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Report No: ICR3241

IMPLEMENTATION COMPLETION AND RESULTS REPORT

ON A LOAN

IN THE AMOUNT OF US\$30 MILLION

AND A GRANT FROM  
THE GLOBAL ENVIRONMENTAL FACILITY (GEF)

IN THE AMOUNT OF US\$10 MILLION

TO THE

REPUBLIC OF COSTA RICA

FOR A

MAINSTREAMING MARKET-BASED INSTRUMENTS  
FOR ENVIRONMENTAL MANAGEMENT PROJECT

SEPTEMBER 23, 2014

Environment and Natural Resources Global Practice  
Central America Country Management Unit  
Latin America and the Caribbean Region

## CURRENCY EQUIVALENTS

Currency Unit = Colones (COL)  
COL540 = US\$1 (September 15, 2014)

## FISCAL YEAR

January 1 – December 31

## ABBREVIATIONS AND ACRONYMS

ADII	Asociaciones de Desarrollo Indígenas Integral, Associations for the Integral Indigenous Development
BCF	BioCarbon Fund
BOP	Beginning of Project
CATIE	Centro Agronómico Tropical de Investigación y Enseñanza
CDM	Clean Development Mechanism
COOPEAGRI	Agricultural and Industrial Cooperative El General (Cooperativa Agrícola Industrial y de Servicios el General R.L.)
COP	Conference of the Parties
CPS	Country Partnership Strategy
EOP	End of Project
FBS	Trust Fund for Sustainable Biodiversity Conservation ( <i>Fondo de Biodiversidad Sostenible</i> )
FCPF	Forest Carbon Partnership Facility
FONAFIFO	National Forest Financing Fund (Fondo de Financiamiento Forestal)
GEF	Global Environmental Facility
GEO	Global Environmental Objective
GIS	Global Information System
GPO	Global Positioning System
IBRD	Investment Bank for Reconstruction and Development
ICR	Implementation Completion and Results Report
INBio	National Biodiversity Institute of Costa Rica ( <i>Centro de Investigación y Gestión de la Biodiversidad</i> )
KfW	German Development Bank
M&E	Monitoring and Evaluation
MINAE	Costa Rica's Ministry of Environment, Energy and Oceans ( <i>Ministerio de Ambiente, Energía y Mares de Costa Rica</i> )
MTR	Mid Term Review
PAD	Project Appraisal Document
PDO	Project Development Objective
PES	Payment for Environmental Services
PSA	Programa de Servicios Ambientales
UNFCCC	United Nations Framework Convention on Climate Change

# Republic of Costa Rica

## Mainstreaming market-based Instruments for Environmental Management Project (P093384/P098838)

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A. Basic Information			
Country:	Costa Rica	Project Name:	Mainstreaming Market-Based Instruments for Environmental Management Project
Project ID:	P093384,P098838	L/C/TF Number(s):	IBRD-73880,TF-56666
ICR Date:	08/27/2014	ICR Type:	Core ICR
Lending Instrument:	SIL,SIL	Borrower:	GOVERNMENT OF COSTA RICA
Original Total Commitment:	USD 30.00M,USD 10.00M	Disbursed Amount:	USD 30.00M,USD 9.94M
<b>Environmental Category: B,B</b>		<b>Focal Area: B</b>	
<b>Implementing Agencies:</b>			
<b>Cofinanciers and Other External Partners:</b>			

B. Key Dates				
Mainstreaming Market-Based Instruments for Environmental Management Project - P093384				
Process	Date	Process	Original Date	Revised / Actual Date(s)
Concept Review:	12/02/2004	Effectiveness:	07/31/2008	07/31/2008
Appraisal:	03/06/2006	Restructuring(s):		06/28/2012 07/15/2013 03/10/2014
Approval:	06/08/2006	Mid-term Review:	02/20/2012	04/09/2012
		Closing:	07/31/2012	03/31/2014

GEF - Mainstreaming Market-Based Instruments for Environmental Management Project - P098838				
Process	Date	Process	Original Date	Revised / Actual Date(s)
Concept Review:	12/02/2004	Effectiveness:		07/31/2008
Appraisal:	03/06/2006	Restructuring(s):		
Approval:	06/08/2006	Mid-term Review:	01/15/2011	
		Closing:	07/31/2012	03/31/2014

C. Ratings Summary	
C.1 Performance Rating by ICR	
PDO Outcomes	Satisfactory
GEO Outcomes	Moderately Unsatisfactory
Risk to Development Outcome	Negligible to Low

Risk to GEO Outcome	Negligible to Low
Bank Performance	Moderately Unsatisfactory
Borrower Performance	Moderately Satisfactory

### C.2 Detailed Ratings of Bank and Borrower Performance (by ICR)

Bank	Ratings	Borrower	Ratings
Quality at Entry	Moderately Unsatisfactory	Government:	Satisfactory
Quality of Supervision:	Moderately Unsatisfactory	Implementing Agency/Agencies:	Moderately Satisfactory
Overall Bank Performance	Moderately Unsatisfactory	Overall Borrower Performance	Moderately Satisfactory

### C.3 Quality at Entry and Implementation Performance Indicators

#### Mainstreaming Market-Based Instruments for Environmental Management Project - P093384

Implementation Performance	Indicators	QAG Assessments (if any)	Rating:
Potential Problem Project at any time (Yes/No):	No	Quality at Entry (QEA)	None
Problem Project at any time (Yes/No):	Yes	Quality of Supervision (QSA)	None
DO rating before Closing/Inactive status	Satisfactory		

#### GEF - Mainstreaming Market-Based Instruments for Environmental Management Project - P098838

Implementation Performance	Indicators	QAG Assessments (if any)	Rating:
Potential Problem Project at any time (Yes/No):	No	Quality at Entry (QEA)	None
Problem Project at any time (Yes/No):	No	Quality of Supervision (QSA)	None
GEO rating before Closing/Inactive Status	Moderately Satisfactory		

### D. Sector and Theme Codes

#### Mainstreaming Market-Based Instruments for Environmental Management Project - P093384

	Original	Actual
<b>Sector Code (as % of total Bank financing)</b>		
Forestry	70	70
General water, sanitation and flood protection sector	30	30
<b>Theme Code (as % of total Bank financing)</b>		
Biodiversity	22	22

Climate change	11	11
Environmental policies and institutions	23	23
Legal institutions for a market economy	22	22
Water resource management	22	22

<b>GEF - Mainstreaming Market-Based Instruments for Environmental Management Project - P098838</b>		
	<b>Original</b>	<b>Actual</b>
<b>Sector Code (as % of total Bank financing)</b>		
Forestry	30	30
General agriculture, fishing and forestry sector	35	35
General water, sanitation and flood protection sector	30	30
Other social services	5	5
<b>Theme Code (as % of total Bank financing)</b>		
Biodiversity	22	22
Climate change	11	11
Environmental policies and institutions	23	23
Legal institutions for a market economy	22	22
Water resource management	22	22

<b>E. Bank Staff</b>		
<b>Mainstreaming Market-Based Instruments for Environmental Management Project - P093384</b>		
<b>Positions</b>	<b>At ICR</b>	<b>At Approval</b>
Vice President:	Jorge Familiar Calderon	Pamela Cox
Country Director:	J. Humberto Lopez	Jane Armitage
Practice Manager/Manager:	Emilia Battaglini	Laura Tuck
Project Team Leader:	Christian Peter	Nadim Khouri
ICR Team Leader:	Christian Peter	
ICR Primary Author:	Michael Bliemsrieder/Juliana Gomez	

<b>GEF - Mainstreaming Market-Based Instruments for Environmental Management Project - P098838</b>		
<b>Positions</b>	<b>At ICR</b>	<b>At Approval</b>
Vice President:	Jorge Familiar Calderon	Pamela Cox
Country Director:	J. Humberto Lopez	Jane Armitage
Practice Manager/Manager:	Emilia Battaglini	Laura Tuck
Project Team Leader:	Christian Peter	Nadim Khouri
ICR Team Leader:	Christian Peter	
ICR Primary Author:	Michael Bliemsrieder/Juliana Gomez	

## F. Results Framework Analysis

### Project Development Objectives (from Project Appraisal Document)

The Project Development Objective is to enhance the provision of environmental services of a national and global significance and assist in securing their long-term sustainability.

### Revised Project Development Objectives (as approved by original approving authority)

### Global Environment Objectives (from Project Appraisal Document)

The Project Global Environmental Objective is to enhance the conservation of globally significant biodiversity and ensure its long-term sustainability by supporting the development and implementation of market-based instruments to promote forest conservation in buffer zones of protected areas and biological corridors connecting them.

### Revised Global Environment Objectives (as approved by original approving authority)

#### (a) PDO Indicator(s)

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
<b>Indicator 1 :</b>	By end of project (EOP), at least 288,000 hectares of land are maintained annually under PES contracts providing environmental services of both local and/or global importance.			
Value (quantitative or Qualitative)	250,000 ha	288,000 ha	310,000 ha	296,904 ha
Date achieved	06/08/2008	07/31/2013	6/28/2012	03/31/2014
Comments (incl. % achievement)	The target of 310,000 ha could not be reached due to limited enrollments in the last two years. EOP value exceeded the original target value but only reached 95% of the revised target.			
<b>Indicator 2 :</b>	By the end of the project, at least half of the newly-contracted area is financed annually by funding from service users			
Value (quantitative or Qualitative)	7,400 ha	50%	35,000 ha	16,904 ha
Date achieved	06/28/2008	07/31/2013	6/28/2012	03/31/2014
Comments (incl. % achievement)	Revised 2012. Target had been achieved at 42,900 ha in 2010, but because of the annual nature of most of FONAFIFO's budget and the 5-year length of most of its conservation contracts, CR's PES (Payment for Environmental Services) program is subject to wide fluctuations in the areas under conservation.			
<b>Indicator 3 :</b>	By end of the project, a 50% increase (from current 1,900 to 2,850) of the number of small- and medium-sized landholders (less than 100-hectare farms) participating in the PSA Program.			
Value (quantitative or Qualitative)	1,900 landholders (small and medium sized)	2,850	3,500	4,226
Date achieved	06/08/2008	07/31/2013	06/28/2012	03/31/2014

Comments (incl. % achievement)	This indicator was increased to 3,500 in the 2012 Restructuring. Target was overachieved and by EOP stood at 120.7%.
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**(b) GEO Indicator(s)**

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
<b>Indicator 1 :</b>	By EOP, at least 190,000 ha (2,000 contracts) of land located in productive landscapes in the buffer zones of protected areas and biological corridors connecting them in the MBC are maintained annually under PSA contracts for at least 20 years.			
Value (quantitative or Qualitative)	100,000 ha	190,000 ha		146,074 ha
Date achieved	06/08/2008	07/31/2013		03/31/2014
Comments (incl. % achievement)	Because of the annual nature of most of FONAFIFO's budget and the 5-year length of most of its contracts, Costa Rica's PSA program has long suffered from wide fluctuations in the area under conservation. Indicator achieved 80% of its EOP target.			

**(c) Intermediate Outcome Indicator(s)**

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
<b>Indicator 1 :</b>	By EOP, at least 15,000 hectares located in productive landscapes in the buffer zones of protected areas and biological corridors connecting them with environmental service contracts financed from the FBS			
Value (quantitative or Qualitative)	0.0	15,000 ha funded by FBS	85% of FBS funds allocated towards PES contracts	0
Date achieved	06/08/2008	07/31/2013	07/15/2013	03/31/2014
Comments (incl. % achievement)	While the indicator was changed following the MTR to “% of annual net returns from the FBS (Trust Fund for Sustainable Biodiversity Conservation) invested in PES at productive landscape projects located in buffer zones of protected areas and biological corridors”, delays in setting up the FBS and strict investment rules imposed by KfW prevented FONAFIFO from allocating any FBS resources towards PES contracts.			
<b>Indicator 2:</b>	3.5 percent from fuel-tax revenues and 25 percent to finance PSA for water-resource protection.			
Value (quantitative or Qualitative)	3.5% fuel tax and 0% water tariff	3.5% fuel tax and 25% water tariff		3.5% fuel tax and 25% water tariff
Date achieved	06/08/2008	07/31/2013		03/31/2014
Comments (incl. % achievement)	3.5% fuel tax and 25% water tariff achieved by EOP; indicator was achieved at 100%.			

<b>Indicator 3:</b>	FBS with capital participation of at least US \$15 million, of which US\$7.5 million, contributed by GEF.			
Value (quantitative or Qualitative)	US\$0	US\$15 million, of which US\$7.5 million, contributed by GEF.		US\$18.5 million total of which US\$9.1 million from GEF
Date achieved	06/08/2008	07/31/2013		03/31/2014
Comments (incl. % achievement)	The Fund has been capitalized with GEF and KfW contribution. By EOP its capitalization exceeded the target of US\$15 million and achievement stood at 123.3%			
<b>Indicator 4:</b>	At least 90% of PSA Program resources are placed in PSA contracts.			
Value (quantitative or Qualitative)	N/A	90%	75%	77%
Date achieved	06/08/2008	07/31/2013	06/28/2012	03/31/2014
Comments (incl. % achievement)	Target was revised downwards as administration costs were higher than expected due to changes in the administrative structure of FONAFIFO. By EOP the percentage of achievement slightly exceeded the revised target value.			
<b>Indicator 5:</b>	PSA activities are integrated through participatory planning on land use in at least 3 (micro-watershed) communities			
Value (quantitative or Qualitative)	0 micro-watersheds	3 micro-watersheds		2 micro-watersheds
Date achieved	06/28/2008	07/31/2013		03/31/2014
Comments (incl. % achievement)	By EOP activities were integrated through participatory planning in 2 micro-watersheds. Although the project did not intervene in the third planned watershed, through an agreement between the client and the Institute of Technology of Costa Rica participatory planning and land use activities were carried out at that site. In practice, although this data sheet does not register it as such, the target value was achieved at 100%.			
<b>Indicator 6:</b>	2.7 million tons of CO <sub>2</sub> from forestry activities will be certified and sold at the global carbon markets and will generate at least USD 10 million in revenue.			
Value (quantitative or Qualitative)	0.0	2.7 million tons of CO <sub>2</sub> / USD 10 million		22,950 tons of CO <sub>2</sub> /USD 95,000.
Date achieved	06/28/2008	07/31/2013		03/31/2014
Comments (incl. % achievement)	At EOP 22,950 tons of CO <sub>2</sub> from forestry activities were certified and sold at the global carbon markets for US\$95,000. Final indicator achievement was of 0.85% of target value in tons, and 0.95% of target value in USD.			
<b>Indicator 7:</b>	Female landholders in the program will be maintained at least to the current level.			
Value (quantitative or Qualitative)	474	474	800	877
Date achieved	06/08/2008	07/31/2013	06/28/2012	03/31/2014
Comments (incl. % achievement)	The number of women participating in the PES program by EOP was 877, exceeding the revised target value of 800. The final value was 185% of the original target and 110% of the revised value.			
<b>Indicator 8:</b>	Indigenous community owned lands in the PSE program will be maintained at least to the current level.			
Value (quantitative or Qualitative)	25,125 ha	25,125 ha	43,000	47,571 ha
Date achieved	06/08/2008	07/31/2013	06/28/2012	03/31/2014

Comments (incl. % achievement)	The number of ha of indigenous community-owned lands in PES by EOP was 47,571, exceeding the revised target value of 43,000. The final value was 181% of the original target and 106% of the revised value.			
<b>Indicator 10:</b>	Contract system for PSA with differentiated payments applied (this need to go under Comp 2 indicators)			
Value (quantitative or Qualitative)	System not existing.	System operational and working		System operational and working
Date achieved	06/08/2008	07/31/2013		03/31/2014
Comments (incl. % achievement)	The system was designed and fully operational by EOP. Target value was achieved at 100%.			

