27] Details of growth calculations are presented in section 3.9.4.
[28] Details of these calculations can be seen in section II.
[29] The PDF B Study section I provides details of the method used to estimate income and expenditures.

Table 31: Estimations of the Net Present Value (NPV), by setting, type of incomes and expenses of the PA (2006-2020)

NET PRESENT VALUES NPV@4,49% (figures in US$ million)	Without park´s tax Column 1	Without forest tax Column 2	Without taxes Column 3	Without incomes not perceived Column 4	Without transferred surplus Column 5	Without Column 4+5 Column 6	Without water resouce Column 7	Without PES Column 8	Without columns 7+8 externalities Column 9	Without 5+7+8 Column 10	All incomes Column 11
BASE SETTING											
Row 1: NPV (including all expenses)	143.75	171.69	132.96	182.48	159.39	159.39	(30.88)	127.74	(85.62)	(108.71)	182.48
Row 2: NPV (wtihout salaries of OB)	271.07	299.01	260.27	309.80	286.71	286.71	96.44	255.06	41.70	18.61	309.80
Row 3: NPV (without land investment)	175.91	203.85	165.12	214.65	191.56	191.56	1.29	159.90	(53.46)	(76.55)	214.65
Row 4: NPV (without land and salaries)	303.23	331.17	292.44	341.96	318.87	318.87	128.60	287.22	73.86	50.77	341.96

NET PRESENT VALUES NPV@4,49% (figures in US$ million)											
MEDIUM SETTING											
Row 1: NPV (including all expenses)	238.25	278.45	223.31	283.08	267.71	257.39	(5.31)	216.75	(81.95)	(107.64)	293.39
Row 2: NPV (wtihout salaries of OB)	397.97	438.16	383.02	442.80	427.42	417.11	154.40	376.47	77.76	52.08	453.11
Row 3: NPV (without land investment)	278.60	318.80	263.66	323.43	308.05	297.74	35.04	257.10	(41.60)	(67.29)	333.74
Row 4: NPV (without land and salaries)	438.32	478.51	423.37	483.14	467.77	457.46	194.75	416.82	118.11	92.42	493.45

NET PRESENT VALUES NPV@4,49% (figures in US$ million)											
STRONG SETTING											
Row 1: NPV (including all expenses)	403.89	455.62	383.19	455.76	444.40	423.83	49.61	366.84	(59.88)	(91.80)	476.33
Row 2: NPV (wtihout salaries of OB)	590.57	642.30	569.86	642.43	631.08	610.51	236.28	553.52	126.80	94.87	663.00
Row 3: NPV (without land investment)	451.05	502.78	430.35	502.92	491.56	470.99	96.77	414.00	(12.72)	(44.64)	523.49
Row 4: NPV (without land and salaries)	637.73	689.46	617.02	689.59	678.24	657.67	283.44	600.68	173.96	142.03	710.16

Source: M. Adamson, CIESA.

OB = Ordinary Budget

PES = Payment for environmental services

IV.c. Results of the feasibility analysis of economic sustainability of PAs in Costa Rica

In addition to the forecasted income and expenditures, a feasibility assessment was required to show how sustainable the PA System and its PAs are in economic and financial terms. This assessment was undertaken using the Net Present Value (NPV).[30] The positive NPV indicates that the PAs are sustainable in economic terms if they include valuation of internalization, and if not, in purely financial terms. A positive NPV indicates in each case that the PA can generate more income than expenditures. A negative NPV - economic or financial - indicates that the PAs of the system cannot generate sufficient income to cover the expenditures demanded of the system under that scenario. All of the figures were estimated and projected in real terms to account for inflation and therefore are presented in US$. The rate of discount used a risk free rate defined by the FED, which for the period in question is set at 4.49% annually.

The final results (see above Table 31) of the NPV (for scenarios and combinations) indicate that from an economic standpoint – including an economic valuation of environmental externalities generated by the PAs, as is the case with water resources produced by the PAs; Environmental Services Payments (PES) for the forest in the PA, and adding financial income from rights and entry fees, *pro parque* stamp taxes, forestry stamp taxes and other income – for the period forecast (2006-2020), even in the baseline scenario (BS**)**, the **System is economically sustainable**. ***In other words the NPV is positive, which implies that the estimated Present Value of the Economic Benefits is GREATER than the total of ALL expenditures of the System (positive NPV), even including expenditures on staff*** (including all staff expenditures from Ordinary Budget (OB) or total staff in the System), as shown in the first Base Scenario block and column 11 of table 31. The table shows a value of **US$ 182.5** million when covering all expenditures; **US$ 309.8** million when not covering Ordinary Budget staff; and **US$ 214.6** million when not including investment in lands. The investment in lands considered in this scenario is valued at over **US$ 32** million, equal to a current value – unadjusted – of **$43.6** million.

Interestingly, this situation of the system's economic sustainability also arises in the Medium Sustainability Scenario (**MS**) and in the High Sustainability Scenario (**HS**). **Therefore, Costa Rica's PA System, from an economic standpoint, appears to be highly sustainable, which means that it is producing economic benefits capable of covering ALL of its costs, including all staff (whether 0Ordinary Budget or in total).** Covering all expenditures, in the **Medium Scenario**, the NPV is **US$ 293.4** million and in the **High Scenario** it is **US$ 476.3** million (the Medium Scenario includes a NPV in lands of US$ 40.3 million, equal to an investment in current dollars of US$ 56.1 million; for the High Scenario these figures are US$ 47.1 million and US$ 66.6 million, respectively).

Row 1, column 11 of Table 31 shows that the NPV is positive, and therefore the NPVs in the remaining rows, which exclude salaries from the Ordinary Budget or investment in lands, will be even higher. **Therefore, from the perspective of the economical allocation of resources, taking the income and expenditures considered in this study, the PA System is providing the country with economic benefits higher than the expenditures associated with its inputs.** This result shows that in economic terms the system is sustainable for all scenarios. This means that if SINAC effectively undertakes the collection of its taxation revenues, as detailed in section II under "ingresos tributarios," and if the visitation and income from visitation maintain their trends (see below in section IV.e. on visitation scenarios and on income from visitation under different scenarios of entry fees and visitation rates) and forecasted trends (parks in Group A continue to lack the capacity to receive more visitors than those received in 2005; visits to Group B parks grow more rapidly and those in Group C more gradually and C' more quickly); and most importantly, if the economic benefits produced by the PAs (valuation from positive water externalities and those recognized by the PES) are actually included in the System's finances, then **the PAs generate total economic benefits greater than their expenditures in a dynamic or inter-temporal definition of economic efficiency**.

[30] NPV is the difference between the present value of the income and the present value of expenditures discounted at a given rate.

Notably, the above does not exclude the possibility that in economic terms the System could be even more efficient. Without cost center accounting that allows at least a cost-effectiveness exercise, as indicated in the first volume of the Study Report, it is not possible to determine the System's level of efficiency. Nevertheless, considering possible scenarios for the collection of tax revenues, transferred surpluses and potential income from visitation, ***there is economic evidence that the System can increase its efficiency substantially, both in terms of increasing its revenue and by reducing its expenditures.***

IV.d. Results for the financial sustainability of PAs in Costa Rica

The results from this analysis indicate (see above table 31) **that the system is NOT financially sustainable in ANY of the scenarios** (base, medium or high), when excluding payment for externalities associated with the water function, **i.e. the system cannot cover ALL of its expenses (Line 1 column 7)**. **This is also evident in column 9, where all scenarios produce negative NPVs, when externalities are not included (line 1): US$ -85.6 million (Base Scenario); US$ -81.9 million (Medium Scenario) and US$ -59.8 million (High Scenario)**, which shows that in the High Scenario expenditures increase more quickly than income, and the same happens with the Medium Scenario in regard to the Baseline Scenario (*the sustainability level required for the high scenario is higher than that required for the medium scenario, and that of the medium in turn is greater than that required for the baseline scenario; in other words, in terms of sustainability, HS>MS>NS*). The system appears to be the **least financially sustainable** when, in addition to excluding externalities, the system is **not** able to include income from surpluses transferred (line 1, column 10, in all three scenarios): **US$ -108.7 million; US$ -107.6 and US$-100.7 million,** respectively for the Base Scenario, Medium Scenario and High Scenario.

The result of the system's financial unsustainability is consistent with the barrier identified in Volume I of the Study Report – also integrated into Barrier No 2 in the prodoc section I-9 - regarding the lack of internalization of externalities produced by the PAs. Without a real capture of these externalities, expenditures will continue to exceed income from all sources: Taxation, visitation, and income "*not perceived*," even if the system appropriates the transferred surpluses.

As can be observed in above table 31, the results enable an analysis of the Medium Scenario and High Scenario, for protected areas in Group A (Manuel Antonio, Volcán Poás and Volcán Iraza National Parks) regarding the effect on the System's finances, if the growing demand for visiting these places is accommodated. However, given their current saturation level, without the accompanying investment it will not be possible to accept more visitors to these places[31], even if the carrying capacity is increased to acceptable levels. For example, in the Medium Scenario, the NPV of those revenues reaches the sum of 10.3 million, and in the High Scenario this amount rises to US$ 20.5 million. These resources are sufficient to finance the investment required to receive said additional visitors. A similar situation occurs when analyzing the present value of the consumer surpluses transferred (in these places) only to visitors in Group A: US$ 23 million in the Base Scenario and US$ 25.7 and US$ 31.9 in the Medium Scenario and High Scenario, respectively. These resources should not simply continue to be transferred as surpluses to visitors. Unless the system carries out the modifications or adjustments in monopolistic strategies required to appropriate them, it is basically allowing hotels - simply by making use of buses, guides and selling fruit – to capture rent for these PA environmental services by charging for guided visits.

IV.e. Identified potential for increasing SINAC's revenue capture

[31] Notably, this will actually be addressed by the Project through the co-financed activities of the IADB-funded Sustainable Tourism Programme.

The feasibility analysis provides important findings regarding the general economic and financial sustainability of Costa Rica's PA System. Effectively, the scenarios modeled show that the system has a high potential for generating its own economic and financial benefits in varying degrees. **If** the system receives even partial payment for its generation of environmental services that recognize its economic contribution in the form of positive externalities; if it optimizes its fee structure and makes the necessary adjustments to improve its collection of tax revenues; if the trend of increasing visitation to PAs in group B PAs continues (high visitation growth rates and mid level contribution of benefits); if the System carries out the adjustments needed to satisfy the demand for visitation to PAs in Group A; if it controls spending (particularly on staff salaries); then the system is quite capable of generating enough resources even to pay the salaries of its employees to varying degrees. The financial analysis arrives at a logical result from the economic standpoint: If the country does not pay the System for its positive environmental externalities in water through the payment of environmental services; if it does not optimize its fee structure and the way it collects taxation revenues; if it does not take advantage of the unsatisfied demand for visitation; and if it must ask for help to cover its human resources expenditures; then the System will be financially unsustainable.[32]

In response to the above conclusions, the following provides a summary of some of the main Study findings and recommendations pertaining to identified potential for increasing SINAC's revenue capture.

- **Suggestion A: Investment in re-profiling and capacity development of PA System staff**

An important element for the System's economic and financial sustainability is related to its capacity for managing these environmental goods and servicess. The economic modeling and financial flows indicate that how the fee policy is managed markedly influences the sustainability of the system. The same thing occurs with tax revenues, wherein the System's ability to program and manage the collection of these revenues determines whether they will effectively be captured. Yet, **expenditures for the salaries of PA System staff (in the Ordinary Budget) imposes a very heavy financial burden on the System.** Due to its large size the System has more than 1,000 employees. The financial analysis shows clearly that spending on human resources must be curtailed, as it shows a high rate of growth in real terms (an average of 10% per year over the last decade), which represents an important portion of the System's resources. In effect, expenditures on staff services have doubled (to close to $8 million as of 2005). It is therefore important to control hiring and expenditures on PA System staff.

Hence, the financial sustainability - and therefore the economic efficiency of the System - depends to a large extent on investments in professional, suitably trained human capital to stimulate greater productivity, with more focus on the quality and not quantity of staff hired. The Project is addressing this capacity need in Outputs 2.4 and 3.6. Moreover, to be sustainable and efficient, a System with more than 1000 employees demands and needs a Human Capital Strategy for the medium and long term that is incentive compatible and **at the same time** can meet the System's goals of economic and biological sustainability. This recommendation is addressed through Output 2.3.

In addition to the above, to achieve the System's priority of financial and economic sustainability—which underpins its biological sustainability—it is advisable that SINAC incorporate into its organizational structure a **unit of professionals specializing in economic-financial management**. Such a unit will enable the System to manage itself internally– with its own capacity and in harmony with the rest of its structure – and will be responsible for catalyzing the activities required to overcome the identified barriers and threats to achieving the System's economic and financial sustainability. This recommendation is addressed through Outputs 2.1, 3.4 and 3.6.

[32] See the PDF B Report, Volume II.

- **Suggestion B: Introduction of an optimum sliding and diversified PA Entry Fee Policy and increased investment in PA infrastructure**

Table 32 below presents income from total visitation to the Protected Area System for 1995, 2000 and 2005, as well as estimates for 2010, 2015 and 2020 by PA group. In addition the table presents average growth rates for the periods 2006-2010, 2010-2015 and 2015-2020. Income from total visitation reported in 2005 reached US$ 5 million and the average annual growth rate for the past 10 years is 11%. According to estimates undertaken for the Base Scenario (BS), total income generated from visitation (including transferred surpluses) will reach US$ **6.9 million** in 2010 and US$ **9.1 million** in 2020. This corresponds to an annual average growth rate in income (for the 2006-2020 period) of 2.5%. In the Medium Scenario (MS) these reach US$ **9.2 million** and US$ **16.1 million** at a growth rate of 5.5% and in the High Scenario (HS), US$ **11.34 million** and US$ **26.2 million**, respectively (growing at 8.4% annually).[33] It is important to recall that income not perceived represents income that could be made but is not made because the System does not expand the infrastructure as required to meet the existing demand for visits in the Group A PAs, and represents therefore the estimation of the excess demand.

