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The World Bank

Report No: ICR3415

IMPLEMENTATION COMPLETION AND RESULTS REPORT
(TF-56628)

ON A

GLOBAL ENVIRONMENTAL FACILITY GRANT

IN THE AMOUNT OF US$ 6.0 MILLION EQUIVALENT

TO THE

REPUBLIC OF PANAMÁ

FOR A

RURAL PRODUCTIVITY AND CONSOLIDATION OF THE ATLANTIC MESOAMERICAN BIOLOGICAL CORRIDOR PROJECT (CBMAP II)

July 23, 2015

Agriculture Global Practice
Central America Country Management Unit
Latin America and Caribbean Region

Republic of Panama

Rural Productivity Project (PRORURAL)
Rural Productivity and Consolidation of the Atlantic Mesoamerican Biological Corridor (CBMAP II)

CURRENCY EQUIVALENTS

Exchange Rate Effective January 31, 2015
Currency Unit = USD/PAB
PAB 1.00 = USD 1:00
USD 1.00 = PAB 1.00

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

ANAM	: National Environmental Authority
APPR	: Association of Small-scale Rural Producers
ARAP	: Water Resource Authority of Panamá
ASPN	: Nargana Protected Forest Area
BPPS	: Palo Seco Protected Forest
CAS	: Country Assistance Strategy
CATHALAC	: Center for Water in Tropical Wetlands of Latin America and the Caribbean
CBMAP II	: Rural Productivity and Consolidation of the Atlantic Mesoamerican Biological Corridor Project
CBO	: Community-based Organization
CCA	: Consultative Environmental Commission
CDD	: Community-driven Development
CITES	: Convention on International Trade in Endangered Species
CONABIO	: National Commission for Knowledge and Use of Biodiversity - Mexico
DAPVS	: Directorate for Protected Areas and Forest Life
DBC	: Department of Biological Corridors/ANAM
EOP	: End of Project
FM	: Financial Management
GBIF	: Global Biodiversity Information Facility
GEF	: Global Environmental Facility
GIZ	: German Agency for International Cooperation
GOP	: Government of Panama
HIIDG	: Damani Guaviriara Wetlands of International Importance
HIISSPS	: San San Pond Sak Wetland of International Importance
INACOOP	: National Institute of Cooperatives
IPP	: Indigenous Peoples' Plan
MBC-P	: Meso-American Biological Corridor of Panamá
MEU	: Municipal Environmental Unit
MIAMBIENTE	: Ministry of Environment
MIDA	: Ministry of Agricultural Development

NPAS	: National Protected Areas System
NRM	: Natural Resource Management
RPA	: Rural Producer Association
MBC	: Mesoamerican Biological Corridor
MBC-P	: Panamanian Mesoamerican Biological Corridor
MEP	: Municipal Environmental Land Use Plan
MEF	: Ministry of Economy and Finance
NRM	: Natural Resource Management
ONU-REDD	: United Nations Collaborative Program on Reducing Emissions from Deforestation
OPS	: Services Operators
PA	: Protected Area
PAF	: Productive Alliance Facilitators
PES	: Payment for Environmental Services
PIP	: Project Implementation Plan
PNCH	: Cerro Hoya National Park
PNGDOTH	: Divisional General Omar Torrijos Herrera National Park
PNMIB	: Isla Bastimento National Marine Park
PNSF	: Santa Fe National Park
PNVB	: Volcán Barú National Park
POA	: Annual Operating Plan
PRORURAL	: Rural Productivity Project
RAMSAR	: Convention of Wetlands of International Importance
RFEM	: El Montuoso Forest Reserve
RPA	: Rural Producer Association
RVSIC	: Isla Canas Forest Life Refuge
RVSII	: Isla Iguana Forest Life Refuge
SEU	: Sector Environmental Unit (MIDA)
SIAMP	: Integrated System for Project Administration and Monitoring)
SIL	: Specific Investment Loan
SINAP	: National System of Protected Areas of Panama
SINIA	: National System of Environmental Information
SINAP	: National Protected Areas System
SMAP	: System for Monitoring Protected Areas
SNIMDB	: National System for Information and Monitoring of Biological Diversity
TSP	: Technical Service Providers
UAM	: Environmental Management Unit
WWF	: World Wildlife Fund

Vice President:	Jorge Familiar
Senior Global Practice Director:	Juergen Voegele
Country Director:	Humberto Lopez
Practice/Program Manager:	Laurent Msellati
Project Team Leader:	Norman Bentley Piccioni
ICR Team Leader:	Norman Bentley Piccioni

PANAMA
Rural Productivity Project (SIL, P064918)
Rural Productivity and Consolidation of the Atlantic Mesoamerican Biological Corridor Project (GEF, P083045/TF56628)

CONTENTS

DATA SHEET: Rural Productivity Project (P064918)

A. Basic Information			
Country:	Panama	Project Name:	Rural Productivity Project (PRORURAL)
Project ID:	P064918	L/C/TF Number(s):	IBRD-74390 (SIL)
ICR Date:	02/05/2015	ICR Type:	Core ICR
Lending Instrument:	SIL	Borrower:	REPUBLIC OF PANAMA
Original Total Commitment:	USD 39.40M	Disbursed Amount:[1]	USD 38.85M
Revised Amount:	N/A		
Environmental Category: B			
Implementing Agencies: Ministry of Agro-Livestock Development (MIDA)			
Co-financiers and Other External Partners: N/A			

B. Key Dates				
Process	**Date**	**Process**	**Original Date**	**Revised / Actual Date(s)**
Concept Review:	05/02/2003	Effectiveness:	11/01/2007	11/01/2007
Appraisal:	01/23/2007	Restructuring(s):		12/12/2007 11/09/2012 06/24/2014
Approval:	03/21/2007	Mid-term Review:	03/01/2010	03/21/2011
		Closing:	01/31/2013	01/27/2015

C. Ratings Summary	
C.1 Performance Rating by ICR	
Outcomes:	Moderately Satisfactory
Risk to Development Outcome:	Substantial
Bank Performance:	Moderately Satisfactory
Borrower Performance:	Moderately Satisfactory

[1] As at July 1, 2015, Client Connection shows PRORURAL 98.46% disbursed (USD38.8 m), with a balance of USD 596,000 undisbursed (1.54%).

C.2 Detailed Ratings of Bank and Borrower Performance (by ICR)			
Bank	**Ratings**	**Borrower**	**Ratings**
Quality at Entry:	Moderately Satisfactory	Government:	Moderately Satisfactory
Quality of Supervision:	Moderately Satisfactory	Implementing Agency/Agencies:	Moderately Satisfactory
Overall Bank Performance:	Moderately Satisfactory	**Overall Borrower Performance:**	Moderately Satisfactory

C.3 Quality at Entry and Implementation Performance Indicators			
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		

D. Sector and Theme Codes

	Original	**Actual**
Sector Code (as % of total Bank financing)		
Agricultural extension and research	10	5
Agro-industry, marketing, and trade	47	55
Central government administration	10	10
General agriculture, fishing and forestry sector	33	30
Theme Code (as % of total Bank financing)		
Biodiversity	25	25
Other rural development	24	50
Rural non-farm income generation	13	10
Rural policies and institutions	25	5
Rural services and infrastructure	13	10

E. Bank Staff

Positions	**At ICR**	**At Approval**
Vice President:	Jorge Familiar	Pamela Cox
Country Director:	Humberto Lopez	Jane Armitage
Practice Manager/Manager:	Laurent Msellati	Laura Tuck
Project Team Leader:	Norman Bentley Piccioni	Matthew McMahon/Edward

		Bresnyan
ICR Team Leader:	Norman Bentley Piccioni	
ICR Primary Author:	Anna F. Roumani	

F. Results Framework Analysis

Project Development Objectives (from Loan Agreement**)**

Due to differences in wording of the PDO in the PAD and Loan Agreement, the latter version is used throughout, as follows:

"*To contribute to increased productivity among organized rural small-scale producers of the Borrower's territory through their participation in productive alliances, while ensuring the sustainable use of natural resources and the conservation of globally important biodiversity*".

Revised Project Development Objectives (as approved by original approving authority)
N/A

Global Environmental Objectives (from Grant Agreement)

Due to differences in the wording of the GEO in the PAD and Grant Agreement, the latter version is used throughout, as follows:

"*To conserve globally important biodiversity and protected associated forest, mountain, coastal and marine ecosystems in the Recipient's territory by: (a) improving the effective management of SINAP (National System of Protected Areas) at the national, provincial, Comarca and district levels; and (b) supporting investments in natural resource management and productive opportunities for CBOs (Community-based Organizations) of the Project Area*."

Revised Global Environmental Objectives (as approved by original approving authority)
N/A

(a) PDO Indicator(s): RURAL PRODUCTIVITY PROJECT (PRORURAL - P064918)

Out of four PDO Indicators, two were revised following the Mid-term Review in March 2011. As the changes were approved by the CD, not the "original approving authority", and the PDO itself did not change, the ICR does not include an ICR Guidelines Appendix B split assessment.[2] The intent of the changes was to better capture the PDO and to signal productive, institutional and natural resource sustainability.

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator 1 :	**At least 25% increase in sales receipts of small-scale producers via PRORURAL-financed productive alliances (EOP)**			
Value quantitative or Qualitative)	Zero	25% increase in sales receipts		22.3% increase
Date achieved	01/23/2007	01/31/2013		01/27/2015
Comments (incl. % achievement)	**Substantially achieved: 90%** Field surveys (Barzev 2015) show that entering a productive alliance resulted in the following: increased income and quality of life collective sales at better prices; more favorable input, equipment and materials prices from bulk purchasing; higher yields per production unit; and, insertion in new markets. 58.4% of SP beneficiaries were still selling through commercial intermediaries and not reporting such sales. Results are therefore under-stated. Such beneficiaries preferred intermediaries connected to an alliance rather than traditional, informal entities.			
Indicator 2 :	**At least 40% increase in net revenues for the participating Rural producer Associations (RPA) via the productive alliances (EOP)**			
Value quantitative or Qualitative)	Zero	40% increase in net revenues of RPAs		80%
Date achieved	01/23/2007	01/31/2013		01/27/2015
Comments (incl. % achievement)	**Exceeded: 107%** PDO Indicator changed in November 2012 (CD-approved) to: ***"At EOP, 75% of the producer associations continue to operate one year after they received project support and have an active revolving fund"*** due to need to better capture the PDO. 104 of the 130 associations remain operational and 73 had reimbursed the working capital loans/fund by June 2015. MIDA froze the RF in late 2014 to conduct a financial and managerial stocktaking. All funds need to be reimbursed before they are again re-lent to association members. It is unclear when the associations will be able to operate their RFs autonomously but that is the goal (and original intent).			
Indicator 3 :	**At least 20% increase in membership in RPAs for the project area, relative to baseline (EOP)**			

[2] The ICR Guidelines Appendix B explicitly refers to split assessments where changes were made by the "original approving authority which approved the Loan/Grant". Changes to the PRORURAL Results Framework were CD-approved.

Value quantitative or Qualitative)	1,806 active members (Baseline)	20% increase		54%
Date achieved	01/23/2007	01/31/2013		01/27/2015
Comments (incl. % achievement)	**Exceeded: 270%** Surveys of associations verified that the attrition rate is barely 2%; most members are continuing the activities financed. Association records also show 975 new members joined existing (baseline) associations in 2014. Survey of 50% of project associations (65) showed that membership was higher than originally thought and, that not all members of a beneficiary association benefited from the PRORURAL investment.			
Indicator 4 :	**10% reduction in area under annual crops and cattle in project area on land appropriate for forestry uses (EOP)**			
Value quantitative or Qualitative)	3,781.4 ha	10% reduction in area (min. 378 ha)		8% of project area or 302.5 ha
Date achieved	01/23/2007	01/31/2013		01/27/2015
Comments (incl. % achievement)	**Substantially achieved: 80%** The original indicator was re-phrased in November 2012 to**: *"10% of the subproject area has been transformed due to the Project, into forest for sustainable uses".*** This was measured as the area (ha) where formerly unsustainable activities (cattle, extensive crops in forested areas) were ceased due to project activities/messages and substituted by sustainable alternatives. M&E showed that 302.5 ha had reverted as a result of project activities. Data was unavailable on total land area occupied by PRORURAL beneficiaries, but the project's Environmental Safeguards records permit verification from technical profiles.			

(b) Intermediate Outcome Indicator(s): Rural Productivity Project (P064918)

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator 1 :	**<u>Component 1</u>: Support to Productive Alliances** **140 RPAs trained and capable of participating in productive alliances (EOP)**			
Value (quantitative or Qualitative)	Zero	140 RPAs trained		152 RPAs trained
Date achieved	01/23/2007	01/31/2013		01/27/2015
Comments (incl. % achievement)	**Exceeded: 108.5%** Despite administrative delays affecting the project, the achievement exceeded its target in the first two years, prompted by active dissemination of the nature, objectives and activities of the project and requirements/criteria for participation. Training was based on a plan implemented in association with SP-specific TA, and included best practices in agriculture, cattle and fishing, complemented by organizational training including financial administration for SP management.			
Indicator 2 :	**At least 30 technical service providers (TSP) trained and certified to provide technical assistance to RPAs and productive alliances (EOP)**			
Value	Zero	30 trained and		43

(quantitative or Qualitative)		certified		
Date achieved	01/23/2007	01/31/2013		01/27/2015
Comments (incl. % achievement)	**Exceeded: 143.3%** External evaluation of TSPs at MTR found quality issues especially in financial and economic analysis of Business Plans. A radical winnowing of TSPs, major re-training effort and re-certification markedly improved performance. Some beneficiary associations continued to have FM challenges highlighting the need for training RPAs in business record-keeping.			
Indicator 3 :	**At least 100 productive alliances proposed with quality Business Plans according to criteria set forth in the project Operational Manual**			
Value (quantitative or Qualitative)	Zero	100 productive alliances		159 alliances proposed with quality Business Plans of which 130 financed
Date achieved	01/23/2007	01/31/2013		01/27/2015
Comments (incl. % achievement)	**Exceeded: 159%** This indicator exceeded annual targets since effectiveness. In 2011 an intensive review was conducted of business plans/alliances and profiles many of which had been approved for financing. As noted above, unsatisfactory plans/alliances were weeded out and the more viable were adjusted/revised technically and financially, resulting in 159 quality Business Plans/alliances meeting Operational Manual/other criteria. Of these, 130 were actually financed, benefiting 4,577 producers.			
Indicator 4 :	**At least 70 Business Plans approved for financing (EOP)**			
Value (quantitative or Qualitative)	Zero	Min. 70 Business Plans		130 Business Plans approved
Date achieved	01/23/2007	01/31/2013		01/27/2015
Comments (incl. % achievement)	**Exceeded: 186%** From 2008-2013, MIDA issued 7 invitations to submit business ideas and profiles and received 332. Of these, 180 were approved leading to 175 Business Plans of which 159 were considered suitable for financing and 130 were formally approved and became investment subprojects. See Indicator 3.			
Indicator 5 :	**<u>Component 2</u>: Productive Alliances** **60 subprojects under implementation**			
Value (quantitative or Qualitative)	Zero	60 subprojects		130
Date achieved	01/23/2007	01/31/2013		01/27/2015
Comments (incl. % achievement)	**Exceeded: 217%** The original estimate of 60 was based on a ceiling of US$500,000/SP but this was reduced to US$250,000 in 2012 due to associations' difficulty absorbing/administering large amounts. Demands received consisted of very small SPs, requiring associations to have large numbers of members to qualify based on criteria governing selection/approval. Reducing the ceiling gave more associations the chance to participate and more than doubled SPs financed.			
Indicator 6 :	**5,000 small-scale producers participating in PRORURAL-financed productive alliances**			
Value	Zero	5,000 small		4,577 small

(quantitative or Qualitative)		producers		producers
Date achieved	01/23/2007	01/31/2013		01/27/2015
Comments (incl. % achievement)	**Substantial achievement: 92%** The project benefited 4,577 families directly. While the target was not achieved, in the Panamanian context the achievement was notable given that the vast majority of rural organizations are very small, especially in the central region/provinces where PRORURAL focused.			
Indicator 7 :	**85% satisfaction among RPAs regarding technical assistance from certified service providers**			
Value (quantitative or Qualitative)	Zero	85% satisfaction		114% (of the target)
Date achieved	01/23/2007	01/31/2013		01/27/2015
Comments (incl. % achievement)	**Exceeded: 114.0%** This was measured in 2010 and again in 2013 based on a sample of 35 RPAs (27% of total of 130). By 2013, 40% were very satisfied, 57% were satisfied and 3% were unsatisfied. Issues surveyed covered: services provided to associations, results of SPs, training methodology and TA quality. These results are consistent with positive project achievements described in the Final Evaluation (Barzev, 2015).			
Indicator 8 :	**10% increase in land under perennial crops (previously under annual cropping or pasture) by organized producers in the project area**			
Value (quantitative or Qualitative)	Zero	10% increase		Indicator dropped
Date achieved	01/23/2007	01/31/2013		01/27/2015
Comments (incl. % achievement)	**No results/not measured:** Indicator was dropped post-MTR. See similar PDO Indicator # 4			
Indicator 9 :	**<u>Component 3</u>: Environmental Investments and Strengthening of the National Protected Area System (NPAS)** **<u>NOTE</u>: This component was financed by PRORURAL but executed by ANAM as part of the GEF/CBMAP II partial blend.** **At least 50,000 ha of forest and other natural eco-systems of global biodiversity significance in the buffer zones of Protected Areas and biological corridors connecting them in the MBC-P are under effective conservation (protection and sustainable management)**			
	Baseline zero	50,000 ha in PA buffer zones and biological corridors		43,033 ha of forest recuperated
Date achieved	01/23/2007	01/31/2013		01/27/2015
Comments (incl. % achievement)	**Substantially achieved: 86%** 43,034 ha of forest and other eco-systems were recuperated. Data was collected based on environmental SP profiles. The MTR estimated that the target far exceeded available funding and by agreement between ANAM and the Bank (Aide Memoire, 14 November, 2012), ANAM's own-financed reforestation/recuperation activities in PA buffer zones (including creation of the Donoso PA foreshadowed in the PAD) could be counted against			

	the target. The SPs reforested and conserved 1,957 ha, while ANAM's complementary reforestation activities covered another 41,076 ha. All activities were in project PAs and within project time period. The PAD did not specify who would be responsible for executing this target.			
Indicator 10 :	**Biodiversity of global significance is under effective conservation, as measured by vegetation cover and indicator species of conservation interest (EOP)**			
Value (quantitative or Qualitative)	2002	Evidence of vegetation cover and indicator species, including as registered in the upgraded SNIMDB database		Increased forest/vegetation cover; numerous indicator species of conservation interest documented and uploaded in SNIMDB
Date achieved	01/23/2007	01/31/2013		01/27/2015
Comments (incl. % achievement)	**Achieved: 75%** Forest cover maps were updated using modern technology; biodiversity of forests was monitored using field information on selected indicator species; and, permanent land parcels were estabalished for monitoring in project PAs (and longer-term). From 2012-2014, CBMAP II/ANAM with the UN-REDD and FAO constructed a high resolution Forest Cover and Soil Use Map updating forest status to 2012. Results: (i) forest and vegetative cover had reached 62% vs 45% in 2000 in 65 PAs. ICR was unable to obtain data specific to the 14 GEF project PAs but such data will be extracted by ANAM. Secondary evidence (PDO Ind. #4, Intermediate #9/others suggest target was achieved but conservative rating is used; (ii) under SNIMDB, many species of conservation interest were documented including new, unrecorded species, and species well beyond their normal range indicating effective conservation of globally significant biodiversity.			
Indicator 11 :	**60% of districts in the project area have incorporated biodiversity aspects into sector policies and plans and adopted appropriate regulations, and implemented plans accordingly**			
Value (quantitative or Qualitative)	Zero	15 Municipal Environmental Land Use Plans (MEP) (equivalent to 60% of districts); MEPs implemented; co-management plans implemented		15 MEPs (60% of districts) developed by 15 Municipal Environmental Units (UAM); 12 co-management plans executed; 3 MEP-based potable water projects piloted
Date achieved	01/23/2007	01/31/2013		01/27/2015
Comments (incl. % achievement)	**Achieved: 100%** Indicator was adjusted post-MTR by eliminating ***"…. adopted appropriate regulations, and implemented plans accordingly"*.** Actuial achievement is consistent with original indicator. Municipal Environmental Land Use Plans (MEP) were prepared in 15 municipalities within the GEF project area using participatory methods. By end-2014, 15 MEPs legally approved and ratified. CBMAP II focused on integrating environmental management into local government. Each MEP covers socio-environmental and			

	institutional diagnoses; 10-year environmental plan and three-year activity agenda to mitigate, revert and/or control environmental problems; and, technical, financial and logistical resources available for its execution. ANAM regulated Resolution AG 1103, 2009 providing legal basis for co-management arrangements. MEP-based plans were implemented via 3 pilot potable water projects. 12 co-management agreements under implementation and 7 more communities seeking co-management status.			
Indicator 12 :	**<u>Component 4</u>: Project Management, Monitoring and Evaluation** **Annual Operating Plans successfully executed**			
Value (quantitative or Qualitative)	Zero	As above		Achieved (2011-2014)
Date achieved	01/23/2007	01/31/2013		01/27/2015
Comments (incl. % achievement)	**Achieved for years 2011-2014:** No records were available for the years 2007-2010. AOPs were apparently not used. Annual reports show achievement of the vast majority of targets and proposed activities in AOPs for the years 2011-2014 consistent with the overall acceleration of project execution.			
Indicator 13 :	**Satisfactory technical and financial audits of the project**			
Value (quantitative or Qualitative)	Zero	As above		Achieved
Date achieved	01/23/2007	01/31/2013		01/27/2015
Comments (incl. % achievement)	**Achieved: 100%** All audits since 2007 were conducted by independent auditors, with clean opinions and based on Bank/internationally-accepted auditing standards. Technical audits conducted regularly with satisfactory results.			
Indicator 14 :	**The M&E system reports satisfactory results for the financed Business Plans**			
Value (quantitative or Qualitative)	Zero	As above		Partially achieved
Date achieved	01/23/2007	01/31/2013		01/27/2015
Comments (incl. % achievement)	**Partially achieved: 70%** M&E was managed by a contracted specialist to report on SP results under Business Plans and encountered challenges in organizing SP information/databases. Certain data was inconsistent which created difficulty for the economic and financial analysis and project evaluation, and the need for additional field data collection and analysis at EOP to demonstrate project achievements.			
Indicator 15 :	**Quarterly reports completed and sent to the Bank**			
Value (quantitative or Qualitative)	Zero	As above		Achieved
Date achieved	01/23/2007	01/31/2013		01/27/2015
Comments (incl. % achievement)	**Achieved: 100%** Quarterly and six-monthly reports were issued regularly, and consolidated into annual aggregates to show the evolution of project indicators. More detailed reports were prepared for Bank supervision missions.			