## G. Ratings of Project Performance in ISRs

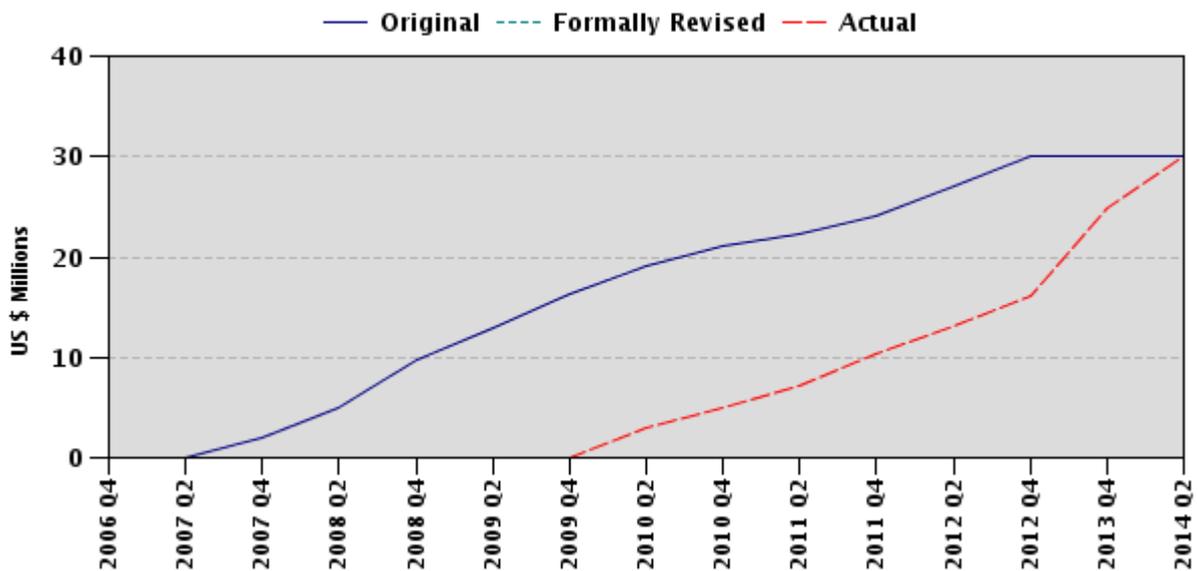
-						
No.	Date ISR Archived	DO	GEO	IP	Actual Disbursements (USD millions)	
					Project 1	Project 2
1	09/10/2006	S	S	S	0.00	0.00
2	03/29/2007	S	S	S	0.00	0.00
3	04/16/2007	S	S	S	0.00	0.00
4	06/28/2007	MS	MS	MU	0.00	0.00
5	12/17/2007	MU	MU	MU	0.00	0.00
6	06/25/2008	MU	MU	MU	0.00	0.00
7	12/18/2008	MS	MS	MS	0.00	0.00
8	06/22/2009	MS	MS	MS	0.00	0.00
9	12/19/2009	MS	MS	MS	3.00	0.84
10	03/01/2010	MS	MS	MS	3.00	0.84
11	02/23/2011	MS	MS	MS	7.25	0.84
12	11/27/2011	S	S	S	10.25	8.34
13	07/10/2012	S	S	S	16.18	8.34
14	11/27/2012	S	S	S	16.18	8.34
15	05/29/2013	S	S	MS	19.17	8.34
16	12/23/2013	S	MS	MS	30.00	9.21
17	03/26/2014	S	MS	MS	30.00	9.21

## H. Restructuring (if any)

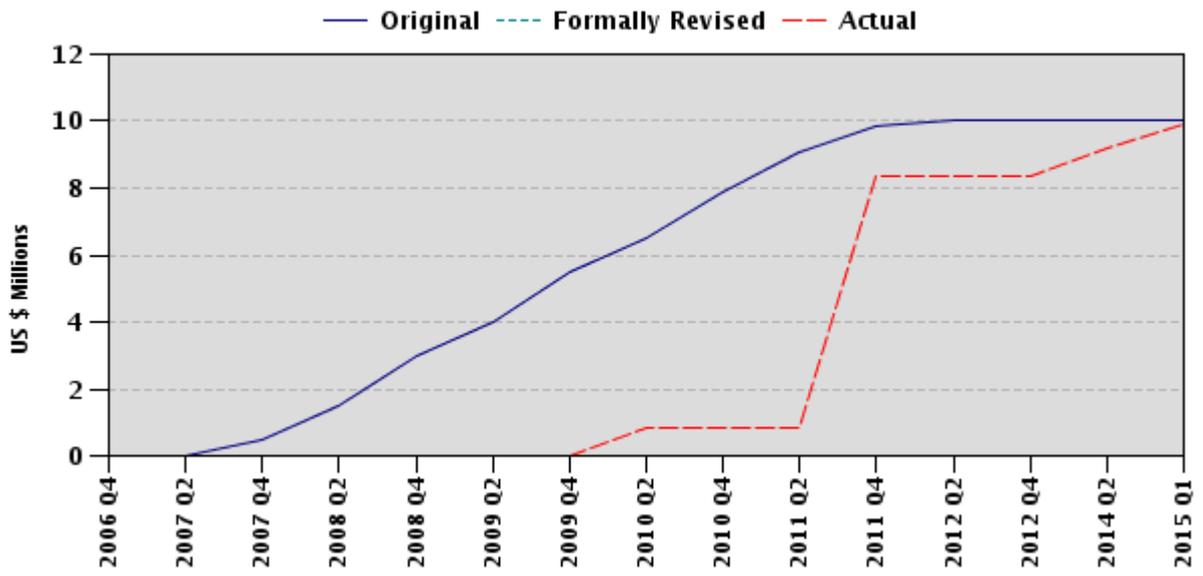
Restructuring Date(s)	Board Approved		ISR Ratings at Restructuring			Amount Disbursed at Restructuring in USD millions		Reason for Restructuring & Key Changes Made
	PDO Change	GEO Change	DO	GEO	IP	Project1	Project 2	
06/28/2012			S		S	16.18		To accommodate the project's two-year delay in effectiveness to allow for the sustainable and regular capitalization of Costa Rica's PSA program. Key changes to results/indicators, reallocation of funds and extension of closing date.
03/10/2014			S		MS	30.00		Reallocation of GEF grant proceeds remaining and uncommitted in Disbursement categories 1, 3 and 4 to category 2 - payments for the capitalization of FBS under part 1.B of the Project

## I. Disbursement Profile

P093384



P098838





# 1 Project Context, Development Objectives and Design

## 1.1 Context at Appraisal

1. At appraisal of the Mainstreaming Market-Based Instruments for Environmental Management (“Ecomarkets II”) Project in 2006, Costa Rica was considered to be a country with pioneering leadership and remarkable progress in environmental management and biodiversity conservation. Still, the Government of Costa Rica (GOCR) faced a number of challenges, including achieving financial sustainability in the environment sector<sup>1</sup>. The latter was considered a key goal of the GOCR for supporting and maintaining the national park system and securing the financing of the country’s Payment for Environmental Services program (PES<sup>2</sup>; *Programa de Servicios Ambientales* (PSA in Spanish)).

2. PES, established in 1997 and supported from 2000 to 2006 by the IBRD/GEF Ecomarkets I Project (Report No. 20434-CR), had been considered a groundbreaking and widely successful program that had strengthened Costa Rica’s global efforts to promote biodiversity conservation and environmental management. By 2006, PES had been credited with supporting the country, once known as having one of the world’s highest deforestation rates, in achieving consistent net increases in forest cover<sup>3</sup> (see Annex 10 of this ICR for a graphic display of Costa Rica’s historic forest cover).

3. The 2007 Ecomarkets I ICR<sup>4</sup> agreed with the 2005 independent “Blue Ribbon Panel” review<sup>5</sup>, which concluded that Ecomarkets I reached its key targets and objectives. The review also concluded that there was considerable scope to improve the efficiency of PES, and identified the following priority issues: i) developing additional funding mechanisms to complement current funding sources and allow an expansion of the area under conservation, ii) drawing a greater proportion of funding from service users for future sustainability, iii) increasing targeting (prioritizing the selection of conservation areas with unique biodiversity features), and differentiating payments, iv) targeted efforts to ensure that small and medium landholders are able to participate in the program, as well as v) improving program monitoring, in particular on service generation and socioeconomic impacts.<sup>6</sup> Annex 11 of this ICR includes the key targets and objectives of Ecomarkets I, as well as relevant conclusions of the Blue Ribbon Panel review.

4. The present project, Mainstreaming Market-Based Instruments for Environmental Management II (“Ecomarkets II”), was conceived to address these priority issues, building on the experience gained and lessons learned during Ecomarkets I. The implementing agency, the National Forestry Financing Fund (*Fondo Nacional de Financiamiento Forestal*, FONAFIFO), had by 2007 more than a decade of experience administering the PES program.

## 1.2 Original Project Development Objective (PDO), Global Environmental Objective (GEO) and Key Indicators

5. Table 1 shows the project’s original PDO, GEO and Key Indicators as stated in the Project Appraisal Document (PAD). It should be noted that neither the Bank nor the GEF loan/grant agreements included the PDO in their respective project descriptions, and that different descriptions exist for Key Indicators within the PAD (PAD main sections B.2 and 3 differ from Annex 3, Results Framework and Monitoring). For this ICR, the text in Annex 3 has been assessed, as it provides more detail for indicators 1, 5 and 6 (see below).

Table 1. Original PDO, GEO and Key Indicators

<i>Original PDO and GEO</i>	<i>Key indicators</i>
<b>PDO:</b> Enhance the provision of environmental services of national and global significance and assist in securing their long-term	1. By end of project (EOP), at least 288,000 hectares of land are maintained annually under PES contracts providing environmental services of both local and/or global importance.
	2. By EOP, at least half of the newly contracted area is financed by funding from service users.

<i>Original PDO and GEO</i>	<i>Key indicators</i>
sustainability by mainstreaming market-based instruments for environmental management.	3. Improved efficiency of the PES program, as measured by indices of services generated per dollar spent. 4. By EOP, a 50% increase (from current 1,900 to 2,850) of the number of small- and medium-sized landholders (less than 100-hectare farms) participating in the PES Program.
<b>GEO:</b> Enhance the conservation of globally significant biodiversity and ensure its long-term sustainability by supporting the development and implementation of market-based instruments to promote forest conservation in buffer zones of protected areas and biological corridors connecting them.	5. By EOP, at least 190,000 ha (2,000 contracts) of land located in productive landscapes in the buffer zones of protected areas and biological corridors connecting them in the MBC are maintained annually under PES contracts for at least 20 years.
	6. Effective biodiversity conservation in globally significant areas measured by vegetation cover and indicator species of conservation interest.

### 1.3 Revised PDO and GEO (as approved by original approving authority) and Key Indicators, and Reasons/Justifications

6. Neither the PDO nor the GEO were revised. Nevertheless, following a Mid-Term review (MTR) in April 2012, a Level Two restructuring was approved on June 29, 2012, which revised and raised the targets expected at project closing for PDO outcome indicators 1 and 4; revised and downgraded the target PDO indicator 2; and dropped PDO indicator 3 and GEO indicator 6. Table 2 includes the PDO and GEO and revised indicators. A second restructuring took place in July 2013, additionally modifying some intermediate outcome indicators (see section 1.6 of the ICR).

Table 2. Revised PDO and GEO indicators

<b>PDO and GEO indicators</b>		
<i>Original Indicator</i>	<i>Revision</i>	<i>Comments/Rationale for Revision</i>
By EOP, at least 288,000 hectares of land are maintained annually under PES contracts providing environmental services of both local and global importance.	By EOP, at least 310,000 hectares of land are maintained annually under PES contracts providing environmental services of both local and global importance.	Target was revised and raised through the Level Two restructuring, approved on June 29, 2012, which took into account new government targets of 310,000 ha to be achieved with PES contracts (although nationwide and not only under this project). Since the client assumed that there was a real opportunity to achieve this target within the project's timeframe, the Bank agreed to the proposed increase. Ultimately, by EOP 296,904 ha were included under PES contracts, a figure that exceeded the original target but fell short (by 5%) of the revised one.
At least half of the newly-contracted area is financed by funding from service users' by the end of the project.	Conservation of at least 35,000 ha is financed annually by funding from service users by the end of the project.	Target was revised through the Level Two restructuring, approved on June 29, 2012. By EOP the area financed annually through funding from service users stood at 16,904 ha. Thus, the revised target for this indicator was partially achieved. During the lifetime of the project the area covered by PES fluctuated annually (up to 42,900 ha in the third year of implementation), depending on the overall area under contract and the availability of GOCR funds. The target was revised downward by 50%, in part because generating financing from service users reportedly proved to be more challenging than expected. In addition, fuel tax revenues increased dramatically due to an increase in vehicular traffic, therefore resulting in an increase in government funding to the PES program and reducing the need for service users financing of the program.
Improved efficiency of the PES program, as measured by	Dropped	This indicator was dropped as it was found that, based on the experience from other countries (e.g. Mexico and Brazil), tracking the 'improved efficiency of the environmental services

<b>PDO and GEO indicators</b>		
<i>Original Indicator</i>	<i>Revision</i>	<i>Comments/Rationale for Revision</i>
indices of services generated per dollar spent.		program as measured by indices of services generated per dollar spent' was challenging, primarily due to the technical difficulty of quantifying changes in the level of environmental service provision. <sup>7</sup>
By EOP, a 50% increase (from current 1,900 to 2,850) of the number of small- and medium-sized landholders (less than 100- hectare farms) participating in the PES Program.	By EOP, a 50% increase (from current 1,900 to 3,500) of the number of small- and medium-sized landholders (less than 100- hectare farms) participating in the PES Program.	As a result of the restructuring approved on June 29, 2012, the target was revised and raised to 3,500 landholders. By EOP there were 4,226 small- and medium-sized landholders participating in the program.
Effective biodiversity conservation in globally significant areas measured by vegetation cover and indicator species of conservation interest	Dropped	One of the project's two GEO indicators, this was dropped during the MTR. The indicator proved impossible to measure since the project lacked the necessary biodiversity baseline at beginning of project (BOP). By the MTR it became clear that no biodiversity data was going to be in place before EOP, and the indicator was therefore removed. No alternative method of measuring the impact of PES on conservation of biodiversity was put in place. At the time of the 2012 restructuring, a study by CR's National Institute of Biodiversity (INBio) was scheduled to produce the baseline information necessary to monitor biodiversity after EOP. The study was delivered in late March 2014, but as of the ICR preparation date (August 2014), the monitoring system had not yet been implemented.
By EOP, at least 190,000 ha (2,000 contracts) of land located in productive landscapes in the buffer zones of protected areas and biological corridors connecting them in the MBC are maintained annually under PES contracts for at least 20 years.	This indicator was not revised.	By EOP 152,506 ha were included under the criteria stated in the indicator's description. Although this number fluctuated over the project life span (between approximately 126,000 and 176,000 ha), this represents the average area for this indicator. This being the second of the project's two GEO indicators, it reached 80% of its EOP target. It bears pointing out that this indicator measured implementation of the PES program in biological corridors, but not in buffer zones. However, the buffer zone definition used in the project context does not formally exist in CR legislation and were not used as a measurement criteria during project M&E.

