Evaluation of the World Bank – GEF
Ecomarkets Project in Costa Rica

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Executive Summary

Costa Rica’s “payments for environmental services” (PSA) program is an innovative and highly successful effort to voluntarily enlist private landowners to maintain and protect their forests. Since its inception in 1997, the PSA program has been applied to a total of nearly 500,000 hectares (ha) of privately owned forests. Of this amount, the Ecomarkets Project (2001-2005) represents a cumulative total of about 212,000 ha, involving payments to nearly 2,400 landowners. Since 2001, the PSA program has been funded primarily through allocating 3.5% of the national fuel tax to FONAFIFO. The PSA program has also attracted significant co-financing from bilateral donors, including KfW, NORAD, and the Government of Japan. The World Bank-GEF Ecomarkets Project’s main achievement has been not merely to provide additional financial resources for expanding the PSA program, but to re-focus the entire PSA program on global and regional biodiversity conservation priorities, as well as on national social goals. The Ecomarkets Project’s other main achievement has been to greatly strengthen FONAFIFO’s institutional and technical capacity, thereby increasing the effectiveness and efficiency of the entire PSA program, making it a model for other countries to emulate.

In-country benefits of the Ecomarkets Project are: Maintenance of privately-owned forests in several important national components of the Mesoamerican Biological Corridor; local conservation of biological diversity; major increases in the involvement of women landowners and indigenous communities with the PSA program; direct payments to a relatively greater number of small rural landowners; and, most importantly, broad-scale public recognition that intact forests and their environmental services have value.

The success of the Ecomarkets Project is based on FONAFIFO’s strength as an institution that is capable of effectively and efficiently managing a complex system of payments for environmental services; the strong legal framework and wide political support for the PSA program through three successive administrations; and the nationwide support from civil society, particularly small- and medium-size landowners, as well as local and regional organizations (e.g., NGOs, cooperatives). The PSA program and the Ecomarkets Project have attracted widespread international interest, spurring several replication efforts. FONAFIFO has hosted official delegations from many countries wanting to study the PSA program.

Over the last 35 years, Costa Rica has become an experimental laboratory for biodiversity conservation (e.g., the Mesoamerican Biological Corridor), providing important lessons learned that are of global importance. FONAFIFO should experimentally test new ideas by measuring their effectiveness and efficiency in comparison to existing programs. Evaluations should not simply be a post-hoc analysis of available data at the end of the project, but should become one of the main activities being implemented by (and during) the project.
Introduction

The recent development of the field of ecological economics has led to numerous efforts to determine the economic value of both ecosystems and the environmental services provided by different types of ecosystems. Over the second half of the 20th century, the tiny (50,000 km²) country of Costa Rica attracted global interest and recognition for several pioneering initiatives, including: Abolishment of military forces; universal education and health care; conservation of biological diversity; biochemical prospecting; and training rural people as “para-taxonomists;” inter alia. More recently, Costa Rica has been in the forefront of using payments for environmental services (PSAs) for national conservation and socio-economic objectives.

In 1996, Costa Rica approved a new Forestry Law (No. 7575) that explicitly authorized the creation of the National Forestry Financing Fund (known as FONAFIFO) as well as the concept of PSAs. After a successful 5-year period of initial funding by the Government of Costa Rica (GOCR) and bilateral donors, the US$49.2 million Ecomarkets Project was established for 2001-2005 to expand and refine the national PSA program. The Ecomarkets Project consists of a US$8 million grant by the GEF, a US $32.6 million loan by the World Bank, and US $8.6 million from the GOCR. The PSA program applies only to privately owned forests, and is now focused primarily on priority areas of the Mesoamerican Biological Corridor in Costa Rica.

The Ecomarkets Project is implemented by FONAFIFO and involves four modalities: forest protection; reforestation; forest management (suspended in 2003); and agroforestry (begun in 2003). The nearly 2,500 contracts enacted during the project period are overwhelmingly concentrated on the first modality—forest protection. This report constitutes the terminal evaluation of the Ecomarkets Project.
Global and Project Objectives, Goals, and Legal Agreements

The Ecomarkets Project’s global environmental objective is to foster biodiversity conservation and preserve important forest ecosystems through conservation easements on privately owned lands outside of protected areas in the Mesoamerican Biological Corridor of Costa Rica (MBC/CR). The project development objective is to increase forest conservation in Costa Rica by supporting the development of markets and private sector providers of environmental services supplied by privately owned forests. The project directly supports the implementation of Forestry Law No. 7575 (passed in 1996) by providing financial incentives to forest owners in buffer zones and interconnecting biological corridors contiguous to national parks and equivalent reserves for the provision of environmental services relating to biodiversity conservation, carbon sequestration, hydrological services, and scenic beauty.

The Ecomarkets Project’s goals are to: i) Support the supply and demand for environmental services provided by forest ecosystems; ii) strengthen management capacity and assure financing of public-sector forestry programs administered by the Ministry of the Environment and Energy (MINAE), including the National Forestry Financing Fund (FONAFIFO), and the National System of Conservation Areas (SINAC); and iii) strengthen management capacity of local non-governmental organizations.

The GEF’s donation of $8,000,000 by the end of project (EoP) was carried out through agreement No. 23681-CR.
Principal Results Expected and Key Performance Indicators

Principal Results Expected

The Ecomarkets Project’s Global Environmental Objective and Project Development Objective are outlined above. To evaluate the effectiveness of the Ecomarkets Project in achieving these objectives, the Project Appraisal Document (PAD) proposed six performance indicators (the associated “output” is in parentheses, when different from the indicator): (i) 150,000 ha of land incorporated into the PSA program by EoP; (ii) 100,000 ha of conservation easements in MBC/CR priority areas incorporated into the PSA program by EoP; (iii) Establishment of a sustainable financing mechanism to support conservation easements by EoP (i.e., a Trust Fund to be established in accordance with GEF best practices by EoP); (iv) Six NGOs working in priority areas in the MBC/CR strengthened (six local NGOs providing services to the PSA program, and facilitating its access to small landowners in priority areas of the MBC/CR); (v) 30% increase in participation of women landowners and women’s organizations in the PSA program by EoP; and (vi) 100% increase in the participation of indigenous communities in the PSA program by EoP. The Project Log Frame lists two other anticipated outputs: (vii) Fulfillment of existing contractual obligations by 2003; and (viii) Increase in the local capacity to value and market environmental services, as measured through technical studies and the introduction of market mechanisms.

Key Performance Indicators

- 150,000 hectares (ha) of forest land incorporated into the Payment for Environmental Services (PSA) program by the EoP, including 50,000 ha of privately owned lands within the MBC/CR in Tortuguero, Barbilla (Amistad-Caribe), Corcovado-Piedras Blancas (Osa), and the Paso de la Danta-Fila Costeña (which is in both the Osa and Central Pacific Conservation Areas) biological corridors, and 50,000 ha of privately owned lands within other Conservation Areas as identified in the GRUAS report.

- 30% increase in the participation of women landowners and women’s organizations in the PSA program by EoP;

- 100% increase in the participation of indigenous communities in the PSA program by EoP; and

- establishment of a sustainable financing mechanism to provide long-term support for conservation easements in Costa Rica by EoP.
Project Accomplishments According to the Log Frame

Attainment of Global Environmental Objectives

The project has provided critical financial and technical support for the long-term conservation of Costa Rica’s most globally significant and biologically diverse ecosystems through a strategy of “Mainstreaming Biodiversity in Production Landscapes and Sectors” (GEF Strategic Priority 1 of the Biodiversity Focal Area). The project has streamlined and refocused Costa Rica’s “cutting-edge” program of payments for environmental services (PSA). This in turn has led to the “Generation and Dissemination of Best Practices for Addressing Current and Emerging Biodiversity Issues” (GEF Strategic Priority 2 of the Biodiversity Focal Area). This project exemplifies the approach recommended by the Conference of the Parties to the Convention on Biological Diversity (CBD) of “adopting economic incentives for the conservation of biodiversity.”

In particular, the project has been instrumental in ensuring that global and regional objectives were adequately pursued as successive Costa Rican administrations have balanced conservation and development policies. The project has shifted the PSA program’s earlier scattered approach to PSA contracting, to a more focused approach of conserving and consolidating the areas of Costa Rica that were designated as priorities by the Mesoamerican Biological Corridor (MBC) project of the Central American Commission on Environment and Development (CCAD). The GEF Ecomarkets Project has enabled Costa Rica to more effectively conserve its globally significant biodiversity by creating linkages between geographically isolated protected areas and other high concentrations of biodiversity, i.e., linkages consisting of privately owned lands where biodiversity is legally protected through PSA contracts. More than seventy percent of PSA program resources (when measured both as a percentage of the total number of PSA contracts awarded, and as a percentage of the total number of hectares covered) are now focused on priority biodiversity corridors, including Tortuguero, Barbilla (Amistad-Caribe), Corcovado-Piedras Blancas (Osa), and the Paso de la Danta-Fila Costeña.

Attainment of Project Development Objectives

As of September 2005, Costa Rica’s PSA program had about 212,000 ha under contract, involving 2,356 landowners. Since the PSA program began in 1997, FONAFIFO has contracted a cumulative total of nearly 500,000 ha, of which 89% are natural forests under conservation, 5% are forest plantations, and 6% are sustainable forest management (the latter modality was discontinued in 2003; an agroforestry modality introduced in 2003 does not yet represent a significant area [1,170 ha]). For the Ecomarkets Project period, the modality distribution is as follows: protection = 200,798 ha; reforestation = 7,551 ha; and forest management = 3,394 ha. Since 2001, the bulk of this conservation effort has been financed from the 3.5% of fuel tax revenues that the GOCR has allocated for the PSA program.
The PSA program has attracted substantial additional funding from international donor agencies, including a US$8 million grant from the GEF, a €10 million (about US$11.2 million) grant from KfW (the German Development Bank) for the protection of forests and recovery of deforested lands in the northern region of Huetar Norte, and a US$2 million payment from Norway in 1997 for carbon sequestration services. FONAFIFO has also signed more than a dozen agreements with Costa Rican private and public water users to finance the conservation of important watersheds.