G. Ratings of Project Performance in ISRs

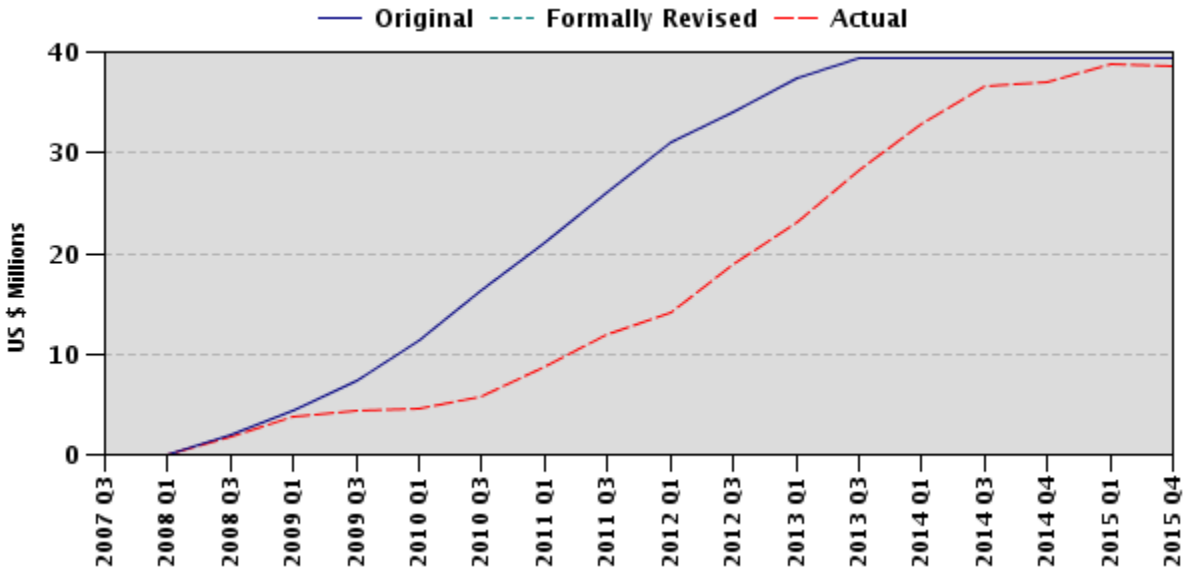
No.	Date ISR Archived	DO	IP	Actual Disbursements (USD millions)
1				0.00
2	05/29/2007	Satisfactory	Satisfactory	0.00
3	12/27/2007	Satisfactory	Satisfactory	0.91
4	06/25/2008	Satisfactory	Satisfactory	3.85
5	12/14/2008	Satisfactory	Satisfactory	3.85
6	05/28/2009	Satisfactory	Satisfactory	4.32
7	11/17/2009	Moderately Satisfactory	Moderately Unsatisfactory	5.69
8	04/20/2010	Moderately Satisfactory	Moderately Unsatisfactory	5.69
9	02/09/2011	Moderately Satisfactory	Moderately Satisfactory	10.61
10	08/10/2011	Moderately Satisfactory	Moderately Satisfactory	13.89
11	01/22/2012	Moderately Satisfactory	Moderately Satisfactory	17.04
12	06/26/2012	Moderately Satisfactory	Moderately Satisfactory	21.09
13	01/16/2013	Moderately Satisfactory	Moderately Satisfactory	26.88
14	10/21/2013	Moderately Satisfactory	Satisfactory	32.90
15	04/27/2014	Moderately Satisfactory	Moderately Satisfactory	36.62
16	11/19/2014	Satisfactory	Satisfactory	38.85

H. Restructuring (if any)

Restructuring Date(s)	Board Approved PDO Change	ISR Ratings at Restructuring		Amount Disbursed at Restructuring in USD millions	Reason for Restructuring & Key Changes Made
		GEO	IP		
12/12/2007	No	S	S	0.91	Loan Agreement modified to establish to include the date for MIDA to present its Work Plan, and to select a financial agent under conditions agreed with the Bank.
11/09/2012	No	MS	MS	26.61	Level Two restructuring adjusted the Results Framework, re-allocated loan funds and extended closing date to July 31, 2014 to achieve

Restructuring Date(s)	Board Approved PDO Change	ISR Ratings at Restructuring		Amount Disbursed at Restructuring in USD millions	Reason for Restructuring & Key Changes Made
		GEO	IP		
					project objectives.
06/24/2014	No	MS	MS	37.00	Exchange of notes between Bank and Government extended closing date another 6 months to January 27, 2015 to achieve project objectives.

I. Disbursement Profile: Rural Productivity Project (P064918)



DATA SHEET: Rural Productivity and Consolidation of the Atlantic Mesoamerican Biological Corridor Project (P083045)

A. Basic Information			
Country:	Panama	Project Name:	Rural Productivity and Consolidation of the Atlantic Mesoamerican Biological Corridor Project (GEF)
Project ID:	P083045	L/C/TF Number(s):	TF-56628
ICR Date:	07/28/2015	ICR Type:	Core ICR
Lending Instrument:	GEF	Borrower:	REPUBLIC OF PANAMA
Original Total Commitment:	USD 6.00 M GEF USD10.0 M IBRD	Disbursed Amount:	USD 6.00 M USD 10.00 M
Revised Amount:	N/A		
Environmental Category: B		**Global Focal Area: B**	
Implementing Agencies: National Environmental Authority/ANAM (now Ministry of Environment)			
Co-financiers and Other External Partners: N/A			

B. Key Dates				
Process	**Date**	**Process**	**Original Date**	**Revised / Actual Date(s)**
Concept Review:	05/02/2003	Effectiveness:	12/21/2006	01/18/2007
Appraisal:	04/17/2006	Restructuring(s):		07/13/2012 05/06/2013 06/24/2014
Approval:	06/15/2006	Mid-term Review:	06/01/2011	06/01/2011
		Closing:	06/28/2013	07/31/2014

C. Ratings Summary	
C.1 Performance Rating by ICR	
Outcomes:	Moderately Satisfactory
Risk to Global Environment Outcome	Substantial
Bank Performance:	Moderately Satisfactory
Borrower Performance:	Moderately Satisfactory

C.2 Detailed Ratings of Bank and Borrower Performance			
Bank	**Ratings**	**Borrower**	**Ratings**

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

C.3 Quality at Entry and Implementation Performance Indicators			
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
GEO rating before Closing/Inactive status	Satisfactory		

D. Sector and Theme Codes

	Original	**Actual**
Sector Code (as % of total Bank financing)		
Central government administration	10	15
General agriculture, fishing and forestry sector	75	70
Sub-national government administration	15	15
Theme Code (as % of total Bank financing)		
Biodiversity	25	30
Decentralization	13	10
Micro, Small and Medium Enterprise support	25	40
Participation and civic engagement	24	10
Rural non-farm income generation	13	10

E. Bank Staff

Positions	**At ICR**	**At Approval**
Vice President:	Jorge Familiar	Pamela Cox
Country Director:	Humberto Lopez	Jane Armitage
Practice Manager/Manager:	Laurent Msellati	Mark E. Cackler
Project Team Leader:	Norman Bentley Piccioni	Matthew McMahon/Edward Bresnyan
ICR Team Leader:	Norman Bentley Piccioni	

ICR Primary Author:	Anna Roumani	

F. Results Framework Analysis

Global Environmental Objectives (from Grant Agreement)

"To conserve globally important biodiversity and protect associated forest, mountain, coastal and marine ecosystems in the Recipient's territory by: (a) improving the effective management of SINAP (National System of Protected Areas) at the national, provincial, Comarca and district levels; and (b) supporting investments in natural resource management and productive opportunities for CBOs (Community-based Organizations) of the Project Area."

Revised Global Environmental Objectives (as approved by original approving authority)
N/A

(a) GEO INDICATORS: Rural Productivity and Consolidation of the Atlantic Mesoamerican Biological Corridor Project (CBMAP II - GEF, P083045/TF56628)

In consultation with the Borrower Team after the Mid-Term Review, the Bank Team made several changes to the GEO Indicators. These changes were managed informally through agreement between the Bank Team and ANAM and were not approved by the original approving authority which approved the Grant.

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Global Development Objective	**Indicator: By EOP, 40% of community associations and base organizations implementing environmental investments with productive ends, continue those activities after the funds provided by CBMAP II are executed.**			
Value quantitative or Qualitative)	Zero	40% (140 concluded and operating)		282 finalized by June 2014 and still operating at EOP.
Date achieved	04/18/2006	09/28/2012		01/31/2015
Comments (incl. % achievement)	**Exceeded: 186%** Results were calculated based on a sample of environmental investment subprojects (SP) with financial execution concluded by June 2014 out of total such investments executed and still operating by EOP. By June 2014, 282 SPs were finalized and still operating in January 2015 compared to the targeted 140. Some 350 environmental SPs were financed overall.			
GEO Indicator 1:	**Local and national institutional capacity is improved, as measured by the WWF/Bank Management Effectiveness (GEF BD SP 1) Tracking Tool, to manage 14 Protected Areas (PA - 675,775 ha) (EOP)**			
Value quantitative or Qualitative)	Zero	Management of 14 PAs improved		Average aggregate value for 13 PAs increased from 44.86 to 69.08 from 2005-2013
Date achieved	04/18/2006	09/28/2012		01/31/2015
Comments (incl. % achievement)	**Exceeded: 116%** This indicator was changed informally via an agreement between the Bank team and the ANAM Coordinator, adding a quantitative target: "…***measured by the increase in the average score from 45 to 60 for 14 Protected Areas".*** Using the WWF/Bank Monitoring Tool, and assisted by PA managers, park authorities and DAPVS personnel, from 2005-2013 (7 years), the average aggregate value for 13 PAs (one dropped out) increased from 44.86 points in 2005 to 69.08 in 2013. Two PAs improved management by 200%, 4 by over 140%, 2 by over 115% and 2 reached 100%. See Annex 2.			
GEO Indicator 2:	**At least 50,000 ha of forests and other natural eco-systems of global biodiversity significance in the buffer zones of Protected Areas and biological corridors connecting them in the MBC-P under effective conservation (protection and sustainable management) (EOP)**			
Value quantitative or Qualitative)	Zero	50,000 ha forests		43,034 ha forests
Date achieved	04/18/2006	09/28/2012		01/31/2015

Comments (incl. % achievement)	**Substantially achieved: 86%** 43,034 ha of forest/other eco-systems were restored and/or put under protection/sustainable management including creation of the Donoso PA (included in the PAD project 14). As the PAD target of 50,000 ha far exceeded available project funding, responsibility for achieving it was not specified in the PAD, but ANAM was committed to its achievement, a written agreement between ANAM and the Bank permitted ANAM to credit own-financed reforestation activities occurring (i) within the project period and (ii) in Buffer Zones of project PAs, against the target. ANAM reforested/conserved 41,076 ha and the environmental investments 1,957 ha. See 3.2 and Annex 2.			
GEO Indicator 3:	**Biodiversity of global significance is under effective conservation, as measured by vegetation cover and indicator species of conservation interest (EOP)**			
Value quantitative or Qualitative)	Zero	Vegetation cover and indicator species		Increased forest/vegetation cover; numerous indicator species of conservation interest documented
Date achieved	04/18/2006	09/28/2012		01/31/2015
Comments (incl. % achievement)	**Achieved: 75%** Key maps were updated using modern technology; forest biodiversity was monitored via field research on selected indicator species; and, parcels of land were defined for continuous biodiversity monitoring in 4 project PAs (Omar Torrijos, Santa Fe, La Amistad and Volcán Barú). Time/access issues excluded Cerro Hoya/Los Santos and the Damani Guariviara Wetlands. A modern Forest Cover and Soil Use Map was prepared (ANAM, UN-REDD and FAO partnership) to update forest/vegetative status in 65 PAs. ICR could not access specific data from this map for the 14 project PAs but, secondary evidence suggests global biodiversity is under conservation/protection in those PAs (GEO Indicators 1 and 5, and Section 3.2). Results: (i) forest cover averaged 62% compared to 45% in 2000 over all 65 PAs; and, (ii) project-upgraded SNIMDB database documented many indicator species of conservation interest in the 14 PAs including new, unrecorded species and species beyond their normal range.			
GEO Indicator 4:	**60% of districts in the project area have incorporated biodiversity aspects into sector policies and plans and adopted appropriate regulations, and implemented plans accordingly (EOP)**			
Value (quantitative or qualitative)	Zero	60% of districts; regulations adopted; plans implemented, MEPs piloted		60% of districts; ANAM regulated key co-management resolution; MEPs prepared and piloted; co-management plans under execution.
Date achieved	04/18/2006	09/28/2012		01/31/2015
	Achieved: 100% Post-MTR "**….** ***adopted appropriate regulations, and implemented plans accordingly*****"** was dropped**.** However, final achievements were consistent with original Indicator: (i) Municipal Environmental Land Use			

Comments (incl. % achievement)	Plans (MEP) prepared via 40 municipal diagnostic workshops which trained 754 local stakeholders in co-management. MEPs were legally approved and ratified in 15 municipalities within the 14 PAs (60% of districts in the project area) covering: socio-environmental and institutional diagnosis; 10-year environmental plan and 3-year activity agenda; and, technical, financial and logistical resources for MEP execution; (ii) MEP-generated pilot water projects were implemented in Santa Fe, Las Minas and Boqueron; (iii) ANAM Resolution AG 1103, 2009 was regulated (Regulations for the Shared Management of the National System of Protected Areas (SINAP)), legally sanctioning co-management within SINAP; (iv) adoption is shown by 12 co-management plans/agreements under implementation: ecotourism, resource conservation, protection of endangered species including marine, mangrove recovery, handicrafts, agro-forestry. Another 7 CBOs in the 14 project PAs have applied for co-management status.			
GEO Indicator 5 :	**# ha under effective biodiversity protection (EOP)**			
Value quantitative or Qualitative)	Base year (2005): Average Tracking Tool score (core indicators) of 40.8% in 6 PAs.	Improved score by target year (2013)		Average Tracking Tool score of 74.9 in same 6 PAs by end-2013.
Date achieved	06/01/2011	09/28/2012		01/31/2015
Comments (incl. % achievement)	**Achieved: 100%** This Core Indicator was added at the request of the ANAM Coordinator and in agreement with the Bank, post-MTR. Measurement was based on area of 6 project PAs which passed from one level of management to another using the GEF methodology of "core indicators" of biodiversity. By 2013 (target year), 6 PAs representing 248,000 ha – measured by the WWF/World Bank Tracking Tool - showed significantly improved management in 2013 compared to 2005 baseline, based on increased biodiversity protection.			

(b) Intermediate Outcome Indicator(s): Rural Productivity and Consolidation of the Atlantic Mesoamerican Biological Corridor Project (CBMAP II - GEF P083045)

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator 1 :	**<u>Component 1</u>: Community Investments in Environmental Resources** **Community associations and rural producer associations implement at least 450 natural resource, sustainable agriculture and conservation subprojects in the project area**			
Value (quantitative or Qualitative)	Zero	450 environmental SPs		350 environmental SPs
Date achieved	06/01/2011	09/28/2012		01/31/2015
Comments (incl. % achievement)	**Substantially achieved: 100%** Post-MTR, the target was reduced to 350 SPs due to insufficient funding for the planned 450 SPs. (Note: Date of MTR is used for "baseline value" column for all new indicators). Community contribution was US$1.22 m, 136% of the appraisal estimate. The 350 IAs benefited 10,761			

	people of which 57% men and 43% women, as well as 40,233 people indirectly. Types of SPs: agro-forestry (56%), crafts (11%), native animal breeding (8%), plant nurseries (8%), eco-tourism (7%), organic agriculture (3%).			
Indicator 2 :	**30% of environmental investments suitable for commercialization, which have a marketing/commercialization strategy, are under implementation**			
Value (quantitative or Qualitative)	Zero	30%		41%
Date achieved	06/01/2011	09/28/2012		01/31/2015
Comments (incl. % achievement)	**Exceeded: 140%** 141 approved environmental SPs (41% of total) were commercializing their environmental investment products and another 29% had a Business Plan under implementation. Most SPs are expected to be linked to markets by end-2015 (Barzev, 2015). New indicator added post-MTR.			
Indicator 3 :	**At least 70% of community groups and rural producer associations which implement environmental investments have been trained and received materials to be used as reference for financial information**			
Value (quantitative or Qualitative)	Zero	70% producer organizations		350 producer organizations
Date achieved	06/01/2011	09/28/2013		01/31/2015
Comments (incl. % achievement)	**Exceeded: 143%** All 350 environmental SPs were trained to administer funds, to apply productive technologies compatible with environmental conservation, marketing and commercialization, and environmental norms and laws. All associations received a manual for the execution and administration of their SP. All were trained to use the Basic Guide for the Administration, Execution and Monitoring/Supervision of Funds. New indicator, added post-MTR.			
Indicator 4 :	**Women's participation in the processes of planning and execution of environmental investments is 40%, by Year 5**			
Value (quantitative or Qualitative)	Zero	40%		43.3%
Date achieved	06/01/2011	09/28/2013		01/31/2015
Comments (incl. % achievement)	**Exceeded: 108%** 4,663 women participated in environmental SP planning and execution out of a total 10,761 executors. Women's involvement was far higher than expected at appraisal. Of the 350 SPs executed, 44 had 100% female membership and another 20 were led by women, most members were women, their directorates comprised only women, and financial management was led by women. About 39% of all persons trained by CBMAP II were women. New indicator, added post-MTR.			
Indicator 5 :	**100% of community-based groups which implement environmental investments have operating rules (EOP)**			
Value (quantitative or Qualitative)	Zero	100% (350)		350
Date achieved	06/01/2011	09/28/2013		01/31/2015
Comments (incl. % achievement)	**Achieved: 100%** The source of information was the project legal documentation re community groups. By June 2014, community-based groups managing 350 SPs had documentation validating their legal status and with detailed operating rules. This was done with collaboration of MIDA which has the authority to			

	grant legal status to rural organizations and firms. New indicator, added post-MTR.			
Indicator 6 :	**The directorate for each community-based group which implements environmental investments meets three times per year (EOP)**			
Value (quantitative or Qualitative)	Zero	350 groups meeting 3 times/year		283 out of 315 surveyed held 3 meetings per year
Date achieved	06/01/2011	09/28/2013		01/31/2015
Comments (incl. % achievement)	**Substantially achieved: 90%** Measured from the number of meetings per year documented via minutes of meetings. Associations were trained by CBMAP II technicians and provided with a guide on maintaining registers/records of meeting proceedings. Data showed: 283 organizations out of 315 surveyed held three annual meetings; 9 held two and 23 held one. New indicator, added post-MTR.			
Indicator 7 :	**<u>Component 2</u>: Management of Natural Resources and Strengthening of SINAP** **Protected Area co-management agreements under implementation increase by at least 100% (EOP)**			
Value (quantitative or Qualitative)	Zero	Min. 100% increase (14 agreements)		12 PA co-management agreements under implementation
Date achieved	04/18/2006	09/28/2013		01/31/2015
Comments (incl. % achievement)	**Substantial achievement: 86%** Result is estimated based on the number of PA co-management agreements financed by the project, verified by the relevant law (Resolution AG 1103, 2009: Regulations for the Shared Management of the National System of Protected Areas (SINAP)), related Work Plans, persons trained by ANAM in themes linked to environmental law/conservation, sustainable financing, organization and co-responsibility. 12 PA co-management agreements were under active implementation in ecotourism, resource conservation, protection of endangered species including marine, mangrove recovery, crafts and agro-forestry. At EOP, another 7 community organizations within the 14 project PAs had applied for co-management status.			
Indicator 8 :	**25 district-level CCAs and at least 2 UAMs established, trained and operating with sustainable financing plans (EOP)**			
Value (quantitative or Qualitative)	Zero	25 CCAs; min. 2 UAMs (Municipal Environmental Units) with financing plans		25 CCAs; 4 UAMs with sustainable financing plans
Date achieved	04/18/2006	09/28/2013		01/31/2015
Comments (incl. % achievement)	**Achieved: 100%** and **200%** (i) 25 CCAs established/reorganized/trained in 25 districts in project area including indigenous *comarcas*; (ii) 4 Municipal Environmental Units (UAM) established with sustainable financing plans; (iii) CCAs in 15 districts worked with ANAM and specialists to prepare Municipal Environmental Land Use Plans (MEP – the programmatic framework for co-management activities of UAMs) covering 4 priority PAs and one *Comarca*. MEPs have short (3 year) and longer-term (10 year) action plans, and authorize			

	municipal governments to assume responsibility for environmental management/land use in their territories; (iv) piloted 3 UAM-executed potable water SPs valued at some US$64,950 (plus community contribution) in Santa Fe, Las Minas and Boqueron/Pedregal/La Victoria.			
Indicator 9 :	**1,000 local authorities and community leaders trained in environmental issues/regulations and the preparation of municipal land use plans (EOP)**			
Value (quantitative or Qualitative)	Zero	1,000 local authorities/others trained		1,380 local authorities and community leaders trained
Date achieved	04/18/2006	09/28/2013		01/31/2015
Comments (incl. % achievement)	**Exceeded: 138%** ANAM's records on training conducted, beneficiaries, subject matter show 1,380 local authorities and community leaders were trained by the project in environmental management, law and municipal land use planning. Additional training through closing focused on Bank social and environmental safeguards, fire control, natural disaster planning/other.			
Indicator 10 :	**Payment for Environmental Services (PES) program piloted in 2 project sites and replication strategy developed**			
Value (quantitative or Qualitative)	Zero	Legal framework for PES		Law drafted to regulate PES and presented to Nat. Assembly
Date achieved	04/18/2006	09/28/2013		01/31/2015
Comments (incl. % achievement)	**Partially achieved: 50%** Indicator was changed post-MTR (06/01/2011): **"*Legal framework established to facilitate preparation and approval of PES*".** Based on MTR findings, ANAM withdrew the existing draft PES law pending in the National Assembly to re-draft/include coverage of economic, social and environmental aspects in the PES framework. Two studies were financed: (i) establishing *fideicomiso* to support PA management, financing for environmental investments and biodiversity monitoring, and (ii) financing needs of SINAP as a foundation to reduce its dependence on external resources. Views of private sector firms located in conservation zones, and other stakeholders, were explored regarding feasibility of study recommendations. Based directly on these studies, the new GEF will finance an Endowment Fund and move PES forward.			
Indicator 11 :	**Component 3: Monitoring, Evaluation, Project Management and Supervision** **Monitoring and evaluation system is functioning with MIS producing monthly/quarterly progress reports (Year 1)**			
Value (quantitative or Qualitative)	Zero	Functioning M&E		System established and functioning but some remaining issues
Date achieved	04/18/2006	09/28/2013		01/31/2015
Comments (incl. % achievement)	**Substantially achieved: 90%** This indicator was adjusted post-MTR (06/01/2011): ***"…..functioning and permitting the timely identification of changes needed to achieve project objectives".*** The PENTAGON system was established in stages and evolved as a system capable of rigorous measurement and valuation of project activities. Data bases were created in MS Access. All			

	required reports were issued on time and published online (www.cbmap.org/documentos). Other improvements, e.g., installation of SIAMP (Integrated System for Project Administration and Monitoring) had insufficient time to be fully uploaded, tested and adjusted before closing, hence the 90% achievement. ANAM continued to strengthen the system which is now in use for the new GEF.			
Indicator 12 :	**Functioning SMAP and SNMDB monitoring systems in place (Year 2)**			
Value (quantitative or Qualitative)	Zero	Baseline and infrastructure for SNMDB and SMAP		Baseline and infrastructure in place for SNIMDB and system functioning.
Date achieved	04/18/2006	09/28/2013		01/31/2015
Comments (incl. % achievement)	**Achieved: 100%** This indicator was changed post-MTR to make it more specific (06/01/2011): ***"Baseline and infrastructure of a National System for Information and Monitoring of Biological Diversity (SNIMDB) has been established by EOP".*** SNIMDB was constructed and tested in the countryside; research, collection and classification of samples were done; Methodological Manual for SNIMDB was prepared; and, technological structure to support the database was designed and validated. System is functioning and was instrumental in the registration of indicator species in PAs.			
Indicator 13 :	**Monitoring systems developed by the Project are incorporated into national (SINIA) and other international systems (Year 3)**			
Value (quantitative or Qualitative)	Zero	As above		Partially incorporated
Date achieved	04/18/2006	09/28/2013		01/31/2015
Comments (incl. % achievement)	**Partially achieved: 60%** This indicator was adjusted post-MTR (06/01/2011): ***"SNIMDB is incorporated in national and international information systems on biological diversity (SINIA, GBIF/other)".*** This was measured by the extent to which SNIMDB data was associated with and included in the international GBIF (Darwin Core Archive) platform. The Ministry of Environment is working to fully integrate SNMDB in GBIF, and ensure the databases are active/accessible. The new GEF operation, Sustainable Productive Systems and Biodiversity Conservation in the CBM-Panama includes resources to complete planned integration with GBIF and dissemination of SNIMDB results.			
Indicator 12 :	**Communication strategy implemented, updated and evaluated annually**			
Value (quantitative or Qualitative)	Zero	As above		Strategy implemented, updated and evaluated annually
Date achieved	04/18/2006	09/28/2013		01/31/2015
Comments (incl. % achievement)	**Achieved: 100%** Communications strategy was updated and included in Operational Manual; disseminated basic information on CBMAP II; facilitated exchange of information and experiences; and, promoted the participation of strategic partners and communication with ANAM staff and external project stakeholders. ANAM also disseminated information on Bank social and environmental safeguards, distributed publicity materials, supported biodiversity education, oversaw the translation of pest management guidelines into			

	indigenous languages, and continued to promote and explain organic production. The communications strategy was evaluated and updated annually.