#### **1.4 Main Beneficiaries**

7. Main beneficiaries of the project included: (i) environmental services providers who maintain or adopt desirable land uses and practices, and (ii) environmental services users expected to co-finance the program. The user side of the relationship included users of (a) hydrological services (municipalities, utilities, water bottlers and beverage producers, farmers utilizing irrigation, individual consumers), (b) globally significant biodiversity (tourism industry, society as a whole), and (c) carbon sequestration (purchasers of verified emission reductions, carbon markets, and the international community). The environmental service providers were the recipients of the environmental service payments This group included landholders in targeted priority conservation areas, including biological corridors and priority watersheds.

8. Additionally, the PES program specifically targeted indigenous communities, who benefitted most from direct payments, and women, whose participation in the project was

measured with a dedicated indicator. According to a recent consultancy report<sup>8</sup> commissioned by the Bank to evaluate the socioeconomic impact of the program, between 2008 and 2013 an average of 12,000 ha of forests were protected in indigenous territory; payments for these services are generally being used not individually but through a community consensus for the acquisition of agricultural machinery, medical equipment and educational material, among others.

## 1.5 Original Components

9. Table 3 shows the project's summarized components and subcomponents.

Table 3. Components and subcomponents

<i>Original Component/Subcomponents</i>
<p><i>Component 1. Developing and implementing sustainable financing mechanisms:</i> Component 1 focused on developing and implementing sustainable financing mechanisms tailored to the characteristics of each group of environmental service users. Likewise, rules would be developed for the use of these funds to generate environmental services that users desired.</p> <ul style="list-style-type: none"> <li>• <i>Subcomponent 1A: Promoting watershed conservation via application of the new water tariff.</i> This subcomponent was intended to mainstream sustainable natural resource management by instituting water tariffs to finance, <i>inter alia</i>, upstream watershed conservation, with 25 percent of the income generated channeled to the PES Program to protect priority watersheds.</li> <li>• <i>Subcomponent 1B: Implementing and capitalizing the Trust Fund for Sustainable Biodiversity Conservation (FBS).</i> This subcomponent was intended to help strengthen and capitalize the FBS -established by the project -to enable it to provide sustainable, long-term financing for areas of globally significant biodiversity where other financing was either unavailable or insufficient.</li> <li>• <i>Subcomponent 1C: Accessing global carbon markets.</i> The subcomponent was intended to support FONAFIFO's efforts to develop carbon sequestration projects to finance forest regeneration in degraded areas that the PES program had been unable to support given their high up-front cost.</li> <li>• <i>Subcomponent 1D: Developing voluntary markets for biodiversity conservation.</i> This subcomponent was intended to support a more systematic approach to seeking funding from voluntary or 'retail' markets. The funds generated were intended to help capitalize the FBS.</li> </ul>
<p><i>Component 2. Scaling-up the Environmental Services Program:</i> This component supported FONAFIFO and other institutions in implementing the expanded PES program. Key outputs included: (a) strengthened capacity of FONAFIFO and other governmental institutions that, together with NGOs working to implement the PES Program; and (b) a more efficient PES program.</p> <ul style="list-style-type: none"> <li>• <i>Subcomponent 2A: Strengthening capacity to implement the expanded PES program.</i> This subcomponent was intended to support the strengthening of FONAFIFO's technical capacity to implement the expanded program, while ensuring that FONAFIFO's recurring overhead costs remained at less than 10 percent.</li> <li>• <i>Subcomponent 2B: Increasing the efficiency of environmental service contracting.</i> The subcomponent was intended to support the development and introduction of a more targeted, differentiated approach in which the land uses promoted, the eligibility criteria, and the payments offered were set on a region-by-region basis in light of local needs and conditions.</li> <li>• <i>Subcomponent 2C: Strengthening technical monitoring capacity.</i> This subcomponent was intended to support the strengthening and/or establishment of appropriate systems to monitor the PES program's effectiveness in generating the desired environmental services, in cooperation with other institutions.</li> <li>• <i>Subcomponent 2D: Contracting landholders to provide environmental services.</i> This subcomponent was intended to finance environmental service contracts with participating landholders.</li> </ul>
<p><i>Component 3. Removing Barriers for Small Landholders' Participation in the PES Program:</i> This component aimed at reducing obstacles to participation of small landholders, many of whom are poor, in the PES program. Although the program was not primarily designed for poverty reduction, the high spatial correlation between areas that supply environmental services and low-income rural areas were assumed to create opportunities to contribute to this complementary objective.</p> <ul style="list-style-type: none"> <li>• <i>Subcomponent 3A: Strengthening the incorporation of low-income landholders in the PES Program.</i> This subcomponent was intended to support efforts to remove obstacles that could impede participation by poor landholders, including the high transaction costs of dealing with many individual medium and small landholders and the lack of cadastral plans.</li> <li>• <i>Subcomponent 3B: Piloting improved watershed management in low-income areas.</i> This subcomponent was intended to develop and implement watershed management plans in three pilot areas with high poverty rates.</li> <li>• <i>Subcomponent 3C: Monitoring social and economic impacts.</i> This subcomponent was intended to strengthen monitoring systems related to measuring socioeconomic impacts of the program, with a particular emphasis on the poor as well as small- and medium-sized landholders.</li> </ul>

## 1.6 Revised Components

10. Project components were not changed. However, following the MTR in April 2012, and then again during a second Level Two restructuring in July 2013, five intermediate results indicators were revised. These changes are reflected in Table 4 (below).

Table 4. Components and Revised Outcomes

<b>Original Component</b>		
1. Developing and implementing sustainable financing mechanisms.		
<i>Original Intermediate Outcomes</i>	<i>Revised Intermediate Outcome</i>	<i>Comments/Rationale for Revision</i>
By EOP, at least 15,000 hectares located in productive landscapes in the buffer zones of protected areas and biological corridors connecting them with environmental service contracts financed from the FBS.	At least 85% of annual net returns from the FBS Patrimonial Fund invested in PES at productive landscape projects located in buffer zones of protected areas and biological corridors connecting them, which lack other sources of funding.	According to the restructuring paper, the 2009 global financial crisis prevented the timely capitalization of the FBS until June 2011, and the return on investment was lower than planned (2%), affecting the target number of hectares (15,000) expected to have environmental service contracts financed by the FBS by EOP.  The proposed language for this indicator included changing the unit of measure from hectares to percentage of annual net returns invested from the FBS. The revised indicator was approved in the 2013 restructuring. However, in its final progress reports the client failed to reflect the revised indicator and kept the original figure in ha.
2.7 million tons of CO <sub>2</sub> from afforestation/reforestation activities are sold via verified emission reductions, generating at least US\$10 million.	238,239 tons of CO <sub>2</sub> from forestry activities will be certified and sold at the global carbon markets, for at least US\$ 900,000.	By EOP, approximately 22,950 tons of CO <sub>2</sub> from forest activities were certified and sold on global carbon markets, for around US\$95,000. Following project appraisal (and the two-year effectiveness delay), the annual emission reduction generation proved to be significantly lower. According to the restructuring paper and the second, 2013 restructuring, the primary causes for the shortage of Certified Emission Reductions (CERs) were twofold: (i) requirements for verification and certification of emission reductions turned out to be more stringent and take longer than anticipated at appraisal, and (ii) a decline in CER prices, more or less coinciding with the global financial crisis, reduced the expected carbon revenue. The indicator was revised to reflect a more realistic scenario. However, in its final progress reports the client failed to reflect the revised indicator and kept the original figure of 2.7 million tons of CO <sub>2</sub> /US\$10 million. Final achievement was of 9.6% of the revised target value in tons (or 0.85% of the original target), and 10.6% of the revised target value in US\$ (or 0.95% of the original target).
2. Scaling-up the Environmental Services Program		
<i>Original Intermediate Outcome</i>	<i>Revised Intermediate Outcome</i>	<i>Comments/Rationale for Revision</i>
By EOP, at least 90% of PES program resources are placed in PES contracts.	At least 75% of PES program resources are placed in PES contracts.	By EOP, 77% of PES program resources were allocated in PES contracts. This indicator was revised during the 2012 restructuring. The number achieved exceeded the revised target of 75%, but fell short of the original target value of 90%.
3. Removing Barriers for Small Landholders' Participation in the PES Program		
<i>Original Intermediate Outcome</i>	<i>Revised Intermediate Outcome</i>	<i>Comments/Rationale for Revision</i>
Female landholders	This indicator was not	The number of women participating in the PES program

participating in the program will be maintained at least to the current level.	revised, but during the 2012 restructuring the target value for EOP was raised from 474 to 800.	by EOP was 877, exceeding even the revised target value of 800. The final value was 185% of the original target and 110% of the revised value.
Indigenous community-owned lands in the PES program will be maintained at least to the current level.	This indicator was not revised, but during 2012 restructuring the target value for EOP was raised from 25,125 to 43,000 ha.	The number of ha of indigenous community-owned lands in PES by EOP was 47,571, exceeding the revised target value of 43,000. The final value was 181% of the original target and 106% of the revised value.

## 1.7 Other significant changes

### *Extension of Closing Date*

11. Following the MTR and the subsequent 2012 restructuring, an extension of the closing date of the project from July 31, 2012 to March 31, 2014 was approved. The extension sought to accommodate the project's two-year delay in effectiveness, to allow for the capitalization and financing of the administrative costs of the Costa Rica's Sustainable Biodiversity Fund (FBS), as well as to secure the completion of studies critical for the achievement of the PDO and GEO,<sup>9</sup> namely (i) a socioeconomic impact study; (ii) the biodiversity monitoring study by INBio; and (iii) a carbon sequestration study to define Costa Rica's emissions baseline to support the country's carbon market.

### *Reallocation of Loan Proceeds*

12. As a result of the need to capitalize and finance unexpected administrative costs of the FBS and complete key critical studies, a reallocation of funds from components 1a and 3 to components 1b and 2 of the GEF grant was approved during the restructuring of June 29, 2012.

## 2 Key Factors Affecting Implementation and Outcomes

### 2.1 Project Preparation, Design and Quality at Entry

13. The project was prepared building on achievements of the Ecomarkets I Project and taking into consideration a number of lessons learned to improve the sustainability of the PES program, in particular to promote the consolidation, efficiency improvement, and coverage expansion of the program. Overall, the project was conceived as a follow-up implementation phase of Ecomarkets I, and aimed at resolving the shortcomings of the previous project and providing long-term financial sustainability to the PES program. The project was implemented by FONAFIFO, which by BOP had more than a decade of experience administering the PES program.

14. The project objectives were consistent with the Bank's Country Partnership Strategy (CPS) for 2004-2007, which called for strengthening the country's leadership in environmental management, as well as achieving financial sustainability in the environmental sector, in particular by securing the sustainability of the PES program. The project preparation team had access to significant information, since Costa Rica was widely considered a pioneer in PES initiatives and conservation. In addition, extensive literature about both topics was readily available. Furthermore, Ecomarkets II was being prepared while Ecomarkets I was still under implementation, which provided additional input to design a project that would address both forest protection and biodiversity conservation.

15. The project was primarily designed as a forestry-based intervention that provided funding for promoting afforestation, forest protection and development of social inclusion in the PES program, all of which contributed to the PDO. Yet, project design failed to include concrete actions to directly promote and improve biodiversity conservation (which was the aim of the GEO), and put in place adequate mechanisms to measure the impact of the PES

program on conservation on the ground. With more than 85% of the GEF grant allocated to capitalize the FBS, the project design assumed that, by default, successful implementation of the PES program and guaranteeing its long-term financial sustainability would be sufficient to ensure improved biodiversity conservation. While there are a number of publications that support this assumption (e.g. Pagiola, 2008<sup>10</sup>; Costa Rica, 2012<sup>11</sup>; INBio, 2006<sup>12</sup>), others disagree with the direct causal link assumption of payment for ecosystem services and improved conservation (e.g. Hohberg, 2014<sup>13</sup>; Mena (ed.), 2008<sup>14</sup>; Boelens and Hoogesteger, 2014<sup>15</sup>).

16. The project selected its intervention areas based on the recommendations of the GRUAS II report, produced under the Ecomarkets I project<sup>16</sup>. This report identified areas of high biodiversity value and recommended that future PES interventions be carried out in such areas. The report also indicated that further work was required as there were knowledge gaps about biodiversity baselines. Ecomarkets II's project design appears to have incorporated the former recommendation, but not the latter. This resulted in the project starting without an adequate biodiversity baseline (not completed until EOP) and without mechanisms to provide physical evidence that the PES program was having an actual impact on conservation.

17. One of the expected results of the project was to increase the participation of downstream users in the financing of the program. However, by simultaneously providing a large amount of external resources for actual PES contracts and promoting the creation of the FBS, the project sent conflicting signals from the onset. Indeed, during implementation user participation did not reach the expected target, since government funding - supplemented by the Bank loan as well as eventually the FBS - provided ample resources, effectively reducing the motivation for FONAFIFO to actively increase user co-financing of PES contracts.

18. The project's risk at Appraisal was assessed as low to moderate (L/M). Nevertheless, the risk assessment framework seems to have included only risks for which a mitigation measure had already been planned, as opposed to also considering less manageable risks that could have disrupted project implementation.

19. Overall, the project's objectives were ambitious considering the realities on the ground. Project design relied on the results of the successful predecessor project, without, however, fully incorporating all of its lessons, while at the same time not sufficiently appreciating requirements and risks of a conservation-oriented GEF component (in addition to the development-focused IBRD investment).

## **2.2 Implementation**

20. Appraisal was carried out in March 2006, and the Board of Directors approved the project loan and grant on June 8, 2006. The legal documents were only signed in May 2007, and the project became effective on July 31, 2008, more than two years after approval. While there were a number of reasons for this (including lengthy legislative approval processes which applied to externally funded operations), and although there is no formal requirement for revisiting project design in cases of delayed effectiveness, the project would have benefitted from a thorough review to ensure that conditions as appraised were still valid at the time of effectiveness.

21. The challenges of project implementation were a direct reflection of the project's design. Although the Bank ISRs regularly stated that project progress was satisfactory or moderately satisfactory, delays were common throughout the project's life. Although both the client and the Bank team were successful in resolving most of the issues, by EOP a number of targets had not been fully achieved, and activities that should have been carried out much earlier were only starting as the project was in its final stages. A number of delays can arguably be traced back to factors outside the implementing agency's control, such as (i) the significant drop in carbon certificate prices by the time the project became effective, or (ii)

long processing and approval times by central government and the National Assembly, which delayed the initial disbursement and the establishment of the FBS. Still, delays were also the result of incomplete baseline information, the nature of the project's design and the client's capacities in biodiversity management.