Table 32. – Revenue from visitation by PA Group, historical figures (1995-2005) and projected by scenario (base, medium and high) (2006-2020), in thousands of US$

		A				B	C	C'	Total 1 *	Total 2 **
		Dejados de percibir	Ingresos recibidos	Excedentes Transferidos	Subtotal					
BASE	2010	-	2.056	2.056	4.112	2.117	633	98	4.904	6.960
	2015	-	2.056	2.056	4.112	2.939	660	141	5.796	7.853
	2020	-	2.056	2.056	4.112	4.181	676	205	7.118	9.175
	06-10	-	-	-	-	6,3%	0,3%	7,3%	2,7%	1,8%
	10-15	-	-	-	-	6,7%	0,8%	7,5%	3,3%	2,4%
	15-20	-	-	-	-	7,3%	0,5%	7,8%	4,1%	3,1%
	06-20	-	-	-	-	6,8%	0,6%	7,6%	3,5%	2,5%
MEDIO	2010	612	2.805	2.101	5.518	2.828	734	129	7.108	9.209
	2015	1.243	2.805	2.486	6.534	4.342	857	232	9.478	11.964
	2020	2.013	2.805	2.955	7.773	6.914	1.006	424	13.161	16.116
	06-10	34,7%	-	3,3%	38,1%	8,3%	3,0%	12,3%	5,3%	4,8%
	10-15	16,4%	-	3,4%	19,9%	8,9%	3,1%	12,5%	5,9%	5,3%
	15-20	10,5%	-	3,5%	14,0%	9,7%	3,2%	12,8%	6,7%	6,1%
	06-20	19,0%	-	3,4%	22,4%	9,0%	3,1%	12,6%	6,1%	5,5%
FUERTE	2010	1.149	2.805	2.428	6.382	3.762	1.039	167	8.922	11.349
	2015	2.482	2.805	3.240	8.527	6.629	1.269	374	13.559	16.799
	2020	4.291	2.805	4.340	11.436	12.406	1.567	848	21.917	26.257
	06-10	36,3%	-	5,9%	42,1%	10,9%	3,9%	17,3%	7,8%	7,4%
	10-15	17,9%	-	5,9%	23,8%	11,9%	4,1%	17,5%	8,6%	8,1%
	15-20	11,9%	-	6,0%	17,9%	13,2%	4,3%	17,8%	9,9%	9,2%
	06-20	20,5%	-	5,9%	26,4%	12,2%	4,1%	17,5%	8,9%	8,4%

Históricos

Ingresos			Crecimiento		
1995	2000	2005	95-00	00-05	95-05
2.584	2.445	5.065	5,7%	11,4%	11,1%

*Total 1: Includes income received and not perceived from visitation.
**Total 2: The total of all income.

To achieve financial sustainability it is recommended that the system develop an **Optimum Fee Policy**, in order to take advantage of its monopoly and maximize the generation of benefits from visitation,

[33] The PDF B Study provides more details in Section IV. 4.2.

especially for Group A PAs, with high visitation demand and saturation in high season. As SINAC is legally empowered to set a differentiated fee scale - and in order to help cover the entire cost of the System - there is no economic reason why SINAC should not use a differentiated fee schedule (group rates for entry fees and optional services) with a **sliding scale for park entry fees** (second or third, group rates, etc.) that utilizes all existing studies (i.e. Adamson, *op cit;* TNC-SINAC, 2004, etc.), which identify and list alternative services that could be offered. The analysis shows that some parks, such as Manuel Antonio and Póas Volcano, are losing close to half a million dollars per year in unperceived revenue. The Study shows how a sliding entry fee - which could increase by 20% for Costa Rican nationals and 40% for foreign visitors to Group A parks, while keeping the rates in groups B, C and C´ constant (given the forecast of visitor evolution) - would be **capable of generating an NPV income increase of more than US$ 23 million** from the Base Scenario to the Medium Scenario and a similar rise from the Medium Scenario to the High Scenario through a 40% increase in fees. **This economic management of entry fees is important to undertake in the System in order to optimize its income**. The project is addressing this recommendation through Output 3.3.

The usual objection to this argument is that in the past when the entry fees have increased, visits declined. Nevertheless, Volume I of the Study Report contains technical annexes that demonstrate that in all econometric models there was no statistically significant correlation between entry fees and number of visitors. All aspects indicate that the decision to visit Costa Rica's PAs depends more on factors related to tourist levels in the country, along with airfare and accommodation costs, than on the entry fee itself, which is proportionately small compared to the cost of the trip.

Moreover, everything seems to indicate that tourism is shifting from the PAs with traditionally high visitation levels but limited biological diversity towards new areas that have a greater density of biodiversity. This is likely occurring as visitors seek out a more dynamic and intense experience with nature and its biodiversity. The situation offers an important opportunity for **optimizing and diversifying the entry fee structure** to diminish the risks associated with its present concentration. In this regard, it is recommended that a study to **Select and Prioritize Investments** be conducted to take advantage of this opportunity. The study should include estimates of the benefits derived from visitations and requirements in regard to infrastructure and services, carrying capacity, entry fee schedules and human resources. For instance, in the Group A PAs, which have a low level of biological diversity, it is important to consider whether additional investment processes will be allowed to enable greater visitation. Such investments may include building new trails and expanding existing facilities like parking and park infrastructure (restrooms, restaurants, etc.). Otherwise, the environmental goods and services that these parks generate will not increase; it is therefore important to review and update the studies on carrying capacity and make investment plans.

- **Suggestion C: Expansion of non-essential services**

It is also recommended to reconsider expansion of non-essential services as defined in the Law of Biodiversity (Articles 38 and 39), in order to enable economic benefit generating investments in PAs that will contribute to their economic and financial sustainability. In the short term, to mitigate the incompatibility of incentives and improve carrying capacity, the use of the present definition of non-essential services can be combined with public investment through a mixture of added values. In the Group A PAs (high visitation and low biodiversity), it is possible to carry out studies (of carrying capacity and size of additional investment required) to make significant improvements that will enable increased visitation.

Once the amount of the additional investment is known, the strategic localization of non-essential services can be analyzed so that these will help to extract surpluses from visitors. The added value of additional infrastructure (to be built) will be to recover the investment and a cost margin for substitution of biodiversity. For example, conservation could be encouraged in surrounding zones to gradually conserve

the biota in these zones, which already are poor in terms of biodiversity. This is only one example of how alternatives could be combined using the strict existing definition of non-essential services.

- **Suggestion D: Internalization of benefits produced by water externalities**

Notably, if the country decides to internalize even a fraction of the benefits produced by water externalities (by 25%, 35% and 50% in the Base Scenario, Medium Scenario and High Scenario, respectively) the System would be financially sustainable. On the other hand, the results indicate that where this partial internalization of PES is not achieved for the PA forests by 25%, 35% and 50% of PES for the Base Scenario, Medium Scenario and High Scenario, respectively, but internalization is achieved for PA hydrological services (column 8), then the NPV will be positive in all scenarios, showing that the system will be economically sustainable.

In this regard, a recent positive development is that the Government of Costa Rica has already committed to finance a part of the above identified financial gap by income from the new Water Tax (Canon de Agua). SINAC estimates that new revenue from this source will amount to a total of approx. US$ 2,851,320 over the planned five-year period of project implementation (2007-11) as per the following annual allocation. *Notably, this amount will constitute SINAC's cash co-financing for this project:*

	2007	2008	2009	2010	2011	Total Amount
25% allocation for SINAC (in USD)	244,250	351,270	639,480	699,310	916,910	**2,851,220**

*Type of reference exchange rate: 2007: US$1= colones 550.00; 2008: US$1= colones 594.00; 2009: US$1= colones 641.52; 2010: US$1 = 692.84; 2011: US$1 = 748.27

VI. Conclusion

In sum, the total financial needs, revenues and funding gap for all SINAC operations are as follows:

- The financial needs of SINAC amounted to between US$ 36 - 43.2 million annually for the period 2004-2006.
- Hence, a fair projection for SINAC's short-term future needs would be about US$ 40 million annually to cover SINAC's overall operations.
- Yet, SINAC is faced with a considerable funding gap: For 2004 it was more than 57% (US$ 24.8 million); for 2005 it was 49% (US$ 20.1 million); and for 2006 it amounted to 41% (US$ 15 million).
- While the trend is a decreasing funding gap, it still amounts to an average of 49%, meaning that ***close to half of the activities that SINAC is supposed to realize are currently without funding***. While this funding gap is minimized a bit by the additional temporary funds from cooperation (Part C above), the shortage of funds remains significant.

It should be noted that it is not possible to calculate the specific funding gap for PA management activities per se, given that SINAC presently is in no position to provide specific figures for financial needs for its PA management activities alone. This fact stresses the importance of the strong financial management support that this project will provide to SINAC's PA System and its individual PA units.

In response, it is of vital importance **to internalize the externalities generated** by the PA System, as only in this way can SINAC and its PA System pay for its expenditures. With the following combination of assumptions and measures taken, effectively, the scenarios modelled show that the PA System would have a high potential for generating its own economic and financial benefits in varying degrees.

Assumption:

- The trend of increasing visitation to PAs in group B PAs continues (high visitation growth rates and mid-level contribution of benefits).

Measures:

- The PA System must receive even partial payment for its generation of environmental services that recognize its economic contribution in the form of positive externalities.
- It must optimize its fee structure and make the necessary adjustments to improve its collection of tax revenues.
- It should carry out needed adjustments to satisfy the demand for visitation to PAs in Group A.
- It should control spending (particularly on staff salaries).

In summary, economically the PA System is sustainable (the economic benefits are greater than their costs in a planning horizon to 2020), in the Baseline Scenario as well as the Medium and High Scenarios. *Financially, however, when ONLY the benefits generated and simultaneously appropriated and included in the System's finances are taken into account, the sustainability of the System decreases, making it unable to cover its expenditures.* If the country does not pay the PA System for its positive environmental externalities in water through the payment of environmental services; if it does not optimize its fee structure and the way it collects taxation revenues; if it does not take advantage of the unsatisfied demand for visitation; and if it must ask for help to cover its human resources expenditures; then the System will be financially unsustainable.[34] In this regard, the System's financial sustainability depends on a political decision to internalize the economic benefits generated by the PA System itself, which would enable it to effectively cover its costs.

[34] See the PDF B Report, Volume II.

PART IX: PILOT DEMONSTRATIONS

TABLE 33: SUMMARY OF BACKGROUND INFORMATION ON PILOT DEMONSTRATION SITE IN TEMPISQUE CONSERVATION AREA (OUTPUT 4.4)

TEMPISQUE CONSERVATION AREA (ACT)	
Name of Pilot (Theme or Approach to be Tested)	Improving the effectiveness of PWA management through innovative human resources management processes in the ACT.
PA Management Category	Four Biological Reserves, three National Parks, 12 National Wildlife Refuges, three protection zones, three Wetlands.
Predominant Land Ownership of the PA (% public/private)	In the 17 PWAs considered in the process for which institutional presence is expected (out of 25 that exist in the ACT), 12,351 ha are State-owned, and 27,817 ha are privately owned. In the marine portion, 68,639 ha are protected. Considering both the terrestrial and marine areas, the publicly owned portion rises to 80,990 ha, or 74 % of the PWAs, compared to 26% privately owned (See attached table).
PA Size	25 PWAs cover 108,807 ha, of which 12,351 are terrestrial and 68,639 marine.
Main ecosystems/habitats represented	Dry forest, wet forest, pre-montane wet forest, pre-montane very wet forest, mangrove forest, sandy beaches, rocky beaches, rocky sea bottom, coral communities, freshwater lagoons, estuaries, palustrine wetlands.
Biodiversity of (national/global) importance	Las Baulas National Marine Park: main nesting beach for leatherback sea turtles in the eastern Pacific; RNVS Ostional: principal beach in the world for Atlantic Ridley Sea turtle nesting; RNA Cabo Blanco: one of the principal nesting sites for *Piqueros morenos*; RNVS Mata Redonda: freshwater lagoon with the highest diversity of water birds in Costa Rica; Lower Tempisque wetlands: protection of nesting and feeding sites of the Jabiru Mycteria; PN Barra Honda: system of 42 limestone caverns; eight protected beaches for nesting of sea turtles Baulas, Loras, Negra and Carey; biological corridor for eastern Pacific migratory marine species.
Main Stakeholders	Agro-industrial companies producing sugar cane, melons, shrimp, small scale fishing, livestock raising, forestry; tourism companies, coffee cooperatives, eight Municipalities; public and private universities, research centers, development associations, Rural Water Canal Associations, other public institutions, environmental NGOs, Catonal Agricultural Centers.
Socio-economic and demographic context (Main productive activities)	33,000 ha of tree farms, 7,000 ha of sugar cane, 3,800 ha of melons, 150,000 ha in private forests under conservation, growing sun and sand tourism industry, around 32 sun and sand tourism sites with infrastructure. Population: 174,000 inhabitants.
Main threats to biodiversity in the PA	Sedimentation in marine areas from terracing in high zones, forest fires, hunting, environmentally unfriendly activities in the buffer zone, sedimentation and wetland draining, incompatible activities carried out in lands declared PWAs but not yet acquired by the State.
State of conservation (Ramsar Sites, Management Plans, World Heritage Sites)	Ramsar Sites: RNVS Mata Redonda, Corral de Piedra Wetland and Tamarindo Mangrove Forest. PWA with management plans: PNM Las Baulas, RNVS Camaronal, RNVS Iguanita, RNVS Caletas – Ario and RNA Cabo Blanco (out of date). In preparation: PN Barra Honda, ZP Monte Alto, RNVS Karen Mogensen, RNVS Ostional, RNVS Conchal and RNVS Romelia.
Current management situation (Effectiveness, institutional presence, partnerships with municipalities, NGOs, GROs)	Annual, systematic monitoring of PWA management in RNVS Mata Redonda, Humedal Corral de Piedra, PNM Las Baulas, RNVS Camaronal, RNVS Iguanita, RNA Cabo Blanco, PN Barra Honda, PN Diriá, ZP Monte Alto, RNVS Ostional; support from the Federation of Municipalities of Guanacaste, Municipalities of Santa Cruz, Nicoya, Carrillo, Hojancha, Nandayure and Cóbano in activities such as participation in Local Councils and Watershed Management Commissions, road repair, trail construction and maintenance, municipal regulatory plans, wetland and mangrove protection. Cooperative alliances with MarViva, Fideicomiso Baulas, FUNDECODES, Conservation International, Fundación Amigos de Cabo Blanco, ASOTEMPISQUE, Fundación Amigos de Barra Honda, Fundación Monte Alto, Fundación Camaronal, ACOBIGUA, Fundación de Parques Nacionales, Asociaciones de Guías Locales de Ostional, Mata Palo, Tamarindo y Barra Honda, ADIO, Asociaciones de Brigadistas

	de Moracia, Hojancha, Nandayure, San Juan, ASEPALECO, Fundación Cerros de Jesús, UNDP, Canada-Costa Rica Debt Conversion Fund, ADEPEN. Public institutions that support management in ACT: FONAFIFO, IDA, INCOPESCA, Defensoría de los Habitantes, MAG.
Possible Activities and Expected Outcomes	Placement of qualified staff in eight PWAs that currently have none; increase qualified, trained staff in nine PWAs for research, shared management, visitor service; agreements and partnerships with the private sector for the creation of trusts and agreements in PWAs and their areas of influence, to guarantee the sustainability of valuable human resources in the PWAs; establishment by the Regional Office of a Human Resources Department with capacity to develop processes for analyses, recruitment, training and skills development, occupational health, quality of life in work, salary increases. This capacity development of ACT's regional office will help SINAC not only increase its institutional presence and therefore contribute to improve PA management efficiency. It will also help train SINAC field staff to manage its own human resources and finances, as well as increase the outreach capacities of the regional office to deal with the local business sector. In particular, this pilot will also seek to test innovative approaches to both joint business ventures between PA and local businesses, as well as to improve the management of private sector concessions in and around PA in the Nicoya Peninsula. **Some ideas to consider in formulating the proposal.** General Objective: Improve management and conservation of PWA natural resources, through innovative human resources management processes in the ACT. Improve management skills and strengthen outreach capacities with private sector. Specific Objectives: ✓ Position staff in 8 PWAs of the ACT that currently do not have staff. ✓ Increase staff in nine PWAs of the ACT where staff already are in place. ✓ Improve the technical and professional level of staff in place in the PWAs of ACT. ✓ Improve the quality of life of staff in place in the PWAs of the ACT. Some goals we hope to reach: ✓ 35 new staff members in PWAs. ✓ Presence of staff in 8 PWAs that have none at present. ✓ Increased staff in 5 PWAs that have staff in place. ✓ Set a minimum level of technical and professional proficiency for PWA staff. ✓ Annually monitor the effectiveness of management activities in the 17 participating PWAs. ✓ Establish programs for occupational health, quality of life and personal development of PWA staff. ✓ Create trusts, agreements and partnerships with private sector participation that ensure the sustainability of the human resources process in PWAs. ✓ Strengthen the ACT Human Resources Department by hiring two new qualified HR employees.