G. Ratings of Project Performance in ISRs

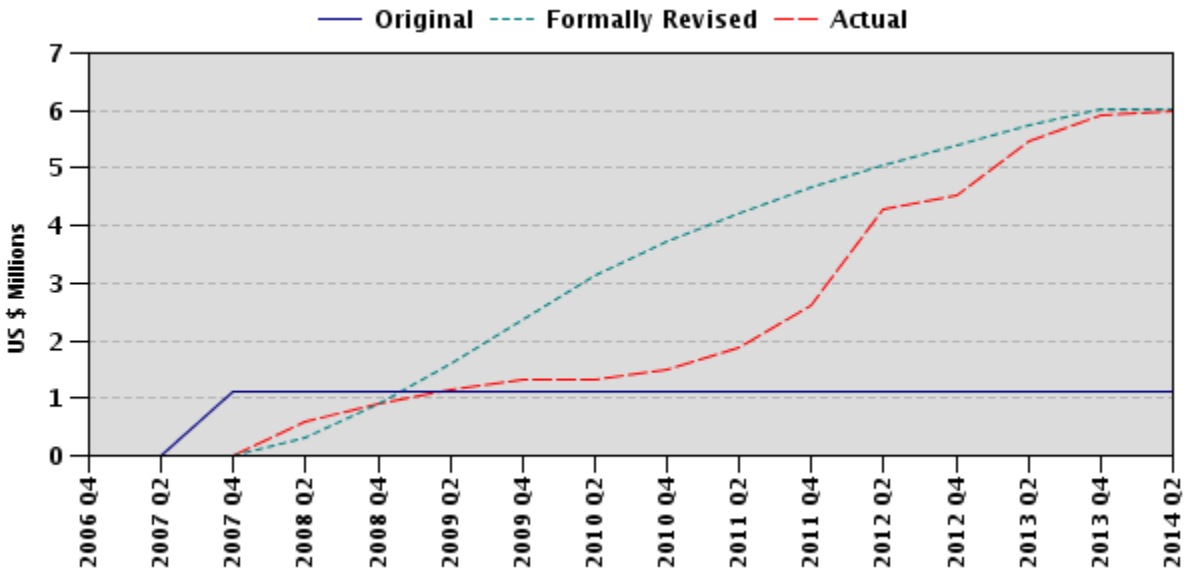
No.	Date ISR Archived	GEO	IP	Actual Disbursements (USD millions)
1	08/14/2006	Satisfactory	Satisfactory	0.00
2	05/29/2007	Satisfactory	Satisfactory	0.00
3	12/27/2007	Satisfactory	Satisfactory	0.60
4	06/27/2008	Moderately Satisfactory	Moderately Satisfactory	0.89
5	12/14/2008	Moderately Satisfactory	Satisfactory	0.90
6	06/16/2009	Moderately Satisfactory	Moderately Satisfactory	1.32
7	12/29/2009	Moderately Satisfactory	Moderately Satisfactory	1.32
8	06/30/2010	Satisfactory	Satisfactory	1.49
9	12/25/2010	Satisfactory	Satisfactory	1.87
10	06/28/2011	Satisfactory	Satisfactory	2.60
11	11/20/2011	Moderately Satisfactory	Moderately Satisfactory	2.77
12	06/06/2012	Moderately Satisfactory	Moderately Unsatisfactory	4.53
13	12/17/2012	Satisfactory	Moderately Satisfactory	5.46
14	06/12/2013	Satisfactory	Moderately Satisfactory	5.92
15	12/13/2013	Satisfactory	Moderately Satisfactory	6.00
16	07/01/2014	Satisfactory	Moderately Satisfactory	6.00
17	11/29/2014	Satisfactory	Moderately Satisfactory	6.00

H. Restructuring (if any)

Restructuring Date(s)	Board Approved GEO Change	ISR Ratings at Restructuring		Amount Disbursed at Restructuring in USD millions	Reason for Restructuring & Key Changes Made
		GEO	IP		
07/13/2012	No	S	MS	4.53	Level One Restructuring: (i) triggered the Pest Management Operational Policy (OP 4.09), not deemed necessary at appraisal but triggered as a preventive measure, post-MTR; and, (ii) informed the Board that the Involuntary Resettlement Policy (OP/BP 4.12) was applied under the project and reflected in the Grant

Restructuring Date(s)	Board Approved GEO Change	ISR Ratings at Restructuring		Amount Disbursed at Restructuring in USD millions	Reason for Restructuring & Key Changes Made
		GEO	IP		
					Agreement, but not mentioned in the PAD.
05/06/2013	No	S	MS	5.92	Level Two restructuring extended closing date from June 28, 2013 to July 31, 2014 to enable completion of environmental SPs and other key activities; and reallocated US$280,308.84.

I. Disbursement Profile



1. Project Context, Development Objectives and Design

Introduction: This ICR presents a consolidated analysis of the design, execution and results of two operations in Panama: the Rural Productivity Project (PRORURAL, Loan of US$38.85 m) and a partially blended Global Environmental Facility (GEF) operation, the Rural Productivity and Consolidation of the Atlantic Mesoamerican Biological Corridor Project (CBMAP II – Grant of US$6.0 m plus US$10.0 m of co-financing from the PRORURAL Loan). The projects were implemented by the Ministry of Agro-livestock Development (MIDA) and the National Environmental Authority (ANAM), respectively. The initial concept was a fully-blended Loan and GEF but, due to a change of administration in Panama` in 2004 – which also changed the Ministry of Economy and Finance (MEF), Ministry of Agricultural Development (MIDA) and ANAM – opinion shifted regarding project design with the Government of Panama (GOP) favoring greater emphasis on agribusiness and competitiveness. ANAM, not directly affected by the proposed changed content/design of the Bank Loan and with its project ready, requested that the GEF be de-linked and approved by the Board separately, to which the Bank agreed. The GEF was approved in June 2006 and PRORURAL in March 2007.

These circumstances shifted the projects onto a parallel course with separate supervision (but same TTLs for part of the period and a

Bank core team for fiduciary and safeguards) and reporting, target populations and geographic coverage, executing institutions and monitoring and evaluation (M&E) systems. The implicit complementarities remained but execution on the ground diverged. The rationale for a consolidated analysis is: financial, conceptual and methodological linkages between the two operations; complementarity of the projects' development objectives seeking to improve the lives of poor rural people while strengthening the management and longer-term sustainability of globally important biodiversity; and, cross-referenced Results Frameworks.

1.1 Context at Appraisal

1.1.1 At the time of appraisal of the two projects (mid-2006 and early 2007) Panama ranked as an upper-middle income country characterized by extreme economic inequality: 40% of the population of 3.0 million was living in poverty and about 17% were destitute. About one-half of all rural residents lived below the poverty line and 20% of city dwellers. It is also one of the world's most bio-diverse countries facing serious threats to natural habitat conservation for its unique flora and fauna. The country is a critical link in the Mesoamerican Biological Corridor (MBC) with more than 12,000 plant species, 2,950 species of vertebrates and 10% of global bird species, many of which are endemic and/or threatened.

1.1.2 The agriculture, agro-industrial and related services sector was about 22% of GDP and generated 25% of employment. It comprised a modern, commercial subsector, a second sub-sector of small and medium producers with limited market access, and a third comprising extremely poor, subsistence farmers with no market access. The domestic market had traditionally been farmers' main focus although some commodities (bananas, coffee and livestock) were traded internationally. This pattern had led to technological stagnation, lack of export competitiveness, and low-level production, all of which contributed to persistent poverty. However, globalization was forcing the sector to become more competitive and develop additional export products.

1.1.3 Meanwhile, the advancing agricultural frontier and spontaneous colonization at the rate of 50,000-80,000 ha/year were rapidly reducing the country's forests and protected areas, and depleting soil and water resources due to inadequate conservation and traditional agricultural practices. Indigenous production systems were becoming unsustainable due to economic pressures and being displaced by mono-cultural farming systems without rotation, further exacerbating soil problems and pushing frontier expansion of increasingly impoverished populations into areas with a relatively intact natural resource base and globally significant biodiversity where they were replicating the same, unsustainable practices. Some areas with globally significant biodiversity including RAMSAR Convention sites, UNESCO Biosphere Reserves and tracts of forest within the Panamanian Meso-American Biological Corridor (MBC-P) were severely threatened. Similarly, relatively large, undisturbed areas of tropical humid and mountain forest were inadequately managed, their main threats being conversion, weak policy and enforcement, and a range of poorly-planned and regulated economic activities and infrastructure development.

1.1.4 **Government's strategy:** The Government of Panama's (GOP) 2005 social and economic strategy sought to reduce poverty by 20% by 2009, emphasizing fiscal responsibility, good governance and export-led growth to increase investment and generate employment. Similarly, Government's 2005-2009 Agricultural Strategic Plan (*Manos a la Obra*) also sought poverty reduction by: strengthening agricultural producers and their organizations; increasing production and yields and lowering unit costs to boost competitiveness; promoting agricultural transformation linked to demand and to agro-exports, agro-industry and technological innovation; meeting unserved needs of marginalized rural people via socio-economic programs to improve quality of life, emphasizing indigenous areas; and, strengthening sector institutions. PRORURAL was founded on a set of basic principles linked directly to this Plan (see 2.1).

1.1.5 The GOP had also developed a coherent national environmental strategy in response to recognized threats, and signed on to major international treaties on biodiversity – RAMSAR, CITES and the Convention on Biological Diversity. Government's multi-sector response to the related issues of rural poverty, NRM and biodiversity conservation was to focus one set of instruments on the poorer and more populous central and southern provinces of the Pacific to reduce out-migration and another set within the MBC-P to control access to high biodiversity areas to diminish pull factors and *in situ* threats. About one-third of Panama's land had already been set aside to establish the National Protected Areas System (SINAP) consisting of 65 Protected Areas (PA, now 105), 12 National Parks, nine Forest Reserves and two Protected Forests constituting some 85% of lands in SINAP. Government had passed a significant body of environmental/biodiversity law since 1992, the most recent at the time of appraisal being ANAM's Strategy of Conservation for Sustainable Development with which the GEF was closely aligned.[3]

1.1.6 **Rationale for Bank assistance:** Bank support to Panama declined in the late 1990s with the Country Assistance Strategy for FY99-01 going largely unimplemented and up to late 2004, economic growth and policy reform slowed and the GOP turned to capital markets for

[3] This was a five year vision for establishing stronger co-management partnerships for PAs with local governments, NGOs, the private sector and civil society and, building institutional and normative capacity in ANAM to act in these areas. This had already resulted in the formation of Consultative Environmental Commissions (CCA) as forums for civil society to address environmental concerns, 20% of PAs being co-managed with local NGOs and municipalities and 13 PAs being directly managed by entities other than ANAM. Similarly, indigenous people – through their *comarcal* CCAs, were directly managing 10% of SINAP protected territory. CBMAP II expanded coverage of these activities/systems.

financing. Renewed interest in Bank engagement after a government turnover in 2004, and an Interim Strategy Note (August 2005), resulted in a limited portfolio of Bank-supported projects targeting the rural sector. PRORURAL was intended to contribute to closing the deep and expanding income gap between urban and rural Panamá. Further, Bank experience and/or design features of rural productive alliance projects in Bolivia and Colombia were leveraged as justification for a similar approach in Panama. The project was consistent with the Interim Strategy Note and the Rural Strategy for Latin America and the Caribbean (July 2002) and activated three of the five pillars of Government's 2005-2009 development strategy: poverty reduction, job creation and human capital development and by way of its targeting mechanisms, was to support public finance reform and modernization of the state.

1.1.7 Both the Bank Loan and the partially-blended GEF were designed to address specific threats facing Panama and its natural resource base by reducing a series of critical "push" factors (natural resource depletion, deforestation and rural poverty) spurring human migration into areas of global conservation importance within the Meso-American Biological Corridor (MBC-P), and "pull" factors (over-exploitation, illegal harvesting and a lax enforcement regime) which could be addressed by consolidating and strengthening the implementation of existing management plans to ensure conservation of globally important biodiversity. PRORURAL, by co-financing the GEF, was intended to foster decentralized management of the National Protected Area System (NPAS) and more effective management of existing plans in selected PAs, to ensure conservation of globally significant biodiversity and align with Panama's main environmental legislation (*Ley* 41).

1.1.8 The Bank had already piloted two quite successful, demand-driven operations: CBMAP I and the Poverty and Natural Resource Management Project which improved community capacity to directly identify and implement small-scale investments, promote sustainable use and conservation of biodiversity and establish a demand-driven grants mechanism. Most importantly, an effort was made to integrate the Panamanian Mesoamerican Biological Corridor (MBC-P) into sector strategies, local and regional planning and public investments. Notable progress was made but the PRORURAL and GEF sought to mainstream their methodologies in other activities focused on the rural poor and conservation: longer-term financing of SINAP and decentralization of environmental management.

1.1.9 **Baseline Scenario and GEF alternative**: In establishing the rationale for the GEF, the GEF PAD states that in the absence of the GEF Alternative, total expenditures associated with the Baseline Scenario would be US$32.2 m. Benefits would include poverty reduction through infrastructure, community organization and capacity building, credit for micro-business, and support for environmentally sound forms of NRM. Pressure would be reduced on the agricultural frontier by stabilizing rural communities through poverty alleviation, land titling and locally-managed development initiatives. Implementation of the baseline scenario was considered highly important for Panama. The GEF Alternative would enable the GOP to undertake a more ambitious program generating global, national and local benefits especially in terms of biodiversity conservation. Total expenditures of the GEF Alternative scenario were an estimated US$49.6 m, and incremental cost US$18.4 m.

1.2 Original Project Development Objectives (PDO) and Global Environmental Objectives and Key Indicators (*as approved*)

1.2.1 The PDO, as stated in the Loan Agreement, was: *To contribute to increased productivity among organized rural small-scale producers, through their participation in productive alliances, while ensuring the sustainable use of natural resources and the conservation of globally important biodiversity.* Key indicators were:

- 25% increase in sales receipts of small-scale producers via PRORURAL-financed productive alliances by end-of-project;
- 40% increase in net revenues for participating Rural Producer Associations (RPA) for the project area, relative to baseline;
- 20% increase in membership of RPAs for the project area, relative to baseline;
- 10% reduction in area under annual crops and cattle in project area on land appropriate for forestry uses.

1.2.2 The GEO, as stated in the Grant Agreement, was: *To conserve globally important biodiversity and protect associated forest, mountain, coastal and marine ecosystems in the Recipient's territory by: (a) improving the effective management of SINAP (National System of Protected Areas) at the national, provincial, Comarca and district levels; and (b) supporting investments in natural resource management and productive opportunities for CBOs (Community-based Organizations) of the Project Area.* Key Indicators were:

- Local and national institutional capacity is improved, as measured by the WWF/Bank Management Effectiveness Tracking Tool (GEF BD SP 1) to manage 14 Protected Areas (675,775 ha) by EOP;
- At least 50,000 ha of forests and other natural eco-systems of global biodiversity significance in the buffer zones of Protected Areas (PA) and biological corridors connecting them in the MBC-P under effective conservation (protection and sustainable management), by EOP;
- Biodiversity of global significance is under effective conservation, as measured by vegetation cover and indicator species of conservation interest; and,
- 60% of districts in the project area have incorporated biodiversity aspects into sector policies and plans and adapted appropriate regulations and implemented plans accordingly.

1.3 Revised PDO (as approved) and Key Indicators, and reasons/justification

1.3.1 The PDO was not revised. A Level Two, CD-approved restructuring dated November 9, 2012 revised two Key Indicators (KI) for measurability and clarity (see Data Sheet). The second KI listed in 1.2.1 above was replaced by: "*75% of the producer associations continue to operate one year after they received project support and have an active revolving fund*." The original indicator was considered problematic because most of the productive alliances were created and reactivated under the project and started with revenue of zero. Efforts to evaluate the revenue of individual members before the alliances were created failed because data typically was unavailable and the number of participants was evolving over time. The indicator selected was commonly used in other Bank-supported rural alliances projects. The fourth KI in 1.2.1 was clarified to reflect the project's positive environmental effect and eliminate possible ambiguities in interpretation. The new indicator was: "*10% of the subproject area has been transformed due to the Project, into forest for sustainable uses."*

1.3.2 The GEO was not revised. After the 2011 MTR, two GEO Indicators were adjusted by adding targets and dropping several phrases from another indicator to improve measurability. These changes were agreed informally between the ANAM Coordinator and the Bank Task Team. Formal restructuring was discussed but not favored by the GEF Secretariat at that time. The changes involved: (i) adding a quantitative target of "*45 to 60 for 14 protected areas*" to KI #1 shown above: and, (ii) eliminating *"…. adopted appropriate regulations, and implemented plans accordingly*" from KI #4. Also, the ANAM Coordinator requested a new GEO Indicator (GEF Core Indicator) to capture the GEO's full meaning: "*# ha under effective biodiversity protection*".

1.4 **Main Beneficiaries**

1.4.1 PRORURAL targeted 70 SPs implemented by 5,000 organized, rural small-scale producers (farm holdings of 0.5 ha to 20 ha) or about 13% of total small-scale producers in three provinces – Herrera, Los Santos and Veraguas (see Map). These had especially high rates of poverty and untapped productive potential and unlike other provinces, were known to lack specialized regional programs addressing these priorities. The financing ceiling was US$500,000/SP reduced post-MTR to US$250,000 due to associations' lack of absorptive capacity. Total population of the three provinces was about 430,000. The three provinces housed some 70,000 farms representing about 130,000 cultivated ha (100,000 rain fed and 30,000 under perennial crops); about 13,000 farms (19%) were between five and 20 ha. Most small-scale and medium-sized farmers with potential for commercial cropping were in this cohort but cropping barely 25% of their land and selling on local markets with little value-added. Mean monthly incomes of the working rural population were well below the national average.

1.4.2 CBMAP II targeted different beneficiary cohorts and geographic areas the latter comprising 14 selected PAs (see Map) and designated corridors between PAs deemed crucial to conserving globally important biodiversity and productive landscapes. Criteria for targeting specific PAs included: poverty levels as defined by national studies; areas with poverty exceeding 50%; and, monthly median household income of <US$163. Other criteria included institutional and environmental. Targeted beneficiaries (not quantified) were located in seven provinces, 28 districts and two *comarcas* with a total population of 660,000. They comprised two indigenous groups: the Ngobe-Buglé and Kuna-Yala, and two non-indigenous ethnic groups: African Antilleans and Peasants. Rural producer associations were expected to implement 450 environmental SPs. Other beneficiaries included Consultative Environmental Commissions (CCA), Municipal Environmental Units (UAM), and 1,000 local authorities and community leaders who would receive environmental/land use training.

1.5 Original Components (*as approved***)**

1.5.1 **PRORURAL:** The project had four components, of which Components 1, 2 and 4 would be implemented by MIDA and Component 3 by ANAM, as follows:

Component 1: Support for Productive Alliances (total cost US$7.6 m of which Loan US$7.1 m, 93.4%) to finance the preparation of productive alliance proposals, business plans and investment subprojects; communications strategy to stimulate participation; business skills and organizational training for small-scale producers; training of technical service providers to qualify them to work with RPAs; and, technical studies and consultancies supporting business plan execution.

Component 2: Productive Alliances (total cost US$24.7 m of which Loan US$19.8 m, 80.1%) to finance about 70 SPs (up to a max. US$500,000 each) implemented by RPAs in the Provinces of Veraguas, Herrera and Los Santos. RPAs were obliged to be allied with at least one agro-processor, wholesaler or other commercial partner. SP financing included fixed capital (plant, equipment and infrastructure), working capital and TA. RPAs contributed a minimum 10% towards SP cost.

Component 3: Environmental Investments and Strengthening (total cost US$11.4 m of which Loan US$10.0 m, 87.7%) executed by ANAM under the partially-blended CBMAP II, financed matching grants for 450 small-scale environmental investments, proposed and implemented by community and producer associations in 14 PAs and their buffer zones. These were in natural resource management (NRM) and productive activities to both conserve biodiversity of global significance and provide sustainable options to improve livelihoods. Mobilization, TA and training were also financed. Beneficiaries would contribute a minimum 10% of SP cost in cash/kind.

Component 4: Project Management, Monitoring and Evaluation (total cost US$3.2 m of which Loan US$2.5 m, 78.1%) financed MIDA's incremental operating costs to execute PRORURAL, including establishing a monitoring and evaluation (M&E) program.

1.5.2 **CBMAP II:** The GEF had three components comprising seven subcomponents:

Component 1: Community Investments in Environmental Resources (total cost US$12.4 m with US$7.8 of PRORURAL Loan and US$2.9 m of GEF) financed investments proposed by rural community associations and producer organizations in targeted PAs and associated buffer zones to improve management and conservation of natural resources. (i) Subcomponent 1A: Environmental Subprojects, administered by DBC/ANAM, provided matching grants ranging from US$10,000 to US$30,000 with a 10% beneficiary contribution for 450 demand-driven investments in small-scale economic infrastructure, screened for their contribution to conserving globally significant biodiversity; and (ii) Subcomponent 1B: Support for Natural Resources Management financed the principles, processes and activities to promote conservation, protection, restoration and sustainable use of natural resources and biodiversity.

Component 2: Management of Natural Resources and Strengthening of SINAP (total cost US$2.9 m with US$1.4 m of PRORURAL Loan and US$1.4 m of GEF) supported the GOP in integrating social and environmental sustainability into development and poverty reduction strategies, while helping to strengthen and consolidate the MBC-P. (i) Subcomponent 2A: Strengthening of SINAP, to improve the environmental and financial viability of the PAs by directly involving in their management the populations dependent on the PAs and living within or around them; promote co-management arrangements; and, information and monitoring systems to support conservation in at-risk eco-systems; (ii) Subcomponent 2B: Local Participation and Decentralization for Environmental Management, to increase civil society participation in decentralized environmental management by helping ANAM to establish, train and equip Environmental Technical Units (ETU) in municipalities and *comarcas*; Environmental Consultative Committees (CCAs); design/implement environmental education programs; and, help municipalities develop, implement and monitor/evaluate pilot investments; and, (iii) Subcomponent 2 C: Opportunities for Self-financing, to develop alternative sources of financing for NRM and biodiversity conservation, including piloting watershed-scale PES mechanisms in the provinces of Los Santos and Coclé, and in the indigenous *comarcas* of Kuna Yala and Ngobe-Buglé; studies, TA and negotiations to develop specific PES; and, financing systems for ANAM.

Component 3: Monitoring, Evaluation and Project Management (total cost US$2.8 m with US$0.8 m of PRORURAL Loan and US$1.6 m of GEF) to improve ANAM's national capacity to monitor the SINAP and evaluate biodiversity conservation. (i) Subcomponent A: Monitoring and Evaluation, to boost ANAM's capacity to monitor the SINAP and evaluate biodiversity interventions by strengthening the Protected Areas Monitoring System (SMAP) and the National Biodiversity Monitoring System (SNMDB); integrating them into the National Environmental Information System (SINIA); and, (ii) Subcomponent B: Project Management, financing project coordination, planning and supervision by DBC/ANAM (and post-MTR, the PIU/ANAM).

1.6 Revised Components

1.6.1 Changes were made to components under each operation: (i) PRORURAL: Post-MTR the SP financing ceiling was reduced to US$250,000 from US$500,000 (due to tendency for TA providers to over-size SPs up to the ceiling limit, and lack of absorptive capacity of small associations) permitting the potential doubling of SP numbers; associations were required to have a minimum 15 members for critical administrative, operational and commercial mass; and the amount of financing per producer was set at >US$5,000; and, (ii) CBMAP II: The targeted

number of Environmental Investments was reduced from 450 to 350 due to inadequate funds to implement the full 450, and ANAM re-focused SP solicitation efforts on the province of Veraguas and the *Comarca* Ngobe-Buglé due to their important PAs. Several other minor changes were made but are not detailed here. Scale, scope and scheduling adjustments are discussed in 1.7.

1.7 Other significant changes

1.7.1 PRORURAL: The closing date was amended twice – the first extension of 18 months to July 31, 2014 was justified on grounds that it would permit successful conclusion of SPs and their effective M&E. The project had made significant progress in the previous year after a slow start, national budget allocations had improved at the time, a pipeline of eligible SPs was ready to absorb remaining Loan funds and the pace of execution had accelerated. A second extension of six months to January 27, 2015 was to both secure US$2.6 m of urgently-needed additional budget resources at a time of renewed budget cuts to the project, and the time to absorb those funds via completion of planned SPs. Also, US$3.425 m of Loan resources were reallocated to Parts 3 and 4 of the project.

1.7.2 CBMAP II: A Board-approved Level One restructuring in May 2012 triggered the Pest Management Operational Policy (OP 4.09). This was not deemed necessary at appraisal due to the small quantity of pesticides expected to be procured under the grant-financed environmental SPs. A negative list in the Operational Manual was considered sufficient as part of the SP screening and approval process. The Mid-term Review (MTR) however, concluded that OP 4.09 should be triggered preventively. In addition, the project applied the Involuntary Resettlement Policy (OP/BP 4.12) and reflected in the Grant Agreement but not the PAD. No restrictions had occurred at that point but a Process Framework was in place. Further, the Bank agreed to government's request to prepare an Additional Financing of US$8.0 m but this was substituted by preparation of a new GEF of US$9.59 m, approved in February 2015 and awaiting effectiveness at ICR finalization. Finally, a CD-approved Level Two Restructuring on May 6, 2013 extended the closing date 13 months to July 31, 2014 and reallocated US$280,308.84 to conclude environmental SPs and other activities.

2. Key Factors Affecting Implementation and Outcomes

2.1 Project Preparation, Design and Quality at Entry

2.1.1 Both projects financed a matching grants scheme for rural producer associations but with certain differences. PRORURAL investments were to foster the formation and consolidation of productive alliances thereby increasing market access, producer incomes and rural employment. Its direct link to biodiversity conservation was through project-promoted land transformation on-farm, i.e. best practice agriculture. GEF funds complemented the Loan through incremental support to SINAP to build local capacity for environmental co-management, re-forestation and the piloting of Payment for Environmental Services (PES), boosting longer-term revenue generation for ANAM. The US$10.0 m of PRORURAL Loan funds financed the GEF's planned 450 environmental SP investments (and some other activities) for community associations in PAs and buffer zones. Both projects incorporated design elements derived directly from good practice in the region (see 2.1.3), although this did not alleviate complexity.