The Ecomarkets Project has reached or exceeded all of its key project performance indicators. For example, 131,000 ha have been incorporated into the priority areas selected for biodiversity conservation by the Ecomarkets Project, with about two-thirds of the contracts paid for with World Bank and GEF funds. This exceeds the project’s target #2 of 50,000 ha by the EoP on privately owned lands within Tortuguero, Amistad-Caribe, and Osa Conservation Areas. In addition, 81,000 ha have been contracted outside the Ecomarkets priority areas on privately owned lands within other Conservation Areas identified as priorities in the Costa Rican portion of the MBC by the GRUAS Report, thus also contributing to the achievement of conservation and sustainable management goals (target #1) agreed at the regional level within the framework of the CCAD.

In 2000, there were 22 women landowners participating in the PSA program. Currently, there are 474 (whose properties cover over 30,000 ha), representing a very significant increase against the 130% target. In 2000, there were 2,850 ha of indigenous community-owned lands participating in the PSA program. Currently, there are 25,125 ha, representing an 882% increment compared with the original target of a 100% increase in indigenous participation. The Ecomarkets Project can take a substantial portion of the credit for promoting greater participation by women and indigenous groups in the PSA program.

**Execution and Completion of the Resulting Activities**

As detailed in the preceding section, the Ecomarkets Project has been successful fulfilling, and in most cases, exceeding its principal objectives and goals. It clearly should be considered to be an excellent GEF project. We emphasize that these achievements were made with a relatively high degree of administrative efficiency. Estimates provided by FONAFIFO indicate that administrative costs were only 5-8% of the total budget. In the United States, administrative costs are often 25% of total conservation contracting budgets (Ferraro and Kiss 2002).

Six NGOs received training or technical support related to their work with the PSA program, and therefore this performance indicator was fully met. In addition, 13 performance contracts were awarded to local NGOs. Based on the training and technical support that the NGO participants received, it appears likely that the Ecomarket Project’s investments facilitated FONAFIFO’s access to small landowners in priority areas of the MBC/CR. As noted below, small and medium landowners (<100 ha) make up the
majority of PSA contracts, but it is unclear to what extent the training of NGOs contributed to this outcome.

The Ecomarkets Project successfully generated the output of fulfilling existing PSA contractual obligations by 2003. There is no precise performance indicator associated with the objective of supporting the development of private sector providers for environmental services supplied by privately owned forests, but output indicator 1.3 in the Log Frame is most closely associated with it, i.e., an increase in local capacity to value and market environmental services, as measured through technical studies and introduction of market mechanisms by EoP. There have certainly been many technical studies conducted and attempts to “introduce market mechanisms” by Costa Ricans, and some of these might not have been realized without the Ecomarkets funds. Most importantly, it was clear to the evaluation panel that the support and direction provided by the Ecomarkets Project’s funds were successful in strengthening the management capacity of GOCR-MINAE-FONAFIFO by supplying funds for training, technology, and opportunities for experiential learning.

Almost all of the specific outputs and activities described in the GEF Project Brief and Project Appraisal Document have been achieved in a highly satisfactory manner. Nevertheless, the evaluation panel notes the following weaknesses:

- It seems extremely unlikely that the project will be able to achieve its original goal of legally establishing an endowment by December 2005 to provide a moderate amount of long-term funding. Although some work has been done toward this objective, the establishment of an endowment fund has now become the main focus of a proposed follow-on GEF project that would start in January 2007.

- One of the project’s objectives is to promote a shift away from 5-year PSA contracts to 20-year PSA contracts, in order to ensure more lasting conservation impacts. PSA contracts are now awarded for a term of four renewable 5-year periods, totaling 20 years. However, FONAFIFO is not legally obligated to make payments beyond the first five-year period, if its resources are insufficient for this purpose (for example, if the Ministry of Finance decides in the future to reduce or eliminate FONAFIFO’s current earmarked allocation of 3.5% of fuel tax revenues). Thus, one could argue that the project has not really achieved its objective of paying landowners to conserve biodiversity for a 20-year period, even though in a narrow legal sense this goal has been met. Several people described the short 5-year term of PSA payments as the greatest weakness of the PSA program.

- The proposed endowment fund is intended to complement the project objective of having 20-year contracts by providing a sustainable source of long-term funding for such contracts, particularly for priority areas not readily covered by other funding sources. However, the amount likely to be generated by such a fund is probably no greater than around $1 million/year, based on the perhaps optimistic
assumptions that $15 million can be raised as capital, and this sum can then be invested to produce an average net annual return of around 6-7%. This additional $1 million/year would not (by itself) be sufficient to enable FONAFIFO to finance 20-year PSA contracts in even 10% of the priority areas whose conservation could not be funded through payments for providing carbon-related or water-related ecological services.

- The project originally planned to establish a “Coordinating Council” in order to facilitate collaboration between FONAFIFO and SINAC. However, due to the fact that FONAFIFO subsequently became the project’s sole Implementing Agency (and therefore assumed all of the responsibilities originally assigned to SINAC), such a Council was not established. The panel recognizes that FONAFIFO’s current Executive Director is a member of SINAC’s Board of Directors, and there also seems to be a significant amount of informal collaboration and consultation between FONAFIFO staff and the directors of SINAC’s regional conservation areas. Nevertheless, it still merits considering whether some form of closer and more formal collaboration between the two organizations would help both of them to better achieve their shared goal of conserving Costa Rica’s threatened biodiversity.

Environmental Impacts

Evaluating the environmental impacts of the PSA program is difficult. Data and reports collected by FONAFIFO show the size and location of PSA contracted lands, but they do not provide a clear answer to the question: Do we observe more forest cover (or more ecosystem services) as a result of the PSA program?

Although FONAFIFO recently commissioned a study to look at this question in one area of the country, the results from this study were not available at the time of the evaluation. We therefore depend on indirect evidence from previous studies and the evaluation panel’s own analysis of available data. We summarize the evidence in favor of a positive environmental impact, the evidence in favor of little or no environmental impact, and issues of unknown importance. We wish to emphasize that the difficulty in evaluating the effectiveness of project interventions is not unique to the Ecomarkets Project. All conservation programs suffer from these same obstacles.

- Beneficial Impacts

The Ecomarkets Project helped to shift the focus of the PSA contracting toward “priority areas” of high biological value. The percentage of contracts in high-priority biological corridors increased from 58% of all contracts during 1999-2002 to 73% of all contracts in 2003-2004. In terms of area, the gains are slightly less impressive (58% to 69%), but are still praiseworthy (see Figures 1 and 2). With regard to the corridors specifically targeted by the Ecomarkets Project (Tortuguero, Amistad-Caribe, Osa, and Paso de la Danta), the number of contracts went from 40 in 2000 to 233 by 2004. The contracted area in these
corridors went from 3,187 ha in 2000 to 17,959 ha by 2004 (8% of the total Ecomarkets corridor areas were under PSA contracts). Also worthy of mention is the apparent concentration of PSA contracts in the buffer zones of protected areas (Figure 3). Although it is impossible to say with certainty that these changes in the distribution of PSA contracts would not have come about without the Ecomarkets Project, the evaluation panel feels confident in attributing many of these changes to the Ecomarkets funds.

In addition to its potential effects on land-cover change in Costa Rica, the Ecomarkets Project could influence environmental outcomes by its role in improving the Costa Rican institutional capacity for environmental management. Unlike the PSA program’s effects on land cover, the PSA program’s effects on institutions are clear and substantial. FONAFIFO’s Geographical Information System and SIAP (Sistema Integrado de Administración de Proyectos) would not have achieved their current level of sophistication without Ecomarkets funds. Likewise, the Ecomarkets funds helped facilitate the change in the field administration of the PSA program from SINAC to FONAFIFO in 2003. All of these institutional changes helped improve the targeting of the PSA program and lower the administrative costs of managing it in the long-run.

Sierra and Russman (forthcoming) conducted an analysis of land cover changes for 30 PSA participants and 30 non-participants in the Osa Conservation Area. Although they found no difference in the amount of forest cover on these lands, they did find that non-PSA farmers allocated more land to active agriculture than PSA farmers. The authors conclude that PSA payments encourage landowners to accelerate their exit from agriculture. However, this conclusion may be misplaced given the small sample size, the lack of control for initial land-cover conditions and the potential for selection bias (i.e., rather than PSA causing farmers to abandon agriculture, farmers who are less likely to farm because of household or farm characteristics are also more likely to sign up for PSA).1 Ortíz et al. (2003) drew similar conclusions based on responses to a telephone survey of a sample of PSA participants: A little less than half of respondents indicated that they had abandoned agriculture and pasture after enrolling in the PSA. However, these responses are self-reports rather than observations of actual land-cover change.

- **Absence of Proven Beneficial Impacts**

The Ecomarkets Project has improved targeting of contracts to biologically important areas. However, when the different priority areas (e.g., GRUAS, SINAC, MBC/CR, and counties with low development indicators) are projected on a map, approximately 70% of the country lies in one or more of the priority areas. Thus, the priority areas help but still leave many of the contracts spread thinly over the landscape, which weakens their environmental impacts.2

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1 Miranda et al. (2003) and Zbinden and Lee (2005) find that there are substantial differences in the characteristics of PSA participants and non-participants. Many of these characteristics (e.g., off-farm living, off-farm employment, property size) also have an effect on land use decisions and thus may confound simple comparisons of land-use differences between PSA participants and non-participants.

2 As a solution, FONAFIFO might consider designating a “supra-priority” area, which represents the intersection of two or more of the existing priority areas.
More importantly, there is evidence that the PSA forest protection contracts have been made on forested lands that were unlikely to have been cut in the absence of payments. In interviews with a sample of PSA participants, Miranda et al. (2003) found that most respondents reported they would not have done anything with their forest land in the absence of PSA payments (similar results were found by Ortiz et al. [2003]). However, the evaluation panel notes that converting natural forest to agriculture or pasture is illegal, and thus respondents may not have wanted to divulge their interest in engaging in an illegal activity. Sierra and Russman (forthcoming) collected data on land cover for a small sample of PSA participants and non-participants. They found forest cover on farms in the two groups was statistically indistinguishable.