TABLE 34: SUMMARY OF BACKGROUND INFORMATION ON PILOT DEMONSTRATION SITE IN CORDILLERA VOLCÁNICA CENTRAL CONSERVATION AREA (OUTPUT 4.3)

CENTRAL VOLCANIC RANGE CONSERVATION AREA (ACCVC)	
Name of Pilot (Theme or Approach to be Tested)	Local partnerships and initiatives in managing buffer zones of the core areas of the Reserva de la Biósfera Cordillera Volcánica Central (Central Volcanic Range Biosphere Reserve, RBCVC).

PA Management Categories	The RBCVC was designated by UNESCO on January 27, 1988 and covers approximately 101,754 ha. (Map 1). The Reserve seeks to promote the conservation of landscapes, ecosystems, species and genetic diversity; foster ecologically and culturally sustainable human economic development; and promote scientific investigation, education and training. Core Areas: • Volcán Poás National Park (6506.48 Ha) • Braulio Carrillo National Park (47582.56 Ha) • Volcán Irazú National Park (2000.36 Ha) • Volcán Turrialba National Park (1265.57 Ha) • Guayabo National Monument (232.72 Ha) Transition or Buffer Area: • Central Volcanic Range Forest Reserve • Biological Corridor between Volcán Turrialba National Park, Guayabo National Monument, and the Río Tuis Watershed Protection Area • Biological Corridor Volcán Irazú National Park, Tiribí Protection Zone, Central volcanic Range Forest Reserve, Braulio Carrillo National Park.
Predominant Land Ownership of the PA (% public/private)	48,059.46 Ha State-owned (83.45 %) 9,527.73 Ha privately owned (16.55 %)
Size of PAs	Core areas: 57,587.69 Ha
Main ecosystems/habitats represented	Due to climatic and topographical differences, the RBCVC contains ecosystems that are very rich in biological diversity. Seven of the 12 zones described by Holdridge's Life Zone classification are found herein, as well as three of the eight transition zones existing in Costa Rica. In the lowland rainforests of the RBCVC, the jungle is diverse and lush, with high trunks with little ramification. The principal forest wood species of value include *nazareno* (*Peltogyne purpurea*), *manú* (*Caryocar costaricensis*), caoba (*Swietenia macrophylla*), *roble* (*Quercus costaricensis*), *caobilla* (*Guarea rhopalacarpa*) and *gavilán* (*Pentaclethra macroloba*). Tree species include *botarrama* (*Vochysia ferruginea*), *ceiba* (*Ceiba pentandra*), *yos* (*Sapium pittieri*), *lorito* (*Weinmannia pinnata*) and *ojoche* (*Brosimun costaricanum*). The volcanic highlands hold cloud forests whose characteristic species include: oaks such as *roble* or *encino* (*Quercus* spp), evergreens (*Podocarpus* sp) and magnolias (*Magnolia poasana*). Trees in this tier have irregular trunks, broad crowns and branching lower down. Epiphytic plants are usually abundant; most trees are covered with moss, *piñuela* plants, orchids and ferns. The forest floor is thick and spongy and covered with an uneven layer of mostly moss and ferns. Also abundant in this band are some shrubs of the ericaceae family, notably *Vaccinium consanguieum* and *Pernetia coriacea*. On the summit of the Irazú and Turrialba volcanoes, vegetation is stunted and consists of species native to the Costa Rican highmountain wetlands.
Biodiversity of (national/global) importance	The RBCVC is one of the most important regions of the country because of its endemism, mainly in regard to terrestrial vertebrates: It contains 80.7% of the endemic species of Costa Rica. Within its boundaries close to 6,000 plant species are protected, equal to 50% of the entire number of plant species present in Costa Rica's continental territory.

	The RBCVC harbors more than 65% of bird species reported for Costa Rica, including among these the king vulture (*Sarcoramphus papa*), the bellbird (*Procnias tricarunculata*), the jilguero (*Myadestes melanops*), the quetzal (*Pharomachrus mocinno),* the black turkey (*Chamaepetes unicolor*), the Emerald Toucanets (*Aulacorynchus prasinus*), a number of hummingbird species, the acorn woodpecker (*Melanerpres formicivorus*), the clay-coloured robin (*Turdus grayi*), toucans (*Ramphastos sulfuratus* and *Ramphastos swainsonii*), oropéndola (*Psarocolius montezuma*), trogons (*Trogon collaris and Trogon massena*), the Squirrel Cuckoo (*Piaya cayana*), the Ornate Hawk Eagle (*Spizaetus ornatus*) and the Great Green Macaw (*Ara ambigua*), among others. The RBCVC also shelters important populations of large mammal species, including most notably: white-faced capuchin (*Cebus capucinus*), Geoffroy's spider monkey (*Ateles geoffroyi*), the mantled howler monkey (*Alouatta palliata*), Baird's tapir (*Tapirus bairdii*), the puma (*Puma concolor*) and the jaguar (*Panthera onca*), all of which are classified as reduced populations or in danger of extinction in this country. Other large species include the saíno (*Tayassu pecari*) and the red brocket deer (*Mazama americana*).
Main Stakeholders	The target groups are: Rural Water Canal Associations (ASADAS) Development Associations Women's Groups and Associations Local Tourist Guide Associations Primary and secondary educational establishments Natural Resource Watchdog Committees (COVIRENAS) Local Tourism Chambers Municipal Environmental Commissions
Socio-economic and demographic context (Main productive activities)	The largest communities around the core area of the Central Volcanic Range Biosphere Reserve are: • Volcán Poás National Park: Varablanca, Bosque Alegre, Poasito and Bajos del Toro. • Braulio Carrillo National Park: San Ramón de la Virgen, El Mortero, Magsasay, San Jerónimo, Monserrat, Cascajal, Sacramento and Porrosatí. • Volcán Iraza National Park: San Gerardo and San Juan de Chicuá. • Volcán Turrialba National Park: La Pastora • Guayabo Natural Monument: Guayabo Although these are rural communities, they all have basic services such as a primary school, a health center, drinking water supply, electricity and public transportation. The lands around the RBCVC are basically used for agriculture and livestock raising. However, in recent years there has been a rise in the creation of tourism services such as small mountain refuges, coffee bars (sodas), restaurants, sale of local native products such as fruit, typical snacks and crafts. Many local populations are connected to the region's largest urban centers (Heredia, Alajuela and San José) by a system of well-signed highways in good condition. Local inhabitants are quite conservative and typical of Costa Rica's *campesino* population. Change does not occur here as quickly as in other parts of the country. Inhabitants are immigrants from other agricultural zones of our country. In regard to tourism and forms of recreation, many activities are related to the practice of popular sports such as soccer, indoor football and fishing, among others. In recent years, tourism activity generated by the core areas of the RBCVC has prompted the creation of local tourist facilities, producing a successful combination of agricultural and tourism activities that directly benefits surrounding communities.

Main threats to biodiversity in the PA	The main threats to biodiversity in the protected areas of the RBCVC are: a) Urban sprawl; b) the lack of land use planning; c) contamination of aquifers and springs; d) illegal hunting; e) illegal extraction of forest products; g) fragmentation of private property within the boundaries of national parks to construct urbanized, residential housing; and h) the growing visits of tourists as a result of its proximity to the International Airport Juan Santamaría, the capital of the Republic.
State of conservation (Ramsar Sites, Management Plans, World Heritage Sites)	The national parks mentioned form the core area of the Central Volcanic Range Biosphere Reserve; while the Central Volcanic Range Forestry Reserve is a transition or buffer zone. All of the core areas were established by executive decree and ratified by Law.
Current management situation (Effectiveness, institutional presence, partnerships with municipalities, NGOs, GROs)	All national parks have management plans, which are their primary planning instrument. All parks also boast an administrator, environmental educators, tourism operators and park rangers. Another initiative that that contributes to civil society participation in the administration of natural resources is the Project to Strengthen Municipal Environmental Management that is being implemented in coordination with the Municipal Development and Assistance Institute (Instituto de Fomento y Asesoría Municipal). This project involves 15 municipalities (local governments), 14 of which are within the RBCVC. The main objective of this partnership is to strengthen technical capacities in municipalities in pursuit of adequate management of natural resources and the environment. In the core area buffer zones, biological corridors are also being promoted to ensure connectivity and genetic flow among protected wilderness areas of the RBCVC and with these and protected areas of neighboring conservation areas. This will be achieved by the sound use of natural resources and the harmonized interaction of human activities and the environment. Actions in this regard include inter-institutional coordination, the work of local commissions, promotion of scientific investigation, payment for environmental services, promotion of sustainable community projects, and the protection of water resources for industrial, commercial, recreational and domestic use. Another activity is public participation in land use planning through the formulation and application of municipal regulatory plans. Currently, efforts are being made to establish the following biological corridors (BC): San Juan – La Selva BC, Montes del Aguacate BC, Central Volcanic Range–Talamanca Range BC, Intervolcanic BC, Cachí-Tapantí BC, Central Volcanic Range Forest Reserve - Pacuare Forest Reserve BC and the Paso de las Nubes BC.
Activities and Expected Results	Possible activities include forming partnerships and strengthening ongoing initiatives in surrounding communities to improve management capacity for community based projects, thereby generating opportunities and improving the quality of life of the inhabitants. It is expected that at least 18 community projects will be implemented with local governments, on the following themes: Community-based tourism, training for local guides, butterfly breeding farms, school-based plant nurseries, organic agriculture, water resource protection, strengthening municipal environmental management and natural resource watchdog committees (COVIRENAS). The aim is to develop small projects in these communities, each of which will include the following stages: • Diagnostic • Training in implementing and managing community projects • Purchase of materials, food, transportation • Project implementation • Technical assistance • Supervision

BUDGET

Diagnostic	$ 20,000
Training in management and project administration	$ 60,000
Purchase of materials, transportation	$ 40,000
Implementation of projects	$ 200,000
Technical assistance	$ 60,000
Supervision	$ 20,000
Total Budget	**$ 400,000**

YEAR BY YEAR IMPLEMENTATION

Year →	**1**	**2**	**3**	**4**	**5**	
Diagnostic	10,000	10,000				**20,000**
Training	10,000	30,000	10,000	5,000	5,000	**60,000**
Materials	10,000	10,000	10,000	5,000	5,000	**40,000**
Implementation	25,000	50,000	50,000	50,000	25,000	**200,000**
Tech, Assistance	10,000	15,000	15,000	15,000	5,000	**60,000**
Supervision	2,500	5,000	5,000	5,000	2,500	**20,000**
Total						**$400,000**

Table 35: SUMMARY OF BACKGROUND INFORMATION ON PILOT DEMONSTRATION SITE IN TORTUGUERO CONSERVATION AREA (OUTPUT 4.5)

Name (of the project, program or strategic action):	Local management and sustainable development in the buffer zones of Tortuguero National Park (PNT-ACTo)
General objective	• Promote processes and opportunities for participation that are oriented towards strengthening local management capacities in the conservation and proper management of biodiversity and natural resources, in order to improve the quality of life of rural communities situated in the buffer zone of PNT.
Specific Objectives	• Promote alternative uses of biodiversity and natural resources that are aimed towards achieving the sustainability of rural communities in the buffer zone of PNT. • Strengthen the local land use planning capacity of municipalities and local associations • Improve livelihoods opportunities in communities located in the buffer zone of PNT, with special emphasis on decision making for the achievement of social, economic and environmental benefits. • Implement processes and actions that improve practices in the direct use of biodiversity and natural resources, bringing these into line with the natural capacity of ecosystems. • Implement actions for education and dissemination of the importance and value of proper management and conservation of biodiversity and natural resources in the buffer zone of PNT. • Encourage alliances and coordination among public institutions, municipalities, NGOs, the private sector and grassroots organizations, to strengthen efforts in PNT buffer zone communities towards eco-systemic management of the territory. • Contribute to the construction, dissemination and appropriation of an agro-ecological culture in the region through appropriate communication mechanisms.
Goals	• There are at least five local organizations that are advancing projects for sustainable production and commercialization of biodiversity-based goods and services. • Two Local PNT Councils that promote the development and consolidation of the Tortuguero Biological Corridor are formed and functioning. • An inventory of natural resources existing in the zones adjoining PNT (biodiversity, endemic species, water, insect species, mammals, reptiles, birds, fish and other aquatic species, butterflies, wetlands and others) has been compiled. • Local inhabitants and staff of institutions and organizations have appropriated the importance of the Biological Corridor for the conservation of PNT • A network for coordination and enchainment among organizations and institutions present in the buffer zones of PNT has been established, in order to increase the effectiveness of actions undertaken • Environmental values and principles (environmental awareness) have been strengthened among local inhabitants and staff of institutions and organizations through environmental education and training and as a result of concrete