2.1.2 CBMAP II financed (via the PRORURAL blend) innovative environmental investments within and around the PAs for poor, dispersed communities, and a complementary stream of activities including reforestation and decentralized co-management arrangements to foster SINAP's (and ANAM's) longer-term financial independence. Experience shows that project

preparation and design under-estimated the effort and time required to bring inexperienced and unorganized targeted groups to investment readiness, and paid inadequate attention to mechanisms for linking producer groups to potential commercial allies. Importantly, the GEF was under-funded: US$10.0 m was a tight budget for 450 SPs and the primary reason for reducing the targeted 450 to 350 post-MTR; and, US$6.0 m of GEF funds was insufficient for all planned activities under Component 2, most notably the reforestation of 50,000 ha. Also, the PAD did not specify who would be responsible for the reforestation target (see 3.2 and Annex 2).[4] The project's anticipated impact on global biodiversity was not intended to stem exclusively from the 450 SPs, where direct impact was likely to be modest given SP scale and dispersion. It was an integrated vision incorporating the positive impacts – short and longer-term - of re-forestation and conservation, the financial sustainability of SINAP, improved databases, progress in establishing co-management, and investments to strengthen communities' as both users and caretakers of the PAs.

2.1.3 Both PRORURAL and CBMAP II deployed demand-driven, participatory mechanisms to leverage the support and engagement of local communities in addressing the above factors, although the geographic concentration of project activities and nature of targeted beneficiaries differed. Rural producer associations under PRORURAL were to implement investments to increase their market insertion and add value in an attempt to slow expansion of the agricultural frontier - especially in the Pacific region/provinces - and reduce pressure on sites of environmental importance. Under CBMAP II, envisaged investments were three types: conservation and protection of natural resources; generation of employment and income; and, food security to improve community living conditions. PRORURAL SP financing included working capital for repayment to MIDA via a revolving fund mechanism, whereas CBMAP II did not. The investment ceiling under PRORURAL of US$500,000 was excessive and reflected inadequate analysis of producer associations in Panama which tend to be small with limited capacity to efficiently absorb such large amounts. Reducing this ceiling by 50% post-MTR saw the number of SPs financed more than double the original target. The GEF financed smaller-scale environmental investments of >US$ 30,000 within PAs and buffer zones, mostly in the northern, Atlantic regions (see Map).

2.1.4 **Lessons reflected in design:** The design of PRORURAL was consistent with Bank projects of the period including the Colombia Productive Alliances and a series of projects in Northeast Brazil which had produced a compendium of guidance referred to as "rules of the game" based on a decade of efforts to pilot and scale up small-scale productive investments.[5] Lessons cited in the PAD were relevant and factored into SP design and the support framework: verifiable market opportunities as a criterion for approval/financing; broad-based participation of beneficiaries in decision-making and to build ownership of investments and social capital; experience-based rules for local participation, defining technical criteria for business plans, subproject selection and stakeholder responsibilities; rigorous selection, preparation and TA to maximize SPs' commercial potential and sustainability; standardized SP documentation, technical standards and unit costs; and, capacity building for business management and administration.

[4] Even assuming producer responsibility, 450 small-scale SPs benefiting associations averaging around 20 families and with each family allocating about 0.5 ha to their SP, implied a maximum re-forestation potential of about 4,500 ha from that source. The ICR was unable to clarify the background to this target.

[5] It is unclear why the Pará Integrated Rural Development Project was cited in the PAD as a source of lessons. It did not become effective until end-2007 and did not register any productive investments until 2012.

2.1.5 Many of these lessons were equally applicable to CBMAP II as a project targeting small-scale rural producers, but so were specific, conservation-related lessons from its predecessor and similar GEF-supported operations elsewhere. CBMAP I demonstrated that strong project dissemination and management could generate benefits for remote communities and in regions with little/no previous access to TA, information or direct support. Also, co-management arrangements needed to be expanded and strengthened for existing PAs, resulting in CBMAP II financing increased local management in 14 targeted PAs by building capacity in ANAM and local partner organizations. Monitoring and information systems tracking the link between SP investments and biodiversity conservation and the status of biological diversity in the PAs were crucial. Further, longer-term revenue generation including payment for environmental services (PES) was the key to increasing local stewardship of environmental assets while the focus on PAs, local communities and indigenous *comarcas* through consultation, training and communication could promote decentralized PA management.

2.1.6 **Risk analysis and mitigation:** Identified risks overlapped/intersected in some cases: national government commitment, political will, budget and institutional support for implementation were rated low to moderate but the mitigation measures were incomplete. Only counterpart funding is mentioned, not annual budget allocations which in the case of PRORURAL constrained execution, or government commitment/political will which negatively affected both projects in their early years and might have been anticipated. Similarly, certain risks intersected: inter-institutional coordination, community/producer capacity to successfully implement SPs whether environmental or alliance-based, and the risk that local and national authorities might not cooperate with project-driven change. Mitigation measures were reasonable although insufficiently specific regarding the drivers of institutional coordination and too optimistic on the issue of poor, small-scale farmers' ability to organize, propose and manage SPs.

2.1.7 **Participatory processes:** Both projects conducted consultative social assessments during preparation and project design included strategies to promote inclusion and access to project benefits through mobilization, culturally-aware communications, training and participatory monitoring of SPs. Project beneficiary cohorts were carefully defined and any potentially negative impacts on indigenous and other vulnerable groups including women were identified. An Indigenous Peoples Plan was prepared in each case.

2.1.8 **Institutional arrangements:** For PRORURAL, day to day implementation was delegated by the Borrower (Ministry of Economy and Finance (MEF)), to the Ministry of Agricultural Development (MIDA) with the project led by a Coordinator and a team of technical specialists and administrators. A multi-agency/private sector Steering Committee would oversee execution. MIDA would coordinate Components 1, 2 and 4 and ANAM – through its Department of Biological Corridors (DBC/ANAM) - would manage Component 3. Subprojects under Components 2 and 3 would be implemented by Rural Producer Associations (RPA) and community associations. Productive Alliance Facilitators (PAFs) contracted by MIDA would be the main interface with intended beneficiaries under PRORURAL. The Productive Alliances themselves were to comprise an RPA and at least one commercial partner, a formal pre-requisite for SP approval.

2.1.9 The institutional framework for CBMAP II was conceptually similar but operationally more complex: DBC/ANAM as implementation agent; municipal environmental management units (UAM) with the authority to handle local natural resource and environmental monitoring and Environmental Technical Units; consultative environmental commissions (CCA) of local authorities, indigenous representatives and civil society, trained and eligible to propose

demonstration SPs based on municipal environmental land use plans (MEP); and, community associations and RPAs with a minimum 10 rural citizens organized and legally-constituted, responsible for identifying and preparing SP proposals for funding. Depending on the ANAM bureaucracy for project implementation/coordination was not appropriate and hindered execution up to 2011 when a Project Implementation Unit (PIU) was established.

2.2 Implementation

2.2.1 **Factors affecting project implementation:** PRORURAL (like CBMAP II) was implemented over the course of two government administrations (2004-2009 and 2009-2014), had five Project Coordinators, and a relatively high turnover in PMU staff, further complicated by similar turnover in Bank Task Team Leaders over the project period. CBMAP II also had multiple coordinators but a more stable Bank Task Team with three TTLs from effectiveness through ICR. This situation implied variable perceptions of project execution, distinct understandings of commitments to beneficiaries and relationship to the parent agency, and disruption to established work patterns which impacted on the projects' technical and financial execution to varying degrees..

2.2.2 In the case of PRORURAL, technical assistance capacity in the initial years affected the quality of the investment profiles and caused marked heterogeneity in the quality of the resulting Business Plans. Beneficiary producers were left with the responsibility of trying to prepare and/or adjust the plans and maintain contact with the PMU. Business Plans used unrealistic production models, cost estimates were inaccurate, in many cases financing for working capital far outweighed financing for the investment itself, there was little/no provision for post-production technology (transformation, conservation and commercialization) or value-added, and the marketing side was overlooked. In many cases, contracts with buyers were vaguely-defined, loose arrangements.

2.2.3 A reduced pace of disbursement in 2011 saw MEF respond by cutting the annual budget for PRORURAL, creating a spiral effect of slower completion of planned project activities which in turn generated further budget cuts. This situation affected the entire Bank portfolio at the time and was not unique to this project. From MEF's viewpoint, this was good fiscal practice associated with its obligation to comply with the Fiscal and Social Responsibility Law and annual fiscal deficit ceilings. If projects do not demonstrate good budget execution in line with predictions, MEF provides less money the following year. MIDA and ANAM always managed to sort this issue out through the *credito extraordinario* mechanism involving the internal reallocation of unused funds from projects within their institutions. Even so, the situation became acute in 2014 – a time of political transition in Panama and a critical year for concluding SPs and winding down the project. PRORURAL needed US$4.4 m but received a budget allocation of US$1.8 m. Component 2 SPs were cut 98% needing US$2.79 m but receiving around US$57,000. Various options were considered including an additional financing, but the final outcome was a six-month extension of the closing date and a special budget allocation from MEF of US$2.56 m to complete project commitments. The PRORURAL Coordinator's proactivity proved critical in this case.

2.2.4 CBMAP II was affected by changes in environmental administration - both political and internal - in the initial years. Like PRORURAL, its implementation can be divided into two distinct phases: from effectiveness to 2011 which saw ANAM accord inadequate priority to the project, and the post-MTR period from mid-2011 to closing which benefited from new ANAM leadership, an agreed action plan to speed implementation and appointment of a capable coordinator. Up to 2011, project activities were centralized and subject to ANAM's internal bureaucracy limiting DCB's ability to achieve the level of independence and dynamism essential

for an externally-financed project. Technical capacity was inadequate due to contracting delays. By 2011 the project had stalled due to the loss of the technical coordinator, administrative-financial coordinator, financial specialist and accountant, and the environmental and social specialists.

2.2.5 An important limitation with operational implications for the environmental SPs was the failure to tap into the human capital developed under CBMAP I. That project had recommended that any follow-on continue supporting producer organizations which had already transitioned through the initial organizational and productive phases and had sufficient knowledge and technical skills to move to the next level of productive activity linked to markets. Instead, CBMAP II selected new organizations which for the most part lacked these skills/experiences, needing to start afresh with induction, legalization, mobilization, establishing relationships with banks not attuned to dealing with such clients, training and subproject design and implementation assistance. These reasons explain the delays in achieving productive efficiency as well as organized groups able to produce and market with less hand-holding. Establishing appropriate M&E of these investments including a baseline for each investment SP, also contributed to delays.

2.2.6 **Mid-Term Review (MTR):** Both MTRs had a major positive influence on progress. Diagnosis by the PRORURAL MTR (March 2011) showed many issues affecting the quality of SPs and pace of execution. Strong follow-up of the Bank's MTR recommendations saw project execution gain momentum and overcome difficulties. SP processing accelerated, disbursements improved from 21.37% by end-2010 to 76.23% from 2011 to closing, and overall quality improved. The M&E system was overhauled, additional qualified staff were hired and a review was conducted of the existing portfolio to evaluate the project's impact and better monitor fiduciary compliance. Other agreed measures include: reducing the ceiling on SP financing from US$500,000 to US$250,000, aligned more closely to associations' limited administrative capacity and avoiding SP over-dimensioning; boosting the technical unit in MIDA and providing each SP with an implementation plan; more proactive search for business opportunities which added value, and measures to enhance the technical capacity of TA providers and promote associations' ownership of their Business Plans; eligibility criteria based on a standardized model profile and revised proposal evaluation criteria; improved project communications and interface with the target communities; and, integration of environmental aspects into SP design, improving safeguards compliance. Subproject approval and processing was accelerated to improve overall momentum and reduce economic losses from late financing beyond the planting season. Beneficiary surveys taken in 2013 measured the level of satisfaction with project TA and training services, finding marked improvement over a similar survey done in 2010: 57% satisfied, 40% very satisfied and just 3% unsatisfied.[6]

2.2.7 The CBMAP II MTR conducted in June 2011 prompted a notable change in ANAM's political and institutional commitment to the project and general proactivity. An independent MTR study (CIIDSE, 2011) provided the analytical foundation for subsequent adjustments: strengthening M&E and adjusting key indicators; reducing targeted SPs from 450 to 350 due to inadequate financing to cover the original target; reformulation of SP eligibility criteria; updating the communications campaign; implementing an effective training plan; and. updating the Indigenous Participation Plan (IPP) and preparing a Pest Management Plan. Cooperation agreements were signed with local and indigenous authorities and with national and international bodies to support execution and sustainability. A project PIU was created within ANAM's General Administration with qualified staff acceptable to the Bank and with operational

[6] Survey of Producers in Associations of Small Producers and Plan to Improve PRORURAL, PMU/MIDA, 2013.

independence. This facilitated the Bank-Client dialogue, decision-making, capacity to contract and manage field operations, and FM and Procurement management. Criteria for environmental SP selection under CBMAP II also changed with a stronger market focus and suitable support services. By late 2012, 70% of Loan funds and about 91% of GEF Grant funds had been disbursed.

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

2.3.1 **M&E design:** M&E design is rated Moderately Satisfactory in both cases. The PRORURAL Results Framework was generally satisfactory in capturing the well-articulated PDO but created some measurement and interpretation issues. In particular, the PDO Indicator seeking an increase in "net revenue" assumed the availability of good quality, consistent data from small-scale producers on their costs and returns to enable measurement of benefits at EOP, but was in practice too advanced for beneficiaries with only rudimentary record-keeping/accounting. A CD-approved restructuring improved this situation by ensuring adequate reflection of income generation (though sales receipts and beneficiary surveys), institutional and productive sustainability and natural resource conservation, while improving several Intermediate Outcome Indicators. M&E was to be both a mechanisms for assessing project impacts and a day-to-day management tool. Baseline and follow-up data were planned and would be consolidated for key evaluation events: at MTR and a final impact evaluation at EOP.

2.3.2 The CBMAP II GEO was clearly-stated and characteristically broad, expressed in global terms but effected locally as a valuable contribution to a much larger effort. Overall, M&E expectations were more complex than PRORURAL: strengthen ANAM's capacity to coordinate local co-management activities; monitor environmental investments for global biodiversity benefits; and, integrate monitoring activities in national PA and biodiversity monitoring systems. The targeted 50,000 ha of reforestation was especially ambitious and its execution path unclear. Updating of maps, creation and/or strengthening of national conservation databases (SNMDB and SINIA), and monitoring of indicator species were all part of the M&E agenda. The WWF Tracking Tool had already established a baseline in 14 PAs and the Bank/counterpart teams worked with USAID and under the GEF Biodiversity Focal Area SP2 (Mainstreaming Biodiversity in Production Landscapes and Sectors) to develop the project's M&E framework around realistic and monitorable output indicators. Some informally-managed adjustments/clarifications to two PDO Indicators and new Intermediate Outcome Indicators post-MTR (women's participation and business record-keeping) refined the Results Framework (RF). Both projects planned for M&E systems established within the first year with CBMAP II building on pre-existing systems.

2.3.2 **Implementation and dissemination:** Both projects produced MTR reports based on consolidated data pulled from project MIS data bases, and conducted an extensive, survey-based EOP evaluation for each operation (Barzev, 2015). CBMAP II's assignment of dedicated staff to M&E proved advantageous. The main issues beyond the control of the contracted evaluators were the lack of formal baselines for the investment activities in both cases (although each SP had a simple baseline) or, established treatment and control groups. However, samples surveyed under each exercise were randomly-selected and a control group was reconstructed ex-post in the case of PRORURAL (see Annex 5). Further, while both projects made efforts to train beneficiary associations in business/related record-keeping, the results were uneven which affected the quality of data available for the EFA and the impact evaluations. Both operations received good quality Completion Reports (Pitty, 2015), complemented by separate analyses of achievements under both Results Frameworks (Pitty, 2015) using inter alia, the Barzev survey data. In regard to establishing the SNIMDB, the project established participation agreements with the University of Panamá and Autonomous University of Chiriqui, developed the infrastructure and standards to

obtain, digitalize and share information on biological diversity, equipped ANAM to do this monitoring and generated baseline information for indicator species in seven project PAs. Dissemination of PRORURAL results/lessons at EOP was not systematic but CBMAP II conducted four events involving public authorities, local leaders, indigenous groups, civil society and national/international experts.

2.4 Safeguard and Fiduciary Compliance

2.4.1 **Safeguards compliance:** As noted in 1.7.2 (i) a Board-approved Level One restructuring of CBMAP II in May 2012 triggered the Pest Management Operational Policy (OP 4.09); and, (ii) the Board was informed that the Involuntary Resettlement Policy (OP/BP 4.12) was applied under the project and reflected in the Grant Agreement but not in the PAD. Following these amendments, both projects triggered the same Safeguards: Environmental Assessment (OP4.01), Natural Habitats (OP4.04), Pest Management (OP4.09), Cultural Property (OP4.11), Involuntary Resettlement (OP4.12), Indigenous Peoples (OP4.10) and Forests (OP4.36).

2.4.2 **Environmental Safeguards:** [7] Environmental safeguards performance under PRORURAL indicates that the PRORURAL PMU was committed to complying with all triggered environmental safeguards, establishing a strong working relationship with its Sector Environmental Unit and training its regional staff in Bank requirements. PRORURAL technicians were well-aware of their environmental compliance responsibilities in the field and along with the Bank, consistently pushed natural resource conservation messages including specific best practices in soil and water use to beneficiary associations/producers. The link between good practices and increased productivity was stressed by inserting key environmental conservation messages at the local level. An integrated Pest Management Plan was developed, and protective gear for pesticide spraying and proper storage of containers was mandated. Associations including artisanal fishermen were also trained by the Water Resource Authority of Panamá (ARAP). Since the PMU had only three technicians devoted to this, field partnerships were arranged with MIDA, ARAP and ANAM. Also, each beneficiary producer was required to develop an Environmental Plan which at a cost of US$600-800 was a significant financial burden. The law was changed so that producers could use an "Environmental Guide" to filter out potential environmental impacts from project activities.

2.4.3 In the case of CBMAP II, the Bank insisted from the start that beneficiaries take ownership for ensuring that their SPs not create negative environmental impacts, and trained them to complete the environmental checklist, verified by ANAM technicians on site. The Bank Team also promoted the idea that environmental co-management could take various forms and was not necessarily a single model: there were some PAs with strategic importance where Government would inevitably maintain sole management rights (e.g., where land tenancy and land speculation were problematic); in others, co-management could be transferred to local authorities and indigenous groups. In the initial years, SP preparation and evaluation were found to be in compliance with all triggered safeguards and the Bank advised on their monitoring during execution. The MTR found that the instruments for environmental evaluation of SPs were adequate, the project had not financed any SP ineligible due to environmental infractions and, mitigation measures were generally satisfactory. ANAM contracted specialists in social and environmental safeguards, including for indigenous peoples, and intensified its technical supervision of safeguards compliance in the field. Environmental SPs showed high rates of

[7] Bank environmental and social safeguards reporting was of uneven quality over time, especially on performance under individual, triggered safeguards and thus the ICR was unable to provide more specifics for the latter.

adoption/utilization of environmentally sound agricultural practices, evidence that ANAM was committed to environmental safeguards compliance and promoting producer responsibility for their implementation.

2.4.4 The Bank Task Team was proactive in both attempting to address important issues which arose and in furthering conservation activities not originally contemplated. In 2009 the Bank, with UN-REDD, FAO and ANAM, collaborated with key stakeholders and the Government of Panama on a US$3.6 m Grant Proposal for Preparation for REDD "Readiness", supported by the Forest Carbon Partnership Framework (FCPF). The Bank did not approve the proposal and the GOP subsequently pursued REDD activities with IDB. Also, hydro-electric infrastructure activities in the Palo Seco Protected Forest (Chan 75 and Bonyic), already underway at project effectiveness, showed that even though the area affected was relatively small, potential negative impacts had been ignored. At Bank insistence, ANAM proposed an inter-institutional action plan requiring stronger on-site monitoring of social and environmental aspects/impacts. The Bank insisted that the dialogue be elevated to the highest ministerial levels including MEF, that it involve the private sector and civil society, and that potential resettlement be systematically monitored. Another issue watched closely by the Task Team was the management of PAs in the Province of Boca del Toro, also affected by planned hydro-electric activities and other economic development projects in the region. The Bank Team moderated a Land Organization Plan for the Rio Changuinola watershed to ensure that development was integrated.

2.4.5 **Social Safeguards:** MIDA was fully committed to social safeguards compliance which was internalized in project and SP execution. Indigenous Peoples' provisions were in compliance, specifically those relevant to PRORURAL Component 3 executed by ANAM. Cultural norms were observed and Business Plans were screened to ensure that Involuntary Resettlement criteria were applied. Ngobe-Buglé peoples were located in territories covered by PRORURAL and the project actively worked with their leaders on project dissemination, inclusion, and action plans to ensure compliance. While a new PMU team installed in 2011 lacked understanding of Bank safeguards and needed concentrated briefing, physical visits to PRORURAL SPs showed no evidence of non-compliance and all SPs were screened to detect exceptions. However, MIDA's updating of the Indigenous Peoples Participation Plan (IPPP) was slow, causing a downgrading of the Social Safeguards rating to MU in 2012 which was sustained into 2013 when MIDA had difficulty filling the vacant Social Safeguards Specialist position in the PCU. Once the IPPP was updated, implementation was launched immediately with information dissemination events, induction training in MIDA to promote a coordinated approach to IPPP execution under Components 1 and 2 and to define SPs for indigenous peoples. This delay in the IPPP meant that indigenous groups received just four SPs (of 8 Business Plans) under PRORURAL, 3% of the total.

2.4.6 Social safeguards compliance under CBMAP II was uneven initially but improved over time. Activities programmed under the Indigenous Peoples Participation Framework (IPPF) benefited from monitoring and guidance provided by the Bank: ANAM prepared a Results Framework specifically for IPPF implementation by component, including costs, responsibilities for implementation and results expected; the Indigenous Peoples Participation Plan was updated and diffusion workshops organized in all relevant PAs - indigenous participation improved significantly post-MTR; Bank safeguards training was provided to ANAM and the PMU both centrally and in the regions; agreements with the Kuna, Naso-Teribe and Ngobe-Buglé indigenous groups were updated; and, efforts were made to ensure that the PMU social safeguards specialist participated in the formulation of the Municipal Environmental Land Use Plans (MEP) to ensure that proper protections were accorded indigenous groups via consultation mechanisms. Similarly, application of the Involuntary Resettlement safeguard to potential

negative impacts of activities in the PAs was initially uneven but gained traction over time and compliance graduated to satisfactory.

2.4.7 **Financial Management (FM):** Financial Management supervision reports for PRORURAL show that its FM unit was well-staffed with experienced specialists, rapidly established strong internal controls and record-keeping and showed good follow-up regarding Bank recommendations and agreed action plans. Ratings were consistently Moderately Satisfactory and risk was initially rated Moderate. However, the planned PENTAGON FM Information System took time to implement during which key reporting and related functions were manually done in Excel. Further, the Financial Manager position remained vacant for almost a year with no-one in charge of reporting and account reconciliations. This was finally resolved with new FM staff hired, PENTAGON fully-operational and Excel use discontinued. Performance was steady, agreed action plans were followed up efficiently including a restructuring of the SP portfolio, and FM management was in compliance with Bank requirements. Delayed delivery of some financial reports and independent audits saw risk downgraded to Substantial and FM supervision was increased to twice-yearly missions. The final FM rating was Moderately Satisfactory.

2.4.8 CBMAP II's FM performance was adequate in the initial years but by 2010, the Bank Specialist found that the PMU FM team while well-staffed was maintaining project accounts manually in Excel. The planned PENTAGON system had been installed but the uploading of data was delayed and planned daily updates not occurring. The overall rating dropped to Moderately Unsatisfactory, mainly due to FM shortcomings jeopardizing capacity to provide timely and reliable information to manage and monitor project implementation, and the overall risk was Substantial. These ratings continued because of the slow progress in implementing PENTAGON and continued use of Excel spreadsheets. The ANAM project went for some time without adequate FM staff or internal supervision. By 2012 the ratings remained negative due to another rollover of the FM staff and risk was rated Substantial. Matters did not improve markedly in 2013 with PENTAGON still not functioning properly and the project essentially lacking an accounting system. With renewed FM improvement by ANAM, the overall rating was upgraded to Moderately Satisfactory with all key Bank rules being properly observed and by 2014, performance was upgraded to Satisfactory.