In fact, the PAD (p. 68) analyzes the trend in Costa Rica toward abandonment of pasture and agricultural lands that began before the implementation of the PSA program. The evaluation panel made its own rough analysis of data provided by FONAFIFO and found that there was a strong correlation between land-use capacity and PSA contract area. Fifty-one percent of the PSA forest protection contracts are on land designated for the lowest-value uses (forest management or protection). Another 20% are located on lands with “strong limitations” for agriculture. This observation suggests that much of the land under PSA forest protection contracts might not have been converted to other uses in the absence of payments. Ortiz et al. (2003, p. 64) report average returns for land classes for a variety of activities and find that forest protection contracts compete favorably on only one type of land—marginal lands with zero opportunity cost of conservation.

Paying for forest protection on land that requires no protective measures is an inefficient use of scarce conservation funds and could well be subsidizing land-use change of other more valuable, primary or late secondary forests in the nation (see Recommendation #1, p. 28).

To our knowledge, only one NGO intermediary (FUNDECOR in the Central Volcanic Cordillera) attempts to guide its PSA efforts toward lands that have biophysical features that are correlated historically with deforestation (slope, distance to road). Although it is unclear if FUNDECOR’s system classifies land at a fine enough level to ensure contracts are going on lands that are likely to be deforested, we note that no other intermediary or FONAFIFO attempts to target their contracts in this way.

- Possible Impacts for which there is Insufficient Information

PSA contracts may contribute to environmental protection indirectly by making the social norms and preferences of the participants more conservation-oriented. However, no data on such changes have been collected, nor does the PSA program explicitly attempt to provide conservation education materials to participants.

There is a belief by some PSA stakeholders (e.g., the Executive Director of FUNDECOR) that the PSA influences land-use decisions on forested lands without PSA
contracts by inducing a value for the preservation of an option to obtain a contract in the future. Because cutting the forest extinguishes the option to receive a payment in the near future, some landowners may forgo cutting. Under certain assumptions (e.g., neighbors of PSA participants are more knowledgeable about the program), this belief is a testable hypothesis, but the evaluation panel was unable to test it in the time allotted.

It is not well known how payments are used by recipients and how these decisions indirectly contribute (e.g., educate children to work off-farm) or detract (e.g., clear secondary forest on property) from the PSA program impact. Miranda et al. (2003) and a recent survey funded by FONAFIFO (unpublished) observe that many respondents claim to use PSA payments to fund nonagricultural activities (education, clothing, health). However, budgets are fungible and respondents may understand that it is socially undesirable to indicate funds are used to clear forest. Larger landowners report they are more likely to use their PSA payments to fund agricultural activities on the farm.

Finally, it is unknown to what extent PSA contracts simply displace pressure elsewhere. If PSA contracts were targeted to forests that otherwise would have been cut down, it would have to displace some land-use pressure in the absence of strong enforcement of existing forest law. In the presence of strong enforcement, however, such displacement may not occur.

**Social Impacts**

Neither the PSA program nor the Ecomarkets Project was conceived as a mechanism to effect social and economic changes and reduce poverty. Most household studies of PSA participants show that few of them meet the government’s definition of “poor.”

However, an explicit focus on small and medium landowners in the law that established the PSA program, and an emphasis on women and indigenous groups through the Ecomarkets Project, imply that social impacts are important objectives (as does the recent incorporation of seven “poverty priority areas” in FONAFIFO’s prioritization scheme and efforts to relax land-tenure criteria for awarding contracts). Moreover, the PSA program has transferred substantial amounts of money and technical expertise to rural areas, and thus one can legitimately inquire about its social impacts.

Social impacts can exist at the level of the household or a larger unit of society (e.g., "community") and these impacts can be financial or non-financial. As with evaluating the environmental impacts of the Ecomarkets Project, the analysis of social impacts is also difficult. One wants to know the counter-factual outcome: How would social conditions be different in a household or community if there were no PSA contracts? As with an evaluation of the environmental impacts, one needs to have a control group that represents this counter-factual. There have been at least six studies on social impacts of the PSA program in six of the seven major zones where it operates. However, none

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3 Note, however, that these surveys use methods that likely under-sample poor households (e.g., telephone interviews, interviews with farmers known to local NGOs). None, to our knowledge, interviewed landowners involved in global contracts, which group together many small landowners.
includes a control group. Moreover, none compared before-participation and after-participation data. Although FONAFIFO recently commissioned a study of socio-economic impacts in one area of the country using a control group, the results from this study were not available at the time of the evaluation.

We can, however, make some assumptions and draw inferences based on the data that have been collected. If one assumes that PSA participants would have respected the law in the absence of the PSA contract, the full amount of the PSA forest protection payment minus transaction costs (estimated by Ortíz et al. [2003] at about 20-25% for forest protection contracts) is a net financial gain to households of over $20 million. The data on PSA reforestation and forest management costs were site-specific and thus no general conclusions could be drawn about the net financial gains to households from these modalities.

The PSA payments help diversify the household portfolio of recipients with a relatively risk-free source of cash, which is desirable to risk-averse rural households. Whether the cash is “important” in terms of the percentage of the household budget varies by region and farm and farmer characteristics. Miranda et al. (2003) report an estimate of 16% for part of the Central Volcanic Cordillera, but note the percentage is smaller (5%) for small landowners who have only a small area under PSA contracts. Ortiz et al. (2003) estimate payments make up about 10% of their interview respondents’ budgets. In contrast, a study by Muñoz (2004) in the Osa region, where landowners are poorer on average, reports much higher percentages. Many of these studies are small and use different sampling methodologies, which could explain their differences rather than any true difference in PSA impact across regions (for example, the methodologies of Miranda et al. [2003], Ortíz et al. [2003], and Zbinden and Lee [2005] likely over-sample landowners who derive much of their income from off-farm sources).

Of course, if the PSA has increased the supply of ecosystem services, then Costa Rican society benefits, not just the participants of the program. Based on interviews with PSA participants in a watershed in the Central Volcanic Cordillera, Miranda et al. (2003) observe that respondents list an improved local environment as one of the benefits of the program. Ortiz et al. (2003) and several of those interviewed by the evaluation panel argue that one social impact of the PSA program is the change in public perception about forest ecosystems, i.e., such ecosystems provide valuable services that must be paid for just like any other valuable service. This change in perception has increased support for the program from all sectors of society, from ministers to taxi drivers. Some studies (e.g., Muñoz [2004]) argue that the PSA program has increased the environmental preferences and knowledge of the participants, but without analyzing the same outcomes among non-participants, one cannot attribute such preferences and knowledge to the PSA program (given that FONAFIFO does not offer conservation education materials to participants, one must assume such education is being conducted by intermediaries).

The impressive increase in the participation of women and indigenous groups is also likely to have social impacts by strengthening the economic power of disadvantaged groups (however, we note that in the case of women, no data were available about the
economic status of these women). Some interviewees suggested that PSA contracts on indigenous land improved the ability of indigenous groups to enforce their property rights against squatters and opportunists, but the evaluation panel could not verify this claim.

As mentioned above, the PSA program emphasized the participation of small and medium farms (<100 ha). Using SIAP data from FONAFIFO, we found that 63% of all PSA contracts were on small and medium farms. Small and medium landowners make up 58% of forest protection contracts, 97% of agroforestry contracts, and 80% of reforestation contracts. In terms of area of PSA contracts, small and medium farms comprise only 25% of the PSA area, but one would expect this given their small farm sizes. The average small farm (<20 ha) was 9 ha, with an average of 6 ha under PSA contracts. The average medium farm (20-100 ha) was 39 ha, with 30 ha under PSA contracts. The average large farm was 257 ha with 127 ha under PSA contracts. Note, however, that the data we analyzed do not include “global contracts,” which are agglomerations of small landowners, because we could not obtain data that broke these contracts down by their constituent farms. If these contracts were included, the proportion of PSA contract area on small and medium farms would increase. We also excluded indigenous contracts because indigenous groups are a categorically different kind of landowner (global and indigenous contracts make up less than 4% of PSA contracts and less than 10% of the total area).

Through contractual consultancies with NGOs, the Ecomarkets Project has also contributed to the development of a broad range of skills and knowledge among NGOs who work with landowners in rural Costa Rica. Some reports have claimed employment benefits from the PSA (e.g., private forestry consultants, NGO employees), but unless these sample people would have been unemployed in the absence of the PSA program, it is difficult to ascribe job creation to the PSA program (the PSA program may have also reduced employment by reducing the demand for farm laborers).
Project Evaluation According to GEF Project Review Criteria

Implementation Approach

- Logical Framework

The project’s logical framework (as summarized on pages 22-23 of the Project Appraisal Document of 8 May 2000) has been consistently used during project implementation as a management, and monitoring and evaluation (M&E) tool. FONAFIFO’s periodic reports to the World Bank and GEF have measured the project’s achievements to date against the targets established in the logical framework. Very few of these original targets have had to be revised, even though some of the project’s “Critical Assumptions” (that are beyond the control of the implementing agency [IA] or the GOCR) have not held true as had been assumed. For example, in retrospect some would question the assumption that there would be “macroeconomic stability” during the period from 2000 to 2005. Another key assumption of the project that has not (yet) materialized is the issuance of “Regulations within the Kyoto Protocol permitting financing of carbon forestry.”

It is a great credit to the project, to FONAFIFO, and to the GOCR that the failure of such critical assumptions has not significantly impeded the on-time achievement (and indeed, the surpassing) of the project’s main targets and objectives. This is largely due to the GOCR’s fulfillment of all of the project’s critical assumptions that were within its power to control or influence: An uninterrupted high level of government commitment (political will and technical capacity) to market environmental services and legally enforce conservation easements; and to provide sufficient financial support and trained human resources for achieving these ends.

- Effective Partnership with Stakeholders

The project has created highly effective partnership arrangements with relevant local stakeholders, including NGOs such as FUNDECOR, COOPEAGRI, and ASANA, whereby the latter organizations have served as intermediaries for contract preparation and implementation. The project has created highly effective partnership arrangements with Costa Rican governmental and non-governmental conservation organizations (including INBio and SINAC) for the purpose of establishing biodiversity priorities, and evaluating and monitoring biodiversity at particular sites.