	in situ practices such as Integrated demonstration farms. • The biophysical, social, cultural and environmental context of the PNT buffer zone has been described. • A "stakeholder map" for the buffer zone of the PNT has been established, reflecting the types of participation in local efforts, projection, threats, and potential. • An environmental education and training program is under implementation for local decision making on biodiversity management in the PNT and its buffer zone. • A process to systematize the experiences of Project implementation is currently underway. • An auditing system for project implementation is currently underway.	
Duration	Years: 2007-2009	Months: January to December
Implementing Period	Start Date: July 2007	End Date: July 2009
Implementing Agency	Tortuguero Conservation Area- ACTo, within the Community Management and Biological Corridors-PGC Program	
Project Address (responsible party)	Name: Luis Rojas	Address: Guápiles, Limón
	Phone: 710 06 00 /Fax: 7101070	Email: luisrojas51@yahoo.com.ar
Project Address (responsible party)	Name: Laura Segura	Address: Guápiles, Limón
	Phone/Fax: 7100600/fax 7101070	Email: lbsegura@yahoo.com
Funding source and amount	Donor(s): ACTor/SINAC/MINAE Budget	Donor contribution: 102,000,000.00 colones
	Implementing agency co-financing: 40,000,000.00 million colones	Total (in thousands of colones): 102,000,000 million colones
Beneficiary entities:	Local community organizations in PNT buffer zone communities, the municipality of Pococí, public institutions such as MAG, IDA and IMAS, Local Councils, Natural Resource Watchdog Committees (COVIRENAS), tourism companies, local businesses, ACT visitors and the Tortuguero Regional Conservation Area Council (CORACTo).	
Current status:	Implemented: under implementation	Currently under implementation: 25%
	Under negotiation:	Other:
Geographic coverage (territory of application):	Communities adjoining the PNT: South Sector, Colorado District (Línea Vieja, Colorado, San Gerardo and la Aurora), La Fortuna, Ceibo, La Lucha, Monte Rey and Palacios, Linda Vista, Barra del Tortuguero, Barras del Colorado and Barra del Parismina.	
Strategic Baseline:	-Local organizational strengthening as a way of increasing the effectiveness of collective productive projects and their economic, social and environmental impacts. -Strengthening alliances among different sectors involved in processes within the PNT buffer zone. -Boosting the leadership role of organizations such as CORACTo, projecting the appropriation and sustainability of processes over time. -Recovering a territorial approach to construction so this orients actions implemented, in order to establish an holistic vision of territorial management. -Ongoing planning, monitoring, evaluation and systematization of this pilot experience for its subsequent dissemination (retrieving lessons learned) -Use existing information that could increase the efficiency of processes that are being promoted. -Re-start the work carried out in the Community Management Program PGC-ACTo, in communities located in these zones, making use of the knowledge and learning that was acquired.	
Other important aspects:	There is an urgent need to energize participation of local inhabitants, encouraging them to play their crucial role in building	

	comprehensive processes, taking into account a systemic-territorial approach in achieving their benefits.	
Focal Areas under the Protected Area Project:	**Barriers**	**Approaches**
	Absence of local management with a systemic-territorial focus.	Building individual and collective capacities at the local and institutional levels.
	Incipient social participation in establishing the Biological Corridor.	Social and environmental connectivity of the system with a territorial focus.
	There is a lack of profitable projects that could provide income for families in the zone to ensure their economic stability.	Organization and training as ways of overcoming obstacles within projects that can be successful and sustainable when implemented collectively.
	A number of favorable conditions exist but are not being taken advantage of, such as: scenic beauty, knowledge acquired over generations, enough land available for production, and above all the existence of many people with the desire to carry out creative activities through which they can generate income and help the environment.	Highlight the competitive advantages of this geographic area and the possibilities for the participation of different stakeholders in taking advantage of its potential.
	Insufficient financial resources	Boost the leveraging capacity of those trained and channel financial support towards local contributions.

Table 36: SUMMARY OF BACKGROUND INFORMATION ON PILOT DEMONSTRATION SITE IN OSA CONSERVATION AREA (OUTPUT 4.6)

OSA CONSERVATION AREA (ACOSA)	
Name of Pilot (Theme or approach to be piloted)	Coordination and strengthening of local environmental management initiatives for the Humedal Nacional Térraba Sierpe (Térraba Sierpe National Wetland) and its buffer zones.
PA Management Category	Wetland
Predominant Land Ownership in the PA (%public/private)	100% publicly owned
PA size	14,000 Ha
Main Ecosystems /habitats represented	• Terraba/Sierpe mangrove swamps are Costa Rica's largest mangrove forest. • The Rhizophora mangle and Pelliciera rhizophorae species predominate, but there are 5 additional species. • 87 species of fish have been reported. (Chicas 1995)
Biodiversity of (national/international) Importance	The Térraba Sierpe Nacional Wetland (H.N.T.S.), which holds the largest concentration of mangrove forest (40% of H.N.T.S is mangrove forest), was created by executive decree No. 22993 – MIRENEM of March 17, 1994 and is located in the canton of Osa, Province of Puntarenas, Costa Rica. It is a RAMSAR site and its conservation and protection is based on its being the largest wetland on the Pacific coast of Central America.
Principal Stakeholders	Local communities, local NGOs, environmental groups, investors (local and foreign)
Socio-economic and demographic context (Main economic activities)	Recreational tourism, extensive farming of African palm and rice, animal husbandry, small scale fishing
Main threats to Biodiversity in the PA	Fragmentation of the mangrove forest and associated ecosystems, loss of water surface area from sedimentation and over-exploitation of fishing resources.
Conservation Status (RAMSAR sites, Management Plans, World Heritage Sites)	RAMSAR site
Current Management Situation (Effectiveness, institutional presence, partnerships with municipalities, NGOs and grassroots organizations)	Efforts carried out collectively by neighboring communities, local NGOs and the Osa municipality. Since the formulation of the management plan in 1991 this initiative has fostered the participation of civil society in natural resource management, work has been done to coordinate specific projects related to Municipal Environmental Management, and International Wetlands Day has been celebrated each year on February 2nd. The aim of this collective effort is to strengthen the technical-operational capacities of the municipal environmental management office and strengthen the level of coordination and support in the municipal environmental commission of the Municipality of Osa Canton. The actions implemented include inter-institutional coordination, local commission initiatives, promotion of scientific investigation, payment of environmental services, promotion of sustainable community projects, protection of water resources for commercial, recreational and domestic uses; participation in land use planning through the formulation and implementation of municipal regulatory plans (the plan in force at present is the OSA canton's Regulatory Plan of the Canton and Coastal Area). Other areas that can be strengthened include a redefinition of wetland boundaries and a land ownership study.

Possible Activities and Expected Results of the Pilot

The foremost idea is to strengthen local management capacity by effectively incorporating the municipality in the application of the cantonal and coastal regulatory plan. This plan will emphasize key elements for conservation, including the restoration of the mangrove, Yolillo and palm forest, land use and territorial planning, local community management in outreach and environmental education, and identification of threatened species and those in danger of extinction.

At least 8 community projects are expected to be implemented in coordination with local government in the following areas: Community-based tourism; training for local guides; environmental education with special emphasis on mangroves; organic agriculture; water resource protection; an agreement with the Ministry of Public Education; strengthening of municipal environmental management and natural resource monitoring committees (COVIRENAS).

Small projects are planned for the communities surrounding HNTS. Each project will include the following stages:

- Situation analysis
- Training in implementation and management of community projects
- Purchase of materials, food, transportation
- Project implementation
- Technical assistance
- Supervision

Overall, the project will have a total budget of $ 250,000.00 distributed as follows:

BUDGET

Situation analysis	$ 20,000
Training in implementation and management of community projects	$ 10,000
Purchase of material, transportation	$ 30,000
Project implementation	$ 160,000
Technical assistance	$ 20,000
Supervision	$ 10,000
Total budget	**$ 250,000**

YEAR BY YEAR IMPLEMENTATION

YEAR →	**1**	**2**	**3**	**4**	**5**	**$**
Situation Analysis	10,000	10,000				20,000
Training	2,500	2,500	2,000	2,000	1,000	10,000
Material	10,000	5,000	5,000	5,000	5,000	30,000
Implementation	25,000	25,000	50,000	50,000	10,000	160,000
Technical Assistance	5,000	5,000	5,000	2,500	2,500	20,000
Supervision	2,500	2,500	2,000	2,000	1,000	10,000
Total						**250,000**

PART X: METHODOLOGIES USED DURING PDF B

PROCEDURE FOR THE COLLECTION AND ORGANIZATION OF BASELINE INFORMATION

1. The Baseline is understood as the set of activities carried out in the country by different stakeholders and directly related to the components of the project "Overcoming barriers towards the ecological, socioeconomic, and financial sustainability of Costa Rica's National Protected Area System" in regard to removing barriers, on the one hand, and consolidating the National Protected Area System on the other. Some activities related to the sustainable use of natural resources may also be considered as part of the baseline, where these are strategic activities aimed at guaranteeing biodiversity conservation. The Baseline is one of the elements that enables the estimation of Incremental Cost.
2. The barriers identified are collected in the Baseline Information Collection Format.
3. The project has a two-pronged approach: it centers on building systematic, institutional and individual capacities and developing strategic alliances with local stakeholders; it also aims to focalize efforts through the development of pilot projects in the administration of protected areas and their buffer zones.
4. In constructing the Baseline all stakeholders present (public, private and social entities) shall be described and taken into account in regard to what they do, where they do it, and how much they have invested over a predetermined period of time.
5. The List of Organizations (public institutions and civil society organizations) has been compiled with due consideration for the advances in project design, knowledge of the project's Technical Team and the results of the Study "Evaluation of the Socio-economic context of Costa Rica's Protected Area System," prepared by the Centro Internacional de Política Económica para el Desarrollo Sostenible (International Center in Economic Policy for Sustainable Development, CINPE), the Universidad Nacional de Costa Rica; and the study "Analysis of Stakeholders in the Protected Area System," prepared by Acción Sinérgica Consultores.

6. **A Format has been designed for the collection of information and is attached herein to enable the organized collection and systematization of the information.**

PART XI: PLAN FOR MONITORING AND EVALUATING THE IMPACT OF THE PROJECT

Project monitoring and evaluation will be conducted in accordance with established UNDP and GEF procedures and will be provided by the project team and the UNDP Country Office (UNDP-CO) with support from UNDP-GEF. The Logical Framework Matrix in the main project document provides performance and impact indicators for project implementation along with their corresponding means of verification. These will form the basis on which the project's Monitoring and Evaluation system will be built.

The following sections outline the principal components of the Monitoring and Evaluation Plan and indicative cost estimates related to M&E activities. Emphasis is placed on harmonizing, to the fullest extent possible, the project's M&E activities with routine M&E activities of SINAC. Adaptive management will be an essential ingredient in PA management plans as well as in the PA and individual performance evaluation systems that will be instituted through the project. This will increase the chance of M&E results being fed back and implemented on the ground. The project's Monitoring and Evaluation Plan will be presented and finalized at the Project's Inception Report following a collective fine-tuning of indicators, means of verification, and the full definition of project staff M&E responsibilities.

Monitoring and Reporting

Project Inception Phase

A Project Inception Workshop will be conducted with the full project team, relevant government counterparts, co-financing partners, the UNDP-CO and representation from the UNDP-GEF Regional Coordinating Unit in Panama, as well as UNDP-GEF (HQs) as appropriate.

A fundamental objective of this Inception Workshop will be to assist the project team to understand and take ownership of the project's goals and objectives, as well as finalize preparation of the project's first annual work plan on the basis of the project's logframe matrix. This will include reviewing the logframe (indicators, means of verification, assumptions), imparting additional detail as needed, and on the basis of this exercise finalize the Annual Work Plan (AWP) with precise and measurable performance indicators, and in a manner consistent with the expected outcomes for the project.

Additionally, the purpose and objective of the Inception Workshop (IW) will be to: (i) Introduce project staff with the UNDP-GEF *expanded team* which will support the project during its implementation, namely the CO and responsible Regional Coordinating Unit staff; (ii) detail the roles, support services and complementary responsibilities of UNDP-CO and RCU staff vis-a-vis the project team; (iii) provide a detailed overview of UNDP-GEF reporting and monitoring and evaluation (M&E) requirements, with particular emphasis on the Annual Project Implementation Reviews (PIRs) and related documentation, the Annual Project Report (APR), Tripartite Review Meetings, as well as mid-term and final evaluations. Equally, the IW will provide an opportunity to inform the project team on UNDP project related budgetary planning, budget reviews, and mandatory budget re-phasings.

The IW will also provide an opportunity for all parties to understand their roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms. The Terms of Reference for project staff and decision-making structures will be discussed again, as needed, in order to clarify for all each parties responsibilities during the project's implementation phase.

Monitoring Responsibilities and Events

A detailed schedule of project reviews meetings will be developed by the project management, in consultation with project implementation partners and stakeholder representatives and incorporated in the Project Inception Report. Such a schedule will include: (i) Tentative time frames for Tripartite Reviews, Steering Committee Meetings, (or relevant advisory and/or coordination mechanisms) and (ii) project related Monitoring and Evaluation activities.

Day to Day Monitoring

Day to day monitoring of implementation progress will be the responsibility of the Project Coordinator based on the project's Annual Work Plan and its indicators. The Project Team will inform the UNDP-CO of any delays or difficulties faced during implementation so that the appropriate support or corrective measures can be adopted in a timely and remedial fashion.

The Project Coordinator will fine-tune the progress and performance/impact indicators of the project in consultation with the full project team at the Inception Workshop with support from UNDP-CO and assisted by the UNDP-GEF Regional Coordinating Unit.. Specific targets for the first year implementation progress indicators together with their means of verification will be developed at this Workshop. These will be used to assess whether implementation is proceeding at the intended pace and in the right direction and will form part of the Annual Workplan. The local implementing agencies will also take part in the Inception Workshop in which a common vision of overall project goals will be established. Targets and indicators for subsequent years would be defined annually as part of the internal evaluation and planning processes undertaken by the project team.

Measurement of impact indicators related to global benefits will occur according to the schedules defined in the Inception Workshop and tentatively outlined in the indicative Impact Measurement Template at the end of this Part. The measurement, of these will be undertaken through subcontracts or retainers with relevant institutions or through specific studies that are to form part of the projects activities.

Periodic Monitoring

Periodic Monitoring of implementation progress will be undertaken by the UNDP-CO through quarterly meetings with the project proponent, or more frequently as deemed necessary. This will allow parties to take stock and to troubleshoot any problems pertaining to the project in a timely fashion to ensure smooth implementation of project activities.

UNDP Country Offices and UNDP-GEF RCUs as appropriate, will conduct yearly visits to projects that have field sites, or more often based on an agreed upon scheduled to be detailed in the project's Inception Report / Annual Work Plan to assess first hand project progress. Any other member of the Steering Committee can also accompany, as decided by the SC. A Field Visit Report will be prepared by the CO and circulated no less than one month after the visit to the project team, all SC members, and UNDP-GEF.

Annual Monitoring

Annual Monitoring will occur through the ***Tripartite Review (TPR).*** This is the highest policy-level meeting of the parties directly involved in the implementation of a project. The project will be subject to Tripartite Review (TPR) at least once every year. The first such meeting will be held within the first twelve months of the start of full implementation. The project proponent will prepare an Annual Project Report (APR) and submit it to UNDP-CO and the UNDP-GEF regional office at least two weeks prior to the TPR for review and comments.