2.4.9 Disbursement and audit performance: PRORURAL has a balance of US$848,661.89 of un-executed funds which will be cancelled. Also, MIDA needs to re-document and return to the Bank US$138,063.65 corresponding to non-executed subprojects. Audit reports from 2008 to 2014 (and including the first three months of 2015) were uniformly Unqualified, with no internal control or accountability issues, but were almost always late. In the case of CBMAP II, both the GEF Grant and blended Loan resources were fully-disbursed. Eight audit reports were delivered (the final for 2014 and January 2015, was still pending), the majority with Unqualified opinions; no issues of internal control or accountability were noted. Timely delivery was an issue until 2010.

2.4.10 **Procurement:** PRORURAL struggled after effectiveness to accelerate execution due to significant modification to institutional arrangements within MIDA. The project was designed to mainstream implementation within MIDA's administrative structure with prior review of procurement and payments handled by the *Controlaria*. Following the departure of the project coordinator – who had spearheaded the mainstreaming idea – new management hired a firm (CATHALAC) to manage project funds and to pay suppliers, contractors and consultants, releasing the *Controlaria* from its prior review role. This essentially stalled the project and delayed procurement implementation until an agreement between MIDA and ANAM under

which ANAM would temporarily transfer funds to MIDA for future reimbursement, helped the project move forward. The MIDA procurement team was strong and appropriately staffed resulting in an overall smooth procurement experience from 2011 with ratings generally Satisfactory and risk rated Moderate through EOP. The Procurement Plan was regularly updated and the unit produced timely and reliable information. Procurement PPRs note that MIDA-PRORURAL spent significant time training the beneficiary communities and organizations in how to implement their SPs according to processes and procedures defined in the Operational Manual.

2.4.11 CBMAP II procurement performance was uneven in part due to frequent turnover in procurement staff within ANAM in the earlier years and weak capacity. By 2011, with yet another turnover in the ANAM procurement team and difficulties tracking key documents of its predecessors or trying to reconstruct procurement performance, the Bank procurement team focused on trying to settle the ANAM group down and advance key priorities including updating the Procurement Plan and strengthening the skills of the new ANAM specialist. Unsuccessful efforts to locate equipment and furniture ostensibly purchased by the project for ANAM suggested poor asset management. Risk was rated high and the overall procurement rating was Unsatisfactory. By 2012, ANAM performance had turned around and was upgraded to Moderately Satisfactory but the risk rating remained high. The Procurement Plan was updated, the Procurement Specialist gained skills, procurement files were better-organized and competition for small contracts had improved. The final rating was Moderately Satisfactory.

2.4.12 **Governance:** In 2013, INT launched an investigation into allegations of fraud and collusion under CBMAP II. Findings of the investigation cited poor record-keeping of procurement documents and the need to provide information to bidders on how they or other concerned parties could report suspected fraud and corruption to the World Bank. The Task Team and Region took corrective measures to address these weaknesses. Some of these measures included: fiduciary training for project implementation units and auditing firms in Panamá focused on fraud and corruption detection and mitigation; more frequent ex-post reviews; and the use of *Panama Compra* under the new GEF project to reduce the risk of subsidiaries under the same company participating and competing for the same contract.

2.5 Post-completion Operation/Next Phase

2.5.1 In the case of PRORURAL, a proposed second phase project initiated with MIDA in April 2015 is likely to have a similar PDO, components and methodological approach. The main difference is the broader spectrum of beneficiary producers - a very poor cohort emphasizing indigenous groups in their territories with food security/subsistence concerns and potentially marketable surpluses, and a more sophisticated group with the productive profile for national and international markets. The project would not have an explicit environmental component; natural resource management and conservation elements would be built into the investment subprojects. A loan of US$80.0 m is contemplated with Board presentation in the second half of FY16. There is no explicit plan for the operational phase of PRORURAL SPs.

2.5.2 A follow-on, independent GEF Grant of US$9.59 m, approved in February 2015 and to be executed by the Ministry of Environment (formerly ANAM) is awaiting effectiveness. It finances a Sustainable Production Systems and Conservation of Biodiversity Project designed to "*conserve globally significant biodiversity through the improvement of the management effectiveness of Project (selected) Protected Areas and biodiversity mainstreaming in the Buffer Zones*". The new GEF is intended to consolidate achievements under CBMAP II and has similar implementation arrangements (with PIU) to ensure a seamless transition from its predecessor

including a stabilized technical staff to avoid the high turnover which characterized that operation. The project seeks above all, to establish the mechanisms for a sustainable NPAS, establishing/financing an Endowment Fund based on international best practice. The transition arrangements for consolidation of the 350 small-scale investments under CBMAP II are less clear – the new operation includes SP investment in biodiversity-friendly production systems with a higher financing ceiling than CBMAP II but does not explicitly consider further support to the latter's beneficiaries. There is no explicit plan for the operational phase of the environmental SPs.

3. Assessment of Outcomes

3.1 Relevance of Objectives, Design and Implementation

3.1.1 **Relevance of objectives:** Both the PDO and GEO were **highly relevant** at appraisal and remain so, based on: (i) the Bank's new Panama Country Partnership Framework (CPF) discussed by the Bank's Board on April 14, 2015 and focused on expanding opportunities for the rural poor including indigenous populations, enhancing agricultural productivity and biodiversity conservation, the three pillars of PRORURAL; (ii) the Bank's Twin Goals to eradicate extreme poverty and promote shared prosperity by financing sustainable livelihood options including in Protected Areas; and, (iii) alignment with Government's Strategic Plan for the Agriculture Sector, its National Biodiversity Policy and National Climate Change Policy. Both the conservation elements of the PDO and the GEO remain well-aligned with the GEF-5 Biodiversity Strategy to improve PA sustainability and mainstream biodiversity conservation and sustainable use into production landscapes and sectors. The GEO is also relevant in its support for the technical and political standing of the new Ministry of Environment. Finally, the PDO and GEO remain consistent with/relevant to the Aichi Targets of the Convention on Biological Diversity (CBD) relating to biodiversity values, sustainable production and consumption, effective management of biodiversity and ecosystems, and indigenous and local communities, as well as with Panama's global commitments under the MBC and the UN Framework Convention on Climate Change.

3.1.2 **Relevance of design and implementation**: In the case of PRORURAL, design and implementation relevance is rated **Substantial**. The design and implementation of PRORURAL was in the mainstream of rural development methodologies seeking to elevate small farmer productivity above that of food security and marginal surpluses to business enterprises linked to established commercial entities. The project's design relevance however, was prejudiced to some extent by not putting sufficient weight on the demand side and facilitating through specific design features, the desired commercial linkages. The onus was mostly on the associations/organizations. The inclusion of a substantial component – financed by PRORURAL and implemented by ANAM - dedicated to biodiversity conservation and innovative environmental investments intended to give poor, small-scale rural producers in PAs and buffer zones a stake in their effective management was highly relevant and the combination of strong promotion of project objectives and principles and sensitivity to indigenous cultural and economic concerns resulted in a project in the mainstream of current development aspirations for such people and a successful and replicable model.

3.1.3 Design and implementation relevance of CBMAP II is rated **Modest**. Positive elements include the project's conception under GEF 3 Guidelines in line with the strategic, long-term objectives for biodiversity conservation, responsiveness to the STAP Roster Review, and identification of key gaps and a strategy to confront them. It focused on activities directly and indirectly benefiting very poor groups located in PAs and buffer zones where laws and regulations severely restrict resource use and controversies are frequent. Opportunities were provided to reduce dependence/pressure on PA resources at a relatively low economic cost (max.

US$30,000/SP). Indigenous and non-indigenous groups, among the most vulnerable and without access to resources to improve quality of life, benefited directly through investments using demand-driven and consultative methods. This was complemented by a multi-pronged effort to strengthen SINAP, physically restore forest cover, and develop mechanisms with potential to improve the long-term financial independence of the PAs including through a decentralized, co-management approach. Design flaws however, were revealed by and markedly affected implementation: under-funding of reforestation goals (unless the target was a simple error, although there is no evidence for this) and of the environmental investments; not defining responsibility for reforestation; and, failure to consider consolidating the human capital developed under CBMAP I.

3.2 Achievement of Project Development Objectives

3.2.1 This section presents the achievement of the PDO and GEO respectively. Both are broken down into their key themes and available evidence is presented. Achievement of PDO and GEO is rated **Satisfactory** in both cases based on individual ratings of key themes.

PRORURAL:

PDO: *To contribute to increased productivity among organized rural small-scale producers, through their participation in productive alliances, while ensuring the sustainable use of natural resources and the conservation of globally important biodiversity.* **Satisfactory**

Primary theme 1: *Increased productivity among organized rural small-scale producers, through their participation in productive alliances*. Satisfactory

3.2.2 Evaluation data (Barzev, 2015) show a 22.3% increase in sales receipts (90% of target) of small-scale producers involved in 130 project-financed productive alliances (186%) in the provinces of Herrera, Los Santos and Veragues.[8] Beneficiary consultations indicate that joining a productive alliance helped increase incomes and improved beneficiaries' quality of life due to better input, equipment and materials prices from bulk-purchasing, higher yields per production unit due to the project's technical and productive requirements, insertion in new markets due to quality and volume factors, and higher incomes from selling collectively at better prices. These results do not include ongoing, parallel sales by 58% of beneficiaries through commercial intermediaries not connected to an alliance, implying significant under-reporting of sales. See Annex 5.

3.2.3 Organizational survival rates were high: 80% of the project's 130 RPAs continued to operate one year after receiving project support (target 75%) and there had been an increase of 54% (target 20%) in new RPA members, implying that membership of an RPA was perceived as having value. The total number of associations participating in a productive alliance reached 186% of the target – 130 vs 70, benefiting 4,577 small-scale producers, 92% of target and impressive in the Panamanian context as most RPAs are very small (<50 members). Further, a sample of 2,439 producers showed that 43% of those with-project showed a net profit compared to 33% without-project. Average net returns of the with-project cohort increased from

[8] Productivity is measured using sales receipts as a simplified indicator or substitute for "net revenue", given that some of the data for evaluating changes in income at the family level or net revenues at the business level, particularly with small producers with few record keeping/accounting skills, is often unavailable or poor quality.

US$698/producer/year to US$1,180/producer/year, a 69% increase. The most profitable crops were milk, plantain, fish, corn and beans, all with strong commercial demand in regional/national markets.

Theme 2: ***Ensuring the sustainable use of natural resources and conservation of globally important biodiversity*** **Satisfactory**

3.2.4 Under the productive alliance investments, some 8% (target 10%) of the SP area of 3,781.4 ha - where formerly unsustainable activities (cattle and extensive cropping in forested areas) were ceased - were transformed into forest/vegetation for sustainable uses. Further, percentages of producers ranging from 47% to 100% adopted improved farming practices promoting sustainable natural resources use: avoiding burn-off, agro-forestry systems, wind-breaks, crop diversification, organic fertilizers, zero tillage, waste management techniques and terracing. Through Component 3 (blended Loan financing for CBMAP II-executed environmental investments), associations of poor, small-scale producers implemented 350 SPs resulting in the reforestation/recuperation of over 1,900 ha, and promoting environmentally conservative productive activities. These activities also generated positive externalities in capacity for carbon fixation and water infiltration in the re-forested areas while generating economic benefits. Beneficiaries surveyed said that their attitudes to the environment had changed and most intended to replicate on their other lands the conservation-based messages and techniques learned. While these investments were small in the overall context of globally important biodiversity (para 2.1.2), they had impact in the areas where they were implemented and contributed to aggregate global biodiversity objectives. Also, both PRORURAL and the GEF have follow-on operations of similar design and objectives (at different stages of processing) intended to push this agenda forward.

CBMAP II:

GEO: *To conserve globally important biodiversity and protect associated forest, mountain, coastal and marine ecosystems in the Recipient's territory by: (a) improving the effective management of SINAP (National System of Protected Areas) at the national, provincial, Comarca and district levels; and (b) supporting investments in natural resource management and productive opportunities for CBOs (Community-based Organizations) of the Project Area.* **Satisfactory**

Primary theme 1: ***Conserve globally important biodiversity and protect associated forest, mountain, coastal and marine ecosystems in the Recipient's territory*** **Satisfactory**

3.2.6 Monitoring over a period of four years showed that 43,033 ha of forest and related eco-systems were reforested/restored and put under sustainable management (86% of the targeted 50,000 ha).[9] This target greatly exceeded available project funding and it was achieved by counting 41,076 ha of ANAM's self-financed reforestation activities in project PA buffer zones during the project period which the Bank (via Aide Memoire) agreed to credit against the target. Implicitly, insufficient funding meant that ANAM would need to leverage the required resources to achieve the target and this is seen as an achievement of the project. Using updated maps on forest/vegetation cover, sophisticated equipment acquired by the project and with 22 ANAM technicians trained for the purpose and specialized team, ANAM in cooperation with the United

[9] The PAD did not specify who would execute this reforestation. It is not associated with the environmental investments and would have been impossible to achieve even if it was. See Annex 2.

Nations Program for Reducing Emissions from Deforestation and Forest Degradation (UN-REDD) and the Food and Agriculture Organization (FAO) prepared a high resolution Forest Cover and Soil Use Map to update forest status in all PAs. This map is a critically important national instrument (with global utility) for focusing policy and institutions on environmental management and conservation-appropriate land use in Panamá, and shows that forest/vegetative cover had reached 61.9% over 65 PAs nationwide compared to 45% in 2000. The ICR was unable to obtain direct evidence for the 14 project PAs but indirectly, project-sponsored re-forestation, formal evidence of improved management in the 14 PAs and of improved biodiversity protection from six project PAs representing 248,000 ha (GEO Indicators 1, 2 and 5), strongly suggest that globally important biodiversity was conserved/protected in the project PAs.[10]

3.2.7 Further, under the project-strengthened National System for Information and Monitoring of Biological Diversity (SNIMDB), and using defined land parcels, sophisticated equipment acquired and analytical/research premises provided under the project, numerous species of conservation interest were documented in four priority project PAs (Volcan Barú, Santa Fe, Omar Torrijos PAs and La Amistad International Park). This included new species not recorded before, species located well beyond their known range and species indicative of effective conservation of biodiversity of global interest. Some 6,758 species of flora and fauna were registered on now-permanent biological monitoring lots in these PAs. Results were disseminated to 16 national and international scientific meetings/forums. Achievements related to the SNIMDB have potentially far-reaching implications both for science and for the system's institutionalization as the only scientific biodiversity database captured internationally for monitoring biodiversity in Panamá.

Theme 2: ***Improving the effective management of SINAP at the national, provincial, Comarca and district levels*** **Moderately Satisfactory**

3.2.8 The legal foundation for co-management of PAs was strengthened by ANAM's regulation of Resolution AG 1103, 2009 (Regulations for the Shared Management of the National System of Protected Areas (SINAP)). Co-management was fostered by establishing four Municipal Environmental Units (UAM) with dedicated budgets/financing plans and creating and training 25 Consultative Environmental Commissions (CCA) in 25 districts within the project area including indigenous *Comarcas*. On the policy and planning side, SINAP management was supported by the preparation of Municipal Environmental Land Use Plans (MEP), legally approved and ratified, in 15 municipalities (equivalent to 60% of all districts in the project area – 100% of target) to integrate sustainable environmental management into local government, i.e., to decentralize it and build essential co-management frameworks. The MEPs were prepared via 40 municipal, participatory diagnostic workshops which trained 754 local authorities, civil society and private sector representatives in the principles of co-management. Work Plans linked to these MEPs were already under implementation at EOP. Three pilot UAM-executed potable water SPs valued at US$64,945 (plus community contribution) were executed in Santa Fe, Las Minas and Boqueron/Pedregal/La Victoria. In addition, 12 co-management agreements between ANAM and communities are under active implementation in eco-tourism, resource conservation, protection of endangered species including marine, mangrove recovery and agro-forestry. By EOP, seven additional community organizations had applied to ANAM for co-management status. The project's record of improving the relationship between communities and ANAM - and therefore

[10] The overriding objective of the GEO is worded in terms of the "Recipient's territory" with the effective management of SINAP couched in terms of national, provincial, *comarca* and district levels, i.e., impacts extending beyond the 14 PAs. Environmental SPs are linked explicitly to the "Project Area".

more favorable conditions for implementing decentralized co-management of the PAs - is widely acknowledged.

3.2.9 Local and national institutional capacity to manage SINAP is also shown by WWF/World Bank Management Effectiveness Tracking Tool results. The average aggregate value for 13 project PAs (one dropped out due to pending legal issues) increased from 44.86 points when last measured in 2005 to 69.08 points by 2013. Areas of questioning covered: legal situation and defined threats; existence of management or operating plans; resource availability (human, logistical and financial); management systems; goods and services generated; and effects of management in relation to conservation objectives. Questions were assigned points from zero (poor) to three (excellent). Some 12 of the 13 PAs exceeded 60 points, indicating significant managerial improvement. Individually, two improved by over 200%, four by 150%/more, two by 115%/more and another two improved by 100%. An immense training/related effort led to these results. See Annex 2.

3.2.10 The Forest Cover and Soil Use Map and its research results strengthened ANAM's national capacity for monitoring the SINAP and evaluating biodiversity interventions by: focusing institutional activities in priority regions; prompting cooperation agreements between countries of the MBC; promoting the inclusion of younger professionals and students in key field experiences; expanding access to the knowledge acquired through international scientific forums, publications and websites; and, proactively disseminating important findings to local authorities, community leaders and indigenous groups.

3.2.11 CBMAP II established the legal framework for the preparation and approval of PES through a new law modifying the existing draft law pending in the National Assembly by including economic, social and environmental aspects as the framework for PES agreements. This fell short of the expectation for PES piloting and replication due to the protracted re-drafting and legislative process. The revised legislation defines environmental services more broadly to include: production, regulation and purification of water; improved air quality; soil conservation and erosion control; protection of biodiversity, species and eco-systems; waste management; and natural disaster mitigation. CBMAP II also financed two studies as the foundation for sustainable financing of SINAP (Annex 9): (i) a plan to establish *fideicomiso* to support PA management, financing for environmental investments and biodiversity monitoring, in the process exploring the views of private sector firms located within PA buffer zones on its feasibility; and, (ii) analyzed the financing needs of SINAP as the basis for reducing its dependence on external resources. The new GEF (signed July 9, 2015) will apply the findings of these studies to the creation, financing and operation of an Endowment Fund mechanism starting in Year 1. Then, once Bank and Government requirements are met, US$1.5 m of GEF start-up funds would be injected along with GOP and private sector contributions totaling US$3.5 m, i.e., an initial capital of US$5.0 m. Meanwhile, plans to pilot and replicate PES remain current and will be supported by the new GEF.

Theme 3: ***Supporting investments in natural resources management and productive opportunities for community-based organizations (CBO) of the project area*** **Satisfactory**

3.2.12 Under PRORURAL-financed and CBMAP II-executed activities, opportunities were provided through 350 investments (100%) for 10,760 direct and over 40,000 indirect beneficiaries in 363 communities to reduce dependence/pressure on PA resources, and benefiting an average 20 families/SP. Some 42% of the 350 investments were executed in indigenous communities which represented 53% of all direct beneficiaries. By gender, 57% of beneficiaries were men and 43% women. The project focused on activities directly and indirectly benefiting very poor groups

located in PAs and buffer zones where making a livelihood is challenging. Types of investments included agro-forestry, handicrafts, native animal breeding, plant nurseries, eco-tourism and organic agriculture. Sustainability is considered promising given inter alia, evidence that all 282 CBOs finalized by mid-2014 were still fully operational by EOP compared to the targeted 140.

3.2.13 Impact evaluation (Barzev 2015) based on a sample of 147 environmental investments achieved good preliminary results (based on the maturity of the investments - most were quite recent at the time of the survey). The net benefit compared to the average income of the sampled families was between 12% and 53% depending on the economic level of the families, area of SP execution and type of activity. The lowest value of 12% was obtained in Chiriqui where average incomes are higher. The highest gain (53%) was obtained in Coclé where living conditions are more precarious and market access difficult. It is also estimated that the value of carbon fixation from the recuperation of about 43,000 ha of forest is US$304,970/year demonstrating a direct, relevant socio-environmental benefit. Further, some 50% of all environmental investment beneficiaries are expected to have entered the market by end-2015. See 3.3.2, Annexes 3 and 5.

3.2.14 Positive changes were induced in farmers' behavior regarding soil usage. Beneficiaries reported high levels of adoption of best practice agro-forestry consistent with sustainable NRM and biodiversity conservation: no-burn practices (78%), organic fertilizers (91%), crop rotation (90%), waste management practices (63%), agro-forestry models (99%), crop diversification (100%); zero tillage (96%) and terracing (67%). Rapid assessment of 50% of SP executors/beneficiaries concerning environmentally conservative practices adopted showed improvements in all areas, depending on the conditions and soil use involved. Environmental investments were not only an effective medium for improving family wellbeing but also a viable option for integrating producers within PAs/buffer zones in their conservation. The project generated greater environmental awareness through training, demonstration, TA and the opportunity to obtain a tangible benefit.

3.3 Efficiency

3.3.1 For PRORURAL, a financial and economic cost-benefit analysis was conducted on a random sample of 12 observations from a sampling universe of 111 SPs. The sample was stratified based on the six productive chain categories represented (Annex 3). Sample size was limited by time and resource issues and labor intensive data reconstruction efforts for the financial/economic models. Projections of cost and revenue flows were based on a "most likely" scenario. As in the case of the *ex ante* analysis, productive SPs were subjected to a financial cost-benefit analysis from the perspective of the whole "business venture" using financial models. Results are as follows:

- Total investments for 12 SPs evaluated ranged from US$121,919 to US$404,167 with an average of US$223,905. One-third generated revenues insufficient to cover total costs.
- Average NPV per family was US$159.00 when including all SPs in the sample. This value represents the average net revenue generated per family, after compensating family labor at the local daily rate for unskilled labor.
- Of eight SPs with positive financial feasibility indicators, three had NPVs exceeding US$150.00, a modest return when taking agricultural risk into account.
- Seven SPs would recover the investment in seven years but for five SPs (milk, corn, ñame, honey and watermelon) recovery would exceed the 10 year period of analysis.
- Sensitivity analysis showed that two of eight SPs with positive financial feasibility could withstand cost increases or decreased revenue exceeding 5% and remain profitable.

- Financial indicators were positive for six of the 12 SPs sampled, i.e., 50% were financially viable "business ventures".

3.3.2 For CBMAP II, a cost benefit analysis of financial indicators was conducted on a random sample of 146 environmental investments, 42% of the total. Three economic models were studied: silvo-pastoral systems; production of organic fertilizers; and tourism and sustainable handicrafts. The analysis estimated the annual net benefits/family, projected the Net Present Value (NPV) of cash flow over five years including social NPV to determine the private and social contribution of the investments, and calculated the Internal Rate of Return (IRR). To improve the analysis, two social/environmental externalities – capacity for carbon fixation and capacity for water infiltration in re-forested areas – were included in the cash flow. Their physical flow was quantified and potential economic value estimated based on existing market prices. Results are as follows:

- Net benefits generated account for a significant percentage of family income (from 12% to 53%) and for most, it is their main economic activity.
- Household consumption for basic family food needs absorbs a large part of production.
- Commercial NPV shows the lowest values, while total NPV increases significantly.
- With the value of positive externalities calculated (carbon fixation, water infiltration capacity in reforested areas valued at US$304,970/year), social NPV has the highest values and is positive in all regions from the use of project-promoted agricultural practices.
- A majority of cases in every region show positive NPV, with total NPV higher than commercial NPV - household consumption implies a loss of economic income.
- 79% had total positive NPV and 53% had positive commercial NPV.
- IRR results showed the same pattern: 88% with total positive IRR and 76% with positive commercial IRR.

3.4 Justification of Overall Outcome Rating

3.4.1 PRORURAL: Rating - **Moderately Satisfactory**

- **Relevance: Substantial** The PDO and its supporting design and implementation are rated High based on continuing close alignment of the original project objectives with current Bank and Borrower frameworks and strategies (see 3.1.1), a design and implementation methodology which remains in the mainstream of Bank rural development and NRM practices, and Satisfactory results for PDO achievement. Design flaws mentioned were partially mitigated during implementation but a more standardized approach is needed. These are not considered of sufficient weight to depress this rating.
- **Efficacy: Substantial** PRORURAL achieved all elements of the PDO, exceeding two PDO Indicators, meeting a third and substantially achieving a fourth while achievement of the fifteen Intermediate Outcome Indicators was satisfactory with 73% exceeded or fully achieved. Productivity was increased and as verified by beneficiary surveys, this is attributed in specific terms to the project – conservation messages, training, best practice soil and water use –and the fact that for beneficiaries, the project was their only source of financing for productive improvement.
- **Efficiency: Modest** While financial indicators are positive for 50% of the randomly sampled cases, other results raise concerns about viability and sustainability. Significant post-project support is needed to consolidate some investments. The closing date was extended by 24 months to compensate for initial weaknesses delaying execution and there will be a small cancellation of Loan funds.