The project has created effective partnerships with governmental and non-governmental international agencies (including KfW, the Japanese Government, and Conservation International) for promoting shared environmental goals at particular sites or in regions. Finally, the project has created effective partnerships with private sector enterprises such as the hydropower producers CNFL and Energía Global, the agribusiness Azucarera El Viejo, the bottler Florida Ice and Farms, and the tourism operator Desarrollos Hoteleros Guanacaste, whereby those enterprises have signed contracts to pay landholders for providing environmental services.
• **Lessons from other Projects Incorporated into Implementation**

Because this is such a “cutting edge” project, there are very few specific lessons that it can learn from other GEF projects (as opposed to general lessons such as the need for transparency, broad participation, coordination with government ministries). This project represents the first significant effort to implement a program for payment of environmental services in a developing country. Until very recently, virtually the only other such programs have been in OECD countries such as the US and the EU countries. The few recent GEF projects involving payments for environmental services (including GEF projects in Mexico, El Salvador, Nicaragua, and Guatemala) have all been based on the Costa Rica Ecomarkets Project.

• **Feedback from M&E Activities Used for Adaptive Management**

The project has used feedback from its monitoring and evaluation activities to make changes such as the ones already described for increasing the participation of poorer landowners and indigenous communities. It has proved more difficult to incorporate feedback from monitoring and evaluating data relating to changes in forest cover and biodiversity on lands that have either received or not received environmental service payments under the current project, because of the non-random nature of the PSA program and the absence of appropriate control sets. The lack of a well-designed evaluation of project effectiveness impedes the project’s utility to serve as a “test case” from which important lessons can be learned for designing future projects.

**Country Ownership/Driveness**

From the start, this has been a completely country-driven program. The PSA program predated the World Bank and GEF Ecomarkets Project by more than three years. The PSA program was established by Forestry Law No.7575 enacted in 1996. The law provides the regulatory basis for the government to contract landowners for the environmental services provided by their lands, and established financing mechanisms for this purpose, all under the primary responsibility of FONAFIFO. An amount representing 3.5% of the revenues from the fossil fuel sales tax is presently allocated to FONAFIFO for funding its programs and operations, principally for making payments to participating land users.

Further evidence of Costa Rica’s support for the project’s principal goals of conserving biodiversity, halting land degradation, and promoting the sustainable management of natural resources on privately owned land, can be found in: (i) the National Environmental Strategy (ENA); (ii) the National Forestry Development Plan (PNDF); and (iii) the National Biodiversity Conservation Strategy. In addition, a new water law is under study by Costa Rica’s Congress to establish a nationwide water tariff that will provide substantial funds for FONAFIFO and the National System of Conservation Areas (SINAC), thereby supporting their long-term financial sustainability.
Public and private environmental service users in Costa Rica have started to recognize the value of the PSA program and have provided their own resources for its implementation. FONAFIFO has developed and launched the Environmental Services Certificate (CSA) and has also signed agreements with private sector water users to complement the funding for biodiversity protection in forest conservation areas (i.e., hydrological services and scenic beauty). These new areas of expansion of the PSA Program during the 5-year term of the GEF project have provided around $500,000/yr in additional funding for scaling up PSA activities, but FONAFIFO’s expectations are that this sum will be multiplied many fold as time goes on.

According to Minister Rodríguez, this new approach will bring FONAFIFO’s activities into line with the country’s social programs, thereby enabling it to work more closely with the Ministry of Agriculture (MAG) and the GOCR’s social institutions. This will improve the ability of MAG, the social sector, and MINAE to combat rural poverty and contribute to the achievement of the Millennium Development Goals (UNDP 2005).

### Stakeholder Participation

- **Information Dissemination**

  The project has generally been highly effective in broadly disseminating information about the purposes, terms, and requirements of the PSA program among the intended target audiences, except in the case of poorer and less educated landowners in those areas where FONAFIFO has not been able to identify effective local partner organizations. In most of the priority areas, FONAFIFO has been fortunate in finding competent local organizations such as FUNDECOR, COOPEAGRI, and ASANA to disseminate information locally. FONAFIFO’s website and its publications have enabled broad dissemination of information about the PSA program among more educated and economically better-off landowners, who often have their primary residence in urban areas with easy access to internet and to regional FONAFIFO offices. FONAFIFO’s website now allows all applicants for, and recipients of, PSA payments to easily keep track of the current status of their applications or payments, by simply typing in their personal access codes; participants can also do it by phone. Indeed, this system is better than what many governmental organizations in developed countries are able to provide.

- **Consultation**

  FONAFIFO has made significant efforts to consult with under-represented target groups such as poorer households, women, and indigenous communities through the activities of its local partner organizations, which have effectively served as intermediaries and suggested ways for improving project implementation vis-à-vis such groups.

- **Stakeholder Participation**
The project’s major stakeholders are the beneficiaries of PSAs who are owners of relatively undisturbed forestland and of degraded pastures that were deforested before December 1990. These stakeholders’ high level of participation (or application to participate) in the PSA program provides the best proof of effective stakeholder participation, and effective dissemination of information about the PSA program. In some regions (such as Pérez Zeledón), there have recently been ten times as many landowners applying to participate in the PSA program as could be funded with available resources. At the institutional level, the key stakeholders involved with the project are the Ministry of Environment and Energy (MINAE) through FONAFIFO and the Water Department. The project has also interacted with other relevant Ministries and public entities (notably the Ministry of Agriculture, the National System for Conservation Areas and public water user entities), municipal governments, and local NGOs. FONAFIFO has already developed a collective contracting approach (“contratos globales”), in which NGOs or local community organizations help groups of farmers to develop the necessary management plans and then apply to the PSA as a group. In many areas, however, there are no local organizations to play this role, which therefore is a challenge that should be addressed.

**Sustainability**

The long-term sustainability of project outcomes is made more likely by the existing institutional and legal structure of FONAFIFO, its technical capacity already demonstrated during the implementation of the Ecomarkets Project, and proposed endowment fund. However, other long-term financing mechanisms should also be developed to complement the four main current or potential financing sources that have been identified so far (i.e., fuel tax, new water tariff, payment for carbon services, and the endowment), because these four sources may not be enough (even in a best-case scenario) to fully achieve the project’s ambitious long-term goals.

Within the priority areas for biodiversity conservation, there are about 218,000 ha that have significant potential for carbon financing, about 324,000 ha with significant potential for water-fee financing, and another 8,000 ha with significant potential for both water and carbon financing. This leaves over 900,000 ha of land with high biodiversity conservation value that does not have potential for either water or carbon financing. Conservation in many of these areas is currently being financed by GEF funds through the Ecomarkets Project or KfW funds through the Huetar Norte project. However, both of these sources of international funding are limited in time.

The fuel tax income, assuming it continues to flow to FONAFIFO, will provide partial financing in these areas, but will not be sufficient, even if it could be dedicated solely to biodiversity conservation. The biggest challenge, therefore, has been to ensure that funding is available for areas where neither water nor carbon payments will be sufficient. The Biodiversity Conservation Trust Fund being established under the Ecomarkets Project provides an instrument for doing so, but the size of the trust fund currently
envisaged—an endowment of around $15 million—is by itself insufficient to provide more than a fraction of the resources that need to be mobilized.

With respect to priority areas where water or carbon payments have the potential to generate substantial future funding for the PSA program (a country-wide total of around 550,000 ha), the current project has been highly successful in achieving the following: (i) Development and implementation of a sustainability strategy; (ii) Establishment of financial/economic instruments/mechanisms to ensure the continuation of project benefits after termination of GEF funding; and (iii) Development of suitable organizational arrangements. However, with respect to the approximately 900,000 ha of land located within priority areas where water or carbon payments do not have the potential to generate substantial future funding, achievement of the three results listed above are the subject of the proposal for a follow-on GEF project.

Notwithstanding this need to develop additional sources of sustainable funding, the following four conditions for ensuring the institutional and social sustainability of the PSA program are now in place: (i) Development of a supporting policy and regulatory framework; (ii) Development of appropriate institutional capacity; (iii) Identification and involvement of champions; and (iv) Achieving social sustainability by mainstreaming project activities into productive activities. Although the first, third and fourth of these four conditions were already in place before the current GEF project began, the GEF project has been absolutely essential to achieving the second of these necessary conditions for long-term sustainability—the development of appropriate institutional capacity.

**Replication approach**

**Knowledge Transfer**

The lessons learned and experiences from the project are being widely disseminated within the country, region, and around the world. FONAFIFO has shown its willingness to share the lessons learned with others and hosted dozens of foreign delegations who have come to study the PSA program. In fact, this has been considered by the Costa Rica Foreign Affairs Ministry as a South-South cooperation “Best Practice.” Lessons from the project continue to be disseminated within the country, region, and globally through workshops, seminars, study tours, publications, and web site (www.fonafifo.com).

**Replication of Demonstration Projects**

To test a flexible modality for working ranches, the GOCR has launched a pilot initiative with the Tropical Agricultural Research and Higher Education Center (CATIE) and with GEF support to find ways to compensate cattle ranchers according to the biodiversity friendliness of land-use practices they adopt. This pilot project is in an area near Esparza (seasonally dry lowlands in northwestern Costa Rica).
**Financial Planning**

- **Identification of Potential Sources of Co-Financing**

In addition to World Bank and GEF funds, the project has utilized the following additional sources of financing for the activities supported by the Project: (i) Allocations from the regular and special state budgets, as well as other mechanisms (3.5% of the excise tax on fuels and other hydrocarbons); (ii) Grants and loans from other international organizations (KfW, Government of Japan, IDB); (iii) Loans and resources obtained through the issue and sale of credit instruments such as Forest Bonds; (iv) Resources obtained from the conversion of foreign debt; and (v) Environmental services payments voluntarily made by public, private, national, and international organizations, and administered by FONAFIFO.

Three potential sources of future co-financing for the PSA program that have been identified by the project are carbon payments, water payments, and the endowment (trust fund). The need to develop further funding sources has already been discussed above in the section on “Sustainability.”