The APR will be used as one of the basic documents for discussions in the TPR meeting. The project proponent will present the APR to the TPR, highlighting policy issues and recommendations for the decision of the TPR participants. The project proponent also informs the participants of any agreement reached by stakeholders during the APR preparation on how to resolve operational issues. Separate reviews of each project component may also be conducted if necessary.

Terminal Tripartite Review (TTR)

The terminal tripartite review is held in the last month of project operations. The project proponent is responsible for preparing the Terminal Report and submitting it to UNDP-CO and LAC-GEF's Regional Coordinating Unit. It shall be prepared in draft at least two months in advance of the TTR in order to allow review, and will serve as the basis for discussions in the TTR. The terminal tripartite review considers the implementation of the project as a whole, paying particular attention to whether the project has achieved its stated objectives and contributed to the broader environmental objective. It decides whether any actions are still necessary, particularly in relation to sustainability of project results, and acts as a vehicle through which lessons learnt can be captured to feed into other projects under implementation of formulation.

Project Monitoring Reporting

The Project Coordinator in conjunction with the UNDP-GEF extended team will be responsible for the preparation and submission of the following reports that form part of the monitoring process. In the following list, items (a) through (e) are mandatory and strictly related to monitoring, while (f) through (g) have a broader function and the frequency and nature is project specific to be defined throughout implementation.

a) Inception Report (IR)

A Project Inception Report will be prepared immediately following the Inception Workshop. It will include a detailed First Year/ Annual Work Plan divided in quarterly time-frames detailing the activities and progress indicators that will guide implementation during the first year of the project. This Work Plan would include the dates of specific field visits, support missions from the UNDP-CO or the Regional Coordinating Unit (RCU) or consultants, as well as time-frames for meetings of the project's decision making structures. The Report will also include the detailed project budget for the first full year of implementation, prepared on the basis of the Annual Work Plan, and including any monitoring and evaluation requirements to effectively measure project performance during the targeted 12 months timeframe.

The Inception Report will include a more detailed narrative on the institutional roles, responsibilities, coordinating actions and feedback mechanisms of project related partners. In addition, a section will be included on progress to date on project establishment and start-up activities and an update of any changed external conditions that may effect project implementation.

When finalized the report will be circulated to project counterparts who will be given a period of one calendar month in which to respond with comments or queries. Prior to this circulation of the IR, the UNDP Country Office and UNDP-GEF’s Regional Coordinating Unit will review the document.

b) Annual Project Report (APR)

The APR is a UNDP requirement and part of UNDP’s Country Office central oversight, monitoring and project management. It is a self -assessment report by project management to the CO and provides input

to the country office reporting process and the ROAR, as well as forming a key input to the Tripartite Project Review. An APR will be prepared on an annual basis prior to the Tripartite Project Review, to reflect progress achieved in meeting the project's Annual Work Plan and assess performance of the project in contributing to intended outcomes through outputs and partnership work.

The format of the APR is flexible but should include the following:

- An analysis of project performance over the reporting period, including outputs produced and, where possible, information on the status of the outcome
- The constraints experienced in the progress towards results and the reasons for these
- The three (at most) major constraints to achievement of results
- AWP, SAC and other expenditure reports (ERP generated)
- Lessons learned
- Clear recommendations for future orientation in addressing key problems in lack of progress

c) Project Implementation Review (PIR)

The PIR is an annual monitoring process mandated by the GEF. It has become an essential management and monitoring tool for project managers and offers the main vehicle for extracting lessons from ongoing projects. Once the project has been under implementation for a year, a Project Implementation Report must be completed by the CO together with the project. The PIR can be prepared any time during the year (July-June) and ideally prior to the TPR. The PIR should then be discussed in the TPR so that the result would be a PIR that has been agreed upon by the project, the executing agency, UNDP CO and the concerned RC.

The individual PIRs are collected, reviewed and analysed by the RCs prior to sending them to the focal area clusters at the UNDP/GEF headquarters. The focal area clusters supported by the UNDP-GEF M&E Unit analyse the PIRs by focal area, theme and region for common issues/results and lessons. The TAs and PTAs play a key role in this consolidating analysis.

The focal area PIRs are then discussed in the GEF Inter-agency Focal Area Task Forces in or around November each year and consolidated reports by focal area are collated by the GEF Independent M&E Unit based on the Task Force findings.

d) Quarterly Progress Reports

Short reports outlining main updates in project progress will be provided quarterly to the local UNDP Country Office and the UNDP-GEF regional office by the project team.

e) Periodic Thematic Reports

As and when called for by UNDP, UNDP-GEF or the Implementing Partner, the project team will prepare Specific Thematic Reports, focusing on specific issues or areas of activity. The request for a Thematic Report will be provided to the project team in written form by UNDP and will clearly state the issue or activities that need to be reported on. These reports can be used as a form of lessons learnt exercise, specific oversight in key areas, or as troubleshooting exercises to evaluate and overcome obstacles and difficulties encountered. UNDP is requested to minimize its requests for Thematic Reports, and when such are necessary will allow reasonable timeframes for their preparation by the project team.

f) Project Terminal Report

During the last three months of the project the project team will prepare the Project Terminal Report. This comprehensive report will summarize all activities, achievements and outputs of the Project, lessons learnt, objectives met or not achieved, structures and systems implemented, etc. and will be the definitive statement of the Project's activities during its lifetime. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the Project's activities.

g) Technical Reports

Technical Reports are detailed documents covering specific areas of analysis or scientific specializations within the overall project. As part of the Inception Report, the project team will prepare a draft Reports List, detailing the technical reports that are expected to be prepared on key areas of activity during the course of the Project, and tentative due dates. Where necessary this Reports List will be revised and updated, and included in subsequent APRs. Technical Reports may also be prepared by external consultants and should be comprehensive, specialized analyses of clearly defined areas of research within the framework of the project and its sites. These technical reports will represent, as appropriate, the project's substantive contribution to specific areas, and will be used in efforts to disseminate relevant information and best practices at local, national and international levels.

h) Project Publications

Project Publications will form a key method of crystallizing and disseminating the results and achievements of the Project. These publications may be scientific or informational texts on the activities and achievements of the Project, in the form of journal articles, multimedia publications, etc. These publications can be based on Technical Reports, depending upon the relevance, scientific worth, etc. of these Reports, or may be summaries or compilations of a series of Technical Reports and other research. The project team will determine if any of the Technical Reports merit formal publication, and will also (in consultation with UNDP, the government and other relevant stakeholder groups) plan and produce these Publications in a consistent and recognizable format. Project resources will need to be defined and allocated for these activities as appropriate and in a manner commensurate with the project's budget.

Independent Evaluation

The project will be subjected to at least two independent external evaluations as follows: -

Mid-term Evaluation

An independent Mid-Term Evaluation will be undertaken at the end of the second year of implementation. The Mid-Term Evaluation will determine progress being made towards the achievement f outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project's term. The organization, terms of reference and timing of the mid-term evaluation will be decided after consultation between the parties to the project document. The Terms of Reference for this Mid-term evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF.

Final Evaluation

An independent Final Evaluation will take place three months prior to the terminal tripartite review meeting, and will focus on the same issues as the mid-term evaluation. The final evaluation will also look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental goals. The Final Evaluation should also provide recommendations for follow-up activities. The Terms of Reference for this evaluation will be prepared by the UNDP CO based on guidance from the UNDP-GEF Regional Coordinating Unit.

Audit Clause

An annual audit of the financial statements relating to the status of UNDP (including GEF) funds according to the established procedures set out in the Programming and Finance manuals will be conducted. The Audit will be conducted by a commercial auditor engaged by the Government.

Table 37: Indicative Monitoring and Evaluation Work plan and corresponding budget

Type of M&E activity	Responsible Parties	Budget US$ *Excluding project team Staff time*	Time frame
Inception Workshop	▪ Project Coordinator ▪ UNDP-CO ▪ UNDP GEF	5,000	Within first two months of project start up
Inception Report	▪ Project Team ▪ UNDP-CO	None	Immediately following IW
Measurement of Means of Verification for Project Purpose Indicators	▪ Project Coordinator will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members	To be finalized in Inception Phase and Workshop. Indicative cost : 10,000	Start, mid and end of project
Measurement of Means of Verification for Project Progress and Performance (measured on an annual basis) + workshop for dissemination	▪ Oversight by Project GEF Technical Advisor and Project Coordinator ▪ Measurements by regional field officers and local IAs	To be determined as part of the Annual Work Plan's preparation. Indicative cost: 50,000	Annually prior to APR/PIR and to the definition of annual work plans
Conduct METT	▪ PMU and consultant	5,000	Mid-term and end
APR and PIR	▪ Project Team ▪ UNDP-CO ▪ UNDP-GEF	None	Annually
TPR and TPR report	▪ Government Counterparts ▪ UNDP-CO ▪ Project team ▪ UNDP-GEF Regional Coordinating Unit	None	Every year, upon receipt of APR
Project Management Group Meetings	▪ Project Coordinator ▪ UNDP-CO	None	Following Project IW and subsequently at least once a year
Periodic status reports	▪ Project team	None	To be determined by Project team and UNDP-CO
Technical reports	▪ Project team ▪ Hired consultants as needed	10,000	To be determined by Project Team and UNDP-CO
Mid-term External Evaluation	▪ Project team ▪ UNDP- CO ▪ UNDP-GEF Regional Coordinating Unit	30,000	At the mid-point of project implementation.

Type of M&E activity	Responsible Parties	Budget US$ *Excluding project team Staff time*	Time frame
	▪ External Consultants (i.e. evaluation team)		
Final External Evaluation	▪ Project team, ▪ UNDP-CO ▪ UNDP-GEF Regional Coordinating Unit ▪ External Consultants (i.e. evaluation team)	55,000	At the end of project implementation
Terminal Report	▪ Project team ▪ UNDP-CO ▪ External Consultant	None	At least one month before the end of the project
Lessons learned	▪ Project team ▪ UNDP-GEF Regional Coordinating Unit	20,000 (average 4,000 per year)	Annually
Audit	▪ UNDP-CO ▪ Project team	20,000 (average $4,000 per year)	Annually
Visits to field sites (UNDP staff travel costs to be charged to IA fees)	▪ UNDP Country Office ▪ UNDP-GEF Regional Coordinating Unit (as appropriate) ▪ Government representatives	20,000 (average one visit per year)	Annually
TOTAL INDICATIVE COST *Excluding project team staff time and UNDP staff and travel expenses*		US$ 225,000	

PART XII: LESSONS LEARNED

The project has been designed based on a careful evaluation of lessons learned from a wide range of sources. Notably, several other relevant GEF-funded BD-1 project documents were drawn on, such as the projects *Catalyzing the implementation of Uruguay's National Protected Areas System PIMS 3173* (UNDP-GEF PIMS 3173); *Regional System of Protected Areas for Sustainable Conservation and Use of Valdivian Temperate Rainforest* (UNDP-GEF PIMS 1207) and *Conservation and Sustainable Use of Biodiversity on the South African Wild Coast* (UNDP-GEF PIMS 1767) for PA Systems design and *Financial Sustainability of National Systems of Protected Areas* (UNDP-GEF Global) for PA sustainable financing information). Other useful sources were the UNDP-GEF Advisory Notes on BD-1 and Sustainable Financing, along with the recommendations of the *V World Parks Congress* (Durban, 2003), as well as lessons gained from practices and activities of the project's own preparatory phase. This section presents those lessons that were critical in guiding the Project design and represented ground for consultation during workshops held throughout the Preparatory Phase.

Table 38: Lessons Learned and Adopted Project Design Features

Lesson	Notes	Adopted Project Design Feature
A system approach improves the probability of substantial progress in conservation. It also promotes a truly integrated approach to linking conservation with other human endeavours. It also helps to target the selection of areas and additions to the PA estate in a more rational manner than *ad hoc* approaches. A plan cannot create an effective protected area system overnight, nor can it produce immediate change in factors, which may be compromising conservation status or management performance. ***It is, however, a potentially powerful tool and an essential step in achieving these ends [emphasis added]*** (Davey & Phillips, 1998).	A number of factors might lead to an ineffective or unworkable system plan, including: not specifying clear assumptions, rationale and criteria; not addressing key issues; failure to involve stakeholders, including local people; failure to raise political support for protected areas as a worthwhile concern; poor dissemination; overambitious and ignorance of budget constraints; and over reliance on external support and/or funding.	In response, the Project promotes a systemic approach, including the development of a PA System Strategic Action Plan to assist and promote the consolidation and strengthening of a representative PA System for SINAC and for the planning and orientation of a system that reflects the new political, management and environmental trends in the country, as well as the advances in the state of the art for PA systems worldwide (Output 1.4).
Evaluation of management effectiveness is a vital component of responsive, proactive protected area management.	Through evaluation, every success and failure can be used as an opportunity for learning, and continual improvement can be combined with anticipation of future threats and opportunities (Barber et al. 2004).	For this purpose, evaluation will be systematically built into overall PA management planning process. The WB/WWF *Management Effectiveness Tracking Tool* will form a critical element of project monitoring and progress assessment. A long-term evaluation plan, with an effective monitoring programme will be established for the PA System and its constituent PAs (See Output 2.5 and Part II, M & E). Special care will be given to ensure that all stakeholders have an opportunity to express their viewpoints in M & E activities, and for timely reporting of evaluation findings.
Establishing comprehensive and effective protected area systems requires improved governance. More attention must be paid to broadening the spectrum of governance models and mechanisms beyond the centralized, state-managed parks that currently dominate protected areas practice (Barber et al, 2004).	This is particularly relevant in a country like Costa Rica, which has embarked on a nation-wide decentralization and de-concentration process.	The project focuses on two elements which contribute to improved governance: emphasis on capacity building to improve the government's ability to 'govern', and sharing power through co-management systems, by testing different governance models suitable to different scenarios to promote participation of key stakeholders and equitable sharing of the costs and benefits of establishing and managing PAs (See Outcomes 4 and 5 for details).