3.4.2 CBMAP II: Rating – **Moderately Satisfactory**

- **Relevance: Substantial** The GEO is rated High while its supporting project design and implementation are rated Modest based on: (i) continuing close alignment of the original objectives with current Bank and Borrower frameworks and strategies (see 3.1.1); but (ii) project design and an implementation methodology which, while it remains relevant to Bank best practice on most counts, entailed basic flaws which created difficulties and delays. The overall rating for relevance is balanced/influenced by the Moderately Satisfactory results for GDO/GEO achievement.
- **Efficacy: Substantial** CBMAP II performed well, exceeding or meeting most PDO Indicators. Achievement of the fifteen Intermediate Outcome Indicators was satisfactory with 73% exceeded or fully achieved. SINAP is stronger with co-management successfully established legally and institutionally, MEPs piloted, critical databases established, and additional forest/vegetation under protection. Environmental investments demonstrated income generation potential while supporting environmental conservation.
- **Efficiency: Substantial:** Analysis found that NPV and IRR outcomes were positive, a strong achievement given the nature of targeted beneficiaries. The sustainability outlook is uncertain for reasons common to such investments but there is evidence for optimism (see 4.1.2). Grant and blended Loan funds were fully-disbursed. Government's counterpart contribution was 342% of the appraisal estimate (Annex 1). An INT investigation was resolved by the Bank Task Team and Region through more intensive procurement training and supervision/oversight. The closing date was extended one year to compensate for initial weaknesses/delays.

3.5 Overarching Themes, Other Outcomes and Impacts

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

3.5.1 Based on an evaluation of PRORURAL (Barzev, 2015), 65% of all beneficiaries were in the lowest rural income range, consistent with PRORURAL's intention to support producers lacking sufficient economic weight to improve land productivity and ensure sustainable management of their properties. Comparing PRORURAL with CBMAP II, evaluation showed that the proportion of indigenous beneficiaries in the former was a modest 3% vs 42%. As an indicator of poverty reduction potential, following the project intervention: 69% of the sampled beneficiaries showed positive net benefits; 65% of the 77 baseline associations surveyed at EOP had acquired the capacity to save compared to 33% at the outset, indicative of project benefits especially as the project was the only source of financing available at the time; and, in monetary terms, the average profit (*ganancia*) from the project was US$1,180 and without the project, US$698, an incremental increase of 69% due to productive and administrative improvements.

3.5.2 Total direct beneficiaries of CBMAP II were 10,761 and indirect beneficiaries an estimated 50,000, the vast majority of which – like PRORURAL - had no alternative sources of financing outside the project or tangible opportunities to improve socio-economically. Indigenous representation was 146 investments or 42% (Bri-Bri 2, Kuna Yala 30, Naso-Teribe 16, Ngabe 97, Buglé 1). Evaluation (Barzev 2015) shows that the project delivered benefits which were not merely subsidiary but created new ways of living and producing for the country's poorest communities. CBMAP II beneficiary communities had per capita income well below the minimum salary. The income benefit derived from project interventions represented a significant percentage of family income – from 12% to 53% - and, there was a high dependence on the project's productive model. While in the *Comarca* Ngabe-Buglé and in Chiriqui, dependence was modest (29% and 38% respectively), in Veraguas, Coclé, Bocas del Toro, Los Santos and Kuna Yala dependence ranged from 85% to 100%.

3.5.3 Women's participation in CBMAP II environmental investments was higher than expected at appraisal but varied by region, ranging from 6% to 48%, depending on cultural perceptions of women's role. Some 4,663 women participated directly out of a total 10,761beneficiaries. Of the 350 environmental investments executed, 44 had female membership and 20 were led by women, most members were women, their directorates were female-only and/or financial management was led by women. Some 39% of all persons trained by CBMAP II were women. Similar information is not available for PRORURAL.

(b) Institutional Change/Strengthening

3.5.4 It is unclear to what extent PRORURAL strengthened MIDA as the PMU operated with relative autonomy and had largely disbanded after closing; opportunity for experienced project technicians and administrators to transfer their skills to MIDA was limited. However, it is expected that many of these specialists will be brought back to benefit the follow-on MIDA operation. At the community level, evaluation (Barzev 2015) found that project training strengthened beneficiaries' managerial capacity. Associations in all project provinces had started to use more disciplined financial procedures/processes, were maintaining documentation supporting management, had simple records of expenses and were meeting for specific purposes. Their directorates were still functional and a majority of the associations sampled were in the process of signing agreements with other institutions to access programs, receive benefits and/or training. The main elements boosted by the project were: technical capacity and administrative skills; equipment and infrastructure; greater willingness to work collectively; existence of an organization with committed members; cumulative knowledge; and, commercial linkages.

3.5.5 Institutional growth under CBMAP II is evident in the improved PA management scores reflected in the WWF Tracking Tool results (see Annex 2). The project also provided the means – logistics, knowledge, strengthened databases, training and TA, and organizational and financial support – at the central (ANAM) and decentralized levels to build a network of organizations (e.g., CCA, UAM) with specific roles designed to boost the sustainability of SINAP and biodiversity of global significance. Cooperation agreements at all levels and internationally have strengthened the institutional structure and collaborative arrangements essential to this effort. SINAP and ANAM now have better information bases, tools, qualified human capital and a much broader network of stakeholders. At the association level, evaluation (Barzev 2015) shows: most now have formal legal status; all are better organized with a functional directorate; decision-making is participatory and consensual; all have simple financial management systems and are at minimum recording and managing association expenses; meetings are well-attended and all proceedings recorded; most have managed to establish relationships with other institutions for technical/other support and in most cases, members are regularly supporting the association in various ways and a significant number have created small funds for O&M.

(c) Other Unintended Outcomes and Impacts (positive or negative)

3.5.6 CBMAP II extended its activities beyond the targeted 14 PAs to another seven which in 2005 had WWF Tracking Tool scores of <45, indicating serious gaps in acceptable management standards. Further, due to continuing assistance by CBMAP II and DAPVS, the *Parque Nacional Cerro Hoya* which was declining due to the loss of park rangers once GIZ (German Agency for International Cooperation) collaboration ceased, was able to recover its managerial capacity. Also, government's/ANAM's counterpart contribution was 340% of the appraisal estimate (and actually higher when government's full costs are fully computed – see Annex 1), contributing to the completion of key activities for which project financing turned out to be insufficient.

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

3.6.1 The methodology and main findings of beneficiary surveys for impact evaluation of PRORURAL and CBMAP II are summarized in Annex 5. Annex 6 summarizes the findings of consultative forums and seminars with national and local authorities, civil society, national and international experts and indigenous groups regarding the CBMAP II experience. MIDA/PRORURAL did not organize stakeholder workshops.

4. Assessment of Risk to Development Outcome

Rating: PRORURAL **Substantial** CBMAP II **Substantial**

4.1.1 The overall risk to development outcome in both cases is conservatively rated Substantial, reflecting mainly the uncertainty concerning sustainability of the SP investments. The environmental and biodiversity conservation framework established by CBMAP II demonstrates a burgeoning institutional and civil society commitment, legal foundation, political support and level of organization critical to sustaining the SINAP and moving forward. The new GEF operation with MIAMBIENTE is expected to consolidate that institution's authority and reach which will benefit SINAP. For PRORURAL beneficiaries, the status of the Revolving Funds is unclear (see 4.1.3). More decisive management of this mechanism by MIDA would boost sustainability. The availability of support services for the operational phase along with dispersion, marketing challenges and inadequate processing infrastructure, are also relevant. However, the sustainability of PRORURAL associations per se and evidence of expanding membership, i.e., that being part of an association has value, is a promising objective indicator for the continuation of the productive activities as well. Associations surveyed demonstrated proactivity in the solutions they found to meet difficulties, suggesting permanence and adaptability: maintaining a team approach; locating buyers willing to offer better prices; consolidating skills; seeking TA; and, branching into new activities. The broad acceptance/adoption of best practice agriculture and intention to replicate it on additional lands are also positive indicators.

4.1.2 For CBMAP II associations and investments, evaluation (Barzev, 2015) shows that certain factors are likely to promote sustainability: the productive models presented few problems to beneficiaries since they were already farmers and the activities were/are familiar; there are markets for their products (although marketing per se remains challenging); project training resulted in high rates of adoption of improved practices and technologies; beneficiaries stated that the project had changed their overall attitude to the environment and that they intended to replicate what they had learned to other parts of their properties; family income was generated due to improved practices and productive diversification; and, producer organizations were now stronger and legally constituted. The risk factors to SP consolidation include greater levels of poverty, inaccessibility and organizational fragility among CBMAP II beneficiaries; some attrition is inevitable. Continuing access to technical assistance is vital but not guaranteed. In terms of O&M, instruction was included in the SP package and associations surveyed understood their obligations in this regard. The expressed intention/motivation to keep productive activities going and not lose the benefits of investments which may not be repeated soon, was strong.

4.1.3 **Revolving Funds:** The sustainability of PRORURAL SPs could be affected by the management of and access to the Revolving Funds. The project required that beneficiaries – with certain exceptions such as cattle and crops with three-year recovery terms - reimburse the working capital portion of their financing after one agricultural cycle. Funds would be redistributed for the next production season with PRORURAL (now MIDA) approval, based on proportions established in the Operational Manual for working capital of existing members, for new members and other uses defined by the associations. Of the 130 associations who received SP resources, 73 associations (61%) had fully repaid their working capital obligation by June

2015 (US$2.01 m, 30% of a total working capital outlay of US$6.81 m). Others with longer cycles had not yet started to repay. Reasons for delinquency – described by MIDA as low - tend to be consistent with inadequate organizational strength/maturity, a lesson for projects considering such mechanisms. MIDA froze the revolving funds in late 2014 for a stocktaking of fiduciary performance. Some RPAs were calling for re-distribution given that these funds were understood to be a non-reimbursable transfer to them. MIDA intends to continue its system of funds recovery and verified re-release for a decade (as per Agreements with associations). While MIDA's caution is prudent, this agenda could erode RPAs' capacity to develop financial autonomy in their productive activities.

5. Assessment of Bank and Borrower Performance

5.1 Bank Performance

(a) Bank Performance in Ensuring Quality at Entry

5.1.1 Bank performance in ensuring quality at entry is rated **Moderately Satisfactory** for PRORURAL. The final design addressed Government's call for investments designed to promote a competitive, environmentally sound agribusiness approach in poor rural areas. Background analysis was sound and team composition appropriate. The project methodology – participatory, demand-driven – was in the mainstream of rural development practice but may not have been optimal for the alliance concept since it prioritizes producers' wishes over more pragmatic criteria. There was also a mismatch between the US$500,000 ceiling on SP investments and the average size of local producer associations in Panama which tends to be small, and insufficient provision in project design for facilitating producers' encounters with commercial entities. It was assumed that proposals would be submitted with this aspect already cemented/taken care of, which in turn assumed that local TA providers, trained by the project, would have the expertise to ensure this and that candidate communities had a suitable profile/potential for forming such links. The inclusion of working capital was a strong design feature of great value to beneficiaries and merits replication.

5.1.2 For CBMAP II, Bank performance in ensuring quality at entry is rated **Moderately Unsatisfactory**. Positive elements of design included: alignment with appropriate analysis defining development priorities and pressure points - including financial - in NRM and conservation, and with GEF strategic priorities; and, innovative co-management concept and good grasp of the vertical institutional framework needed to achieve it in a country where centralized management prevails. The original concept of a fully-blended operation might have resulted in greater synergy but the decision to proceed in parallel given earlier Board approval of the GEF set the two operations on separate paths although key aspects of design were also bound to have this result in practice. Inadequate aspects of design included: under-estimating the time needed to position poor, unorganized communities in the PAs and buffer zones to launch investments; related to this, not exploiting the large number of communities already trained and benefited under CBMAP I, to consolidate and extend development benefits, which the ICR assumes was the result of equity concerns – the volume of un-served demand with no other options for development financing; under-estimation of costs for reforestation of 50,000 ha and for the planned 450 environmental SPs; and, not specifying responsibility for the reforestation.

(b) Quality of Supervision

Rating: PRORURAL: **Moderately Satisfactory** CBMAP II: **Moderately Satisfactory**

5.1.3 PRORURAL was supervised regularly and reporting was thorough with the exception of environmental safeguards which lacked substance until post-MTR and even then remained inconsistent. Financial and Procurement supervision was of satisfactory quality with a strong client mentoring element, and reporting was comprehensive. Repeated turnover of Bank TTLs for

PRORURAL was beyond the control of the Task Team and is not intended as a critique of supervision performance per se, hence the MS rather than MU rating, but the changes were disconcerting for the Borrower. While intermittent efforts were made to supervise the two projects jointly, the fact remains that they were distinct operations legally, geographically, institutionally and socially. There was a core team of Bank staff common to both projects supervising FM, Procurement and Safeguards and the respective TTLs were part of both teams.

5.1.4 In the case of CBMAP II, high quality supervision, attention to detail and continuous, painstaking efforts to improve the quality and targeting of and support for, the environmental investment SPs and the training and organization of the associations characterized the initial years. Similarly, the Bank Team showed strong commitment to SINAP through specific activities including new ones not contemplated at appraisal, to strengthen its management and sustainability and build broad ownership. Efforts were made to diagnose and mitigate the impacts of hydroelectric development in several CBMAP II regions. Changes to the Results Framework were handled informally due to circumstances beyond the control of the Task Team which believed the changes were essential. Bank task management was stable, missions were regular but reporting quality declined in the second part of the project period, especially on safeguards. Financial Management and Procurement supervision was strong - regular, comprehensive, diagnostic and well-reported. The Bank's handling of the INT case was appropriate, designed to create a professionalized environment by addressing capacity, organization, awareness and transparency.

(c) Justification of Rating for Overall Bank Performance
Rating: CBMAP II: **Moderately Satisfactory** PRORURAL **Moderately Satisfactory**

5.1.5 The MS ratings in both cases reflect a balanced assessment of the preparation and supervision periods taking into account both positive factors and specific flaws, as well as the Moderately Satisfactory overall Outcome rating for each operation.

5.2 Borrower Performance

(a) Government Performance
Rating: PRORURAL: **Moderately Satisfactory** CBMAP II: **Moderately Satisfactory**
5.2.1 Government's commitment to PRORURAL and CBMAP II was uneven in the initial years and both projects faced challenges stemming in part from the change of government in 2009 and resulting adjustments in many public agencies. MEF's annual budget allocations to PRORURAL in the later years repeatedly fell short of the POA, affecting the project's ability to complete key activities on time especially the productive SPs. CBMAP II had similar issues but not to the same degree/impact. This should be seen however, in the light of MEF's efforts to maintain fiscal discipline by complying with the Fiscal and Social Responsibility Law and annual deficit ceilings. Bank teams know that projects which do not demonstrate good budget execution in line with projections will receive less money the following year. Further, both MIDA and ANAM always managed to resolve this situation via the *credito extraordinario* mechanism for internal reallocation of unused funds from other projects within their institutions and thus Borrower performance does not merit a downgrade. Counterpart funding performance was very strong in the case of CBMAP II, far exceeding the appraisal estimate (341%) but less than appraisal in the case of PRORURAL (57%). Government has demonstrated keen interest in/support for new operations in both cases.

(b) Implementing Agency or Agencies Performance
Rating: PRORURAL: **Moderately Satisfactory** CBMAP II: **Moderately Satisfactory**

5.2.2 The PRORURAL coordination unit (like CBMAP II) struggled to build capacity and gain/maintain momentum especially with five Project Coordinators and turnover of Bank Task Team Leaders. This resulted in varying perceptions and understandings of the project's objectives, methodology and operational needs, continuous adaptation by line staff, and contributed to project delays. The MTR analysis defined key issues which were resolved over time as the unit gained strength and confidence. Contracted specialists, restructuring of staff and responsibilities, greater technical outreach to targeted communities and improved capacity in M&E as well as financial management and procurement, consolidated the unit and markedly improved project performance. This is shown by the overall level of achievement of the Results Framework and ability to recoup disbursement lags despite the negative impact of budget shortfalls and the greater institutional separation between the PRORURAL PMU and its parent agency MIDA, than existed within ANAM. The PMU Coordinator showed exceptional proactivity in securing enough budget to complete the project. A notable downside was the PMU's rapid erosion after closing with only a skeleton staff to manage the grace period and the ICR process.

5.2.3 ANAM's political commitment and institutional structure up to 2011 was inadequate and cost the project in lost time and the opportunity to conclude a critical mass of environmental SPs earlier while establishing a consolidation agenda to boost their sustainability *ex post*. The Bank is partly at fault for under-estimating the complexity of bringing poor and inexperienced beneficiary associations to the SP launch stage. From 2011, ANAM's commitment and overall proactivity improved and was crucial to final outcomes. Agreements were signed with traditional indigenous authorities based on free and open participation, and with prominent academic institutions and research bodies including international the latter proving invaluable for consolidating scientific research supporting SINAP, preparing plans for PA management, and strengthening human resources supporting the PAs. ANAM adopted the CBMAP I collaborative, participatory approach using communication, information and training as essential tools. ANAM complemented project resources where these proved inadequate to finance specific activities or achieve targets, and significantly increased its counterpart contribution over original estimates (see Annex 1).

(c) Justification of Rating for Overall Borrower Performance
Rating: CBMAP II: **Moderately Satisfactory** PRORURAL: **Moderately Satisfactory**

5.2.4 Both projects encountered similar kinds of issues in the years preceding their respective MTRs and both project units were responsive to detailed diagnoses of factors delaying execution and disbursement, with PRORURAL facing tougher challenges than CBMAP II in improving performance. Notably, MIDA had not worked with the Bank before but ANAM had done so and was building on a development model launched under CBMAP I. Stronger performance is evidenced by the many positive achievements and overall outcome ratings in both cases despite initial delays.

6. Lessons Learned

Whether a Bank loan is blended with a GEF grant is not the pivotal issue but rather how synergies can be created between complementary projects in the rural space. These projects demonstrated how methodological synergies aligned around participation, organization and decentralized management, and a unifying vision of the relationship between producers and environmentally conservative land management, can serve the interests of the individual and the global domains. Separate projects can intensify the focus on key, related development pillars -

rural poverty, NRM and biodiversity conservation – avoiding complex, multi-sector operations while acknowledging that since these issues are multi-sector, complementarity and collaboration are key.

Follow-on operations should be alert to the potential aggregate or cumulative benefits of building on previous investments, whether socio-economic or in biodiversity conservation. Such projects should re-visit a promising sub-set of SPs (or local institutions) which demonstrated progress under the first round and need consolidation assistance while becoming elements of an ongoing evaluation program tracking results over time. Selecting new organizations needing the full gamut of inputs to position them for investment satisfies equity concerns by spreading benefits but a two-pronged approach is preferable, with selected, higher-achieving associations already familiar with Bank rules and methodologies in one investment stream and very poor and vulnerable groups needing basic socio-economic investment in another.

Proactive, culturally-appropriate communication with indigenous groups and especially indigenous women pays dividends. Both groups were represented among the more successful SPs. They require special assistance across a spectrum of needs. All training must be conducted in indigenous languages and documentation translated. Letters of Understanding with indigenous leaders can facilitate a project's access to *comarcas* and territories. Specific units/indicators in the M&E framework and evaluation studies should reflect their developmental goals, measure their achievements and support learning.

Organizational strength, maturity and cohesiveness of producer organizations are essential inputs for the efficient management of revolving funds. The economic and social benefits both short- and longer-term of having a reliable, well-managed, local source of working capital are invaluable given that the formal credit system continues to largely bypass engagement with small farmers. Beneficiary satisfaction with such arrangements under PRORURAL was very strong. Defining the responsibilities of beneficiaries and institutional stakeholders and a time-bound plan – periodically re-evaluated – for achieving beneficiaries' autonomous management of such schemes, are essential elements of success.

Decentralized approaches proved valuable in both productive activities and in organizing local co-management of biodiversity conservation within SINAP, and are the way forward. Participatory, consensual arrangements coalescing around well-articulated goals can reach and be effective well beyond productive activities. Considerable local support and demand is evident for environmentally conscious investments whether for income generation or to improve local living conditions and under the GEF in particular, the decentralized organizations created, with specific plans and budgets, made a strong start by establishing essential local frameworks for longer-term conservation in PAs and buffer zones.

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

(a) Borrower/implementing agencies

7.1 The Bank's draft ICR was sent to MIDA and MIAMBIENTE (formerly ANAM) for comment. The latter provided brief inputs which were incorporated, but no letter. MIDA's letter is inserted in Annex 7. Should MIAMBIENTE send a letter it will be archived in WB Docs.

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

Annex 1. Project Costs and Financing

1. Rural Productivity Project (P064918)

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

Components	Appraisal Estimate USD m	Actual Latest Estimate USD m	Percentage of Appraisal
1. Support to Productive Alliances	6.90	5.97	86.52
2. Productive Alliances	24.00	19.16	79.83
3. Environmental Investments and Support to the NPAS	10.50	10.50	100.00
4. Project Management, Monitoring and Evaluation	2.90	3.19	110.00
Total Baseline Cost	**44.30**	**38.72**	**87.40**
Physical Contingencies	1.20	0.00	0.00
Price Contingencies	1.40	0.00	0.00
Total Project Costs	**46.90**	**38.72**	**82.56**
Front-end Fee PPF	0.00	0.40	---
Front-end Fee IBRD	0.00	0.13	---
Total Financing Required	**46.90**	**39.25**	**83.69**

Source of Funds	Type of Co-financing	Appraisal Estimate (USD millions)	Actual/Latest Estimate (USD millions)	Percentage of Appraisal
Borrower	Counterpart	1.90	1.09	57.37
International Bank for Reconstruction and Development	Loan	39.40	38.80	98.48
Local Farmer Organizations[11]	In-Kind	5.60	8.72	156.00

[11] Beneficiary contribution was calculated differently in the case of PRORURAL, based on the amount of labor estimated to be needed to execute the SP plus the value of the land where subproject activities were developed/implemented, significantly increasing the value of the contribution. In the case of CBMAP II, beneficiary contribution was calculated based on a permanent record of days worked (at local labor rates) as well as inputs supplied by beneficiaries and utilized for the SP (primarily land).

2. Rural Productivity and Consolidation of the Atlantic Mesoamerican Biological Corridor - GEF (P083045)

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

Components	Appraisal Estimate (USD millions)	Actual/Latest Estimate (USD millions)	Percentage of Appraisal
1. Community Investments in Environmental Resources	12.10	9.69	80.10
1.1 Environmental Subprojects	9.20	7.20	78.26
1.2 Support Services for Natural Resource Management	2.90	2.49	85.86
2. Management of Natural Resources and Strengthening of SINAP	2.70	1.48	54.81
3. Monitoring, Evaluation and Project Management	2.50	8.57	342.80
3.1 Monitoring and Evaluation	1.30	---	---
3.2 Project Management	1.20	---	---
Total Baseline Cost	**17.30**	**19.74**	**114.10**
Physical Contingencies	0.30	0.00	0.00
Price Contingencies	0.50	0.00	0.00
Total Project Costs	**18.10**	**19.74**	**109.06**
Front-end fee PPF	0.00	0.36	.00
Front-end fee IBRD	0.00	0.00	.00
Total Financing Required	**18.10**	**20.10**	**111.05**

(b) Financing

Source of Funds	Type of Co-financing	Appraisal Estimate (USD millions)	Actual/Latest Estimate (USD millions)	Percentage of Appraisal
Borrower	Counterpart	1.20	4.10[12]	341.67
Global Environment Facility	Grant	6.00	6.00	100.00

[12] This total does not include beneficiary contribution of US$1.22 m, listed separately, or expenditures from the ANAM Investment Fund (US$2.42 m for reforestation/other) and government operating expenditures for the project (US$0.69 m). See table (c).

International Bank for Reconstruction and Development	Loan	10.00	10.00	100.00
Local Farmer Organizations[13]	In-Kind	0.90	1.22	135.55

(c) Contribution of Government of Panama (US$ m)

Activity	Local Funds (US$ m)
1. Counterpart contribution to CBMAP II	4.100
2. ANAM Investment Fund (re-forestation)	2.415
Sub-total:	**6.474**
3. Support in government funds (building rental, energy, water, vehicles, fuel)	0.689
Sub-total:	**7.163**
4. Beneficiary community support	1.221
TOTAL:	**8.384**

Source: ANAM, 2015

[13] Based on registers of daily labor rates and time provided to subprojects by beneficiaries, as well as costs of materials provided by associations. See BCR (Pitty, 2015).

Annex 2. Outputs by Component

2.1 The following presents the main outputs of PRORURAL and CBMAP II respectively. For additional detail see Annex 7 summaries of Borrower/Client Completion Reports.