- **Strong Financial Controls, Including Reporting and Planning, and Due Diligence in the Management of Funds and Financial Audits**

FONAFIFO’s annual independent outside audits, and previous GEF evaluations of the project, have all confirmed the project’s strength (and its lack of any significant problems) in these areas.

**Cost Effectiveness**

- **Compliance with Incremental Cost Criteria, and Securing Co-Funding and Incremental Funding**

During the 5-year period of the project, there has been a large amount of co-funding from sources such as the fuel tax; bilateral donors such as KfW and the Government of Japan; and the new water tariff earmarked for watershed conservation. GEF incremental funding has enabled a very substantial expansion of the PSA program in global and regional biodiversity priority areas, i.e. the Mesoamerican Biological Corridor, and buffer zones around protected areas of global significance. GEF incremental funding has been absolutely critical in strengthening the institutional capacity of FONAFIFO to more effectively target conservation of global biodiversity priorities.

- **Completion of Planned Activities According to Schedule, Meeting or Exceeding the Expected Outcomes, as Cost-Effectively as Originally Planned**
As has already been more specifically discussed in the preceding sections, the project has been highly successful in completing planned activities according to schedule, and meeting or exceeding the expected outcomes as cost-effectively as originally planned.

- **Benchmark Approach or Comparison Approach**

The project used a benchmark approach to establish the cost-effectiveness of the proposed program. The costs of securing conservation benefits through a short-term easement (PSA forest protection contract) versus land purchase and management as a protected area over a 15-year time horizon were compared. The analysis concluded that the PSA forest protection contract was more cost-effective.

The investment that the PSA program makes to conserve biodiversity on private lands in the biological corridors, without relocating people or communities (as is typically the case with protected areas such as national parks and equivalent reserves), is approximately US$45/ha/year. The GEF contribution is US$8.7/ha/year while the remaining US$36.3/ha/year is financed by the GOCR. If a hectare of tropical forest in Costa Rica bears a biological diversity index of 10, 20, or 30 (depending on the type of forest), the conservation cost per unit ranges from US$1.5 to 4.5/biodiversity index unit/year. To reach similar goals using other instruments (e.g., creating national parks), the estimated cost would be 3 to 4 times higher.

**Monitoring and Evaluation**

With the key support of the Ecomarkets Project, the PSA program has established state-of-the-art systems (GIS and SIAP) to monitor land-user compliance with payment contracts. The program remains weak, however, in monitoring its effectiveness (social, economic, and biological).
Evaluation Ratings of Project Components

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<tr>
<th>Project Component</th>
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<tr>
<td>(1) Sustainability</td>
<td>S / HS</td>
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<td>(2) Fulfillment of Objectives</td>
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<td>(3) Public Participation</td>
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<td>(4) Implementation</td>
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<tr>
<td>(5) Monitoring &amp; Evaluation</td>
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After considerable discussion, the evaluation panel decided to split the ratings of three project components, i.e., Satisfactory / Highly Satisfactory. Our rationale is that from a global perspective and many GEF-funded projects, the Ecomarkets Project merits a Highly Satisfactory rating for all five project components. However, the narrow perspective recognizes that there are aspects of some components that could have been better or can still be improved, thus our preference to rate these components as Satisfactory. The remaining rating categories (Limited Satisfactory, Not Satisfactory, and Does Not Apply) were not relevant to the Ecomarkets Project.
Principal Results and Lessons Learned

For the 2001-2005 Ecomarkets grant period, the PSA program has met or exceeded all key project performance indicators. Please see pages 6-10 for the explicit details of the project’s accomplishments. These achievements have been confirmed by recent review efforts including the mid-term review report and this terminal evaluation of the Ecomarkets Project.

Lessons Learned

Lesson 1 – Significant amounts of international donor funding can serve as an essential (although not, by itself, sufficient) catalyst for inducing important institutional changes leading to more effective and efficient biodiversity conservation programs.

All the evidence gathered by the evaluation panel implies that many important institutional changes that took place at FONAFIFO over the last four years would not have taken place without the Ecomarkets Project. In particular, we believe that the following three important changes would not have happened, or would not have developed as much, in the absence Ecomarkets funds: (i) The substantial improvements in FONAFIFO’s GIS technology since 2000; (ii) the development of the SIAP information management system; and (iii) the streamlining of the contracting process by consolidating all administration activities under FONAFIFO in 2003.

Lesson 2 – Efforts to induce the private sector to enter into voluntary agreements to pay for environmental services may be a useful way of strengthening the private sector’s awareness and understanding of the system of payments for ecosystem services, but are unlikely to generate significant amounts of funding to support a national-level PSA program.

Despite more than a decade of work in Costa Rica on bilateral private agreements for ecosystem services, the impact of such projects has been small—about a dozen projects generating some $500,000 per year. Bilateral agreements are made by large firms and utility companies that (i) have little opportunity for free-riding to secure the service, or (ii) are interested in the public relations value of the agreement. The opportunities for substantial expansion of such agreements seem limited. Interviewees portrayed the existing agreements as the slow start of a rapidly increasing upward trend in such agreements, but the evaluation panel believes that more fundamental constraints exist: Namely, the strong incentives for free-riding in the absence of regulatory rules that force payments by beneficiaries (e.g., cap and trade on deforestation rights, user fees for water users or tourists). Free-riding behavior could be reduced if the government could make a credible commitment to not pay for services in areas where a small number of
private entities receive large benefits from ecosystem services, but such commitment may be impossible to achieve. FONAFIFO hopes that more precise quantification of the supply of services will induce more private agents to pay voluntarily, but the evaluation panel believes this outcome is unlikely.

Lesson 3 – The Ecomarkets Project’s focus on creating new markets for ecosystem services, as well as the Project’s substantial budget, appear to have facilitated a change in the mindset of key national stakeholders, including officials of the Ministry of Finance and private sector businesses.

By framing ecosystem services as an important component of national productive capital, which must be paid for and maintained just like any other kind of capital, the Ecomarkets Project has helped to encourage Costa Ricans to view their ecosystems as an essential component of national infrastructure, and to be more willing to financially support the conservation and sustainable management of critical ecosystems on public and private lands.

Lesson 4 – Evaluating the effectiveness of conservation programs is difficult when such programs are not designed to be tested and measured against a clear baseline or “control” case.

Deforestation rates appear to have declined and forest cover is apparently increasing since the beginning of the PSA program. However, these trends began before the PSA program started. One cannot disentangle the effects of PSA, the effects of the elimination of government subsidies that promoted deforestation, and economy-wide changes that have made deforestation less appealing. Comparing changes in forest cover among PSA program participants and non-participants would control for contemporaneous trends, but one still must ask, “Why did some landowners choose to participate and others did not?” For example, suppose one observes that forest cover on participating lands is much higher on average than that on non-participating lands. Can one conclude the program is effective? No. Participating landowners may be more likely to have a pro-environmental ethic or accept low returns in alternative uses of the land. These same characteristics make the landowners less likely to deforest in the absence of the program. If a program does not allocate payments randomly among interested landowners, we cannot simply compare the outcome of a participating landowner to that of the average non-participating landowner. One must control for the characteristics of landowners that jointly affect the probability of deforestation and land-use decisions.

Program evaluation is fundamentally a process of making inferences about an unobserved counterfactual event: What would have happened if there had been no program? In the context of the PSA program, one wishes to know, “Would deforestation patterns have been substantially different in the absence of the PSA
program?” As discussed in the section on Environmental Impacts, answering this question is difficult. It is difficult to differentiate the effects of the PSA program with confounding effects—effects that are cotemporaneous with the intervention and could plausibly affect the outcome and thereby mask the intervention’s effect. Examples of confounding effects include historical trends (e.g., urbanization), unrelated programs or policies (e.g., removal of agricultural subsidies), and unobserved environmental and social characteristics (e.g., landowners with zero opportunity costs sign up for PSA contracts).

As in all scientific research, confounding effects are addressed through baselines, measures of covariates, and control groups. Baselines measure pre-intervention conditions and behaviors, and thus control for initial conditions that may affect measures of program effectiveness. Covariates are observable factors that also influence the outcome measure; these factors may be socio-economic, biophysical, economic, or institutional. Control groups are individuals, communities, or areas that do not experience the intervention but are otherwise similar (on average). Only by comparing sites or individuals with an intervention and those without can we make a convincing case for the intervention’s effectiveness. Controlling for confounding effects is typically absent in research on conservation interventions globally. To its credit, FONAFIFO has recently been making efforts to evaluate the effectiveness of its previous activities through state-of-the-art statistical methods, but such analyses are much easier when activities are designed with the intention of evaluating their effectiveness.
Conclusions

One of Costa Rica’s singular achievements is its dramatic reversal in the rate of deforestation from about 60,000 ha per year in the 1970s (Hartshorn et al. 1982) to a net annual gain in forest area for the last several years. The PSA program has been a key part of the package of government policies that has led to this impressive achievement. About 212,000 ha of land are now enrolled in the program—most of these are existing forests under protection contracts (86%). This is thought to have resulted in significant local, national, and global benefits, including: (i) Provision of alternative income generation opportunities for the rural poor; (ii) improvement of watershed protection, and related impacts in terms of cleaner ground- and surface-water; (iii) increasing the total amount of carbon sequestration; (iv) conservation of biodiversity that may generate significant future economic value through tourism and bio-prospecting; and (v) other indirect benefits such as improved public health and rural infrastructure. Nevertheless, it is very difficult to quantify the causality of the PSA program relative to these benefits.

In spite of the PSA program’s successes, it has so far had little impact on the reforesting of marginal pasture lands. Reforesting these pastures also requires controlling wildfires and increasing the availability of seed sources. Typically, the remaining forest patches are too small or too peripheral to priority conservation corridors to qualify for the forest conservation contract.