Focus on capacity building. Conservation will only succeed if we can build institutions, organizations, and networks and enable conservation practitioners to identify and solve their own problems and take advantage of opportunities. In particular, we need to empower all stakeholders to fulfill their role in protected area management (World Parks Congress Recommendation 5.01).		With a strong emphasis on capacity building, the project will strengthen key capacities to consolidate and strengthen SINAC's PA System and effectively manage PAs, at the systemic, institutional, and individual level. This includes developing a supportive legal, policy and strategic frameworks (Outcome 1, Output 3.1-3.3), strengthening institutional capacities (Outputs 2.1-2.3; 3.4, 3.5), and strengthening individual skills and capacities (Outputs 2.4, 3.6).
Financial sustainability. Many projects fail to maintain their impacts due to not giving appropriate consideration to financial sustainability. There is a need to account for financial sustainability at the outset, with a clear strategy for ensuring that recurrent costs can be absorbed.	Also, as stressed at the fifth World Parks Congress in Durban (2003), inadequate financial resources for protected areas – particularly long-term resources – remain a fundamental barrier to achieving biodiversity conservation goals.	For these reasons, project design considers financial issues as a cross-cutting element. Output 3.1 will develop a system-wide financial strategy and business plan, with a diversified set of funding sources. Output 3.4 will test specific tourism-based resource generating mechanisms. The selection of pilot sites for field demonstrations considered, among a number of criteria, their potential for revenue generation to increase sustainability of project interventions and sharing of benefits with local stakeholders. Economic valuation and evaluation studies will determine the values of resources provided by PAs and the opportunity costs for different types of landowners that may wish to implement private reserves. Output 3.6 is aimed at developing individual capacities to ensure sustainable financing.
Effective and genuinely inclusive stakeholder participation is a key ingredient for success in protected area planning, design and management. Without the support of those upon whom the project impacts, progress will be slow and unsatisfactory to all involved.	Effectively involving stakeholders will ensure long-term success of conservation at a national level because of the relevant knowledge and experience incorporated by them.	From the outset, throughout the planning and project design phases, extensive use has been made of input provided by government ministries, local governments, NGOs working in the field, private landowners and representatives of local communities. The project planning phase successfully helped strengthen "horizontal" links and for engaging with realistic stakeholder support. See the Stakeholder Involvement Plan (Section IV Part III) for full details of proposed participation mechanisms.
Information, education and awareness building. Improving the functioning of a PA System involves the active involvement of a wide range of stakeholders with different levels of technical expertise and local knowledge.	Strengthening communication and information exchange among protected area managers and other stakeholders is also critically important. Participation needs to be informed, and this requires the provision of adequate and timely information to stakeholders.	The Preparatory Phase allowed the identification of knowledge gaps and, in particular, a difficulty to access the abundant and valuable existing information. The Project will contribute to the collection, systematization, analysis and dissemination of the data related to PA management and as an input for adaptive management (see Output 2.5). By investing in awareness raising, the project will build new constituencies for conservation amongst the public at large, which will also be crucial for sustainability (see Output 3.7).

PART XIII: LIST OF DOCUMENTS PRODUCED DURING THE PREPARATORY PHASE

Table 39. – List of documents produced during the PDF-B Phase.

No.	Title	Author
1	Project Document for PDF B Phase	Tim Boyle
2	Work Plan 2005-2006	Tine Rossing Feldman
3	Inception Report	Mario Boza
4	Assessment on the current state of biodiversity and sustainability ecological representativeness of the Protected Areas System.	INBio
5	Evaluation of the Legal Framework that affects the management of Costa Rica´s Protected Areas System.	CEDARENA
6	Analysis of the institutional structures for Protected Area Management/ Tracking Tool Application	INNOVA/CCT
7	Analysis and Evaluation of the financial sustainability of Costa Rica`s system of Protected Areas.	CIESA
8	Stakeholders Analysis	Acción Sinérgica
9	Socioeconomic context of Protected Areas.	CINPE
10	Incremental Cost Analysis	Deyanira Vanegas

PART XIV: RESPONSE TO GEF SECRETARIAT COMMENTS AT PROJECT CONCEPT.

Section	Comment	Location of where addressed
Project Design	Please note that GEF support to assessing and filling gaps in PA systems is to be invested in those sites that are of high biodiversity value and globally significant.	See Section IV, Parts IV and V
	Please specify which large predators (paragraph 48) are in danger due to the small size and isolation of the protected areas and how the project will address this.	
	Please clarify the relationship between the management categories in Costa Rica with the IUCN categories.	See Section IV, Part V, Table 18
	Please clarify what the barriers have been to implementation of Gruas I recommendations (beyond limited financial resources) and how the project design responds to these barriers.	See Section IV, Part VI (Ecor-regional Approach)
	The GEF has invested approximately US$ 26 million dollars in conservation in Costa Rica and through this amount has leveraged an additional US$50 million. Yet, the project design fails to explain adequately what the results of these efforts have been and how the project design reflects the experiences from these 7 projects (this does not include the 6 regional projects Costa Rica is participating in.)	The entire project is focused on system level strengthening which no other GEF funded project has supported. The barriers to system level strengthening and the resulting outcomes have been based on the lessons learned at specific sites where GEF has been involved and lessons from the MBC, see Section IV, Part XII. The project strategy hence is directly tailored from these and other lessons in the region. See Section 1, Part II.

	Furthermore, little mention is made of what has been learned from the Mesoamerican Biological Corridor and how the project will complement this investment. Surprisingly, the project design notes that the only lessons learned from the GEF portfolio that will be applied to this project emanate from the SGP. Given that UNDP serves as the Implementing Agency for four of the 7 national projects and is the lead Implementing Agency for the Mesoamerican Biological Corridor project this is cause for concern. Please clarify what has been learned from these projects and how that is being incorporated into the design of this project. The GEF has made considerable investments in Costa Rica. This project should not be allocating more money to those protected areas that are already receiving GEF support through either national or regional projects. Please clarify complementarity between the existing GEF and non-GEF portfolio in Costa Rica and the proposed project. Regarding indicator 2 under outcome one (paragraph 77), please clarify the relationship between an increased score on the WB/WWF METT and the barriers that the project hopes to remove. An increase in total score	See Section IV, Part XII

	may be deceiving if improvement is not in the areas where the greatest problems exist in the PAs that the project is trying to address. Please also explain the criteria that will be used to select the sample of the 15 protected areas. Please note that the GEF portfolio has some good examples of developing management plans for PAs within a system (e.g., WB China Nature Reserves Management project) and then extending and replicating the process beyond the targeted PAs. There may be lessons from these experiences that can be incorporated into this project design.	See Prodoc, Section II, Part II, log frame indicators, See Section IV, Part IX
Sustainability (including financial sustainability)	Please clarify what the project will do to secure the purchase of private lands the cost of which is estimated to be US$55 million.	See Section IV, Part VIII and Prodoc Part I.B. Incremental Cost Assessment

	Please explain how this shortfall factors into the financial sustainability strategy for the entire system. Please clarify the real annual budget shortfalls for managing the PA system and explain the strategy for meeting this shortfall. Currently (see paragraph 20 and 31) the shortfall appears to be US$ 8 million per year or about 20%.	
Replicability	Please note that the writing up of lessons and dissemination of documents rarely results in successful replication. Please describe the project approach and budget for knowledge transfer and rationale for the strategy. Please also clarify how the project will use existing regional platforms and regional GEF projects (CCAD, Mesoamercian Biological orridor, IABIN, etc.) for replication. This should not only be limited to UNDP GEF projects.	See Outcome 5 of the Project Strategy and the Replication Section in the Prodoc
Stakeholder Involvement	Please describe more fully the approach for stakeholder involvement; and in particular at the site level.	See Section IV, Part III
Monitoring and Evaluation	Please include the GEF Tracking Tool for Strategic Priority One.	See Part IV
Financing Plan	As part of the discussion on cost effectiveness, please describe alternate project approaches considered and discarded.	See Section I, Part II in prodoc
Core Commitments and	Please clarify how UNDP's	See Section I, Part II in Prodoc,

Linkages	national Environment and Energy Area, both in terms of UNDP financial investments and technical assistance, complements the project design and its implementation.	Linkages with the UNDP Country Programme
Consultation, Coordination, Collaboration between IAs, and IAs and EAs, if appropriate	As noted previously, the GEF is very active in Costa Rica. Please describe in detail the relationship and complementarity between the previous and ongoing GEF investments and this project.	See Section I, Part II in Prodoc, Linkages with, Consultation, Coordination between IAs / IAs / ExAs

PART XV: REFERENCES

I. Books and Magazines:

Acción Sinérgica Consultores (ASC). 2005. *Memoria del Taller de Análisis: Problemática Barreras para la Sostenibilidad de las Áreas Silvestres Protegida*s. Proyecto: Removiendo Barreras para la

sostenibilidad del Sistema de Áreas Protegidas de Costa Rica. SINAC-MINAE y PNUD. 23 y 24 de noviembre 2005.

Adamson, M. *Concentración geográfica y distribución por agentes económicos del Pago por Servicios Ambientales en Costa Rica: ¿Internalización o incentivos perversos?* Documento por publicarse IICE-UCR. Presentado en el Seminario sobre Conservación de Recursos Naturales. (DIC. 2003).

Aguilar S., Wo Ching E. 2001. *Manual de Competencias Ambientales Municipales.*

Arguedas, Stanley (2003a). *Manejo de áreas protegidas ante cambios globales*. En: AMBIENTICO. Revista mensual sobre la actualidad ambiental*. No. 121 (Octubre). 6-7.*

Arguedas, Stanley (2003b). *Nuevo paradigma en el manejo de áreas protegidas.* En: *Ambientales.* Revista Semestral de la Escuela de Ciencias Ambientales. Universidad Nacional. No. 26 (Diciembre). 8-15. RESUMEN.

Artavia, Gerardo, 2004. *Guía para la Formulación y Ejecución de Planes de Manejo de Áreas Silvestres Protegidas.* Ministerio del Ambiente y Energía, Sistema Nacional de Áreas de Conservación. 50 páginas.

Atmetlla, Agustín y Camacho, Luis. 1993. "M*anual para la prevención y denuncia de los delitos ecológicos"*.

Atmetlla, Agustín. "Manual *de Instrumentos Jurídicos Privados para la protección de los recursos naturales"* 1995

Asociación Ornitológica Costarricense. 2002*. Lista oficial de las aves de Costa Rica: comentarios sobre su estado de conservación*. Elaborada por Barrantes, G., Cháves-Campos, J., y Rodríguez, J. Zeledonia Boletín especial. Agosto, 2002.

Ballestero, Andrea. 2003. Políticas e instituciones para la gestión de áreas protegidas. En: *Ambientico. Revista mensual sobre la actividad ambiental*. No. 121 (Octubre). 10-12.

Banco Mundial y WWF, 2003. *Como informar sobre los avances en el manejo de áreas protegidas e individuales*. 18 páginas.

Barber. CV., Miller. K.R. and Boness. M: (eds). 2004. *Securing Protected Areas in the Face of Global Change: Issues and Strategies*. IUCN. Gland, Switzerland and Cambridge. UK. Xxxiii+ 234pp.

Barnes, T. s.f. *Landscape Ecology and Ecosystems Management*. University of Kentuchy, United States of America. 8 p.

Barrantes, Gerardo (2000). *Aplicación de Incentivos a la conservación de la biodiversidad en Costa Rica.* Santo Domingo de Heredia: INBio.

Barrantes, G. y Vega, E. *Estrategia Financiera para la Consolidación del Sistema Nacional de Areas de Conservación.* Informe Final. IPS-SINAC, 2002.

Bennett 2001. Citado por: EUROPARC-España. 2002*. Plan de Acción para los espacios naturales protegidos del Estado Español.* Ed, Fundación Fernando González Bernáldez. Madrid. 168 páginas.

Bennet, A. 2004. *Enlazando el paisaje: el papel de los corredores y la conectividad en la conservación de la vida silvestre*. Tr. Por José María Blanch. San José, Costa Rica: UICN. 269 p.

Borges, C., 2004. *Plan de Manejo. Parque Internacional La Amistad Talamanca.* Seder. The Nature Conservancy, USAID, MINAE.

Boza, M., A. Bien. 2002. *Consolidación del sistema de áreas protegidas*. En: Ambientico: Revista Mensual sobre la actualidad ambiental. No. 121. (Octubre). 10-12.

Brignoli, H. 2005. La dinámica demográfica de las poblaciones indígenas del trópico húmedo en América Central. (Censos 2000).

Brenes, Oscar (2003). *Institucionalidad y carácter de la protección de áreas en Costa Rica*. En: Ambientales. Revista Semestral de la Escuela de Ciencias Ambientales. Universidad Nacional. N. 26 (Diciembre). 3-7 RESUMEN.

Caalders J et al. 2000. *Tourism and biodiversity. Impacts and perspectivas of interventions inThe Netherlands and Costa Rica*. 2nd Edition-Buiten Consultancy. Utrecht, NL

Cajiao, María. 2003. *"Régimen legal de los recursos marinos y costeros en Costa Rica".*

Cajiao Jiménez, María Virginia. *"Guía Legal para reconocer el derecho de los Pueblos Indígenas al aprovechamiento y manejo de los recursos naturales en los territorios Indígenas de Costa Rica- Los derechos de los Pueblos Indígenas a sus recursos naturales*". Serie Guías Legales-Derechos Indígenas No. 2.

Calvo, J. *Presentación de resultados de estudio balance hídrico en bosque nuboso.* ITCR. 2004.

Carabias, Julia. 200*3* "*Capacidades necesarias para el manejo de las áreas protegidas en AL y el Caribe*", UICN.

Chacón, Carlos. 1996. "*Los delitos en la ley de conservación de la vida silvestre".*

Chacón, R. 1998. *Guía Jurídico Histórica del Decreto Territorial de los Pueblos Indígenas de Costa Rica*: Decretos Ejecutivos que delimitan los territorios indígenas. San José, Costa Rica. p 115.

CENCE-ICE (2003*). Informe.* CENCE 2003. Centro de Control de Energía.

Centro Científico Tropical (CCT). 2005. Corredor Biológico San Juan-La Selva, Costa Rica. *un proyecto del Corredor Biológico Mesoamericano para la protección de la lapa verde y su entorno*. PNUD-Critical Ecosystem Parteneship Fund-Agencia Canadiense de Desarrollo-Corredor Biológico Mesoamericano-CCT.

CINPE, 2003. *Aportes de los Beneficios Socioeconómicos de los Parques Nacionales y las Reservas Biológicas al Desarrollo de Costa Rica.*

Código de Recursos Naturales y Legislación Ambiental en Panamá. 2002.

Comité de Manejo del Parque Nacional Cahuita. 2002. *Informe de labores de mayo a diciembre del 2002.* Parque Nacional Cahuita, Área de Conservación La Amistad-Caribe. Limón, Cahuita: MINAE.

Cooney, Rosie. 2004. *"The precautionary principle in biodiversity conservation and natural resource management"* UICN.

Conservación Internacional, Instituto Nacional de Biodiversidad.2004. *Áreas importantes para la conservación de especies globalmente amenazadas en Costa Rica*. Informe final. Herrera, A., Arias, E, y Obando, V. Mimeografiado. 64 p.

Contraloría General de la República. *Estudio presupuestario y financiero de los recursos del Sistema Nacional de Áreas de Conservación*. 2002.

Corrales, O., Carrera, F. y Campos, J.J. 2005. El Bosque Modelo*: Una plataforma territorial para la aplicación del enfoque ecosistémico*. Recursos Naturales y Ambiente. 45: 6-12.