22. Ultimately, the implementation of on-the-ground activities related to the PDO was moderately successful. While some of the target values were not fully achieved, a number of indicators were exceeded even after being revised during both Level Two restructuring events. This in turn was the result of adequate management by the Bank and client teams to address issues inherent in project design. Implementation was able to address most of the problems identified by the Blue Ribbon Panel review. FONAFIFO succeeded in carrying out the tasks for which it had the capacity, which was (and still is) managing forestry contracts under a PES scheme and establishing channels of communication and outreach with the target population, including priority groups like indigenous communities and their territories.

23. With regard to the GEO, project implementation was less effective. The main focus of the activities financed under the GEF-funded portion of the project was to address the "enhancing long-term (financial) sustainability of conservation of globally significant biodiversity" element of the GEO. With about 85% of GEF resources used to establish and capitalize the FBS Endowment Fund, a fund which as of July of 2014 had received close to US\$20 million in additional resources through other donors, the GEF grant succeeded in promoting the sustainability of the PES program.

24. Nevertheless, FONAFIFO's lack of experience and expertise in carrying out biodiversity conservation initiatives and measuring their impact resulted in implementation delays of critical activities related to achieving the GEO. As mentioned previously, Project design assumed that successful implementation of the PES program would automatically result in impacts on biodiversity conservation. Considering the focus on the FBS and the described lack of expertise and capacity of the implementing agency in measuring and monitoring this impact, little evidence is available to indicate whether this relationship held. In addition, the optimistic goal of being able to "enhance the conservation of globally significant biodiversity" with less than US\$2 million (the non-FBS portion of the GEF grant) was impossible to measure as the project did not include a definition of what 'globally significant' meant in this context, nor did it include indicator species/ecosystems (since, as has been previously mentioned, no biodiversity baseline was available).<sup>17</sup>

25. Establishment of the FBS was only completed during the late stages of project implementation. A number of political delays and unexpected legal financial requirements (including the lengthy project approval process in the National Assembly and fiduciary complications that prevented the GEF grant from being available until 2013) hampered the establishment of the Fund. Only in mid-2013, after the Fund started operating under new management (where professional and experienced fund managers and fundraisers replaced the person that had been originally hired by FONAFIFO) and some restrictive investment policies (that in practice limited returns to no more than 2.5% annually) were lifted (which were originally required by the German Financial Cooperation, KfW, as additional donor), did the Fund start to show its real potential (by, among others, diversifying investments, increasing risk tolerance and actively looking for higher returns – see Annex 10). Although by EOP the FBS had not yet proven to be an effective new sustainable financing mechanism, implementation was well underway; concurrently the GOCR was able to raise significant additional financing (reaching US\$27 million in 2013) for the PES program through the fuel tax and water tariff, which removed the urgency of tapping into the FBS capital base, therefore enabling FBS management to focus on the protection and investment of the Fund's capital.

26. Carbon payments were originally considered a viable option for raising US\$10 million (selling 2.7 million tons of CO<sub>2</sub> on international carbon markets). Conversely, the lack of a proper legal framework to support a national carbon market, the incompatibility between the PES program itself and the carbon market mechanisms (as approved by the Kyoto Protocol Secretariat), and the slow advances in a separate project funded by the Bio Carbon Fund (*Carbon Sequestration in Small Farms in the Brunca Region – Coopeagri*, P094155) that was intended to “field test” this component, resulted in FONAFIFO deciding not to focus on this line of engagement.

27. Based on the rationale outlined above, project implementation has been rated **Moderately Satisfactory**

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

28. The M&E framework design and implementation is one of the most significant weaknesses of this project. A number of indicators and target values were changed following the 2012 Mid Term Review (MTR) and again during a second restructuring one year later. Tables 2 and 4 show the extent of these modifications. While it would have been expected that revisions to indicators during project implementation were accompanied by corrections in the measurement protocols or adaptation of the M&E framework, such changes would only be effective if introduced early enough to enable adjustments during implementation. Given that the project design was not reviewed and adapted to changed realities soon after becoming effective, this constitutes an important limitation. The fact that the MTR was only carried out 21 months before the closing date (of an implementation period of 68 months) meant that the project’s trajectory did not fundamentally change.

29. The previously described differences between PDO and GEO achievements were apparent in the M&E application as well. The indicator framework was satisfactory for FONAFIFO’s area of expertise, which is the PES program and forestry management. Modifications during implementation resulted from either overambitious or underestimated targets, or from incomplete due diligence during indicator design (in cases where indicators turned out to be too difficult or complicated to measure). For the GEO, the M&E framework only included two indicators and no biodiversity baseline. One indicator (vegetation cover) was dropped given the difficulties of measurement, while the other indicator (buffer zones and ecological corridors) achieved about 58% of its EOP target value. As a result, during and after the MTR the project actually adjusted its results framework to align it with FONAFIFO’s capacities, rather than building capacity to compensate for institutional weaknesses.

30. Available information was not assessed in a proper and timely fashion, resulting in delays in improving project implementation. Combined with the fact that beyond standard PES program data collection and statistical progress reviews, the project did not make full use of the M&E framework as intended, M&E Design, Implementation and Utilization is rated **Moderately Unsatisfactory**.

### **2.4 Safeguards and Fiduciary Compliance**

31. Safeguards implementation during project execution was generally satisfactory. While environmental concerns were sufficiently taken into account, social impacts were initially not systematically identified, recorded and/or mitigated. FONAFIFO required strengthening the identification, documentation and incorporation of PES participants’ socioeconomic data into their management information system. By EOP, FONAFIFO was well advanced in systematically documenting particular impacts of PES on indigenous communities and women. In fact, the targets for gender inclusion were raised and exceeded by EOP. The 2013 CATIE (Center for Tropical Agricultural Research and Higher Education) study on socioeconomic impacts of PES in Costa Rica did focus on poverty reduction, but did not

consider the situation of minorities in the country. However, complementary consultancies have been carried out, providing evidence that the PES program has had a significantly positive direct and indirect impact on targeted communities, including priority groups like indigenous communities and women. In the latter case, impacts even exceeded the upward revision of the target value and almost doubled the original goal.

32. Project financial management was considered to be Satisfactory throughout project implementation, as was procurement. As a result, Safeguards and Fiduciary Compliance is rated **Satisfactory**, in overall accordance with the Project's ISRs.

## **2.5 Post-completion Operation/Next Phase**

33. Given the GOCR's strong interest in developing a program aimed at capitalizing on the productive base of forests both in terms of their commercial value (for plantation forestry and agroforestry) and the value of the full array of ecosystem services they provide (e.g. for conservation forestry, water supply/storage, agroforestry), as well as investments in improving agricultural productivity, Section 6 of this ICR contains Lessons Learned that will be valuable for this new potential program, which would emphasize sustaining the country's achievements in the rehabilitation and conservation of forest ecosystems while maintaining a stable macroeconomic performance and taking into account the challenges of climate change.

34. Two actions by the GOCR have direct causal links with or result from project investments: (i) the implementation of the project's biodiversity monitoring once the INBio report was delivered in March 2014; and (ii) the increasingly effective performance of the FBS, which had reached a 5.3% return on investments by December 2013 and was predicting a possible 6% return by end of 2014 (see Annex 10).

## **3 Assessment of Outcomes**

### **3.1 Relevance of Objectives, Design and Implementation**

35. The original PDO is fully consistent with the Bank's CPS, which states that "[...] the Bank will continue to support the Government's commitment to including more land under the System of Payments for Environmental Services (PES), which compensates owners of forest and forestlands for carrying out conservation, natural regeneration and reforestation. [...], the Bank will contribute to the capitalization of the Biodiversity Endowment Fund through a GEF facility already approved, once matching resources become available. The expectation is that the capitalization of the Biodiversity Endowment Fund by the end of the CPS period will contribute to ensuring the sustainability of the PES." As a result, the Bank's objective for Ecomarkets II is current and the Relevance of Objective (as pertains to the PDO) is rated **High**.

36. The relevance of the project's GEO has been assessed against GEF's programmatic directions, which became effective on July 1, 2014. The GEO is fully compatible with and contributes towards GEF's Biodiversity Objective 4 (Mainstream biodiversity conservation and sustainable use into production landscapes and seascapes and sectors), Programs 9 (Managing the Human-Biodiversity Interface) and 10 (Integration of Biodiversity and Ecosystem Services into Development & Finance Planning). As a result, the ICR concludes that the GEF objective for Ecomarkets II is current and rates the Relevance of Objective (as pertains to the GEO) as **High**.

37. It is evident that this project was a complex operation that did not sufficiently take all country challenges into account. Difficulties resulting from the inclusion of PDO and GEO that required different implementation and M&E arrangements indicate that future operations need to consider more carefully the requirements for development (PDO) or environmental (GEO) objectives and be more sophisticated in developing indicators that are better aligned. As a result, the approach used for Ecomarkets II is no longer valid and the Relevance of Design and Implementation is rated **Modest**.

### 3.2 Achievement of PDO and GEO

38. The PDO intended to (i) enhance the provision of environmental services of national and global significance, and (ii) assist in securing their long-term sustainability. As has been explained in this ICR, given that the FBS was not able to provide funding for the PES program during project life as originally conceived, Bank funds were ultimately important in supporting FONAFIFO in expanding its coverage of PES contracts and land areas under PES coverage, although this small grants-based approach was not the originally intended method of implementation (in fact, it was rejected as an alternative during project design). However, based on the indicator values reached by EOP it can be argued that the goal of expanding the coverage of PES contracts was nevertheless achieved in a way that strengthened the PES program and effectively increased local participation, especially of priority groups like indigenous communities.

39. As mentioned in section 2.1, the project design did not fully embrace the strict concept of a PES, where users of the environmental service significantly fund the ecosystem conservation by compensating landholders/service providers. As a result, the project failed to address one of the recommendations of the Blue Ribbon panel review ('the need to draw a greater proportion of funding from service users for future sustainability'); in fact, during the project's life funding from service users decreased in such way that the corresponding indicator had to be revised downwards. However, activities under the PES program were co-financed by substantial resources provided by GOOCR, leveraged from levies on fuel and the water tariff. That said, despite delays in the FBS's becoming fully operational and given past trends, projections and current investment policies, it is evident that the FBS will turn into a significant source of sustainable funding for the PES program in the near future (within the next 2-5 years), thereby achieving this part of the PDO. Annex 10 provides graphic representations of the FBS's performance over the past years.

40. Bank intervention was key in supporting the program while sustainable funding was being put in place. Without the Bank's loan, it would have been very difficult i) for the GOOCR to provide leveraging funding and maintain the PES program until the FBS was fully established, and ii) to provide coverage for the areas established by government policy. The efficiency analysis (see section 3.3) confirms this. As a result, the ICR considers that there was a clear causal relationship between project intervention and the goals sought, and that, although under less than optimal circumstances, the PDO was sufficiently achieved to be rated **Satisfactory**.

41. The GEO had a similar structure as the PDO, intending to (i) enhance the conservation of globally significant biodiversity and (ii) ensure its long-term sustainability. The key output of the GEO was to support "the development and implementation of market-based instruments to promote forest conservation in buffer zones of protected areas and biological corridors connecting them." As has been described earlier, while the focus of the project was, among others, the financing of PES contracts that encourage forest conservation, the lack of a biodiversity baseline until the EOP made it difficult to substantiate the actual impact of project activities on globally important biodiversity.

42. Nevertheless, GEF funds were used to establish and capitalize the FBS (which is considered a market-based instrument), putting in place arrangements and structures that will eventually generate revenues (additional to the ones generated by the fuel tax and water tariff) and support conservation in the mid- to long-term. Project resources provided FONAFIFO and the GOOCR with valuable time to compensate for the delays in setting up the FBS and to complete the development of the missing biodiversity baseline. Under these circumstances, although there is recognition that there were weaknesses in the design of the project that prevented the project from reaching the goal of effectively conserving

biodiversity of global significance, the ICR considers that the GEO was achieved at least partially. As a result this ICR rates achievement of the GEO as **Moderately Unsatisfactory**.

### **3.3 Efficiency**

43. The ex-post economic analysis reveals positive results in terms of net present values and very high economic rates of returns based on the various scenarios simulated. The robustness of the results was tested by assuming significantly lower estimations of economic benefits in different scenarios (for more detail see Annex 3).

44. Correspondingly, the level of confidence in the high economic returns generated by the project is bolstered by the fact that benefits associated with the reforestation component, the sale of carbon credits, the revenues realized by service contracts by public and private water suppliers, and the poverty reduction benefits have been left out of the analysis.

45. For an economic value of US\$4,500 per ha of annual benefits associated with protected areas, the analysis finds that at 4% discount rate, Net Present Values are as high as US\$48 million, which represents a benefit/cost ratio of 2.4. As a result, the project's efficiency is rated as **Substantial**.

### **3.4 Justification of Overall Outcome Rating**

46. As discussed above, the outcomes with respect to the PDO were significant and warrant a **Satisfactory** outcome rating. This has also been confirmed by the **Substantial** efficiency rating. The GEO was only partially achieved due to shortcomings in design, implementation, borrower performance and the quality of M&E, which resulted in a rating of **Moderately Unsatisfactory**. The outcome rating also takes into account that the PDO portion of the project was achieved through the IBRD loan (which accounted for 75% of the overall project resources of the blended IBRD/GEF funding). While relevance of objectives remains **High**, the relevance of design and implementation has been rated **Modest**.

47. Based on the above the Overall Outcome of the project has been rated **Moderately Satisfactory**.

### **3.5 Overarching Themes, Other Outcomes and Impacts**

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

48. Ecomarkets II was not designed as a poverty reduction project, nor is CR's PES conceived as such. However, besides facilitating access to the program and fine-tuning the targeting of its contracts, project funds have provided an important additionality for PES to be able to significantly strengthen the capacities of local indigenous communities within the target areas to understand and fully use the resources provided by the program. Target indigenous communities have been able to largely avoid the individualization of the contracts and make decisions regarding conservation of their land collectively. At these locations, project funds have been primarily used to support the purchase of farming and medical equipment and supplies. While FONAFIFO does not condition the use of payments, the program has been successful in promoting investing PES receipts, which in some cases possibly even surpassed regular government allocations<sup>18</sup>. In addition, by being required to acquire the necessary skills to navigate the legal and bureaucratic intricacies of PES contracting, communities have been able to apply these same skills to promote their rights and solve problems with local and the central government in a much more proactive and effective manner.<sup>19</sup>

#### **(b) Institutional Change/Strengthening**

49. In addition to the PES program, FONAFIFO leads CR's REDD+'s secretariat and is tasked with implementing the program in the country. While the project's failure in achieving its CO<sub>2</sub> trading target impacted negatively on the overall project outcome rating, it did provide an opportunity for the agency to recognize and address weaknesses in this regard.