As previously mentioned, the project has achieved great success in surpassing all of its original targets for increasing the participation rates for women and indigenous communities in the PSA program. With regard to indigenous communities, however, the absolute number of hectares of land owned by indigenous communities covered by the PSA program is only a small percentage of their total lands (which altogether comprise around 8% of Costa Rica’s national territory). This result is partly due to the fact that many indigenous communities have not yet perfected their legal title to all of their reserve lands, and many of these indigenous reserves are owned communally rather than individually, and therefore are subject to the 600-hectare-per-year legal limit on the area for which FONAFIFO can provide payments.

Several studies have been conducted to examine the impact of the PSA program on the poor and found that the majority of land owners with PSA contracts are not poor. Only 15% to 20% of land owners with forest conservation contracts indicated that PSA payments were very important for their livelihoods. However, the results of these studies are mixed, and most only looked at individual, possibly non-representative sites, and the studies all suffered from data constraints.

The PSA program in Costa Rica was not designed as an instrument for poverty mitigation in rural areas, but rather, as an instrument for promoting forest ecosystem conservation and halting land degradation. Due to the high transaction costs in dealing with many individual small landholders, the PSA program often tended to focus on larger, better-off landholders. To address this issue, the GEF project has assisted FONAFIFO in developing a collective contracting approach ("contratos globales") in which NGOs or
local community organizations help groups of farmers to develop the necessary management plans and then apply to the PSA as a group. In many areas, however, there are no local organizations to play this role. Another initial constraint (before the GEF project started) was that only landholders with titles could participate in the PSA, thus barring many poor landholders. The law has now been changed to allow all landholders to participate, even if they lack formal title, thus greatly expanding eligibility. However, applicants must have a cadastral plan that indicates the boundaries and size of their holdings, and many poor farmers lack such plans.

FONAFIFO recently introduced certain modifications to the PSA program in order to increase the PSA’s impact on alleviating rural poverty, such as the introduction of agroforestry activities as a new PSA modality; the inclusion of land owners without land title to the PSA-protection modality; and the prioritization of counties having a Social Development Index lower that 35%. Indeed, Carlos Manuel Rodríguez (the Minister of the Environment, who has engineered the most recent changes in FONAFIFO) said that “…we need to stop viewing the PSA program as merely a tool for preserving biodiversity and promoting the planting of forests. Instead, we need to see it as a tool for rural development that also includes reforestation and biodiversity conservation.”
Recommendations

There are two different (but not mutually exclusive) paths for increasing the composite environmental benefits provided by the PSA program: (i) Raise more money to expand existing activities; and/or (ii) increase the efficiency of existing activities through improvements in the program’s administration and targeting. The former path focuses on expanding the budget, while the latter path focuses on maximizing the benefits provided by the budget. The Ecomarkets Project has encouraged substantial movements along both paths.

To increase the PSA budget, the project has encouraged the development of new sources of revenue: Private purchase agreements for ecosystem services; donor funding to complement existing budgets; a water tax to fund PSA contracts; and Certificates of Environmental Services (CSA). To increase efficiency, the Ecomarkets Project has led FONAFIFO to target the PSA program on biological corridors, and develop the institutional capacity to reduce the administrative costs of managing an increasingly complex initiative.

Although raising more money and expanding the scope of the existing program is laudable, we believe that greater gains will come from improving the efficiency of the existing PSA program rather than expanding the scope of the program.

Recommendation 1 - GOCR-MINAE-FONAFIFO should continue to improve targeting of contracts to maximize the environmental benefits per dollar expended.

Targeting can be based either on seeking those lands that provide the highest ecosystem benefits or seeking those lands where ecosystem services can be purchased for the lowest contract costs: High-benefit lands with low contract costs are the most desired. As noted in the Environmental Impact section, the benefit-targeting of PSA contracts has improved since the beginning of the Ecomarkets initiative, with more emphasis focused on placing contracts in “priority areas.” However, no efforts have been made to improve cost-targeting in the form of differentiated payments. There is a belief among many PSA stakeholders that the PSA program is a true market in which a uniform price should be determined by supply and demand. In fact, the current price is considered appropriate because it is believed to fall between society’s value of the ecosystem services provided by an average hectare of forest and the opportunity cost of supplying them.

Characterization of the PSA program as creating a competitive market is incorrect. The PSA program is not a market in which price will (or should) be determined by the interaction of consumers’ willingness-to-pay and suppliers’ willingness-to-accept. The structure of the PSA program is such that FONAFIFO could be making lower payments to landowners who are willing to accept lower payments (i.e., landowners with lower opportunity costs of
supplying ecosystem services). The PSA program is funded mainly by taxes, which involve inefficiencies such as the deadweight losses from the market distortions associated with taxation. Thus, society benefits if the payments compensate the landowners’ opportunity costs of contract compliance, but no more than these costs. Moreover, ecosystem services are public goods subject to free-riding and thus the available funds for contracts are generally inadequate to achieve the socially optimal level of these services. Maximizing the environmental services secured with available budgets is socially desirable (and addresses concerns about additionality). Finally, payments above the cost of supplying ecosystem services can relax landowners’ budget constraints and induce more ecosystem conversion, thereby reducing environmental benefits from PSA contracts.

PSA administrators have indicated that they plan to improve benefit targeting by investing in the quantification of ecosystem services. Although this objective is laudable, the evaluation panel believes FONAFIFO must evaluate if greater gains could be made in cost targeting. The cost-efficient targeting approach (i.e., largest environmental gains per dollar spent) is equivalent to ranking parcels from highest to lowest benefit-cost ratio \((b/c)\) and funding projects until the budget is exhausted (the approach is mathematically equivalent to ranking parcels by benefit-cost ratio because benefits and costs are not measured in common units).

Using variability in ecosystem service benefits alone to target contracts will be efficient only if (i) benefits and costs are spatially negatively correlated (i.e., when \(b\) is large, \(b/c\) will also be large), and (ii) if the relative spatial variability of \(b\) is much greater than that of \(c\) (i.e., the variability of \(b/c\) is largely determined by the variability of \(b\), and thus \(b\) and \(b/c\) will be strongly correlated). With greater relative cost variability, cost-targeting that seeks the least expensive lands first will perform better than the benefit-targeting approach that ignores cost variability and seeks only high-benefit lands (see Ferraro 2003a for a complete discussion). Such a conclusion might strike conservationists as impossible—how can one efficiently contract for ecosystem services without investing heavily in research to quantify these services? However, one could indeed achieve substantial conservation benefits with only limited knowledge about “the parts” when cost variability is greater than benefit variability across the landscape.

As noted in the analysis section, there is strong evidence that the payment level for forest protection contracts is too high in many areas (excess demand for contracts in priority areas) and not high enough in others (excess supply of funds for priority areas). This alone, however, does not imply that great gains could be made from differentiating payments by costs. We conducted a coarse analysis of spatial correlations and variability by calculating what percentage of the Ecomarkets’ Biological Priority Areas (i.e., high-value biological areas) were in agricultural or pasture land-use capability designations (i.e., high opportunity cost of conservation). These land-use capability designations are coarse and do not reflect local variability in opportunity cost, but they can provide a rough estimate
of the correlation between benefits and costs. We found that 42% of the Biological Priority Areas were high-opportunity cost classes and 58% were low-opportunity cost, suggesting little correlation between costs and benefits. In addition, the current system of classifying lands by environmental service priority yields much less variability in biological benefits than one observes in cost variability. If these preliminary exercises are confirmed by more rigorous analysis, they imply that much more effort should be invested in differentiating contract prices in order to reflect the true opportunity costs of supplying the contracted services.

Without increasing the budget, differentiating payments by opportunity cost will increase the number of citizens participating in the PSA program. However, we recognize that important stakeholders such as field intermediaries, FONAFIFO administrators, and current participants may have greater incentive to focus on benefit-targeting and expanding the budget, rather than reducing average payment levels and boosting participation.

Determining the appropriate prices for a system of differentiated contracts can be accomplished by mechanisms from three categories: (i) Gathering more information on landowners in the form of costly-to-fake signals (often biophysical characteristics); (ii) relying on screening contracts; or (iii) harnessing competitive forces through procurement auctions. These mechanisms are discussed in Ferraro (2005). FONAFIFO can experiment with differentiated payments within the forest protection modality.

The evaluation panel suspects the most practical approach might be to use coarse biophysical data that are currently used to map priority areas and then do cost targeting within those areas, through one of the mechanisms listed previously. At the very least, we believe that GOCR-MINAE-FONAFIFO should not raise payment levels if benefits continue to be evaluated homogenously and there is excess demand for contracts. In areas where benefits are believed to be unusually high and there is little demand for PSA contracts, one could consider raising the payment levels.

**Recommendation 2 - GOCR-MINAE-FONAFIFO should increase its efforts to encourage greater contiguity or concentration of contracts in biological corridors.**

For biodiversity, effective corridors require some degree of contiguity or concentration of habitat. Likewise, for watershed protection, area thresholds have also been identified as important in supplying hydrological services (see references in Ferraro [2003b]). Scenic beauty benefits may also be subject to thresholds.

Efforts to achieve greater concentration of contracts can be assisted by FONAFIFO’s Ecomarkets-supported GIS laboratory, which allows improved
spatial targeting of contracts, and by payment bonuses provided to landowners who organize their contracted lands to provide for greater contiguity or concentration in local areas (called “agglomeration bonuses;” Parkhurst et al. [2002]). Similar bonuses can be targeted toward landowners who can form contiguous extensions with national parks.

**Recommendation 3** - A follow-up GEF project should explore and develop mechanisms to generate additional sources of sustainable financing for the PSA program.

MINAE-FONAFIFO and its partners have made great gains in identifying and securing new sources of funding. As noted above, we believe that equal efforts should be made on improving the efficiency of the existing program, but we wish to explicitly state our support for the ongoing efforts to diversify and grow the sources of payments for ecosystem services.

Preliminary findings indicate that the success of the PSA program will be constrained without a long-term funding source to provide continued incentives for landholders to adopt conservation measures in areas with globally significant biodiversity. Therefore, an endowment fund is envisaged to provide continued flow of funds in areas of global biodiversity priorities and where there is limited or no buyers of environmental services. Eligibility criteria for the use of the fund will be detailed during the project preparation.