Cortés, J. & León, A. 2002. *Arrecifes coralinos del Caribe de Costa Rica.* Editorial INBio. 136 p.

Covey, Sthephen. *El liderazgo centrado en principios.* Editorial Paidós, Barcelona, 1991.

Davey, A.G. (1998). *National System Planning for Protected Areas*. IUCN, Gland, Switzerland and Cambridge, UK. X+71 pp.

Elkie P C, Rempel R S, Karr A p 1999 Patch Analyst User's Manual*: a tool for quantifying landscape structure.* Northwest Science and Technology. Ontario, Canada. 22p.

Erwin (1982) – 30 million/edwin, T.L. 1982: *Tropical forests: their richness in Coleoptera and other Artropod species.* The Coleopterist's Bulletin. 36, 74-75.

Estado de la Nación, 2003. *Armonía con la Naturaleza.* Programa Estado de la Nación en Desarrollo Humano Sostenibe. IX Informe. Capítulo 4. San José, Costa Rica.

Estado de la Nación, 2004. *Armonía con la Naturaleza.* Programa Estado de la Nación en Desarrollo Humano Sostenibe. X Informe. Capítulo 4. San José, Costa Rica.

Estado de la Nación, 2004. *Armonía con la Naturaleza.* Programa Estado de la Nación en Desarrollo Humano Sostenible. *X Informe.* Capítulo 4. 447 p. San José, Costa Rica.

Estrategia Nacional Ambiental 2005-2020.

Fallas, J. 2004. *Resumen Foro de Reintroducción de Especies silvestres a su medio natural. Foros de presentación de resultados de estudios ecológicos*. Programa conjunto INBio-SINAC. Banco Mundial. Mimeografiado. 3 p.

FONAFIFO. 2005. *Programa de Pagos de Servicios Ambientales*. Decreto Ejecutivo. No. 32226-MINAE PSA 2005.

Furst et al. 2004. *Desarrollo y conservación en interacción : ¿cómo y en cuanto se benefician la economía y la comunidad de las áreas silvestres protegidas en Costa Rica*. Informe final del proyecto interinstitucional INBio-CINPE.

García, R. 2002. Biología de conservación: conceptos y prácticas. Santo Domingo de Heredia: INBio.

Gómez, L.D. 1986. Vegetación de Costa Rica. Vol. I. En: L.D. Gómez, ed. *Vegetación y Clima de Costa Rica.* Con 10 mapas (escala 1: 200.000). EUNED, San José.

González, H. 1997. Turismo Social: *La Recreación, el Turismo y las Expectativas de los Costarricenses para Vacacionar*. Ponencia.

Guevara, L. 2002. *Los aportes de la bioprospección realizada por el INBio*. En: AMBIENTICO. Revista mensual sobre la actualidad ambiental. No. 100.

Hidalgo, C., Monge, R. C., & Vega Ch. O. 2004. *Informe preliminar de país sobre la situación nacional de los recursos zoogenéticos*. INTA-MAG-FAO, San José, C.R. 45 p.

Hodkinson and Casson (1991)- 1.84-2.57 million species/Hodkinson, I.D. and D. Casson. 1991: *A lesser predilection for bugs*: Hemiptera (Insecta) diversity in tropical rain forests. *Biological Journal of the Linnean Society*. 43.101-109.

Holdridge, L.R. 1967. *Life Zone Ecology.* Edición revisada. CCT, San José.

INBio (2002). Memoria INBio 2002. *Anual Report*. Instituto Nacional de Biodiversidad. Santo Domingo de Heredia: INBio.

ICE. 2002. Plan Nacional de Desarrollo Eléctrico 2002. CENPE.

Induni, Gustavo (2003) ¿*Hacia dónde encaminar nuestras áreas protegidas*? En: AMBIENTICO. Revista mensual sobre la actualidad ambiental. No. 121 (Octubre). 13-16.

IFAM, 2003. El *Sistema Nacional de Áreas de Conservación y los cantones de Costa Rica. Serie Cantones de Costa Rica No. 3.* Dirección de Gestión Municipal, Sección de Gestión y Desarrollo.

Jiménez, R. 2001. *Producción eléctrica y desarrollo sostenible.* En: Ambientico: Revista mensual sobre actualidad ambiental. No. 121 (Octubre). 13-16

Kappelle, M y Horn, S. 2005. *Páramos de Costa Rica*. Heredia, Costa Rica. Editorial INBio. p 29-36.

Laval, R.K.; Rodríguez –H., B. 2002. *Murciélagos de Costa Rica/Bats of Costa Rica*. Santo Domingo de Heredia, C.R., Editorial INBio.

MARN (Ministerio de Medio Ambiente y Recursos Naturales). 2002. *Manual de inventarios de la biodiversidad*. San Salvador, El Salvador. 119p

MARN (Ministerio de Medio Ambiente y Recursos Naturales). 2002. *Inventario de la Biodiversidad del Área Natural Protegida Normandía: Nivel de Paisajes y Ecosistemas*. San Salvador, El Salvador. 5

MacGarigal, K. 2002. *Landscape pattern metrics.* Pages 1135-1142 in A. H. El-Shaarawi and W.W. Piuegorsch, eds. Encyclopedia of Environmentrics Volume 2: 1135-1142. John Wiley & Sons, Sussex, England.

MacGarigal, K., and B.J. Marks. 1995. *FRAGSTATS: spatial pattern analysis program for quantifying landscape structure.* USDA For. Serv. Gen. Tech. Reo. PNW-351.

Mena y Artavia (2004). *Hacia la administración eficiente de las Áreas Protegidas:*

Millennium Ecosystem Assessment, 2005. *Ecosystems and Human Well-being: Biodiversity Synhtesis.* World Resources Institute, Washington, DC.

Millennium Ecosystem Assessment. 2005a. Chapter 2: *Current state and trends: Ecosystems and their services around the year 2000.* Scholes, R. et al.

MINAMBIENTE (Ministerio del Medio Ambiente). 2006. *Sistema Nacional Ambiental* (en línea). Bogotá, Colombia. Consultado 27 mar. 2006.

MINAE.2001 *"Preguntas y respuestas sobre la Estrategia Nacional de Conservación y uso sostenible de la biodiversidad"*.

MINAE, MNCR, INBio, 1992. Estudio Nacional de Biodiversidad. *Costos, beneficios y necesidades de financiamiento de la conservación de la biodiversidad biológica en Costa Rica*. PNUMA. Sin publicar. 264 p.

MINAE-SINAC. (2001). *El Sistema Nacional de Áreas de Conservación. Evolución y perspectivas*. San José, C.R.:MINAE.

MINAE-SINAC. 2003. *Informe Nacional sobre el Sistema de Áreas Silvestres Protegidas*. San José, Costa Rica: MINAE.

MINAE-SINAC, 2004. *Informe Estadísticas 2004*. Sistema de Mejoramiento Contínuo de la Calidad (SEMEC). 89 páginas.

MINAE-SINAC, 2006. *Informe Nacional II Congreso Mesoamericano de Áreas Protegidas-Panamá.* 24-28 de abril de 2006. 98 páginas.

MIDEPLAN-SIDES. 2001. *Índice de Desarrollo Social Distrital.* Según: cantones, distritos, población y extensión. Año: 1999.

MIRENEN (Ministerio de Recursos Naturales, Energía y Minas). 1990. Estudio *Diagnóstico de las Áreas Protegidas de Costa Rica (*versión preliminar). San José, Costa Rica. 91p.

Moreno, C.E. 2001. *Métodos para medir la biodiversidad.* M&T-Manuales y Tésis SEA, VOL 1. Zaragoza, España. P 24 y 43.

Mug, M. et al. 2001. *Estado del conocimiento de la biodiversidad marino-costera.* Programa Conjunto INBio-SINAC. Gobierno de Hoanda. Mimeografiado. 20 p.

Muller, Eduard y Claudia Santiago (2003). *Reservas de biosfera: desarrollo local y conservación*. En: Ambientales. Revista Semestral de la Escuela de Ciencias Ambientales. Universidad Nacional. No. 26 (Diciembre). 16-23. RESUMEN.

Obando, V. 2002. Biodiversidad en Costa Rica.: *Estado del conocimiento y gestión. SINAC-MINAE. Estrategia Nacional de Conservación y Uso Sostenible de la Biodiversidad*-MINAE/SINAC. GEF-PNUD,NORAD. Editorial INBio. 81 p.

Ortiz E., Sage L, Borge C. 2003. *Impacto del PSA en Costa Rica como medio de reducción de la pobreza en los medio rurales*. Unidad Regional de Asistencia Técnica (RUTA).

Oviedo, E. 2005. *País duplicará electricidad producida con fuerza del viento*. En: La Nación, Lunes 10 de Octubre. Página 4A.

PROCUENCA SAN JUAN, 2001. Proyecto organización y educación comunitaria para la prevención de incendios Costa Rica-Nicaragua. *Formulación de un plan de acción estratégico para la gestión integrada de los recursos hídricos y el desarrollo sostenible de la cuenca del río San Juan y su zona costera*. Octubre. Proyecto PROCUENCA SAN JUAN; San José, Costa Rica.

PROCUENCA SAN JUAN, 2005a. *Organización comunitaria para la prevención de incendios forestales en las Áreas de conservación Arenal Huetar Norte y Guanacaste*. Informe Final. Junio. Proyecto PROCUENCA SAN JUAN; San José, Costa Rica.

PROCUENCA SAN JUAN, 2005b. PROCUENCA SAN JUAN: *un proceso de creación de capacidades en participación ciudadana. Proyecto Formulación de un programa de acciones estratégicas para la gestión integrada de los recursos hídricos y desarrollo sostenible de la cuenca del río San Juan y su zona costera*. Junio, 2005. PROCUENCA SAN JUAN; San José, Costa Rica.

Programa conjunto INBio-SINAC, PRMVS-UNA. 2003. *Memoria del primer y segundo encuentro con expertos en mamíferos. Revisión del estado de conservación de los mamíferos de Costa Rica y delimitación de prioridades de investigación*. Mimeografiado. 23 p.

Programa Estado de la Nación. 2005. *Undécimo Informe Estado de la Nación en Desarrollo Humano Sostenible*. Proyecto Estado de la Nación-San José, Costa Rica.

Programa Estado de la Nación. 2004. *Décimo Informe Estado de la Nación en Desarrollo Humano Sostenible.* Proyecto Estado de la Nación-San José, Costa Rica.

PROMETA. 2001. "*Areas protegidas departamentales,municipales y privadas en Bolivia".*

PRONATURA. "*Bosques y biodiversidad en riesgo. Vulnerabilidad en áreas estratégicas y nuevos instrumentos de conservación*". 2002.

Quesada, M y Nielsen, V. (eds) 2006. *Ambiente Marino Costero de Costa Rica. Informe Técnico.* Comisión Interdisciplinaria Marino Costera de la Zona Económica Exclusiva de Costa Rica. CIMAR, CI. San José, Costa Rica. 426p.

Reid, V. Walter. 1994. "*La prospección de la biodiversidad".*

Request for Pipeline entry approval. PDF-GEF. Scaling *Up and Mainstreaming Payments for Environmental Services Project*. June, 2005.

Robbins, Stephen. *Comportamiento organizacional.* Sétima edición, Prentice Hall, 1999.

Rosa H, Kandel S. y Dimas L. 2003. *Compensación por servicios ambientales y comunidades rurales: Lecciones de la América y temas críticos para fortalecer estrategias comunales.* PRISMA, El Salvador.

Revista Girasol, 2005. *UCR promueve desarrollo en OSA. Octubre/diciembre*. Año 8. No.29. San José, Costa Rica. Vicerrectoría de Investigación. Universidad de Costa Rica.

Revista Girasol, 2005. *UCR plantea estrategia sobre la biodiversidad.* Julio/Setiembre. Año 8. No. 28. San José, Costa Rica. Vicerrectoría de Investigación. Universidad de Costa Rica.

Rutledge, D. 2003 *Landscape indices as measures of the effects of fragmentation: can pattern reflect process?* Science Internal Serials 98. Department of conservation, New Zeland. 26 p.

Savage, J. 2002. *The Amphibians and Reptiles of Costa Rica*. China. The University of Chicago Press.

Secretariat of the Convention on Biological Diversity (2004). *Biodiversity issues for consideration in the planning, establishment and management of protected area sites and networks*. Montreal . SCBD. 164 pages and I to iv. (CDB Technical Series no.15).

Sierra, C.& Herrera, A. 2005. *Memoria Especies Invasoras en Costa Rica: Resultados del taller nacional*. 2005. UICN, INBio, SINAC, CATIE, Museo Nacional, PROMAR y otros. Mimeografiado.

Serie No. 1 de *Guías de Buenas Prácticas en Areas Silvestres Protegidas de la UICN* (WCPA).

SINAC. 1999. *Tenencia de la Tierra en las Áreas Silvestres Protegidas de Costa Rica.*

SINAC-MINAE. 2005a. Memoria *del grupo focal en Diversidad Biológica Agrícola. III Informe de País sobre la Implementación del Convenio sobre la Diversidad Biológica*. Noviembre 2005. Elaborado por la Oficina de Cooperación y Proyectos y el INBio. GEF-PNUD. Mimeografiado.

SINAC-MINAE. 2005b. Memoria *del grupo focal en Diversidad Biológica Forestal. III Informe de País sobre la Implementación del Convenio sobre la Diversidad Biológica*. Noviembre 2005. Elaborado por la Oficina de Cooperación y Proyectos y el INBio. GEF-PNUD. Mimeografiado.

SINAC-MINAE, INBio 2001. *II Informe de País sobre la implementación del Convenio sobre la Diversidad Biológica*. GEF-PNUD. Mimeografiado.

SINAC-MINAE, 2006. *III Informe de País sobre la implementación del Convenio sobre la Diversidad Biológica*. GEF-PNUD. Mimeografiado. Elaborado por la Oficina de Cooperación y Proyectos y el INBio. GEF-PNUD. Mimeografiado.

SINAC. Informe Grúas I. 1996

SINAC. "*Guía para la formulación y ejecución de planes de manejo de áreas silvestres* protegidas". 2004.

Solís, Vivienne et al. (2003). *Participación comunitaria en el manejo de áreas protegidas.* En: AMBIENTICO. Revista mensual sobre la actualidad ambiental. No. 120 (Setiembre). 8-11.

Solís Rivera, V. Et al. 2000. "*Ley de Biodiversidad de Costa Rica: Lo que dice para todos"* UICN, CR.

Solórzano, A. 2004. Los reptiles de Costa Rica. Santo Domingo de Heredia, C.R., Editorial INBio, p. 10.