Although in a strict sense PES has not been intended to be a primary mechanism for carbon sequestration (nor does it fulfill REDD+'s focus of a market-based emissions-reduction tool - see section 3.2 and 6 of this ICR regarding PES' strong reliance on subsidies<sup>20,21</sup>), the project has significantly strengthened FONAFIFO's capacities to manage relatively large investment operations, similar to what a REDD+ initiative looks like. As a result of this project and concurrent Bank engagements, FONAFIFO is now better prepared to manage carbon sequestration schemes and emission reductions through forest management. In fact, in September 2013 the Bank and FONAFIFO did sign a letter of intent for the purchase by the Forest Carbon Partnership Facility (FCPF) of emissions reduction certificates for up to US\$63 million.<sup>22</sup>

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

50. No formal beneficiary survey or stakeholder workshops were conducted specifically for purposes of reviewing project performance. However, there are preliminary findings from a Bank-commissioned consultancy to evaluate the project's socioeconomic impact. These findings are described in Annex 5. Likewise, FONAFIFO held a closing session where a number of beneficiaries were invited to provide testimonials about the impact of the project on their livelihood. Annex 5 also provides a summary of these testimonials

## **4 Assessment of Risk to Development Outcome**

51. Long-term sustainability of the PES program is somewhat complex to assess. Although the project has contributed significantly towards consolidating the program, sustainability will depend on the GOCCR's commitment to provide funding to finance future PES contracts.

52. On the one hand, while the PES Program has been an important instrument to increase forest cover, its ability to continue doing so is limited on both financial and political grounds. Scarce fiscal resources could also be redirected to more urgent ends given the 52% of forest cover achieved. Considering that the more substantial part of the PES program is being financed through revenues from the fuel tax, current efforts to promote Costa Rica as a carbon neutral country will in the long run reduce tax revenues as the consumption of fossil fuels is likely to decrease. To address this risk, the Bank is currently engaging in a dialogue to provide advice on how to reform the PES, following an analysis of the program's impact and the sustainability of its financing in the context of the country's overall development agenda.

53. On the other hand, given that the PES program originated prior the Bank's engagement, it is likely that it will continue with or without Bank support, especially if the FBS continues its current growing trend and starts providing sustainable funding to the program. In addition, with GOCCR's interest to promote green and inclusive growth through mainstreaming sustainable management practices and systems in productive landscapes, there is an expectation that the PES program will continue. The Risk to both the PDO and the GEO has been rated **Negligible to Low**.

## **5 Assessment of Bank and Borrower Performance**

### **5.1 Bank Performance**

#### **(a) Bank Performance in Ensuring Quality at Entry**

54. Sections 2.1 and 2.3 of this ICR describe a number of issues in the Project's preparation and design. These issues had a cascading effect on implementation, which required the Bank to carry out two restructurings of the results and M&E framework.

55. Problems with Costa Rica's slow and lengthy project approval process as well as FONAFIFO's capacity constraints in terms of biodiversity conservation were known by the time of project appraisal, which should have prompted the Bank to pay more attention to

these issues. Indeed, the first ISRs later pointed out these shortcomings, confirming lapses in Project design. While the Bank focused sufficiently on the project's PDO, it underestimated the capacity of the implementing agency to properly address the shortcomings of the biodiversity M&E system. As a result, Bank Quality at Entry is rated **Moderately Unsatisfactory**.

#### **(b) Quality of Supervision**

56. Considering the delayed effectiveness, which caused the project to start implementation under a different set of conditions from the ones under which it was designed, the Bank missed an opportunity to apply corrective measures immediately after effectiveness, in particular as regards its overambitious nature and the ill-suited M&E system.

57. The fact that the project was supervised by five different Task Team Leaders had an impact on project execution. Also, although agreed upon in principle during the MTR, the June 2012 restructuring did not include a revision of three critical intermediate results indicators under Component 1 (indicators 4 and 5) and Component 2 (indicator 2). To address this shortcoming, the September 2012 supervision mission discussed and agreed on incorporating the revised indicators through an additional restructuring in 2013.

58. The Bank did flag potential issues and took corrective action, albeit with much delay. For example, during the difficulties with the establishment and capitalization of the endowment fund, the Bank supervision and financial teams provided intensive support in finding solutions and supporting FONAFIFO. Ultimately, however, the Bank could have been significantly more proactive in its supervision; quality of supervision is therefore rated **Moderately Unsatisfactory**.

#### **(c) Justification of Rating for Overall Bank Performance**

59. Bank quality at entry and during supervision have been rated **Moderately Unsatisfactory**. This ICR recognizes the Bank supervision team's efforts to solve the difficulties found during implementation, in particular problems with the timing of establishment and capitalization of the FBS. The Bank failed to identify some challenges that led to delays in project start-up and execution, and did not sufficiently adjust the M&E system during and after the MTR. Consequently, Overall Bank Performance is rated **Moderately Unsatisfactory**.

### **5.2 Borrower Performance**

#### **(a) Government Performance**

60. The government of Costa Rica performed as expected, including delays caused by bureaucratic processes that, as mentioned, prompted the Bank to specifically address this issue in its current CPS. Once underway, the government maintained strong commitment throughout the project life, both specifically to the project's goals as well as to the underlying environmental and conservation background issues. The GOCR did leverage substantial funding for the FBS (even exceeding the original capitalization target value) and maintained its goal of securing funding to the PES through the fuel tax and water tariff. The GOCR also applied a policy change and raised the target area of land under PES coverage to 310,000 ha; while the decision to include this target in the project ultimately proved to be overambitious), it *did* demonstrate Costa Rica's confidence in its abilities to sustainably conserve and manage its forest resources through the program. Considering the above and the fact that GOCR embraced and supported the project within the scope of its mandate, Government Performance is rated **Satisfactory**.

#### **(b) Implementing Agency or Agencies Performance**

61. FONAFIFO implemented the project within the reach of its mandate and capacity. As mentioned, the agency excelled at managing the PES program, but had (and still has) insufficient experience and capacity in implementing biodiversity conservation initiatives.

Likewise, many of the initial issues with the FBS can be traced to the fact that FONAFIFO did not have prior experience in establishing and managing large Conservation Trust Funds.

62. However, once issues became apparent, FONAFIFO did deal with them within its limitations. The agency's problems with the GEO and the M&E system resulted from capacity constraints and led to delays in finding solutions. FONAFIFO's performance is rated **Moderately Satisfactory**.

### **(c) Justification of Rating for Overall Borrower Performance**

63. Considering the above-mentioned issues, Overall Borrower Performance is rated **Moderately Satisfactory**.

## **6 Lessons Learned**

64. Project design and implementation need to acknowledge country-specific complexities and pay particular attention to project readiness prior to appraisal. Delays in effectiveness can lead to a situation where the project design is not aligned anymore to the situation on the ground. Where project effectiveness is delayed, the validity of assumptions made at appraisal needs to be reviewed, and corrective action taken as early as possible upon effectiveness.

65. To ensure that a project's M&E Framework serves its purpose as a project management tool, relevant project stakeholders need to adequately understand its concepts and display the capacity to ensure appropriate implementation. Where this is not the case, these deficiencies need to be identified and addressed as a matter of priority. This could be done by either providing additional technical assistance to the implementation agency or, in circumstances where better suited capacity is available outside, bringing this expertise into the project at the design stage.

66. While ecological baselines are not always readily at hand, science offers a number of alternatives for properly measuring conservation achievements when data is difficult to obtain or not available. Only biodiversity operations and/or components that incorporate simple, but proven data collection and measurement tools will ultimately be able to deliver on the outcomes expected from such programs in the long term.

67. PES programs have proven effective in promoting afforestation/ reforestation as well as forest conservation, while providing a number of environmental services to downstream users. However, there are instances of PES programs creating the perverse incentives that this project precisely tried to avoid. Given high opportunity costs for cash crops (such as pineapple), areas formerly participating in Costa Rica's PES program are being converted into agricultural lands. Recent analyses of Ecuador's SocioBosque program (similar to Costa Rica's PES) show that the program has mainly produced healthy forests. Nevertheless, with an inadequate regulatory framework and prices for timber higher than compensation payments for the ecosystem services, these forests are being cut down. If programs are mainly financed through government subsidies (and/or co-financed by external resources), the incentive for the symbiotic relationship between providers and users of the environmental service is removed. With this in mind, it is important to ensure that a value is attached to Biodiversity as part of the PES system, so that the financial incentive for not converting is higher.

68. Given the conditional cash transfer nature of PES, engaging with vulnerable and disadvantaged communities can not only help to increase PES performance, but also significantly improve the livelihoods of these stakeholders. The availability of cash income provides communities in participating indigenous territories with bargaining powers to co-finance GOCR social programs leading to (i) improved access to basic public services such as education and health; (ii) improvements of infrastructure like roads and electricity; and

(iii) the implementation of social development programs, such as construction of houses. At the organizational level Indigenous Peoples Organizations can benefit from assistance given to improve management skills and self-government capacity.

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

### **(a) Borrower/implementing agencies**

69. The main issue raised by the Implementing Agency was related to a perceived less-than-optimal support by the Bank's TTLs until late into project implementation. FONAFIFO argues that many of the issues encountered, especially with regard to delays, could have been prevented or at least mitigated given shorter Bank response times to client enquires.

70. The ICR agrees with the client in this regard and extensively analyzed the issues surrounding project design and implementation, which could have been addressed earlier and more proactively through better and timelier Bank supervision and communication with the client.

### **(b) Cofinanciers**

N/A

### **(c) Other partners and stakeholders**

N/A

## Annex 1. Project Costs and Financing

### (a) Project Costs and Financing

Components	Appraisal Estimate (USD millions)	Actual/ Latest Estimate (USD millions)	Percentage of Appraisal
Component 1: Developing and implementing sustainable financing mechanism	16.5	18.0	109
Component 2: Scaling up-the Environmental Services Program	72.8	107.0	147
Component 3: Removing Barriers for Small landholders' Participation in the PSA Program	1.0	0.2	.2
<b>Total Project Costs</b>	<b>90.30</b>	<b>125.2</b>	<b>138</b>

### (b) Financing

Source of Funds	Type of Cofinancing	Appraisal Estimate (USD million)	Actual/ Latest Estimate (USD millions)	Percentage of Appraisal
Borrower	Cash	47.56	85.4	179
International Bank for Reconstruction and Development	Cash	30.00	30.0	100
Global Environment Facility (GEF)	Cash	10.00	10.0	100
Local Sources of Borrowing Country	Cash	0.20	0.0	0.0
Biocarbon Fund	Cash	2.55	2.7	105
<b>Total</b>		<b>90.30</b>	<b>128.1</b>	<b>142</b>

## Annex 2. Outputs by Component

Original Component	Subcomponents	Outputs
<p><i>Component 1. Developing and implementing sustainable financing mechanisms.</i></p> <p>Component 1 focused on developing and implementing sustainable financing mechanisms according to the characteristics of each group of environmental service users. Likewise, rules would be developed for the use of these funds to generate environmental services that users desire.</p>	<ul style="list-style-type: none"> <li>• <i>Subcomponent 1A: Promoting watershed conservation via application of the new water tariff.</i> This subcomponent would mainstream sustainable natural resource management by instituting water tariffs to finance inter alia upstream watershed conservation, with 25 percent of the income generated channeled to the PES Program to protect priority watersheds.</li> <li>• <i>Subcomponent 1B: Implementing and capitalizing the Trust Fund for Sustainable Biodiversity Conservation (FBS).</i> This subcomponent would help strengthen and capitalize the FBS, being established under the Ecomarkets Project, to enable it to provide sustainable, long term financing for areas of globally significant biodiversity where other financing was either unavailable or insufficient.</li> <li>• <i>Subcomponent 1C: Accessing global carbon markets.</i> The subcomponent would support FONAFIFO's efforts to develop carbon sequestration projects to finance forest regeneration in degraded areas that the PES program had been unable to support given their high up-front cost.</li> <li>• <i>Subcomponent 1D: Developing voluntary markets for biodiversity conservation.</i> This subcomponent would support a more systematic approach to seeking funding from voluntary or 'retail' markets. The funds generated would help capitalize the FBS.</li> </ul>	<p>1A: The water tariff was applied as expected, and by EOP 25% of the income was regularly being transferred to support the PES program.</p> <p>1B: As mentioned, the FBS was actually fully capitalized. However, funds were not available by EOP, as there were significant delays until the Fund became fully operational.</p> <p>1C: This output was not pursued by decision of the client. Due to a number of factors, but mainly the absence of a viable regulatory framework to support a Costa Rican carbon market, by EOP only 0.85% of the original target value in tons and 0.95% of the original target value in US\$ was reached.</p> <p>1D: The target for this output was significantly reduced during restructuring, as it became apparent that voluntary contributions from end users of environmental services were more difficult to obtain than originally expected.</p>
<p><i>Component 2. Scaling-up the Environmental Services Program</i></p> <p>This component supported FONAFIFO and other institutions to implement the expanded PES program. Key outputs included: (a) strengthened capacity of FONAFIFO and other governmental institutions, together with NGOs working to implement the PES Program; and (b) a</p>	<ul style="list-style-type: none"> <li>• <i>Subcomponent 2A: Strengthening capacity to implement the expanded PES program.</i> This subcomponent would support the strengthening of FONAFIFO's technical capacity to implement the expanded program, while ensuring that FONAFIFO's recurring administrative costs remain at less than 10 percent of funds handled.</li> <li>• <i>Subcomponent 2B: Increasing the efficiency of environmental service contracting.</i> The subcomponent would support the development and introduction of a more targeted, differentiated approach in which the land uses promoted, the eligibility criteria, and the payments offered are set on a region-by-region basis in light of local</li> </ul>	<p>2A: FONAFIFO was strengthened and was able to successfully carry out the PES program and increase its coverage, while remaining within the established limits for administrative costs.</p> <p>2B: While bureaucratic hurdles still remain, FONAFIFO was able to develop and successfully implement a more efficient and realistic framework for the allocation of PES funds.</p> <p>2C: This output was only partially achieved. FONAFIFO was able to further develop its in-house contract monitoring</p>

<p>more efficient PES program.</p>	<p>needs and conditions.</p> <ul style="list-style-type: none"> <li>• <i>Subcomponent 2C: Strengthening technical monitoring capacity.</i> This subcomponent would support the strengthening and/or establishment of appropriate systems to monitor the PES program's effectiveness in generating the desired environmental services, in cooperation with other institutions.</li> <li>• <i>Subcomponent 2D: Contracting landholders to provide environmental services.</i> This subcomponent would finance environmental service contracts with participating landholders.</li> </ul>	<p>system. However, gaps remain in terms of monitoring environmental service provision and impacts on biodiversity. As mentioned in the main text, inadequate M&amp;E was one of the reasons for the GEO not having been achieved.</p> <p>2D: This output was achieved almost in its entirety. Most of the Bank loan portion allocated for that purpose was effectively used to fund PES contracts. However, the client was unable to spend the entire budget by EOP; by common agreement between the Bank and the client funds were reallocated to further capitalize the FBS.</p>
<p><i>Component 3. Removing Barriers for Small Landholders' Participation in the PES Program</i></p> <p>This component aimed at reducing obstacles to participation of small landholders, many of whom are poor, in the PES program. Although the program was not primarily designed for poverty reduction, the high spatial correlation between areas that supply environmental services and low-income rural areas were assumed to create opportunities to contribute to this complementary objective.</p>	<ul style="list-style-type: none"> <li>• <i>Subcomponent 3A: Strengthening the incorporation of low-income landholders in the PES Program.</i> This subcomponent would support efforts to remove obstacles that can impede the participation by poor landholders, including high transaction costs of dealing with many individual medium and small landholders and the lack of cadastral plans.</li> <li>• <i>Subcomponent 3B: Piloting improved watershed management in low-income areas.</i> This subcomponent would develop and implement watershed management plans in three pilot areas with high poverty rates.</li> <li>• <i>Subcomponent 3C: Monitoring social and economic impacts.</i> This subcomponent would strengthen monitoring systems related to measuring socioeconomic impacts of the program, with a particular emphasis on the poor as well as small- and medium-sized landholders.</li> </ul>	<p>3A: Undoubtedly, the project succeeded in increasing and facilitating access of priority groups, including poor landholders, indigenous communities and women, to the PES program. More streamlined, efficient and targeted processes contributed to this output.</p> <p>3B: The project targeted only two of the three planned watersheds. By the time the Project became effective, one of the target sites had already been incorporated under a different management plan that had the same conservation goals as this project's. FONAFIFO focused on the two remaining areas and produced the expected plans. Implementation, however, was still not fully underway by EOP.</p> <p>3C: While one socioeconomic impact study had been completed by March 2013 (and another one was still underway at the time of writing), the monitoring systems to be developed and implemented were not ready as of the date of completion of this ICR.</p>

### **Annex 3. Economic and Financial Analysis**

A formal economic analysis was not carried out during preparation and appraisal of the project due to lack of quantitative data. However, relying on qualitative analysis, the project team was able to prove that the PES program shows strong evidence of generating substantial national benefits in terms of improved hydrological services, biodiversity conservation, and carbon sequestration. The economic value of these benefits was expected to outweigh the proposed costs for the project.