New types of earmarked user fees and taxes based on charging for “scenic beauty” (which is listed in Costa Rica’s Forestry Law as the fourth environmental service” provided by forests) is one example. Some of the mechanisms currently being used by other countries to monetize and capture the value of this fourth environmental service (i.e., providing scenic beauty) include charging a nature conservation surcharge on top of the existing room taxes for hotels located in scenic areas, or imposing a surcharge on real estate transfer taxes which is earmarked for preservation of “open space” or undeveloped land in designated scenic areas (at least on properties whose sales price is above a specified amount). Anecdotal evidence suggests that tourists, hotel owners, and land purchasers have a willingness to pay such charges, if (and only if) they feel adequately assured that the money will be effectively earmarked for conservation purposes, rather than simply being used to pay for the salaries of government officials or to subsidize municipal government services.

**Recommendation 4** - GOCR-MINAE-FONAFIFO should experimentally test new initiatives with the intention of evaluating their effectiveness and efficiency as compared to existing initiatives.

Costa Rica is a laboratory for conservation initiatives, but its initiatives are often introduced in ways that make evaluation difficult (see Lesson Learned 3).
recommend that GOCR-MINAE-FONAFIFO treat their new ideas as hypotheses that require testing. As the government of Costa Rica continues to diversify the menu of PSA modalities or areas in which it operates, opportunities may arise to test innovations such as procurement auctions to distribute contracts, agglomeration bonuses to increase contract concentration, and quantification of ecosystem services to induce greater private sector participation.

For example, there is debate with regard to the potential benefits of differentiating contract payments. FONAFIFO can go into a non-priority area, explicitly commit to only offering one contract signing period over the next five years, and implement an alternative allocation mechanism such as an auction. Note that such experimentation does not necessarily require more money; it often merely changes the way in which the field initiative is implemented.

**Recommendation 5 - GOCR-MINAE-FONAFIFO should explore opportunities for improving and expanding public education and recognition targeted toward PSA participants.**

Currently, FONAFIFO provides neither environmental education nor recognition to PSA participants about the important public services participants provide. We believe that such education and recognition would expand public support for the PSA program, increase local participation, and provide a means to lower contract costs over time as well as provide a means to prevent forest conversion in times of budget crises and declines in available payments. Of course, this belief is a testable hypothesis that FONAFIFO can experimentally evaluate (e.g., providing conservation education and public recognition to randomly assigned localities and observing differences in sign-up and renewal rates over time).

**Recommendation 6 - GOCR-MINAE-FONAFIFO should consider re-instituting the Sustainable Forest Management modality by creating a contract that allows more disturbance than the Forest Protection modality allows, while paying the landowner less money.**

The Sustainable Forest Management modality was discontinued in 2003 for good reason. In the context of what is ostensibly a profitable activity, the modality paid landowners more money than the forest protection contract while delivering fewer environmental services (contracts allowed for disturbance, tree girdling, use of pesticides, etc.). However, FONAFIFO may find that a contract that allows for some disturbance, while paying the landowner less money than one receives for forest protection, is viable. If few landowners sign up for this contract, FONAFIFO would have strong evidence that supporting native forest harvesting with conservation contracts is simply not a cost-effective way of delivering ecosystem services.
Recommendation 7 – In collaboration with SINAC and perhaps INBio or Costa Rican universities, FONAFIFO should strengthen biological monitoring on PSA forests.

Determining how effective privately-owned forests under PSA contracts are in contributing to national conservation objectives is an important consideration. Though Costa Rica has attempted to conduct all-taxa inventories, biodiversity monitoring on PSA forests should selectively target key indicator species in order to be easily and cost-effectively conducted. In general, candidate species should be fairly conspicuous, easily identified, and excellent indicators of good habitat and/or minimal hunting pressure. Suggested candidate species include spider monkeys (*Ateles geoffroyi*), Baird’s tapir (*Tapirus bairdii*), great curassow (*Crax rubra*), and the tinamous (*Tinamus* spp.). Costa Rica has a large pool of outstanding biologists and naturalists who could be contracted to provide quick assessments of the presence and/or status of key indicator species. They could also note any selective logging of valuable timber species, evidence of recent hunting, and so forth.
Chronogram of Project’s Terminal Evaluation

Aug 05: Identification, selection, and approval of consultants
Sep 05: Distribution and review of pertinent documents
18-24 Sep 05: In-country review by consultants
26-30 Sep 05: Preparation of draft report
7 Oct 05: Submission of draft final report
7 Nov 05: Submission of final report
Selected References


Ferraro, P.  2005.  Asymmetric information and contract design for payments for environmental services.  Titisee, Germany:  Working paper presented at workshop on *Payments for Environmental Services (PES)—Methods and Design in Developing and Developed Countries*.


Figure 1. Map of PSA contracts, 1999-2002.
Figure 2. Map of PSA contracts, 2003-2004.
Figure 3. Map of protected areas and PSA contracts, 2003-2004.
APPENDICES

Abbreviations and Acronyms

ASANA  Asociación Amigos de la Naturaleza, Dominical, Barú
CATIE  Tropical Agricultural Research and Higher Education Center
CCAD  Central American Commission on Environment and Development
CNFL  Power & Light Company (Compañía Nacional de Fuerza y Luz)
COOPEAGRI  Agricultural Cooperative in San Isidro de el General, Pérez Zeledón
EoP  End of Project
CSA  Environmental Services Certificate (Certificado de Servicios Ambientales)
ENA  National Environmental Strategy (Estratégia Nacional del Ambiente)
EU  European Union
FONAFIFO  National Forestry Financing Fund (Fondo Nacional de Financiamiento Forestal)
FUNDECOR  Central Volcanic Cordillera Foundation
GEF  Global Environment Facility
GIS  Geographic Information System(s)
GOCR  Government of Costa Rica
GRUAS  Project Design for Biological Corridors, Costa Rica
IA  Implementing Agency
IDB  Interamerican Development Bank
INBio  National Biodiversity Institute
KfW  German Development Bank (Kreditanstalt für Wiederaufbau)
MAG  Ministry of Agriculture and Livestock
M&E  Monitoring & Evaluation
MBC/CR  Mesoamerican Biological Corridor in Costa Rica
MINAE  Ministry of the Environment & Energy (Ministerio del Ambiente y Energía)
NGO  Non-Governmental Organization
OECD  Organization for Economic Cooperation and Development
PAD  Project Appraisal Document
PNDF  National Forestry Development Plan (Plan Nacional de Desarrollo Forestal)
PSA  Payments for Environmental Services
SIAP  Integrated System for Project Administration (Sistema Integrado de Administración de Proyectos)
SINAC  National System of Conservation Areas (Sistema Nacional de Áreas de Conservación)
Review Schedule and Persons Interviewed

In Washington DC – BS met with Ken Chomitz, Esteban Brenes and Gunars Platais

Su, 18 Sep 05 – Arrive Costa Rica; stay Hotel Bougainvillea

Mo, 19 Sep 05
Consultants planning meeting [GH, PF, BS]
Briefing by Edgar Ortiz, FONAFIFO technical advisor
EO, GH and BS field trip to San Isidro de el General
PF arranged San Jose meetings
PF met with Roger Bonilla Carrión, Programa Centroamericano de Población (PCP), University of Costa Rica

Tu, 20 Sep 05
PF meetings in San Jose
PF met with Luis Demetrio Monge, Borges & Associados
PF met with Silvia Cordero, Instituto Tecnológico de Costa Rica
EO, GH and BS met with CoopeAgri director and forestry staff
Victor Hugo Carranza Salazar, Coopeagri director
Luis Salazar Salazar, forestry regent
Ronald Borbón Sandi, landowner with PSA contract
Eduardo Hidalgo, forester
Adolfo Pérez, forester
Freizelh Vargas, forestry student
EO, GH, BS plus AP, FV and Carlos Borbón inspected Ronald Borbón’s PSA forest (31 ha, ~1,200 m elevation) above Zapatal de San Pedro de Pérez Zeledón; forest inscribed with PSA in 1997 and renewed in 2002
EO, GH, BS plus AP and FV inspected Miguel Salazar Sibaja’s reforestation with amarillón (Terminalia amazonia) over coffee, near Las Mercedes Abajo
Side trip to see part of the Paso de la Danta corridor (e.g., Dominicalito)
Return to San José via Dominical, Quepos, and Orotina

We, 21 Sep 05
Briefing by Alberto Méndez Rodríguez, FONAFIFO GIS Coordinator
Demonstrated utility of their GIS capabilities, e.g., overlapping land titles, GRUAS corridor recommendations, poorest cantons (= Corredores, Talamanca, Matina, Siquirres, Guácimo, León Cortés, Turrrúbares, Los Chiles, Guatuso, and Upala), KfW project region (Huetar Norte), land-use capability classification, collaboration with the University of Alberta.
Briefing by Zoila Rodríguez, FONAFIFO financial administration
Overview of FONAFIFO objectives, Ecomarkets accomplishments, GOCR financial commitment = US$9.88 millions exceed the $8.5 million projection
Briefing by Bayardo Reyes, Information Systems, and Lucretia Guillén, SIAP
Overview of the “Sistema Integrado de Administracion de Proyectos” (SIAP), physical and financial control of over 4,000 contracts since 1998, includes devolved funds, two dedicated servers
Decree No. 30762-MINAE transferred the PSA program from SINAC to FONAFIFO, comprised of seven modalities, the initial seven regional offices now nine
Meeting with Jorge Mario Rodríguez Zúñiga, FONAFIFO executive director
Indigenous communities are using PSA funds to build schools, health posts, and improve infrastructure; solely PSA-protection until 2003, now includes agroforestry; important social function of PSAs in promoting urban to rural transfer of funds

Briefing by Oscar Sánchez Cháves, Environmental Services Coordinator
First PSA paid in Sep 97. Executive Decree No. 30762-MINAE, 09-10-02 transferred PSA program from SINAC to FONAFIFO; CATIE’s experimental integrated farm project near Esparza might be a useful model