Stork 1988; Hammond 1994; Odegaard 2000; Sorensen 2003; Novotny et al 2002). 4-6 million. /Novotny, V., Y, Basset , S.E., Millar, G.D. Weiblen, B. Bremer, L. Cizek, and P. Drozd. 2002: *Low host specificity of herbivorous insects in a tropical forest*. Nature. 416.841-844.

TNC, 2005. *Opinión de los costarricenses acerca del tema ambiental: valoración de la gestión actual y expectativas para el próximo gobierno*. The Nature Conservancy (TNC) de Costa Rica. Fairbank, Maslin, Maullin & Associates (FMM&A), Consultoría en Desarrollo (CID-Gallup).

UCR. Celebración Día Internacional del Agua. Postgrado en Geología, UCR. 2003. *Seminario sobre el Valor Económico del Agua.*

UICN, 1994. *Directrices para las Categorías de Manejo de Áreas Protegidas*. CPNAP con la ayuda de WCMC, UICN, Gland, Suiza y Cambridge, Reino Unido. 261 páginas.

UICN. 2003. *Establecimiento de sistemas integrales y eficaces de áreas protegidas*. Rec: 5:04.

UICN. 2005. Ese *hermoso lugar donde yo vivo: cómo aplicar los 12 principios del enfoque ecosistémico para cuidar y disfrutar de nuestro hábitat.* Planificador 2006-08-28 UICN, San José, Costa Rica. 2005. 18p.

Undécimo *Informe sobre el Estado de la Nación.* Informe final: Gestión del Patrimonio. 2005.

Vargas, C.R. 1998. *Biodiversidad de los invertebrados marinos de Costa Rica*. Museo de Zoología, Escuela de Biología, Universidad de Costa Rica. Mimeografiado.

Villalobos A. 2006. *Investigación social sobre el posicionamiento de la ciudadanía en torno al tema ambiental*. UCR.

Vreugdenhil, Daan, et al. 2003. "Comprehensive protected areas system composition and monitoring".

Zoología, Escuela de Biología, Universidad de Costa Rica. Mimeografiado.

World Conservation Monitoring Centre (Comp.). Groombridge, B. (Ed.). 1994. Biodiversity Data Sorcebook. World Conservation Press, Cambridge, UK.

II. Documents:

Fudeu, 2000. Análisis *de las modalidades de participación ciudadana en la gestión Ambiental en Costa Rica.* Consultoría de Análisis de la participación ciudadana en la gestión del SINAC. Fundación para el Desarrollo Urbano.

INBio: *Fundamentos teóricos del Sistema Nacional de Áreas Silvestres Protegidas de Costa Rica*, Documento borrador (uso interno). Costa Rica, 2006.

IFAM, 2003. *El Sistema Nacional de Áreas de Conservación y los Cantones de Costa Rica. Serie cantones de Costa Rica, No. 3.* Dirección de gestión Municipal, Sección de Investigación y Desarrollo.

Informe final Plan de estructuración del SINAC. Costa Rica, 1997.

Millennium Ecosystem Assessment. 2005a. Chapter 2: Current state and trends: *Ecosystems and their services around the year 2000*. Scholes, R. *et al.*

Millennium Ecosystem Assessment. 2005b. Chapter 4: *Biodiversity.* Mace, G., *et al.*

Millennium Ecosystem Assessment. 2005c. Chapter 28: Synthesis: *Condition and trends in systems and services, trade-offs for human well-being, and implications for the future*. Janetos, A., *et al.*

MINAE, SINAC. *Diagnóstico Sistema Nacional de Áreas de Conservación. Costa Rica*, 2005.

MINAE, SINAC. *Plan Estratégico ACMIC 2005-2020*. Costa Rica, 2005.

MINAE, SINAC. *Propuesta de organización con base en la la Ley de Biodiversidad No. 7788*. Costa Rica, 2005.

MINAE, SINAC, ACMIC. *Organigrama y Descripción de Funciones.* Costa Rica, 2005.

MINAE, SINAC, TNC. Plan de Necesidades Financieras 2004-2006. *Serie de finanzas y valoración económica en áreas protegidas, volumen III.* Costa Rica, 2005.

MINAE, SINAC. *Organización y marco estratégico de la Gerencia de Áreas Protegidas del SINAC*. Costa Rica, 2002.

Poder Judicial. Circular. *POLITICA DE PERSECUCIÓN PENAL AMBIENTAL*. 27 de enero de 2005.

Propuesta de reestructuración técnica de MIRENEM. Costa Rica, 1995.

Plan Anual de Trabajo SINAC 2006-matrices. Costa Rica, 2005.

Plan Estratégico SINAC 2000-2002. Costa Rica, 2000.

Presentaciones electrónicas del avance de los procesos de consultoría en el marco del Proyecto GEF/PNUD/SINAC.

III. Interviews:

Alvarado, Celso. ACAT.

Alfaro, Juan Diego. ACA-HN.

Alfaro, Juan Diego. Municipalidad de Grecia.

Araya, Marco Vinicio. SINAC.

Arce, Eliécer. Administration -Corcovado National Park.

Arce, José Angel. Municipalidad de Poás.

Arguello, Aldemar. Contraloría General de la República.

Asch, Jenny. SINAC.

Bermúdez, Flor. SINAC.

Borges, Carlos. Consultant.

Calvo, Carlos Manuel. ACT.

Carmiol, Franklin. Red de Reservas Privadas.

Cavaría, Ulises. Administration. Palo Verde Nacional Park.

Carazo, Felipe. The Nature Conservancy.

Conejo, Redy. Volcán Irazú Nacional Park.

Coto, Mario. ACOPAC.

Cubillo, Maribel. Fundación de Parques Nacionales.

Chamorro, Eduardo. Administration. Tortuguero Nacional Park.

Delgado, Marlon. Administration. Guayabo Nacional Park.

De Marco, Gladys. ACA-P.

Esquivel, Oscar. Administration Chirripó Nacional Park.

Fernández, Julio Jurado-Procuraduría General de la República.

González, Francisco. SINAC.

Gutiérrez, Fernando. ACG.
Hernández, Oscar. Programa Incendios Forestales, ACG.
Díaz, Julio. Programa de Control de Incendios Forestales, ACG.
Jansen, Daniel.
Junier. Earl. Manager. ASP-ACLA-C.
Jurado, Julio. Procuraduría General de la República.
Leiva, Ana Luisa. SINAC.
Madrigal, Miguel. Área de Conservación OSA.
Madríz, Carlos. Golfo Dulce Wildlife R.
Masís, Alejandro. Manager ASP-ACT.
Mata, Eduardo. Program Coordinator, PPD. PNUD.
Matamoros, Miguel. ACOSA.
Mena, Yadira. SINAC.
Méndez, Giselle. ACG.
Montero, Vera Violeta. SINAC.
Mora, Alcides. Administration. Volcán Arenal National Park.
Mora, María Elena. ACAT.
Morales, Etilma. ACOSA.
Orrego, Carlos Mario. Administration –RVS Ostional.
Polanco, Marta. Instituto Costarricense de Turismo.
Quesada, Catalina. Poás Nacional Park.
Rodríguez, Emel. Área de Conservación Guanacaste.
Rodríguez, Miguel. Manager ACCVC.
Rodríguez, Norma. Manager ASP-ACA-T.
Rojas, Mario. ACLA-P.
Romero, Carlos. SENARA.
Ruiz, Javier Víquez. Municipalidad de Belén.
Salazar, Bolivar. Administration Manuel Antonio Nacional Park.
Sánchez, Alberto. Planning and Development Direction, ICT. Oficinas Centrales.
Sánchez, Juan. SINAC.
Sánchez, Juan Luis. Administration- Piedras Blancas National Park.
Seco, Emilia. Municipalidad de Moravia.
Serra, Paula. Contraloría General de la República.
Solórzano, Raúl. SINAC.
Tato, Ana María. SINAC.
Valerio, Ricardo. SINAC.
Vargas, Salazar Abel. IFAM.
Vega, Oscar. Manager. ASP-ACOPAC.
Villalobos, Vilmar. Administration-Volcán Tenorio National Park.
Ugalde, Adrián. Chirripó Nacional Park.

Zeledón, Alfredo. Municipalidad de Coronado.

Zeledón, José Miguel. Water Department, MINAE.

Zumbado, Luis. IFAM.

IV. Legal Framework:

CÓDIGO MUNICIPAL. No. 7794. Publicado en la Gaceta del 18 de Mayo de 1998.

CÓDIGO DE MINERIA, Ley No. 6797 de octubre de 1982.

CÓDIGO AGRARIO. Compilado por Ricardo Zeledón. Sexta Edición. 1994.

CÓDIGO URBANO. Compilado por Dionisio Alfaro Rodríguez. Editorial Porvenir. Segunda edición 1994.

Constitución Política de la República de Costa Rica. Ediciones SEINJUSA. 1992

Decreto de Creación de la Comisión para el manejo de las Cuencas de los Ríos Bananito, Banano y La Estrella No. 27997-MINAE. Publicado en la gaceta No. 53 del 28 de julio de 1999.

Decreto Ejecutivo 31176 de junio de 2003. Canon Ambiental por Vertidos.

Decreto Ejecutivo No. 32226-FONAFIFO 2005. Programa de Pagos por Servicios Ambientales.MINAE PSA 2005.

Decreto Ejecutivo. Presidente de la República. Ministerio de Ambiente y Energía (DAJ-072-2005). Canon por Concepto de Aprovechamiento de Aguas.

Decreto 26175 del 31 de marzo de 1997.

Decreto 24481 del 9 de Setiembre de 1993.

Decreto No. 29019-MINAE del 19 de Setiembre del 2000.

Convenio sobre Pueblos Indígenas y Tribales en Países Independientes, suscrito en Ginebra el 27 de junio de 1989 y ratificado por Ley No. 7316 del 3 de noviembre de 1992.

Ley de Administración Financiera de la República y Presupuestos Públicos No. 8131, del 18 de Septiembre del 2001.

Ley de Biodiversidad No. 7788. Del 26 de abril de 1998.

Ley Constitutiva del Instituto Costarricense de Acueductos y Alcantarillados. No. 2726. Publicada en la Gaceta 144 del 29 de julio de 1976.

Ley de Creación del Servicio Nacional de Riego y Avenamiento No. 6877. Del 3 de julio de 1983.

Ley de Aguas No. 276 de agosto de 1942 y sus reformas.

Ley Forestal No. 7575, reformada por las leyes 7609 de junio de 1996, 7761 abril de 1998.

Ley General de Agua Potable No. 1634. Publicada en la Gaceta de 2 de Octubre de 1953.

Ley General de Salud. Ley No. 5395 de 30 de octubre de 1973.

Ley Orgánica del Ambiente 7554 del 4 de octubre de 1995.

Ley de Conservación de la Vida Silvestre, Ley No. 7317. Reformada por las leyes. No. 7495 del 3 de mayo de 1995. 7497 del 2 de mayo de 1995 y 77/88 del 30 de abril de 1998.

Ley Orgánica Ministerio de Agricultura y Ganadería. Ley No. 7064 de 29 de abril de 1998.

Ley de Uso, Manejo y Conservación de Suelos, No. 7799, 30 de abril de 1998.

Ley de la Autoridad Reguladora de los Servicios Públicos No. 7593 del 9 de agosto de 1996.

Ley Orgánica del Ministerios de Salud. No. 5412 de 8 de noviembre de 1973, y sus reformas.

Manual de Procedimientos para el pago de Servicios Ambientales del año 2005.

Políticas Ambientales del AyA en la Gaceta No. 54 del 18 de marzo del 2003.

Presupuesto Ordinario Municipal para el año 2004. Contraloría General de la República.

Jurisprudencia de la Sala Constitucional

Recopilación de Jurisprudencia sobre Áreas Protegidas. Sala Constitucional 1989-1999.

Recopilación de Jurisprudencia sobre Áreas Protegidas, Sala Constitucional 2000-2006.

Contraloría General de la República

Oficio No. FOE-AAM-9 de mayo de 2002

Oficio No. FOE-AM-62-1420 del 13 de febrero de 2002

Oficio No. FOE-AM-138- del 8 de abril de 2002

Oficio No. FOE-AM-159-del 29 de abril de 2002

Oficio No. FOE-AM-271-7403 del 28 de junio de 2002

Oficio No. FOE-AM-275-7415 del 28 de junio de 2002

Procuraduría General de la República

Criterio C-266-200

Criterio C-297-2004

Criterio C-110-2004

Criterio C-174-1987

Criterio C-210-2002

Criterio C-295-2001

Criterio C-321-2003

Criterio C-339-2003

Opinión Jurídica OJ-014-2004

Opinión Jurídica OJ-061-2004

Opinión Jurídica OJ-062-2000

V. Web Sites:

Asociación Coordinadora Indígena y Campesina de Agroforesteria Comunitaria. (ACICAFOC). www.acicafoc.net/

Cámara Nacional de Turismo. www.canatur.org/est_25.htm

Centro Internacional de Política Económica para el Desarrollo Sostenible. CINPE. www.cinpe.una.ac.cr

Centro Mesoamericano para el Desarrollo Sostenible del Trópico Seco (CEMEDE)-UNA. www.chorotega.una.ac.cr/cemede/

Dirección de Investigación. UNA. www.cc.una.ac.cr/proyectos/

Escuela de Ingeniería Forestal. (TEC) www.itcr.ac.cr/escuelas/forestal

Fondo Nacional Forestal. www.fonafifo.go.cr

Instituto Internacional en Conservación y Manejo de Vida Silvestre. www.icomvis.una.ac.cr

Instituto de Investigaciones en Ciencias Económicas (IICE). www.iice.ucr.ac.cr/

Instituto Nacional de Biodiversidad. www.inbio.ac.cr/es/inbio/inb_queinbio.htm

Instituto Tecnológico de Costa Rica. www.itcr.ac.cr

Millennium Ecosystem Assessment. www.milleniumassessment.org

Ministerio de Planificación. www.mideplan.go.cr/Sides/social/10-13.htm

Observatorio Vulcanológico y Sismológico de Costa Rica. UNA. www.ovsicori.una.ac.cr/

Organización de Estudios Tropicales. www.ots.ac.cr/es/about/

Parque Marino del Pacífico. UNA, Puntarenas, Costa Rica. www. parquemarino.org/

Programa de pequeñas Donaciones. (PPD) Fondo para el Medio Ambiente Mundial (FMAM) www.nu.or.cr/gef/proyectos

www.oit.or.cr/unfip/publicaciones/10anjuris.pdf

Promotora de Comercio Exterior.www.procomer.com/est/

Sistema Nacional de Áreas de Conservación. www.sinaccr.net

Universidad para la Cooperación Internacional. (UCI) www.uci.ac.cr

Universidad de Costa Rica. www.ucr.ac.cr

www.umass.edu/landeco

Universidad Nacional. www.una.ac.cr

Vicerrectoria de Acción Social UCR. www.accion-social.ucr.ac.cr/