Benefits related to improved hydrological services include: (i) avoiding the degradation of water quality and the higher treatment costs that lower water quality would imply. The town of Heredia, for example, does not filter the water it obtains from the Rio Segundo watershed; if the watershed were degraded, the town would have to build a costly filtration plant; (ii) reduced sedimentation of reservoirs and water intakes, thus avoiding the need for costly desilting operations; and (iii) reduced flood risk.

Improved biodiversity conservation and scenic beauty: Although biodiversity is primarily a global benefit, it also brings direct benefits to Costa Rica in particular through its contribution to the tourism sector. There are also local benefits to agriculture, for example, through improved pollination. Neither of these impacts can be easily quantified.

The costs of undertaking conservation activities under the program include: (i) opportunity costs of foregone land uses, in cases where landholders would have undertaken other land uses; (ii) transaction costs of the PSA program, including FONAFIFO's administrative costs and costs borne by program participants; (iii) costs related to forest management or reforestation; and (iv) deadweight losses arising from the manner in which financing is generated. These costs could be approximated by the costs of the projects using the actual yearly disbursement figures.

At the ICR stage, although the same limitations of data persist the team has tried to perform an economic analysis of the results of the project. The same benefits identified at appraisal stage stand and this analysis focuses primarily on the benefits related to areas of existing forests brought under conservation contracts in terms of avoided deforestation. The analysis assumes a rate of deforestation of 10% which is very conservative given that Costa Rica achieved negative net deforestation in the early 2000s. Andam, K. S. et al. (2008) "find that approximately 10% of the protected forests would have been deforested had they not been protected"<sup>1</sup> for the period between 1960 and 1997. The project also contributed to reforestation which in the long run will generate increasing benefits. These benefits have been ignored in the economic analysis. Another benefit associated with the project sale of carbon credits, which unfortunately has not really materialized due to the recent collapse of the carbon market.

At the end of the implementation phase, 47,432 ha of forest had been contracted under PSA, which represented about 4,743 ha of avoided deforestation (10%). Estimating economic benefits of protected areas involves estimating both market and nonmarket benefits. Nonmarket benefits are associated with non-extractive carbon, recreation, and biodiversity. A recent analysis performed for the Belize Protected Areas Project concluded that the benefits of primary forest protection net of the indirect opportunity costs could be estimated at US\$4,500 per ha per year<sup>2</sup>. Protected areas (International Union for Conservation of Nature categories I–VI) are valued at the lower returns per hectare to pasture land and crop land—a

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<sup>1</sup> Andam, K. S. et al. (2008): Measuring the effectiveness of Protected Area Networks in Reducing Deforestation.

<sup>2</sup> For more details, please refer to the Project Appraisal Document for the Belize Management and Protection of Key Biodiversity Area (P130474).

quasi-opportunity cost. Data on protected areas are taken from the World Database on Protected Areas, which is compiled by United Nations Environment Programme's World Conservation Monitoring Centre. Based on these data, benefits associated with protected areas in Costa Rica are estimated to US\$8,600 per ha.

Four scenarios have been used in the analysis. The first and second scenarios assumed the estimated benefit to be US\$8,600 and US\$4,500 per ha, respectively. To test for robustness of the results, scenarios 3 and 4 used much lower benefits (US\$3,000 and US\$2,000 per ha, respectively). Scenarios 3 and 4 allowed the team to correct for any overestimation of the economic value associated with protected area by applying as much as 65% and more than 75% of discount to the original estimate of US\$8,600. The simulations applied the following discount rates: 2%, 4%, 5%, and 10%. It turns out that results are positive for most situations, except at the 5% and 10% discount rates under scenario 4.

Table 1: Summary of Simulation Results (NPV stated in Million US\$)

Discount Rate	Scenario 1 \$8,600/ha/yr		Scenario 2 \$4,500/ha/yr		Scenario 3 \$3,000/ha/yr		Scenario 4 \$2000/ha/yr	
	NPV	BCR	NPV	BCR	NPV	BCR	NPV	BCR
2%	162.62	5.37	67.34	2.81	32.49	1.87	9.25	1.25
4%	124.87	4.59	48.76	2.40	20.91	1.60	2.35	1.07
5%	109.83	4.27	41.43	2.23	16.41	1.49	-0.27	0.99
10%	59.55	3.08	46.16	1.61	2.10	1.07	-8.16	0.72
	<b>ERR: 39%</b>		<b>ERR: 20%</b>		<b>ERR: 11%</b>		<b>ERR: 5%</b>	

## Annex 4. Bank Lending and Implementation Support/Supervision Processes

### (a) Task Team members

Names	Title	Unit	Responsibility/ Specialty
<b>Lending</b>			
Nadim Khouri	Sr. Technical Specialist	LCSEER	TTL
Solange Alliali	Sr. Counsel	LEGLA	Legal
Manuel Antonio Vargas Madrigal	Lead Financial Management Specialist	LCSFM	FM
Luis R. Prada Villalobos	Sr. Procurement Specialist	GGODR	Procurement
Benoit Bosquet (TTL 2008-2009)	Practice Manager	GENDR	TTL
Dinesh Aryal	Sr. NRM Specialist	LCSER	Operations
<b>Supervision/ICR</b>			
Stefano Paigola	Sr. Environmental Economist	LCSER	Economist
Saima Qadir	Technical Specialist		Technical support
Alvaro Larrea	Sr. Procurement Specialist	GGODR	Procurement
Fabienne Mrocza	Financial Management Specialist	GGODR	FM
Monica Lehnhoff	Procurement Specialist	GGODR	Procurement
Juan Pablo Ruiz (TTL 2009-2011)	Sr. NRM Specialist	LCSER	TTL
Gunars Platais (TTL 2011-2012)	Sr. Environmental Economist	GENDR	TTL
Tomas Socias	Sr. Procurement Specialist	GGODR	Procurement
Kelsey Jack	Consultant	DEC	
Mary Lisbeth Gonzalez	Sr. Social Development Specialist	GURDR	Safeguards
Aaron Isaac Ordower	JPA	LCC2C	Operations
Christian Albert Peter (TTL since October 2012)	Lead Environmental Specialist	GENDR	TTL
Elena Segura	Sr. Counsel	LEGLE	Legal
Sandra Lisette Flores Mixco	ETC	GGODR	FM
Juliana Gomez Arango	Consultant	GENDR	Environment
Komlan Kounetsron	Operations Officer	GURDR	Economic Analysis

**(b) Staff Time and Cost**

Stage of Project Cycle	Staff Time and Cost (Bank Budget Only)	
	Number of Staff Weeks	USD thousand (including travel and consultant costs)
<b>Lending</b>		
FY05	5	15
FY06	56	268
<b>Total:</b>	<b>61</b>	<b>283</b>
<b>Supervision/ICR</b>		
FY07	16	73
FY08	12	52
FY09	26	107
FY10	19	86
FY011	15	75
FY012	15	85
FY013	17	108
FY014	14	128
FY15	1	7
<b>Total:</b>	<b>135</b>	<b>721</b>

## **Annex 5. Beneficiary Survey Results<sup>3</sup>**

The main expected benefits of Ecomarkets II were: conservation of biodiversity, increase in the participation of indigenous women in the program, participation of small forest owners, and public recognition that intact forests and their environmental services are valuable.

Ecomarkets II applied the following modalities to implement the PES program: a) protection of forest; b) reforestation; c) natural regeneration; d) management of forest; e) agroforestry systems (SAF) for participating forest owners in priority areas established by the National System of Conservation Areas (SINAC).

One of the main participants in the PES program were indigenous territories, representing about 2% of the national population with approximately 350,000 hectares (7% of the country, according to the National Institute of Statistics and Census, 2000). In Costa Rica there are 24 indigenous territories with eight different ethnicities; under Ecomarkets II all but two of these did not enter the PES program. This is important as indigenous territories are particularly relevant, given the high concentrations of forest located in their territories. The highest participation in the program has been concentrated in the Bribri-Cabécar territories belonging to the La Amistad Biosphere Reserve and in Guaymi of Coto Brus, Conte Burica and Osa, which are the indigenous territories with more forests and agroforestry systems in the country.

The project's design was consistent with the country's long-term development goals; its strategies and components had the same purpose, although with different modes of action, but always aimed at improving forest conservation.

However, Ecomarkets II had a limited monitoring and evaluation system to measure the environmental, economic and social impact it had. A limited number of indicators was available that only allowed monitoring of some variables. Still, anecdotal evidence found during the preparation of the ICR shows that all PES participants in indigenous territories used the program's resources for various activities with significant development results in environmental, social and economic aspects, especially in the context of strengthening the administrative, organizational and financial management capabilities of the Associations for the Integral Indigenous Development (ADII).

The benefits generated by the PES in indigenous territories contributed to the human development of these communities, located in areas where coverage by many public institutions is limited. The direct insertion of capital into the local family economy represents (i) an opportunity for many indigenous families (especially for women and children) for acquiring food and clothing, (ii) the recovery of the territory through the purchase of land, (iii) the improvement of the standard of living with access to basic services, and (iv) the strengthening of indigenous governance<sup>3</sup> and capacity building for government and self-management.

Regarding environmental indicators, the project used FONAFIFO's monitoring system, which has been useful to monitor the conservation of forest cover. However, it has not been able to demonstrate the impact on conservation of globally significant biodiversity by creating connectivity between protected areas that are geographically isolated or have high levels of biodiversity, because a biodiversity baseline was not available at the start of the project.

Ecomarkets II generated a series of unanticipated impacts, which have helped to increase its level of performance. Men and women of participating indigenous territories experienced

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<sup>3</sup> Results have been provided by the client and a consultancy report (Castellón, 2014).

significant improvements in their livelihoods: they saw improved access to basic public services such as education and health; improvements of infrastructure like roads and electricity; and the implementation of social development programs, such as construction of houses. Other members of the communities had direct access to increased income. Similarly, the ADII benefitted from improved management capabilities and self-government. In general, there was a high level of local satisfaction.

The Project has learned important lessons that can be taken up in the field of forest conservation:

- PES has the potential to promote conservation, and at the same time, reduce the vulnerability of the rural poor through the provision of additional income and financial stability.
- The concept of conservation used by the PES implies the exclusion of communities in areas that generate the environmental services. For the indigenous communities this means restrictions of access to and use of the natural resources, and a loss of use value in non-timber species.
- Environmental conservation funded by the PES did not promote the development of indigenous territories through the production of non-traditional goods and services such as ecotourism. Additional sources of funding could be used by the ADII.
- The PSA has promoted the diversification of land use and the adoption of improved farming practices, such as agroforestry systems, generating environmental services and contributing to local food security.
- The ADII consider that the indigenous character of the territories require an indigenous-specific PES.
- While Ecomarkets II did not aim for an explicit targeting of the poorest indigenous communities, the distribution *per se* of forests in Costa Rica resulted in such. No evidence of any barriers to the participation of the poorest indigenous communities has been identified in PES.

## **Annex 6. Summary of Borrower's ICR and/or Comments on Draft ICR**

### **Ecomarkets II:**

#### **A stimulus to Costa Rica's Payments for Environmental Services (PES) Program**

Two agreements were signed for this project: loan agreement IBRD 4557-CR and donation agreement 23681-CR. Both became priorities for the Costa Rican government since they were unanimously approved by the Legislative Assembly on the vote for loan contract No. 7388-CR and its annexes between the Republic of Costa Rica and the International Bank for Reconstruction and Development (IBRD), which created Law No. 8640.

Ecomarkets II was implemented from 2008 to March 2014 with the following funds:

- Loan of US\$30 million from the World Bank & a Global Environment Facility (GEF) grant of US\$10 million. Of this amount, US\$9.2 million went to capitalizing the Fund for Sustainable Biodiversity (FSB) and US\$0.8 million for institutional strengthening.
- Counterpart contributions in the amount of US\$72.2 million from the Costa Rican government, primarily coming from the hydrocarbon tax and from the Water Tariff as counterpart funding for the loan.
- Additionally, US\$8.5 million in revenue from other Donors (including Germany (KfW)).

In total, Ecomarkets II provided FONAFIFO with US\$120.7 million to implement the country's Payments for Environmental Services (PES) Program.

#### **Main outcomes**

##### Tariff for the Use of Water

In the context of project formulation, a study was conducted on "Identification of important water areas and estimates of revenues from the water tariff." Based on this research, a map of the important water areas was developed. In addition, the information from this map and the map of the distribution of the number of concessions per watershed was combined with the 2005 forest cover map. This was done in order to ensure that payments were made to forest areas that protect water resources.

Based on research regarding the Ministry of the Environment and Energy (MINAE)'s collection of water tariff payments, the Río Grande de Tárcoles watershed contributes 29% of the water tariff fees collected, followed by the San Carlos River watershed with 16%, and the Reventazón River watershed with 11%. Before it had this information, the National Fund for Forestry Financing (Spanish acronym FONAFIFO) prioritized watersheds with the highest water potential; but since 2011, it has been setting priorities based on the collection of Water tariff fees obtained per watershed. This distribution was adjusted to the administrative coverage of each one of FONAFIFO's nine Regional Offices.