A. PRORURAL: The project had four components, of which Components 1, 2 and 4 would be implemented by MIDA and Component 3 by ANAM, as follows:

Component 1: Support for Productive Alliances (total cost US$7.6 m of which Loan US$7.1 m, 18%) to finance the preparation of viable business plans for proposed productive alliances: communications strategy to stimulate participation; business skills and organizational training for small-scale producers; training of technical service providers to qualify them to work with RPAs; preparation of productive alliance proposals, business plans and investment subprojects; and, technical studies and consultancies supporting business plan execution.

Outputs:

- Seven invitations by MIDA/PRORURAL from 2008-2013 to submit SP ideas and business profiles presented by APPRs interested in accessing the project
- Received 332 business profiles of which 180 approved resulting in 175 Business Plans.
- Of these, 159 were selected as suitable for financing and 130 were actually financed.
- 140 Rural Producer Associations were trained in the first two years prompted by active dissemination of project objectives, activities and requirements for participation/eligibility.
- 43 Technical Services Providers were trained and certified to provide TA to the RPAs and productive alliances.

Component 2: Productive Alliances (total cost US$24.7 m of which Loan US$19.8 m, 50.2%) financed about 70 SPs (up to a max. US$500,000 each) implemented by RPAs in the Provinces of Veraguas, Herrera and Los Santos. For approval, RPAs were obliged to have an alliance with at least one agro-processor, wholesaler or other commercial partner. SP financing would include fixed capital (plant and equipment, minor infrastructure), working capital and TA. RPAs would contribute a minimum 10% towards SP cost.

Outputs:

- 130 SPs financed (217%) and concluded, benefiting 4,577 families (92%) directly at an average cost per SP of about US$160,000 (compared to the US$250,000 revised ceiling, and original ceiling of US$500,000).
- Around 33% of all beneficiaries were women.
- Based on evaluation (Barzev 2015), about 65% of beneficiaries were in the lowest income range, consistent with PRORURAL's intention to support producers lacking sufficient economic weight to improve land productivity and ensure sustainable management of their properties.
- Evaluation (Barzev, 2015) indicates that the participation of indigenous families was quite low compared to CBMAP II, 2% and mostly from the Ngobe-Buglé *Comarca.*
- 13,700 indirect beneficiaries (individual).
- 104 of the 130 SPs financed (80%) remained operational at project closing; evaluation found that 98% of the survey sample said they intended to continue with the project once concluded.

- Main activities financed were traditional to the central region of the country: dairy (16%), artisanal fishing (15%), corn (14%), sweet potato (11%), ñame (9%), crafts (9%) as well as plantain, coffee, pineapple produced in combination with the primary crops/activities.
- All products have good markets and potential.
- There was a significant distance between the meaning in practice of "productive alliance" vs "commercial ally" as 58.4% of beneficiaries were marketing through allies who were not part of an "alliance" as conceived by the project.

Province	No. of Subprojects	No. of Beneficiaries	Value/Amount US$ m
Herrera	29	1,023	4.489
Los Santos	45	1,663	8.101
Veraguas	56	1,891	8.297
Total:	**130**	**4,577**	**20.888**

Component 3: Environmental Investments and Strengthening (total cost US$11.4 m of which Loan US$10.0 m, 25.4%) - executed by ANAM under the partially-blended CBMAP II – financed matching grants for 450 small-scale investments in natural resource management and productive activities contributing to the conservation of biodiversity of global significance and representing viable and sustainable options to improve livelihoods. SP investments would be proposed and implemented by community and producer associations in 14 targeted PAs and associated buffer zones. Mobilization, TA and Training would also be financed. Beneficiaries were to contribute a minimum 10% of SP cost in cash/kind and sign a SP agreement with ANAM.

Outputs: See CBMAP II outputs below.

Component 4: Project Management, Monitoring and Evaluation (total cost US$3.2 m of which Loan US$2.5 m, 6.3%) financed MIDA's incremental operating costs to execute PRORURAL, including establishing a monitoring and evaluation (M&E) program.

Outputs: In terms of project administration, the project complied with Bank and Panamanian contracting norms/requirements resulting in the efficient use of funds and full disbursements of the Loan, as demonstrated by audit results. The project prepared Annual Operating Plans (POA) in a participatory manner including reviews of results of the previous POA. Through six-monthly and annual reports, as well as annual audits, the project's management was handled transparently. The project's participation in forums and events, as well as agreements for collaboration established with indigenous and municipal authorities enabled the project to achieve results superior to what was expected.

B. CBMAP II: The GEF had three components and seven subcomponents, as follows:

Component 1: Community Investments in Environmental Resources (total cost US$12.4 m with US$7.8 of PRORURAL Loan and US$2.9 m of GEF) financed investments proposed by rural community associations and producer organizations in targeted PAs and associated buffer zones to improve management and conservation of natural resources. There were two sub-components:

Subcomponent 1A: Environmental Subprojects, administered by DBC/ANAM, provided matching grants ranging from US$10,000 to US$30,000 with a 10% beneficiary contribution for

around 450 demand-driven investments executed over six years in small-scale infrastructure, TA/other, screened for their contribution to conserving globally significant biodiversity. Details Annex 2.

Outputs:

- 350 environmental SPs approved and implemented (100% of revised target and 78% of the original) in 13 priority PAs, valued at around US$10.9 m of which 87% represented direct investment and 23% the provision of TA for implementation. The target was reduced to 350 SPs due to the MTR estimating that project funds (PRORURAL Loan funds) were inadequate to finance 450.
- 42% of environmental SPs went to indigenous groups (about 5,727 indigenous individuals of which55.5% men and 45.5% women) located in six PAs, with a direct investment of US$2.7 m.
- 10,761 families benefited directly, and indirectly 40,233 (of which 6,098 men (56.67%) and 4,663 women (43.33%)) and 42% were indigenous
- Investments averaged around US$20,000 (ranging from US$15,000 to US$25,000) for associations averaging 20 members and individual farm properties averaging around 16 ha.
- Average SP implementation period was initially about 26 months but declined over time as experience grew.
- Agroforestry SP represented 56%, crafts about 11%, species reproduction centers 8%, nurseries 8%, eco-tourism 7% and organic agriculture 3%.
- Beneficiaries demonstrated ownership of their SPs by contributing US$1,221,242 compared to the US$900,000 originally estimated (136%)
- 400 ha of agro-forestry systems were established and under management in peasant and indigenous communities through the execution of 214 SPs of this type as well as silvo-pasture.
- Total reforestation/restoration of vegetative cover due to project training in environmentally conservative techniques was 1,957 ha.
- Participating women's income improved from 39 environmental investments including through construction of handicrafts centers with equipment, materials, solar energy and bathrooms (Bocas del Toro, Kuna Yala, Los Santos and Ngabe-Buglé).
- Agricultural tools were provided to 64% of all environmental investment SPs.

Subcomponent 1B: Support for Natural Resources Management financed the processes, principle and activities to promote conservation, protection, restoration and sustainable use of natural resources and biodiversity.

Outputs:

- 1400 training events including workshops in different themes directly to environmerntal subproject beneficiaries: agro-forestry systems, farm planning, soil and water conservation, organic agriculture, plant/tree nurseries, forest-pasture systems, marketing and commercialization, crafts, and project administration.
- Training and technical assistance to prepare Business Plans for the beneficiaries of 40 organizations (5 in each region) located in Bocas del Toro, Coclé, Chriqui, Herrera, Kuna Yala, Los Santos, Ngabe-Buglé and Veraguas.
- Organizational assistance including support for the legalization of associations.
- Signature of Letters of Understanding between ANAM and Indigenous Peoples (*Comarcas* Ngabe-Buglé and Kuna Yala, and Naso-Teribe and Bri-bri Territories) to

develop the project in their territories and lands, which facilitated their participation in 42% of all SPs financed.

- Preparation of 2 Management Plans: (i) Santa Fe National Park and (ii) the Damani-Guariviara Wetland of International Importance.
- Development of eco-tourism and recreational facilities through the construction of 24 installations for the provision of services (Bocas del Toro, Chiriqui, Kuna Yala, Los Santos, Ngabe-Buglé and Veraguas).
- Reduced pressure on fauna and forest life by establishing centers for species reproduction (iguana, rabbit, saíno) in 27 zoo-creation centers.
- Execution of an agreement with the University of Panamá to obtain technical support from the Faculty of Agro-livestock Sciences to provide training and TA for the environmental investments in agricultural crops, research, biodiversity and agro-forestry production.
- Evidence of improve local and national institutional capacity to manage 14 PAs. Results of the WWF/World Bank Tracking Tool exercise are shown below:

Protected Area[14]	**Baseline**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**
	2005	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
PILA	58	67	68	66	64	57	61	65
PNMIB	40	55	71	61	54	69	80	78
PNVB	46	59	68	58	53	63	65	75
PNSF	23	23	44	48	59	59	62	66
PNCH	77	57	51	38	44	49	57	63
PNGDOTH	60	66	65	56	63	66	81	90
RFM	48	47	61	67	65	59	66	66
AUMD	19	7	7	12	N/A	N/A	N/A	N/A
BPPS	42	42	42	39	23	50	54	58
RVSII	42	56	64	51	55	58	59	63
RVSIC	39	44	31	30	65	42	57	65
ASPNC	39	40	52	40	33	33	74	78
HIISSPS	70	63	63	57	53	61	66	71
HIIDG	25	34	44	46	44	38	54	60
Total	**628**	**660**	**731**	**669**	**675**	**704**	**836**	**898**
Average	**44.86**	**47.14**	**52.21**	**47.79**	**51.92**	**54.15**	**64.30**	**69.08**

Source: Technical Reports, CBMAP II/ANAM

- To achieve these results, CBMAP II in coordination with other agencies trained 208 park rangers to use monitoring formats, to control, monitor and ensure the security of land and marine species, and to prepare work plans and use GPS. Numerous patrols and field days covered all 14 project PAs. A diploma course was established for park rangers to upgrade their technical skills and knowledge of environmental issues; 149 Strategic Associates were trained in control, vigilance and field monitoring in indigenous Comarcas: ASPCN (Comarca Kuna Yala) and HIIDG (Comarca Ngabe-Buglé); and, ANAM technicians were trained in global positioning and its application.

[14] See ICR Acronym List

- The following shows hectares of land under effective biodiversity protection in six project-covered PAs as at end-2013 (original target year based on GEO Indicator 5), measured by the WWF/World Bank Tracking Tool:

Protected Area	2005 Baseline	2013 Target Year	Ha with Effective Protection
Divisional General Omar Torrijos Herrera National Park (Coclé)	62.5	88.2	25,275
El Montuoso Forest Reserve (Herrera)	50.0	76.5	12,419
Isla Bastimento Marine Park (Bocas del Toro)	41.7	78.4	13.226
Corregimiento No. 1 de Narganá Protected Forest Area (Comarca Guna Yala)	40.6	75.5	100,000
Damani-Guaribiara Wetland of International Importance (Comarca Ngabe Buglé)	26.0	61.7	24,089
Santa Fe National Park (Veraguas)	24.0	69.6	72,636
Average:	**40.8**	**74.9**	**247,645**

Source: ANAM/CBMAP II Monitoring 2005-2013

Component 2: Management of Natural Resources and Strengthening of SINAP (total cost US$2.9 m with US$1.4 m of PRORURAL Loan and US$1.4 m of GEF) supported ongoing actions by the GOP to integrate social and environmental sustainability into development and poverty reduction strategies, while helping to strengthen and consolidate the MBC-P. The financial self-sufficiency of SINAP would be improved as well as its management at the national, provincial, *comarcal* and district levels. ANAM would be supported to integrate communities and local governments in co-managing the environment and the PAs. There were three sub-components:[15]

Subcomponent 2A: Strengthening of SINAP, to improve the environmental and financial viability of the PAs through a strategy that promoted sustainable use of natural resources and biodiversity by the populations that depend on those resources for their livelihoods and live within or in the surrounding Buffer Zones of the PAs, giving them a more direct stake and management role: promoting co-management arrangements; and supporting conservation in at-risk eco-systems.

Outputs:

- ANAM prepared regulations for ANAM Resolution AG-1103, 2009, legally establishing and regulating co-management in SINAP.
- Manual of Instructions and Procedures for Executing Co-Management in at-risk areas was prepared and distributed to PA managers for further distribution to and discussion with relevant communities.
- Training sessions were conducted throughout the project area in: (i) compliance with Resolution AG-1103-2009 and its Regulations; (ii) sustainable financing; and (iii) organizational development.

[15] There is significant overlap in the PAD's description of Component 2 sub-component activities.

- 149 strategic members of beneficiary associations trained in the themes of financial sustainability and organizational development to support implementation of co-management.
- Management Plans updated: Division General Omar Torrijos Herrera National Park (PNGDOTH) and Volcán Barú National Park (PNVB)
- Capacity strengthening for 125 strategically important technicians and other personnel in DAPVS and other agencies.
- 754 community leaders, technicians, administrators received capacity-building (272 women, 482 men).
- 12 community-based organizations signed agreements with ANAM to implement co-management in 9 PAs and implementation is underway. Work Plans (of 3 year activity duration) were developed and are under implementation with budget resources (eco-tourism, resource conservation, protection of endangered species, mangrove recovery, crafts and agro-forestry).
- Three UAM-executed potable water pilot SPs valued at US$64,945 (plus community contribution), stemming from Municipal Environmental Plans (legally approved and ratified in 15 municipalities within the project area) were executed in Santa Fe, Las Minas and Boqueron/Pedregal/La Victoria.
- Conservation in at-risk eco-systems also supported through 350 environmental investments and extensive re-forestation in the project area.

Reforestation activities: As noted in the Main Text, the PAD did not specify who would be responsible for achieving the targeted 50,000 ha of reforestation and direct reforestation at scale is not mentioned under any Component or Subcomponent of the GEF. Further, project funding was inadequate to cover even part of it. It remained as a project target throughout but should have been formally reduced with responsibility for execution assigned and financing reallocated. The ICR has located the output under strengthening of SINAP (given that 43,000 ha came under protected management within SINAP).

- As agreed between ANAM and the Bank (Aide Memoire November 14-19, 2012), 41,076.33 ha of reforestation by ANAM within the Buffer Zones of all 14 PAs covered by the project, executed within the project period, and financed by ANAM with own-funds in a major effort to achieve a critical GEO target, were permitted to be counted against the 50,000 ha. The ICR classifies this contribution as leveraging agreed with the Bank Team and promoted by ANAM's commitment to achieving project objectives and targets.
- Output was a total 43,034.00 ha of forests and other natural eco-systems of global biodiversity significance within the Buffer Zones of PAs and biological corridors brought under effective conservation, including creation of the Donoso PA (envisaged at appraisal).

Year	Hectares Reforested/Recovered in Buffer Zones of PAs under CBMAP II			
	Environmental Investments	ANAM	Total	Advance re Indicator (%)
2010	---	20,832.00[16]	20,832.00	40.77

[16] Includes the establishing of Donoso Protected Area by ANAM, as foreshadowed in the PAD and included in the 14 PAs covered by CBMAP II. Also includes a small amount of reforestation by initial environmental SPs.

2011	388.00	14,219.00	35,439.00	70.88
2012	649.05	4,190.78	40,278.83	80.56
2013	920.55	1,834.55	43,033.93	86.07
Total	**1,957.60**	**41,076.33**	**43,033.93**	**86.07**

Source: Annual Technical Reports, CBMAP II/ANAM

Subcomponent 2B: Local Participation and Decentralization for Environmental Management, to support decentralization of environmental management by helping transfer responsibility for local natural resources and environmental management to municipalities and providing technical support to carry out these functions. Activities would focus on selected municipalities that have demonstrated institutional capacity and commitment to develop Municipal Environmental Land Use Plans (MEP). Activities were to include (i) support to municipal governments and comarcas to establish and train Municipal Environmental Units (UAM) as provided by Law 41, in four municipalities and one indigenous *comarca* to develop Municipal Environmental Land Use Plans (MEP) integrating natural resources management, pollution and socio-economic dimensions; (ii) establishing and training local Environmental Consultative Commissions (CCA), helping them to develop Work Plans and local environmental agendas, and provide small amounts of operational financing.

Outputs:

- 25 Environmental Consultative Commissions (CCA) established in 25 districts and one at the Comarcal level (Kuna Yala), trained with Work Plans
- 5 Municipal Environmental Units (UAMs) with Environmental Technical Units (ETU) were created in four municipalities (Las Minas, Mariato, Olá, Santa Fe and Pedasí) to decentralize environmental management and support execution of co-management plans/agreements.
- 15 Municipal Environmental Land Use Plans (MEP), prepared in a participatory manner including by the CCAs, local authorities and the private sector, legally approved and validated for 4 priority PAs, integrating NRM, pollution and social/economic elements.
- Environmental education programs supported by the Ministry of Education (MEDUCA) delivered.
- 12 community-based organizations signed agreements with ANAM to implement co-management in 9 PAs and implementation is underway. Work Plans (of 3 year activity duration) were developed and are under implementation with budget resources (eco-tourism, resource conservation, protection of endangered species, mangrove recovery, crafts and agro-forestry).
- Three UAM-executed potable water pilot SPs valued at US$64,945 (plus community contribution), stemming from Municipal Environmental Plans (legally approved and ratified in 15 municipalities within the project area) were executed in Santa Fe, Las Minas and Boqueron/Pedregal/La Victoria.
- Workshops to train 14 community organizations in themes associated with co-management supported capacity development and assisted them in preparing their work plans.

Subcomponent 2C: Opportunities for Self-financing would develop alternative and potentially sustainable sources of financing for natural resources management and biodiversity conservation with a particular focus on the development of payments for environmental services (PES). Activities were to include: (i) piloting watershed-scale PES mechanisms in the identified provinces of Los Santos and Coclé, and in the indigenous comarcas of Kuna Yala and Ngobe

Buglé; funding studies, TA and negotiations to develop specific PES; and, (ii) developing sustainable financing systems for ANAM, strengthening its institutional capacity to design, develop, pilot and manage a range of sustainable financing instruments for NRM and biodiversity conservation in PAs.

Achievements were modest but more intensive, follow-up efforts to establish self-financing are planned under the new GEF, awaiting effectiveness (see below).

Outputs:

- Payment for Environmental Services (PES): A new law was drafted modifying the existing draft law pending in the National Assembly by including economic, social and environmental aspects as the framework for PES agreements. Environmental services specified include: production, regulation and purification of water; improved air quality; soil conservation and erosion control; protection of biodiversity, species and eco-systems; waste management; and natural disaster mitigation. Delays in the PES plans were due to the arduous process of re-drafting/improving the PES legislation and its re-submission to the Legislative Assembly.

- Two studies were conducted to support further exploration of self-financing opportunities: establishing *fideicomiso* to support PA management, financing for environmental investments and biodiversity monitoring, and (ii) on the financing needs of SINAP as a foundation for reducing its dependence on external resources. Also, project explored the views of private sector firms located in conservation zones, regarding plan feasibility.

- The new GEF (signed July 9, 2015) moves forward by directly applying the findings of these CBMAP II studies to the creation and operation of an Endowment Fund mechanism. Operational Plans would be financed in the first year, then once Bank and Government requirements are met, US$1.5 m of GEF start-up funds would be injected along with GOP and private sector contributions of US$2.0 m and US$1.5 m respectively, i.e., an initial capital of US$5.0 m. Meanwhile, plans to pilot and replicate PES arrangements remain current and are also moving ahead, to be further facilitated by the new GEF.

Component 3: Monitoring, Evaluation and Project Management (total cost US$2.8 m with US$0.8 m of PRORURAL Loan and US$1.6 m of GEF) to improve ANAM's national capacity to monitor the SINAP and evaluate biodiversity conservation through purchase of hardware and software for the PA Monitoring System (SMAP) and national monitoring system for biodiversity (SNMDB); training of both entities to build technical capacity and integrate them into the National Environmental Information System (SINIA); and, incremental costs of the Department of Biological Corridors of ANAM (DBC/ANAM). There were two subcomponents:

Subcomponent 3A: Monitoring and Evaluation, to strengthen ANAM's national capacity for monitoring the SINAP and evaluating biodiversity interventions through the acquisition of hardware, software for the Protected Areas Monitoring System (SMAP) and the National Biodiversity Monitoring System (SNMDB) subsequently the SNIMDB; training to integrate them in the National Environmental Information System (SINIA); and incremental costs of DBC/ANAM.

Outputs:

- Soil and Forest Cover Map of Panama prepared by ANAM in collaboration with ONU-REDD and FAO covering all 65 PAs.[17] This exercise took two years, and hundreds of trained specialists producing a map of major importance to GOP policy and planning in biodiversity conservation and conservation-appropriate land use, and for the international/global biodiversity community of practice.
- ANAM personnel trained to prepare forest cover and land use maps using modern technology.
- Appropriate hardware and software acquired for the SMAP
- 2 new agreements for scientific and technical cooperation (University of Panama and University of Chiriqui - UNACHI) and one Memorandum of Understanding (CONABIO, Mexico) to strengthen ANAM's technical capacity, using specialists from these centers, in biological monitoring and the identification of species.
- Methodologies developed and training conducted to implement the SNIMDB.
- Renovation and equipping of two physical spaces in the University of Panama to process biological samples under the SNIMDB.
- Numerous new species found and recorded; expanded range of habitat for several species, indicating good environmental management and conservation.
- Registration of 4,000 species of flora and fauna of which 60% identified, resulting in 477 species for PNGDOTH and 236 for PNSF (PAs).
- 11 seminars in national and international scientific congresses on the results of the SNIMDB
- Publication of six papers on representative species of flora and fauna of the PNGDOTH and PNSF as didactic/teaching tools and to promote the SNIMDB
- Database developed for SNIMDB including with areas supporting international protocols for the unification of information (e.g., Darwin Core) to be consistent with international initiatives (e.g., GBIF) for the release/divulging of information.
- Web page updated (www.cbmap.org), where the public can consult project documents and related developments/news.
- Established the SNIMDB, updating data on flora and fauna in the PAs and incorporating in the baseline important biological information, endemic species data, new species etc.
- Communications plan disseminated and regularly updated, building broad awareness of environmental management issues, conservation of at risk eco-systems, and important biodiversity.

Subcomponent 3B: Project Management, financing project coordination, planning and supervision by DBC/ANAM (and post-MTR, the PIU/ANAM).

Outputs: In terms of project administration, the project complied with Bank and Panamanian contracting norms/requirements resulting in the efficient use of funds and full disbursements of the Loan and the GEF, as demonstrated by audit results. The project prepared Annual Operating Plans (POA) in a participatory manner including reviews of results of the previous POA. Through six-monthly and annual reports, as well as annual audits, the project's management was handled

[17] A map covering just the 14 project PAs was never contemplated and was not cost-effective. ANAM did not have an organized database from this mapping exercise for each of the 14 project PAs – and thus the forest cover results are not directly relevant to them - but has undertaken to analyze the data and discriminate such data for the Bank during implementation of the new GEF.

transparently. The project's participation in forums and events, as well as agreements for collaboration established with indigenous and municipal authorities enabled the project to achieve results superior to what was expected.

Revolving Funds: An important factor affecting the sustainability of PRORURAL SPs is the management of and access to the Revolving Funds. The project required that beneficiaries – with some exceptions - reimburse the working capital portion of their financing after one agricultural cycle. The amount received by each farmer (association member) depended in the first instance on the relative contribution to total production usually in terms of production units (eg, land under production, number of animals, beehives). The producer would return the funds to the APPR at the end of the production/marketing cycle, after goods had been sold and producers paid. The idea was that funds would be redistributed for the next production season and this would need PRORURAL (now MIDA) approval; re-distribution would be based on proportions established in the Operational Manual for working capital of existing members, for new members and other uses defined by the APPR.[18] Of the 130 associations who received SP resources, 73 associations (61%) had fully repaid their working capital obligation (US$2.01 m, 30% of a total working capital outlay of US$6.81 m) by June 2015. Crops/activities such as cattle, milk production and artisanal fishing – 30% of all associations benefited and 37% of the total investment in SPs - have recovery terms of three years and most had not yet started to repay.

At the time of the ICR mission, MIDA had frozen the revolving funds for a stocktaking of fiduciary performance but some RPAs had begun pressuring MIDA to re-distribute given that the working capital was understood to be a non-reimbursable transfer to the APPRs, and was already overly bureaucratic. Reasons for APPR non-repayment, other than legitimate reasons such as loss of harvest, are mostly consistent with inadequate organizational strength and maturity, a lesson for projects considering such mechanisms. MIDA has established a system of funds recovery - and re-release after verifying good use of the funds - which it intends to continue for a decade (as per the Agreements signed with associations/alliances). While MIDA's caution is prudent, this agenda has the potential to erode the opportunity for RPAs to develop financial autonomy in their productive activities.

[18] PRORURAL established that 50% of recovered funds would be used for financing working capital at the start of the production season, and given the importance of having APPRs open to new members, that 25% of the recuperated working capital from existing members would be reserved for new members to encourage them to join. The remaining 25% would be used for other purposes to be determined by the APPR.