Th, 22 Sep 05
Follow-up meeting with Bayardo Reyes on new website—expected by Nov 05; discussion of target audiences; website has helped expedite monitoring and processing of contracts
Briefing by Miriam Miranda (UNA consultant) and Alexandra Sáenz, fund-raiser
Plans for the Biodiversity Conservation Fund
GH met with Tropical Science Center principals Joseph Tosi, Enrique Ramírez Guier, Rafael Bolaños, and Vicente Watson Céspedes to discuss their perspectives on the PSA program
GH met briefly with the Lapa Verde project’s Olivier Chassot and Guisselle Monge; Maquenque Wildlife Refuge decreed in Jul 05
GH, PF, BS and EO met with SINAC Conservation Area directors Mario Coto (ex-Tortuguero), Edwin Cyrus (Amistad-Caribe), Alvaro Ugalde (Osa), and Luis Rojas (HQ)
GH, PF, BS and Oscar Sánchez met with Raúl Solórzano, director of SINAC, to discuss the PSA program and the Ecomarkets Project
Team briefing by Wilma Angulo (contracts and procurement) and Lucretia Guillén on FONAFIFO’s work with NGOs and the Conservation Areas; FONAFIFO handles these objectives via the signing of over 100 consultancy contracts

Fr, 23 Sep 05
Most of day working on draft report.
Along with Jorge Mario Rodríguez, the team had a productive meeting with Minister of the Environment Carlos Manuel Rodriguez and MINAE advisor Ricardo Ulate

Sa, 24 Sep 05
Depart Costa Rica
Bio-sketches of Evaluation Panel Members

Gary S. Hartshorn is a tropical forest ecologist with over 35 years of experience in Latin America, including living in Costa Rica for nearly 20 years. His Latin American expertise is complemented by paleo-tropical experience in the Central African Republic, Tanzania, South Africa, Nepal, Thailand, Philippines, and Papua New Guinea. He has over 250 scientific publications and technical reports. Prior to his current position as President and CEO of the World Forestry Center, he was CEO of the Organization for Tropical Studies (based at Duke University), and chief scientist and a vice president of the World Wildlife Fund-US. He holds a B.S. from Moravian College, an M.S. from North Carolina State University, and the Ph.D. from the University of Washington.

Paul J. Ferraro is Assistant Professor in the Department of Economics of the Andrew Young School of Policy Studies at Georgia State University. He has an undergraduate degree in biology and a masters degree in economics from Duke University and a Ph.D. from Cornell University. Dr. Ferraro's research focuses on the design and evaluation of cost-effective environmental policies and institutions, and the use of experiments to explore human behavior and decision-making. He is a collaborating author on the 2005 Millennium Ecosystem Assessment, and his research appears in journals such as *American Journal of Agricultural Economics*, *Conservation Biology*, *Land Economics*, and *Science*. He has worked on ecosystem and species management initiatives in North America, Central America, Africa, and the former Soviet Union. More information on Dr. Ferraro is available at [http://epp.gsu.edu/pferraro](http://epp.gsu.edu/pferraro).

Barry Spergel is an independent, private consultant in conservation financing. From 1989 to 2003 he was Senior Counsel and Director of the Center for Conservation Finance at WWF-US. He is an expert on conservation trust funds and earlier spent 8 years at large international law firms, including 4 years in Japan and China. He has worked on projects to establish conservation trust funds in Bhutan, Philippines, Mongolia, Sri Lanka, Maldives, Papua New Guinea, Indonesia, Canada, Mexico, Belize, Ecuador, Suriname, the Netherlands Antilles, Cote d'Ivoire, Cameroon, Central African Republic, Gabon, Republic of Congo, Mozambique, South Africa, Namibia, Madagascar, Sri Lanka, Maldives, Turkey, Armenia, Azerbaijan, Georgia, Poland, Slovakia, Ukraine, and Russia. He has written environmental and forestry legislation as a consultant for FAO, and designed new environmental taxes and user fees for Mongolia, Bhutan, Laos, Philippines, Indonesia, Papua New Guinea, Taiwan, and Japan. He holds a B.A. from Wesleyan University, M.A. from the University of Chicago, and the J.D. from Yale University.
Panel’s response to observations by Ricardo Ulate of Fonafifo

We appreciate these comments and recognize that many of them seek to place the PSA Program in broader context. However, our mandate was to evaluate the Ecomarkets Project, and we believe that our original text makes valid points about this project.

Specific responses are below (in English; observations are in original Spanish).

Resumen Ejecutivo:

1. Se omite la referencia a importancia del mantenimiento de los bosques como elemento fundamental para garantizar un crecimiento sostenido del turismo internacional, en la actualidad la principal fuente de divisas del país y un mecanismo apropiado para la redistribución de la riqueza.

The Executive Summary presents the most important themes and results, for example, the second paragraph mentions the “maintenance of privately-owned forests in several important national components of the Mesoamerican Biological Corridor, local conservation of biological diversity ...” We are not convinced that the maintenance of forests can guarantee the sustained growth of international tourism. We do agree that the PSA program can be an appropriate mechanism for income redistribution, but this is not an explicit objective of the Ecomarkets Project.

2. Se omite la referencia a que se ha generado una importante y creciente participación del sector privado y de la cooperación internacional – además del sector público- en la movilización de recursos financieros para apoyar el PSA como herramienta de conservación y desarrollo, no sólo para la biodiversidad, sino para evitar la erosión y degradación del suelo y la protección de los recursos hídricos; lo cual convierte a la experiencia costarricense en un verdadero “partnership” exitoso.

In the first paragraph of the Executive Summary, the number of hectares and private landowners who have participated in the PSA program are emphasized. “The PSA program has also attracted significant co-financing from bilateral donors, including KfW, NORAD, and the Government of Japan.”

3. Finalmente, conviene rescatar el hecho de que el PSA como cualquier otro mecanismo financiero, no actúa por sí solo sino que requiere de una clara vinculación con el logro de objetivos nacionales de desarrollo sostenible, que le garanticen un apoyo político y financiero sostenido, lo cual se malogrado mediante la creación de una institucionalidad apropiados y procesos de participación de los grupos sociales interesados. Asimismo, la experiencia costarricense ha aportado resultados extremadamente positivos para contribuir a un esfuerzo regional de consolidación del Corredor Biológico Mesoamericano, de
We do not agree that the national objectives for sustainable development guarantee sustained political and financial support. We have revised the second paragraph to include a specific reference to the MesoAmerican Biological Corridor.

Debilidades (P. 9) (Entre comillas el texto original)

- “Parece poco probable que el proyecto sea capaz de alcanzar su meta original de legalmente establecer un fideicomiso para diciembre de 2005 que provea una cantidad moderada de financiamiento a largo plazo.”

Esta afirmación es relativa, ya que básicamente la complejidad estará dada por la naturaleza jurídica requerida por el Fondo. En caso de que la opción no requiera de una nueva ley, podrá optarse por un mecanismo de menor rango o de naturaleza administrativa (decreto, decisión de la Junta Directiva, etc.)

Nevertheless, the text as written is correct.

- “Varias personas describen el corto periodo de cinco años de los pagos PSA como la mayor debilidad del programa PSA.”

A pesar de ello, la tradición política y el nivel de consolidación de la valoración social del PSA (y de los incentivos al sector en general) demuestran una coherencia definitiva entre los compromisos asumidos por el país y la acción de gobierno. No ha habido retrocesos significativos en los últimos 25 años sobre este tema, y más bien al contrario, hay una presión social importante por mantenerlos. La existencia de la obligación sustentada en una ley y en el Artículo 50 de la Constitución Política indican que difícilmente el gobierno podrá evadir la responsabilidad de continuar asignando los recursos financieros para el programa, lo cual puede incluso estar respaldado en disposiciones de la Corte Constitucional.

However, there are not guarantees. In our judgment, the budget cuts for National Parks and Areas of Conservation over the past decades support our point.

- “Este millón de dólares por año adicional no sería suficiente (por si solo) para permitir que FONAFIFO financie contratos PSA de veinte años en ni siquiera 10% de las áreas de prioridad cuya conservación podría no ser financiada a través de pagos por proveer servicios ecológicos relacionados con carbón o agua”.

Pero por otra parte, debe tenerse presente que los recursos destinados a conservación de biodiversidad no será únicamente los resultantes de los
rendimientos financieros del Fondo, pues recursos de financiamiento ordinarios serán también destinados a este fin.

Many people think that a trust fund will be the ultimate solution, and we wanted to indicate the importance of recognizing that this is not necessarily the case.

- “No obstante, es aún meritorio considerar si alguna forma de cierre o colaboración más formal entre las dos organizaciones ayudaría a ambas partes a alcanzar mejor sus metas comunes de conservación de la biodiversidad amenazada en Costa Rica.”

Este mecanismo ha sido realmente suplantado por el proceso conjunto, abierto y transparente de diálogo que se establece anualmente entre ambas instituciones y el sector no gubernamental, para la determinación de las prioridades de inversión y mecanismos y procedimientos de trabajo, al facilitarse la participación en la revisión y actualización del “Manual de Procedimientos para el Pago de Servicios Ambientales” que se publica mediante decreto por parte del Ministerio de Ambiente y Energía.

We agree with this observation, but at the same time, we believe that there are opportunities to improve and expand collaboration even more.

Ausencia de posibles impactos beneficiosos, (P.13)

“Pagar por protección forestal en bosques que no requieren medidas de protección es un ineficiente uso de los escasos fondos de conservación y bien podría ser usada para subsidiar el cambio de otras tierras de mayor valor, bosques primarios o bosques secundarios tardíos en la nación”

Pero por otra parte, es posible asumir que el pago de PSA especialmente en tierras de propiedad privada con restricciones de uso, es una manera justa de compensar a los propietarios por dicha limitación legal y un instrumento apropiado de política económica que ayuda al Gobierno a no tener que pagar de inmediato las tierras incluidas en áreas silvestres protegidas, pues el dueño recibe al menos una compensación parcial. Asimismo, en muchas ocasiones la alternativa de uso no es necesariamente agrícola o de pastizal, sino que puede ser desarrollo de infraestructura turística, lo que coyunturalmente puede llevar a una mayor presión por el cambio de uso, especialmente en terrenos de dominio privado.

This could be the case, but nevertheless, our point should also be considered.