With the approval of the Ecomarkets II Law, Law No. 8640, the Fund for Sustainable Biodiversity (FSB) was created in 2008. "The Fund for Sustainable Biodiversity (FSB) is an endowment fund mechanism with institutional autonomy, which injects financial resources for the long-term sustainability of the PES program in areas with high biodiversity. As a trust, it is ascribed to the state banking system through the Banco Nacional de Costa Rica" (Obando, 2013).

This trust constituted by the Environmental Bank Foundation (Spanish acronym FUNBAM), aims to preserve nationally and globally relevant environmental services provided by forest ecosystems; to accomplish this it must develop new economic incentive schemes.

The GEF provided US\$9.2 million in initial funding for the FSB, with one-to-one counterpart funding for a maximum of US\$15 million. The goal is to have eventually a US\$100 million

endowment fund by 2021. By the end of the Ecomarkets II project in March 2014, a total of US\$18.5 million had been raised.

The Fund for Sustainable Biodiversity concentrates on private areas within biological corridors and indigenous areas that have high levels of biodiversity and have also been prioritized using the National System of Conservation Areas (Spanish acronym SINAC) criteria.

#### Global carbon markets

Through the initiative “Carbon Sequestration on Farms of Small and Medium-size Producers of the Brunca Region,” Costa Rica registered its first CDM (Clean Development Mechanism) forest project in February 2013, under the United Nations Framework Convention on Climate Change (UNFCCC). This project generated 23,080 tons of Certified Emission Reductions (CER). FONAFIFO successfully negotiated a price of US\$4.15 per ton of certified CO<sub>2</sub> with the World Bank’s BioCarbon Fund. It is important to recall that the progress and the ground covered on this matter has contributed to Costa Rica’s participation in the International Strategy for Reducing Emissions from Deforestation and Degradation (REDD+) and in the National Carbon Neutrality Program. All of the experience that Costa Rica obtained has meant that, in addition to the global market, it has explored the national market, selling carbon to those businesses that need to offset their emissions. Therefore, FONAFIFO is promoting three national projects to offset greenhouse gas emissions through farms under PES contracts. The projects are in Guanacaste, Northern Zone and Southern Pacific.

Through 2013, the year Ecomarkets II was closed out, it is estimated that approximately 300,000 tons of net accumulated increase of carbon fixed through the contracts were included within the area of the three projects cited.

#### Obtaining financial resources to fund PES

Under Ecomarkets II a series of initiatives have been developed in order to secure funding for PES, including: (i) Environmental Services Certificate; (ii) Greenhouse Gas (GHG) Mitigation Service Certificate; (iii) Clean Flight Program; (iv) Donations, as well as (v) Agreements with different organizations. Others, such as the “Ecomarchamo” and the “Servibanca Green Credit Card” are both handled by the National Bank of Costa Rica (Spanish acronym BNCR), which allocates 10% of its commission to the FSB endowment fund. FONAFIFO has started negotiating a Green Credit Card with BNCR and a prepaid tourism card with the Costa Rican Tourism Institute.

#### Technical strengthening of FONAFIFO

During the execution of the Ecomarkets II project, the technical and technological platform for each one of the Regional FONAFIFO Offices was supported.

In addition, a number of steps have been taken to promote South-South cooperation, including during the Ecomarkets II project. For example, in 2013 an International Workshop was held that was organized jointly with the World Bank, whose aim was to present the lessons learned from PES and to support the implementation of Costa Rica’s Preparation Proposal REDD+. This workshop was attended by experts from 26 countries in Africa, Asia, Europe and America.

Similarly, during the execution of the Ecomarkets II project, FONAFIFO officials have participated in various workshops or conferences in several countries including: Germany, Belgium, Brazil, Colombia, Guatemala and the Dominican Republic. They have also received more than 150 representatives of international organizations interested in learning about aspects of how the PES program operates. In addition, a cooperative program was developed on the subject of PES with the government of Bolivia.

In parallel and as part of the efforts made during Ecomarkets II, the participation of

community-based organizations was enhanced.

Finally, in conjunction with the ONF, PES procedures were analyzed in order to make them faster and easier. This analysis helped define more efficient processes.

#### Monitoring: PES contracts

Thus, from 2008 to 2013, FONAFIFO has channeled its monitoring and oversight efforts to PES contracts through the Department of Control and Monitoring. In the field, this Department monitors the different modalities of PES contracts and verifies compliance with the obligations of the contract and the information contained in the technical documents.

It should be noted that FONAFIFO has an Institutional Geographic Information System for recording each PES contract on a geographical basis, which allows monitoring forest cover and the changes that can occur over time.

In support of these actions, the Regional Offices also perform control tasks on farms with PES; each one of the Offices must conduct inspections on at least 50 farms per year. Due to the working synergy, field tracking is done annually for more than 1,000 contracts in different modalities, which generally represents 20% of all valid contracts.

Also, throughout this monitoring process SINAC also assists with supervisory activities for PES contracts, since it must include them in its monitoring strategy. Apart from all this work, FONAFIFO also hires external consultants to evaluate PES performance.

#### Biodiversity monitoring

With Ecomarkets II, a study was conducted to determine the baseline for biodiversity monitoring. In this research, a pilot area was selected (in the northern region of the country), with an estimated sample of 10% of the farms under PES contracts in the modalities of Forest Protection, Protection in Protected Areas and Protection in Conservation Gaps, in accord with the statistical design. The baseline for the terrestrial biodiversity of the PES program used the contracts for the farms subjected to the program in 2012 as a starting point, considering three areas for analysis: national, regional and farm.

For this baseline measurement experience and making improvements based on lessons learned, the average cost of measuring an isolated farm, regardless of transportation costs, amounts to US\$15,000.

As part of the future actions suggested by this study, emphasized is the need to implement this methodology country-wide, selecting farms at random in a stratified way, with representation from different areas, categories, sizes, proximity and/or connection to other areas that could affect biodiversity.

Also, it will be necessary to gather more detailed information about the total number of farms with PES that are under protection, their spatial location, the area subject to PES, as well as start and end dates of the contract.

#### Payment for Environmental Services

At the beginning of the Ecomarkets II project, the goal established for PES for the period 2008 - 2013 was to maintain at least 288,000 hectares of land under PES contracts in order to provide environmental services of local as well as global importance.

At the close-out of Ecomarkets II, FONAFIFO had met this goal satisfactorily for a total of about 297,432.23 hectares in the different modalities of the PES program. According to FONAFIFO's Department of Environmental Management Services, a total of 6,510 contracts were reported. Regarding the Agroforestry Systems modality, almost 3.5 million trees (2008-2013 data) were counted.

As has been mentioned, the partnering, advising and monitoring carried out by the Regional

Offices has been vital, not only in accompanying the beneficiaries during their process of admission to the PES program, but also so that farms already in the program can successfully conclude their contracts.

#### Evaluation matrix

Since 2011, FONAFIFO has been using a matrix that sets the priorities for rating the eligible pre-applications to the PES program in the Forest Protection modality.

The matrix combines important aspects of forestry and ecosystem resources, such as location in relation to the protected wilderness areas, biological corridors, and protection of water resources, among others. In addition, using a point system, higher scores are assigned to farms located in districts with low Social Development Indices. More points are also given for farms located in indigenous communities or with sizes smaller than 50 hectares. Because of these provisions, more small and medium-size landowners are involved. In 2012 the matrix was revised and to increase the point score for farms smaller than 50 hectares.

#### Landowners with farms smaller than 100 hectares

It was because of the matrix that Ecomarkets II successfully achieved the goal of increasing the number of small and medium-size landowners participating in the PES by 50%. It began with a baseline of 1,900 and by project end it had more than 4,700 small and medium-size landowners participating.

#### Participation of indigenous communities

In Costa Rica indigenous territories are established as special priority areas, especially as buffer zones, such as those situated in the Talamanca Cordillera and the Osa, as well as their biological corridors. Although the lack of deeds for land ownership in some territories was inconvenient, Ecomarkets II facilitated entering into contracts with most of the Indigenous Integral Development Associations (Spanish acronym ADIRI). Between 2008 and 2013, more than 67,500 hectares in indigenous territory have been under the PES program in different modalities, mainly for Forest Protection.

It is important to point out that FONAFIFO, by legal mandate, signs contracts with ADIRI, which is the legal owner of the territory and is responsible for fulfilling the contract; but ADIRI has autonomy in its decision making about how to allocate or invest the resources from the PES program. From 2008 to 2013, FONAFIFO had committed more than US\$31.4 million with ADIRI through the PES program until 2023.

#### Participation of women

Keeping the number of women landowners registered in the PES program at 474 was one of the goals set by Ecomarkets II. For 2013, the final year of the project, there are 877 contracts signed with owners of forests and plantations (the average for the period reaches 173% of goal fulfillment).

#### Watershed Management in low income areas

Three watersheds were selected for this subcomponent of the Ecomarkets II project:

- Jesús María River Basin, located on the Central Pacific slope. The predominant economic activities are beef cattle and agriculture; both have exerted strong pressure on the forest, soil and water resources of this area. According to the National Action Program to Combat Land Degradation, this basin has the highest levels of land degradation in the country.
- Morote River Basin, Guanacaste. The following problems have been identified in this watershed: unsound land use and management, poor water resource management, deficient environmental management and weak organization of the agricultural and forestry sectors to enhance their productive activities.
- Volcán River Basin, Buenos Aires, Puntarenas. The highest parts of the watershed are in the protected area of La Amistad International Park, but there is a significant presence of grazing

livestock and coffee farming in the park's buffer zone.

Due to these situations, it was decided that Ecomarkets II would start to generate PES contracts in these areas and it would also provide solutions that would go far beyond forests, encouraging the engagement of all actors in these basins: community grassroots organizations, government agencies, donors, groups of women, artisans, and others. As a result of the research conducted in each one of these watersheds, management plans were developed. These planning tools are essential to more efficient land use.

#### Social and economic impact

In order to explore the potential impacts of the PES program on the socioeconomic dimension, FONAFIFO conducted a study to determine these aspects. In particular, the potential effects on the direct beneficiaries of the payments were evaluated as were the indirect effects on poverty and the job market in the PES coverage area. The study did not consider indigenous territories. The main results were:

- The main use of the money received from PES goes to investments on the farm or the part of the farm under PES. Secondly, payment is useful to them for meeting household expenditures and consumption, followed by investments on the farm or part of the farm without PES.
- PES can have an impact on income to the extent that the net payment for environmental services is higher than the income from an alternative activity.
- The PES program is aimed at landowners. This situation can exclude groups in extreme poverty.
- By introducing agricultural and other land use restrictions, PES tend to have an impact that decreases the job supply.
- Effectively, farms under PES use less fixed labor than ones that do not have a contract.

In 2013 the study found that there is no tool that allows the measurement of poverty when requests are received; however, part of the strategy will be to encourage the participation of landowners with low income. Towards this end, the use of indicators such as farm size, educational level and household income is essential.

#### Lessons learned

Evaluating the results obtained and what was achieved from the actions implemented during the Ecomarkets II project, several lessons learned can be listed, especially:

- *Resource requirements:* Landowning families increasingly want to apply to the PES program but they cannot be included due to the limited resources of the program. Here, interventions by private enterprise or autonomous institutions become more relevant.
- *Revising the matrix:* It is necessary to revise the pre-application matrix in the Forest Protection modality in order to allow the participation of farms smaller than 50 hectares. Many smallholders have found it impossible to participate in PES due to the size of their farms or even the level of their income.
- *More forest advisors with fewer projects:* The participation of a greater number of forest advisors is needed to provide more control, monitoring and quality technical assistance. It is also essential that forest regents devote more time to advising PES contract beneficiaries.
- *Greater dissemination of results:* It became necessary to establish a direct channel between FONAFIFO's Directorate of Environmental Services and the institutions, international agencies and private groups that constantly seek information about the PES program. Currently, this channel addresses demands for information from these institutions although there are continued actions to strengthen it.
- *Indigenous territory.* The indigenous communities have commitments to the PES program, progress and sustainability in their areas. In addition, the active participation of women has been a factor for success in the indigenous territories, particularly because women are the ones who manage household resources; therefore, it is essential to continue fostering that participation.
- *Increased participation of private enterprise to ensure the sustainability of the PES program.*

More and more companies are showing interest in participating in the PES program, due to, among other things, the same marketing efforts being carried out inside as well as outside the country. Given this situation, it would be beneficial to strengthen outreach activities that could also provide stronger support to the capitalization of the FSB. Along this line, it should be noted that many private companies in Costa Rica are carrying out various actions for corporate social responsibility. In this sense, it would be appropriate to encourage the participation of those that want to mitigate their environmental footprint.

- *Control and monitoring.* It is essential to continue strengthening ongoing monitoring processes in order to adjust and fine tune the PES platform. Program stakeholders should be fully acquainted with each one of the results that are being achieved, even those done by the contracted consultancies.
- *Participation of owners of small and medium-size lands.* It is essential to continue seeking mechanisms that encourage the participation of small and medium- size landowners. Studying and providing solutions to the main barriers to participation and providing more advice and information could be key factors for increasing their presence in the PES programs.
- *Inter-institutional synergy.* Based on the various partnerships that have been created around the PES platform, the participation and active engagement of the different organizations involved must be continually strengthened.
- *Sustainability.* While the PES program has developed different strategies to achieve fluid development, its economic sustainability will depend on the maintenance of government support, increased agreement processes with private partners, and continued international support.

## Annex 7. List of Supporting Documents

Arias Castillo, E. Proyecto Ecomercados, Consultoría para: “Actualización de la propuesta técnica de ordenamiento territorial con fines de conservación de biodiversidad en Costa Rica (GRUAS II)”. Informe final, Mayo del 2006. INBio/FONAFIFO.

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Instruments For Environmental Management Project. Report No: 36084-CR. May 10, 2006.

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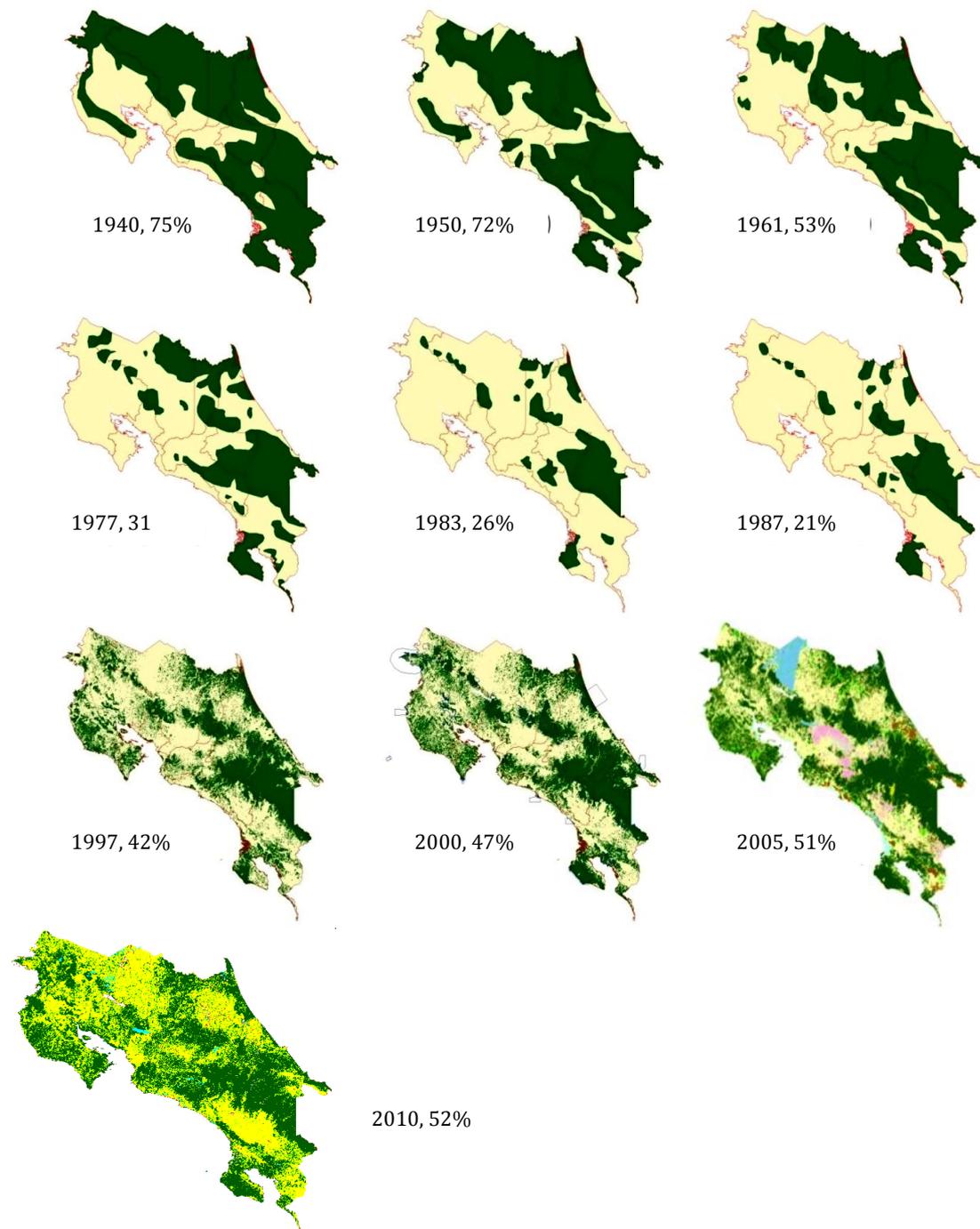
The World Bank. 2007. ICR Ecomarkets I, Report No. ICR0000433, February 9, 2007.

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The World Bank. 2013. Letter of Intent between The World Bank and FONAFIFO, September 10, 2013.

## Annex 8. Costa Rica historic forest cover



Source: Mapas y Diagramas de la Cobertura Forestal en Ciosta Rica – Histórico 1940-2010.  
In: <http://www.minae.go.cr/recursos/documentos/cobertura-forestal/mix-cobertura-forestal-1940-2010-2.pptx>

## **Annex 9. Ecomarkets I goals, expected results and key performance indicators**

The Ecomarkets Project's Global Environmental Objective was 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 was 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 supported 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 were to: i) Support the supply of 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 (MINAЕ), 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.

To evaluate the effectiveness of the Ecomarkets Project in achieving its GEO and PDO, the Project Appraisal Document (PAD) proposed six targets (the associated "output" is in parentheses, when different from the indicator): (i) 150,000 ha of land incorporated into the PSA program; (ii) 100,000 ha of conservation easements in MBC/CR priority areas incorporated into the PSA program; (iii) establishment of a sustainable financing mechanism to support conservation easements (i.e., a Trust Fund to be established in accordance with GEF best practices); (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; and (vi) 100% increase in the participation of indigenous communities in the PSA program. 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.

Source: Hartshorn *et al.*, 2005)

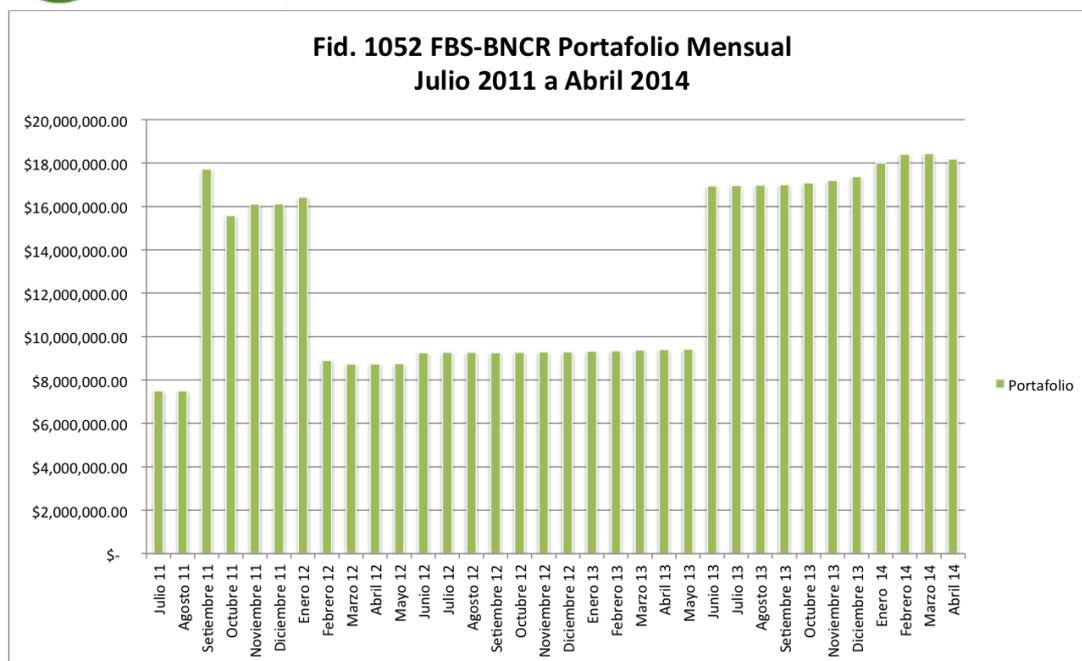
## Annex 10. FBS historic performance and 2014 projections

Data provided by the FBS during ICR preparation shows that by EOP the Fund was well on its way to reaching an expected average return of close to 6% by the end of 2014. The data below shows values up until April of 2014.

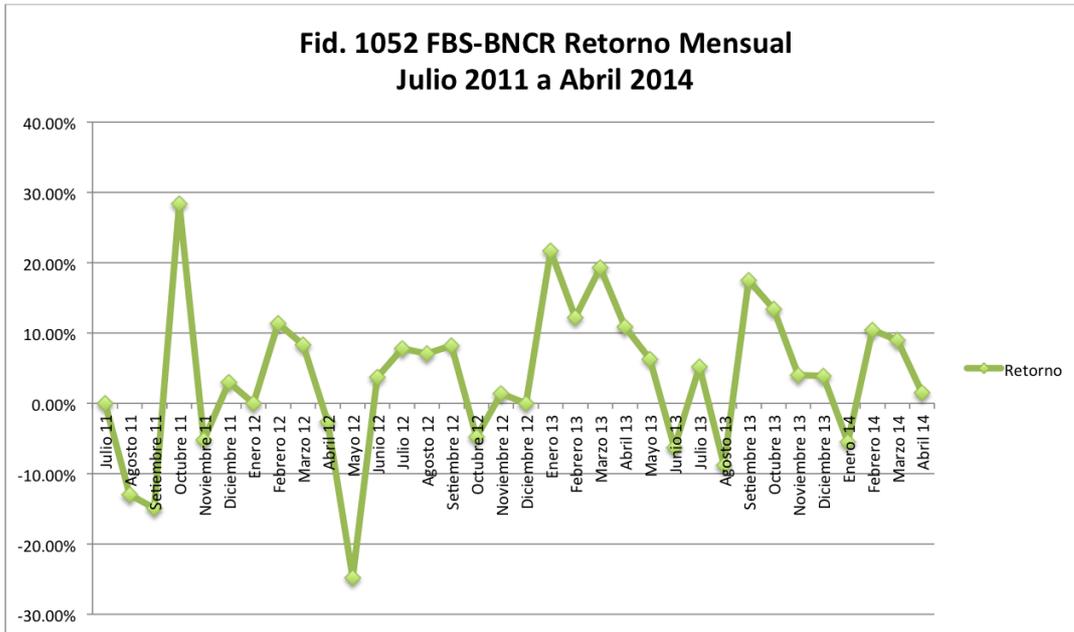
The graphs display FBS monthly portfolio (Figure 1), monthly returns (Figure 2) and average annualized returns (Figure 3) for the period from July 2011 to April 2014. The graphs also tell the story of the Fund's performance and problems: GEF and KfW resources started flowing into the Fund in 2010. Due to legal issues with the way GEF funds were transferred to the country, the FBS portion of the GEF grant had to be withdrawn from the account in early 2012 and was not returned until mid-2013.

KfW's investment policies (which mandated a very risk-averse approach) limited the return on investment to between 2.4 and 2.5% annually until mid-2013, at which time KfW relinquished control of its donation and the FBS legally assumed full control of its investment mechanisms. This coincided with the switch in FBS management; the outgoing fund manager (a FONAFIFO Forestry Engineer) was replaced with a team of experienced fund managers that were less risk-averse and more proactive in seeking better returns.

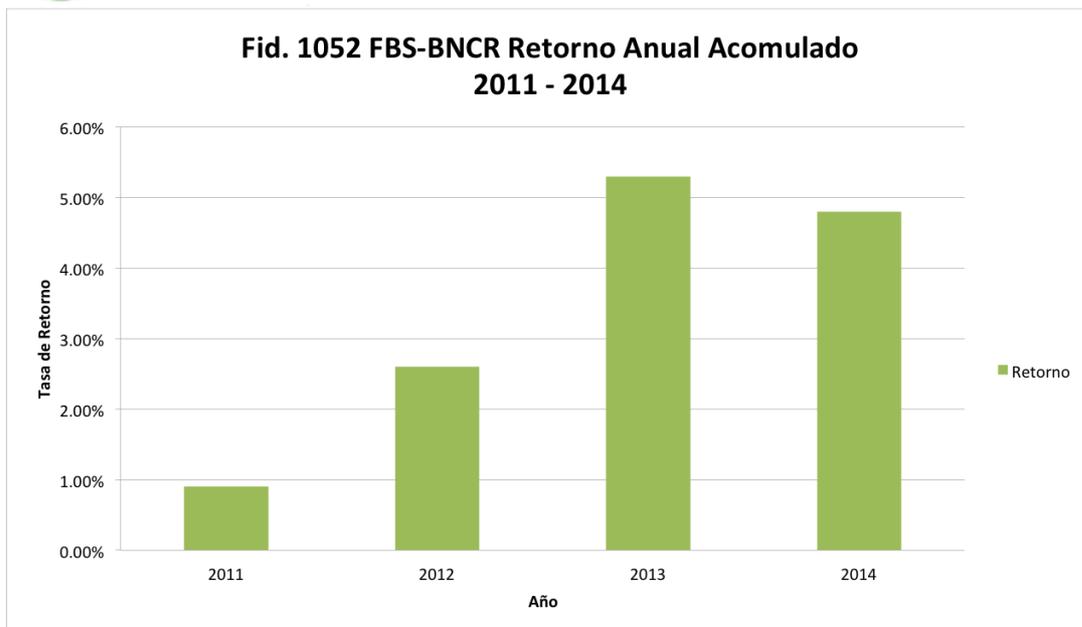
**Figure 1: FBS Monthly Portfolio**



**Figure 2: FBS Monthly returns**



**Figure 3: FBS Averaged annual returns**



## Annex 11. Endnotes/References

<sup>1</sup> Country Partnership Strategy (2004-2007), April 20 2004. Page 22. This was the first CPS prepared for Costa Rica since 1993.

<sup>2</sup> PES is a market-based approach to conservation financing based on the principle that those who benefit from environmental services should pay for them, and that those who contribute to generating these services should receive compensation for providing them.

<sup>3</sup> Pagiola, Stefano. Payments for Environmental Services in Costa Rica. *Ecological Economics* 65 (2008), page 713.

<sup>4</sup> ICR Ecomarkets I, Report No. ICR0000433, February 9, 2007

<sup>5</sup> Evaluation of the World Bank- GEF. Ecomarkets Project in Costa Rica. Members of the Panel: Gary Hartshorn (World Forest Center); Paul Ferraro (Georgia State University); Barry Spergel, (Independent Consultant); and Erin Sills (North Carolina State University). November 2005.

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<sup>6</sup> ICR Ecomarkets I, Report No. ICR0000433, February 9, 2007. “More systematic monitoring of how PES supported land uses affect service generation would help improve targeting and the cost effectiveness of the program”, page 9.

<sup>7</sup> The World Bank. 2012. Restructuring paper on a proposed project restructuring of the Mainstreaming Market-based Instruments for Environmental Management Project Loan and Grant from the Global Environment Facility Trust Fund approved by the Board of Directors June 8, 2006 to the Republic of Costa Rica. June 28, 2012.

<sup>8</sup> Castellón, Ricardo. 2014. Informe de Consultoría del Informe Final de Implementación Programa de Ecomarkets II. Unpublished.

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<sup>10</sup> Pagiola, S. 2008. Payments for Environmental Services in Costa Rica. *Ecological Economics* 65 (2008), pp 712-724.

<sup>11</sup> Costa Rica. 2012. Estado de los Recursos Genéticos Forestales de Costa Rica 2012.

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<sup>12</sup> INBio. 2006. Metodología para el Monitoreo de Impactos en Conservación de la Biodiversidad derivados de la Aplicación de PSA. Informe Final.

<sup>13</sup> Hohberg, M. 2014. Reviewing Payments for Environmental Services in Costa Rica.

<sup>14</sup> Mena, P. (ed.). 2008. Servicios Ambientales. Páramo 24. EcoCiencia/Grupo de Trabajo Páramos.

<sup>15</sup> Boelens, R. And Hoogesteger, J. 2014. Commoditizing water territories? The clash between Andean water rights cultures and Payment for Environmental Services policies. Unpublished manuscript.

<sup>16</sup> Arias Castillo, E. Proyecto Ecomercados, Consultoría para: “Actualización de la propuesta técnica de ordenamiento territorial con fines de conservación de biodiversidad en Costa Rica (GRUAS II)”. Informe final, Mayo del 2006. INBio/FONAFIFO.

<sup>17</sup> Accurately defining ‘*globally significant biodiversity*’ in the context of GEF operations (Bank-implemented or through other agencies) has been a recurrent problem for implementing agencies. The current replenishment (GEF 6) contains new and more applicable definitions in its Programming Directions.

<sup>18</sup> Borge, C. and Martínez, J. 2009. El Pago por Servicios Ambientales en Territorios Indígenas de Costa Rica. PES Learning Paper 2009-1S. Latin America and Caribbean Sustainable Development Department, The World Bank.

<sup>19</sup> Castellón, Ricardo. 2014. Informe de Consultoría del Informe Final de Implementación Programa de Eco Mercados II – ICR Ecomercados II, Aspectos Socioeconómicos.

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