Annex 3. Economic and Financial Analysis

A. Rural Productivity Project (PRORURAL) (FAO, 2015)

1. The Panama Rural Productivity Project (PRORURAL) sought, inter alia, to increase the productivity of small-scale producers' associations through their participation in productive alliances and the good stewardship of natural resources, by supporting market-driven business ventures with matching grants for capital goods, working capital, technical assistance and training, and within the framework of a business plan and a productive alliance with stable market partners. This Annex provides the context and methodological framework for the ex-post financial and economic analysis, and presents and discusses the main financial/economic feasibility indicators, comparing them to those obtained at project appraisal.

2. As shown in Table 1, PRORURAL reached nearly 4,600 producers through 130 subprojects with total investments of around US$ 20.9 million. Those investments focused in the following productive chains: (i) Dairy/Bovine, (ii) Maize, (iii) Roots and Tubers, (iv) Artisanal Fishing; (v) Pulses; and (vi) other (e.g. sugarcane, beekeeping/honey, fruits, small livestock, etc.).

Table 1. Summary for Subprojects financed by PRORURAL

Productive Chains	Number of Subprojects	Total Investment	Total families	Proportion of families per Subproject	Investment per Subproject	Investment per family
	Units	US$	Family Units	%	US$ / Subproject	US$/family
Dairy/ Bovine	20	3,985,323.86	801	18	199,266.19	4,975.43
Maize	15	2,701,613.14	643	14	180,107.54	4,201.58
Tubers	19	2,600,830.57	547	12	136,885.82	4,754.72
Artisanal Fishing	15	2,322,034.39	501	11	154,802.29	4,634.80
Pulses	14	1,649,407.42	457	10	117,814.82	3,609.20
Other	47	7,629,001.06	1620	35	162,319.17	4,709.26
Total	**130**	**20,888,210.44**	**4577**	**100**		

3. Subproject implementation under PRORURAL started in 2009. Of all subprojects, only 37% received their first disbursements (i.e. initiated subproject implementation) within the 2009-2011 period. From the balance, 19% started implementation during 2012, and 43% during 2013 and early 2014, as shown in Table 2.

Table 2. Subprojects and value of expenditures per year

Year of approval	Subprojects		Disbursements	
	Number	%	US$ Million	%
2009	12	9%	1,324,829	6%
2010	21	16%	2,239,338	11%
2011	16	12%	3,389,065	16%
2012	25	19%	5,543,774	27%
2013-2014	56	43%	8,391,204	40%
Total	**130**	**100%**	**20,888,210**	**100%**

Methodological Approach to the Financial/Economic Cost-Benefit Analysis

4. The methodology and the assumptions used for this ex–post economic and financial analysis are fundamentally the same ones used for the ex-ante analysis presented in the Project Appraisal Document (PAD). The financial analysis used a 12% discount rate and was done for a period of 10 years, just as in the ex-ante analysis. No ex-post economic analysis was performed for reasons explained further along the text.

5. The financial and economic cost-benefit analyses of the commercial alliances supported by PRORURAL entailed three distinct phases: (i) sample selection and systematization of secondary information to identify information gaps; (ii) gathering and validation of data in the field; and (iii) data analysis.

Sample Selection for the Ex-post Analysis

6. The sampling universe of subprojects was established at 111 of the 130 subprojects. PRORURAL financed a total of 130 subprojects, but 56 of them received their first disbursements to begin implementation in 2013 and even early 2014. As a consequence, the first production cycles of around 19 of them would only be completed in 2014, and thus actual performance information was not available in time to include in the analysis. From the sampling universe of 111 subprojects, a random sample of 12 observations (11%) was selected. The sample was stratified with respect to the six productive chain categories.

7. It must be pointed out at the outset, that the size of the sample does not infer that the results of the analysis are representative of the sampling universe with a high degree of statistical confidence. Time and resource limitations, coupled with labor intensive data reconstruction efforts for the financial/economic models, did not permit a larger sample. Table 3 presents detailed information for the subprojects that were randomly selected as sample.

8. The total cost of sub-projects in the sample was around US$ 2,686,863 (US$ 1,971,544 from PRORURAL co-financing and US$ 715,319 from producer financing). Sub-project total investments ranged from US$ 121,919 (pulses – pigeon peas[19]) to 404,167 (others- sugarcane).

[19] Cajanus cajan, commonly known as Guandú in Panama.

On average 27 percent of subproject financing came from the producers and the balance 73 percent from Project co-financing. Another noteworthy feature is that, on average, subprojects spent most of its capital (65%), ranging from as low as 20% to as much as 99% on operating costs, including working capital, and only 35% on capital investments.

Table 3. Sub-projects selected for financial evaluation

Investment Type	Producer Group	Total Investment	PRORURAL Contribution	%	APPRs Contribution	%	Number of families	Total Inv/family
Milk	Asociación de Productores Agropecuarios de Las Guabas	303,667	224,858	74%	78,809	26%	45	6,748
Cow-calf operation	Asociación de Productores de Ganado de Leche, Carne y otros del Sur de Soná	168,917	109,516	65%	59,401	35%	23	7,344
Corn	Asociación de Productores Agrícolas 19 de Marzo de San José	247,294	180,000	73%	67,294	27%	36	6,869
Corn	Asociación de Productores de San Joaquín	124,012	90,590	73%	33,422	27%	16	7,751
Tubers–ñame	Cooperativa s/m Unión de Campesinos Mésanos	307,237	234,281	76%	72,956	24%	47	6,537
Tuber –otoe	Asociación Agricultura Sostenible, Conservación y Desarrollo-ASCODE	181,002	140,985	78%	40,017	22%	29	6,241
Artisanal Fishing	Asociación Agropecuaria de Pesca y Ecoturístico de Palo Seco	236,276	145,890	62%	90,385	38%	30	7,876
Pigeon peas –guandú	Asociación de Productores para el Desarrollo Agro Ambiental de la Montañuelita	121,919	73,679	60%	48,240	40%	16	7,620
Others – Sugarcane	Asociación de Productores de Caña y Otros de Veraguas- APROCOVE	404,167	321,964	80%	82,203	20%	52	7,772
Others – bee's honey	Asociación de Productores Agropecuarios y Otros de la Mesa –APROCAME	338,987	270,000	80%	68,987	20%	54	6,278
Others – Watermelon	Mujeres Rurales Emmanuel	127,386	79,781	63%	47,605	37%	17	7,493
Others – poultry	Asentamiento Campesino Santa Rosa de París de Parita	126,000	100,000	79%	26,000	21%	20	6,300
Total		2,686,863	1,971,544		715,319		385	
Average		223,905	164,295	73%	59,610	27%	32	6,337

Information Collection and Systematization for the Ex-post Analysis

9. All information available at PRORURAL for each of the subprojects in the sample was gathered and systematized. It was analyzed, and information gaps to construct the cost-benefit models, and to develop reasonable working assumptions, were identified. Data gathering instruments were then constructed according to the specific information needs for each subproject. Participatory workshops with all producer groups were undertaken to fill, as much as possible, the identified information gaps.

10. The milk, cow-calf operation, artisanal fishing and sugar cane sub-projects had been operating from three to four years at the time of the analysis. However, the rest of the subprojects had only two years of implementation, with the exception of the poultry sub-project with only one year. Thus, actual cost and revenue data was insufficient to undertake the cost-benefit analyses, without resorting to a set of working assumptions on the likely development of the business ventures.

11. For all subprojects in the sample, it was necessary to make projections of cost and revenue flows and their underlying factors. These were made using a "most-likely" approach, based on the perceived likelihood of improvements in productivity, added value, marketing, etc., taking into account the specific situation found during each workshops and field visit. The projections also benefited from local technical advice, and took into account all information available. The projections assume regular weather conditions and factors of production, leaving aside overly optimistic or pessimistic forecasts or events of an exceptional occurrence.

Ex-post Financial Analysis of Productive Subprojects

12. As explained before productive subprojects were the result of a demand-driven process during project implementation, and thus they are different in nature and scope from those "likely" subproject-types that were evaluated during the ex-ante cost-benefit analysis at appraisal. As in the case of the ex-ante analysis, productive subprojects were subjected to a financial cost-benefit analysis from the perspective of the whole "business venture". As such, the results show whether the ventures were financially feasible as a standalone investments.

13. Financial models were constructed for the productive subprojects in the sample. Using the flows of incremental net revenues, the Net Present Value (NPV), Internal Rate of Return (IRR), Benefit-Cost Ratio (B/C) were calculated and are presented in Table 4.

14. Total investments for twelve subprojects evaluated ranged from US$ 121,919 to USD$ 404,167, with an average of US$ 223,905. One out of every three subprojects had negative financial feasibility indicators, or in other words the generated revenues were not sufficient to cover total costs, when accounting for the time value of money.

15. The average NPV per family was estimated at nearly US$ 159, when including all subprojects in the sample. This value represents the average net revenue generated per family, after family-labor devoted to subproject implementation was compensated at the local daily rate for unskilled labor. Of the eight subprojects with positive financial feasibility indicators, only three had net present values per family in excess of US$ 150.00, which is a fairly low return, when taking into account the risks associated with agriculture based enterprises.

16. It was found that most subprojects in the sample would recuperate their investments in around seven years. This was not the case for five projects (Las Guabas – Milk; 19 de Marzo – Maize; Mésanos – Ñame; APROCAME – Honey; and, Emmanuel – Watermelon) whose investments would not be recuperated within the ten-year period of analysis.

Table 4. Ex-post Financial Viability Indicators of Sample Subprojects.

Investment Type	Producer Group	Total Subproject (US$)	IRR	NPV (US$)	NPV per Family (US$)	B/C	Investment Repayment Period
Milk	Asociación de Productores Agropecuarios de Las Guabas	303,667	5%	-71,339	-1,585	0.86	Negative cash-flow
Cow-calf operation	Asociación de Productores de Ganado de Leche, Carne y otros del Sur de Soná	168,917	14%	3,041	132	1.00	8.67
Corn	Asociación de Productores Agrícolas 19 de Marzo de San José	247,294	<-12%	-52,986	-1,472	0.80	Negative cash-flow
Corn	Asociación de Productores de San Joaquín	124,012	12%	203	13	1.00	9.93
Tubers – ñame	Cooperativa s/m Unión de Campesinos Mésanos	307,237	<-12%	-146,834	-3,124	0.67	Negative cash-flow
Tubers – otoe	Asociación Agricultura Sostenible, Conservación y Desarrollo-ASCODE	181,002	14%	3,608	124	1.01	9.42
Artisanal Fishing	Asociación Agropecuaria de Pesca y Ecoturístico de Palo Seco	236,276	34%	266,789	8,893	1.89	4.17
Legumes – guandú	Asociación de Productores para el Desarrollo Agro Ambiental de la Montañuelita	121,919	19%	23,834	1,490	1.04	6.87
Others – Sugarcane	Asociación de Productores de Caña y Otros de Veraguas-APROCOVE	404,167	14%	3,310	64	1.01	9.27
Others – bee's honey	Asociación de Productores Agropecuarios y Otros de la Mesa –APROCAME	338,987	12%	282	5	1.00	9.98
Others – Watermelon	Mujeres Rurales Emmanuel	127,386	<-12	-114,517	-6,736	0.43	Negative cash-flow
Others – poultry	Asentamiento Campesino Santa Rosa de París de Parita	126,000	21%	44,910	2,245	1.08	5.79
Total		**2,686,863**		**-39,700**			
Average		**223,905**	**11%**	**-35,931**	**-93**	**0.98**	

Ex-post Sensitivity Analysis

17. A sensitivity analysis was conducted on the basis of the financial models constructed for the subprojects in the sample. In contrast to the ex-ante analysis, the present analysis considers switching values for costs and revenues where the NPV=0. This type of sensitivity analysis is more insightful and less arbitrary than selecting ad-hoc scenarios with respect to cost and revenue changes. As shown in Table 5., only two out of eight subprojects with positive financial feasibility indicators could withstand an increase in costs, or a decrease in revenue, of over 5% and still remain profitable, and only one if the relative change is above 10%. This indicates that, although eight subprojects in the sample had positive financial indicators; all but

two of these are highly susceptible to decreasing revenues (that could come from price, or sales, or productivity reductions) or by increasing costs.

Table 5. Sensitivity Analysis - Increase in Costs and Decrease in Revenues where NPV=0.

Subproject Type	Community	Switching Value Increasing Cost where NPV=0	Switching Value Reducing Revenue where NPV=0
Milk	Asociación de Productores Agropecuarios de Las Guabas	-13.03%	14.98%
Cow-calf operation	Asociación de Productores de Ganado de Leche, Carne y otros del Sur de Soná	0.38%	-0.38%
Corn	Asociación de Productores Agrícolas 19 de Marzo de San José	-19.62%	24.40%
Corn	Asociación de Productores de San Joaquín	0.17%	-0.17%
Tubers – ñame	Cooperativa s/m Unión de Campesinos Mésanos	-32.54%	48.25%
Tubers –otoe	Asociación Agricultura Sostenible, Conservación y Desarrollo-ASCODE	0.84%	-0.83%
Artisanal Fishing	Asociación Agropecuaria de Pesca y Ecoturístico de Palo Seco	89.02%	-47.09%
Legumes –guandú	Asociación de Productores para el Desarrollo Agro Ambiental de la Montañuelita	3.82%	-3.68%
Otros – Sugarcane	Asociación de Productores de Caña y Otros de Veraguas- APROCOVE	0.72%	-0.71%
Otros – bee's honey	Asociación de Productores Agropecuarios y Otros de la Mesa – APROCAME	0.04%	-0.04%
Otros – watermelon	Mujeres Rurales Emmanuel	-49.23%	96.96%
Otros – poultry	Asentamiento Campesino Santa Rosa de París de Parita	8.49%	-7.82%

18. To complement the sensitivity analysis, a Monte Carlo simulation was used to calculate Net Present Value at Risk. 20 The simulation was undertaken assuming a normal distribution, and an annual growth rate in cash flows of 5%, with a 10% standard deviation. A confidence level of 95% and a number of iterations of 5,000 were used for the simulation. These assumptions are likely under the risk profile of associations with switching values near 0% (i.e. very sensitive sub-projects) with high variability of prices, no contract and other market options to mitigate risk, low yields and limited managerial capacities.

[20] Monte Carlo methods are used in finance and mathematical finance to value and analyze investments by simulating the various sources of uncertainty affecting their value, and then determining their average value over the range of resultant outcomes. This is usually done by help of stochastic investment models (which tries to forecast how investment's variables vary over time). The advantage of Monte Carlo methods over other techniques increases as the dimensions (sources of uncertainty) of the problem increase. In the case of financial analysis, using a stochastic investment model, the decision is made on the basis of Net Present Value at Risk (NPV at Risk). NPV at Risk is the minimum expected value of the NPV of a project with a certain level of statistical confidence.

19. Table 6 shows Net Present Value at risk for all projects with positive Net Present Values when not accounting for risk. It is noteworthy that based on this risk analysis two additional subprojects would be deemed not viable. All but two of the subprojects undergoing the Monte Carlo simulation yielded a positive VPN at risk.

Table 6. Monte Carlo Simulation Results

Subproject Type	Community	VPN at risk	Mean	Standard deviation	Max	Min	% change from VPN to VPN@risk
Milk	Asociación de Productores Agropecuarios de Las Guabas						
Cow-calf operation	Asociación de Productores de Ganado de Leche, Carne y otros del Sur de Soná	2,767	4,130	826.13	6,931	418	-9%
Maize	Asociación de Productores Agrícolas 19 de Marzo de San José						
Maize	Asociación de Productores de San Joaquín	(104)	1,443	937.47	4,580	(2,306)	-151%
Tubers – ñame	Cooperativa s/m Unión de Campesinos Mésanos						
Tubers –otoe	Asociación Agricultura Sostenible, Conservación y Desarrollo-ASCODE	3,064	5,370	1,397.07	10,002	(218)	-15%
Artisanal Fishing	Asociación Agropecuaria de Pesca y Ecoturístico de Palo Seco	262,100	283,883	13,201.83	334,064	236,575	-2%
Pulses –guandú	Asociación de Productores para el Desarrollo Agro Ambiental de la Montañuelita	23,007	26,922	2,372.49	35,912	17,912	-3%
Others – Sugarcane	Asociación de Productores de Caña y Otros de Veraguas- APROCOVE	2,783	5,485	1,637.83	11,123	(212)	-16%
Others – Apiculture	Asociación de Productores Agropecuarios y Otros de la Mesa –APROCAME	(2,142)	7,748	5,994.05	29,655	(12,218)	-860%
Others – Watermelon	Mujeres Rurales Emmanuel						
Others – poultry	Asentamiento Campesino Santa Rosa de París de Parita	43,631	49,391	3,490.92	62,468	38,160	-3%

Comparison between the Ex-post and Ex-Ante Cost Benefit Analyses

18. The PAD presented the results of ex-ante economic analyses of three "pilot productive alliance" models of PRORURAL (Coffee, Ñame, and Annatto Seed). The ex-ante economic IRRs for these three pilot subprojects were all positive ranging from 24% to 34%. The sensitivity analysis undertaken assumed single and combined 10% changes to costs (increases) and revenue (reductions). All scenarios yielded positive economic IRRs, but for Coffee and Ñame when revenue declined, and costs increased by 10% simultaneously. No information on economic net present values was provided.

19. The PAD did not provide information on the conversion factors, shadow prices, and any assumptions used in the ex-ante economic analysis. This prevents any meaningful comparison with an ex-post economic analysis. Because of this, and the fact that an economic

analysis of individual subprojects is not insightful at all, ex–post economic indicators were not calculated.

20. The PAD did not present any information with respect to the financial viability of the three pilot subprojects.

Final Remarks and Conclusions

21. Conventional ex-post financial and economic cost-benefit analyses were undertaken for a randomly selected sample of subprojects. Given data availability limitations at the time of the analyses, and the resource-intensive and time-consuming data reconstruction process, the sample size was relatively small with respect to the sampling universe, and thus not sufficient to assert with a high degree of statistical confidence that the observations are representative of the sampling universe. Although the sample was randomly selected, it cannot be said that it accurately reflects the sampling universe. However, it cannot be assured either that the performance of the subprojects selected is better or worse, for that matter, to those of the universe.

22. Financial indicators under risk analysis were positive for six out of the twelve sub-projects sampled. The common problems found with financially unviable subprojects were lower yields, lower prices, and/or smaller scale of production, with respect to figures projected in their business plans.

23. At the time of the ex-post analysis, with the information available, the risk analysis performed and the assumptions made, the main conclusion is that only six out of the twelve subprojects in the sample proved to be financially viable "business ventures" (i.e. including all financial costs and revenues generated by the activity independently of their source). Subprojects that were not found financially unviable under the same circumstances may still be able to turn their fortunes around, if they were to receive capacity strengthening, technical and business development assistance and other related support, after project closing.

B. Economic and Financial Analysis: CBMAP II (Barzev, 2015)

1. OBJECTIVES OF CBMAP II

The Mesoamerican Biological Corridor of the Panamanian Atlantic Project– CBMAP (1998 – 2005) was co-financed by a donation of US$8.4 million from the GEF. It was successfully implemented and the natural resources were jointly managed by establishing collaborative processes between the communities and ANAM to i) raise awareness about the Mesoamerican Biological Corridor of the Panamanian Atlantic, its natural resources, and threats to its biodiversity; and ii) promote viable productive systems that generate economic and financial benefits for the rural communities in the Protected Areas and their buffer zones.

The CBMAP II (2006 – 2015) is the second phase of the same project. Here the aim is to increase rural productivity and consolidate the Mesoamerican Biological Corridor of the Panamanian Atlantic Project.

The developmental objective of the project is to contribute to increasing the incomes and employment of small-scale rural farmers in Panama.

Component 1 of the project dealt with building productive capacities and involved an investment of US$ 7.8 million dollars through donations and sustainable, productive initiatives promoted by the associations of small producers. These productive initiatives or sub-projects are called Environmental Investments (EIs).

The present analysis focuses on evaluating the degree of sustainability attained by the various environmental Investments (the cost-benefit analysis of the EIs).

2. METHODOLOGY [21]

The CBMAP II Project has provided support to 350 associations of producers in the implementation of sustainable, productive activities through various environmental investments.

To conduct the analysis, an instrument/format of information collection was used: Format of Financial Analysis. The format was applied directly to the sub-samples of the beneficiary associations of CBMAP II by region.

The following table presents the distribution of the sample of EIs by region.[22] It is based on a sample of 146 EIs, which account for 42% of total EIs.

Table 1: Distribution of our sample by format and by region.

Regions	Financial Formats
Comarca Ngäbe Bugle	21
Bocas del Toro	30

[21] The financial analysis of CBMAP II did not compare the results with established targets due to the fact that when the PAD was prepared no environmental SPs had yet been identified and thus there was no basis for comparison. The PAD analysis only reviewed secondary information of agro-forestry projects and assumed that those types of initiatives would be benefited by CBMAP II. Equally, the PAD briefly summarized some specific cases financed under CBMAP I which would not necessarily be continued under CBMAP II.

[22] The SPs in Herrera were not analyzed because the project technician did not submit the information in time.

Coclé	32
Chiriquí	13
Veraguas	26
Los Santos	8
Kuna Yala	16
Total of the sample	**146**

Source: Author

Three (3) main economic models were identified: 1) silvopastoral models; 2) production models for organic fertilizers, and; 3) models based on tourism and sustainable artisan work (handicrafts).

Table 2: Types of Environmental Investments

Mixed Productive Models	Description	Items
Agricultural activities	Principal Crops	*bananas, coffee, cacao, and oranges*
	In combination with other crops	*yams, pineapple, medicinal plants, orchids, coriander, pixbae, primitivo, lemon*
Productive activities	Associated with agriculture	*compost, organic fertilizers; the breeding of zoo animals*
Non-agricultural activities	Compatible with the ecosystems	*Tourism and artisan work (handcrafts)*

Source: Interviews conducted via formats.

The economic analysis is in essence a cost-benefit analysis carried out by analyzing the various financial indicators (see Table 3).

The annual net benefits per family were estimated (Incomes minus Costs per year).

The Net Present Value (NPV) of the cash flow for a period of 5 years was projected: 1) the total NPV was estimated; 2) the commercial NPV (total minus self-consumption); 3) the NPV of externalities (carbon fixation and water infiltration) and; 4) the social NPV (adding total NPV and the NPV of externalities). This was used to determine the private and social contribution of the EIs.

In addition, the amount of the Internal Rate of Return (IRR) greater than the Discount Rate (DR) of 10% was calculated.

Table 3: Criteria for the financial analysis

Evaluation Criteria	Description
Net Present Value (NPV)	
Internal Rate of Return (IRR)	
Net Benefits per family or per hectare (NB)	

Evaluation Criteria	Description
Calculation of NPV: $$NPV = \sum_{t=1}^{n} \frac{NB_t}{(1+i)^t} - I_0$$ Where NB_t = Net Benefits (Incomes – Costs), per period. I_0 = Valor of Initial Disbursement (Initial Investment). n = Number of time periods.	
Calculation of the IRR: It is equal to the NPV at 0: $$\sum_{t=1}^{n} \frac{NB_t}{(1+IRR)^t} - I_0 = 0$$ and transforms to: $$IRR = \frac{-I + \sum_{i=1}^{n} NB_i}{\sum_{i=1}^{n} Nb_i}$$ Where: NB_i = Net Benefits (Incomes – Costs), per period. I = Value of Initial Investment. n = Number of time periods.	
Calculation of the Recovery Period (RP) of the investment: *RP = Investment / Net Benefits*	
Calculation of Net Benefits per member and per hectare: *NB / number of members in each association.* *NB / quantity of hectares in production for each association.*	

To improve the cost-benefit analysis, two social/environmental externalities—the capacity for carbon fixation and the capacity for water infiltration in reforested areas[23] (see Table 4)—were included in the cash flow.

Table 4: Quantification of externalities.

Evaluation Criteria	Description
Capacity for carbon fixation in reforested areas	The physical flow of the two environmental services was quantified and their potential economic value was estimated based on existing market prices:
Capacity for water infiltration in reforested areas	

[23] There is a direct correlation between the increase of reforested areas and the production of environmental goods and services, such as carbon fixation and water infiltration capacity.

Economic valuation of fixed carbon Economic valuation of infiltrated water	- For carbon, the minimum prices per ton equivalent in the voluntary carbon markets were used. - For water, the conservation cost per cubic meter in the areas of water recharge was used. - To calculate the NPV, the benefits of the externalities were projected for a period of 5 years.
Calculation of the economic value of the capacity for carbon fixation was based on the methodology of the IPCC (Intergovernmental Panel on Climate Change): *Economic Value of Carbon Fixation = Ha * Rc * AAI * Dm * 3.66 * MP* Where: Ha = Hectares reforested. Rc = Fraction of carbon in the biomass. AAI = Average annual increase in the forest (by cubic meter). Dm = Density of the mass (ton/m^3). 3.66 = Factor to transform carbon into equivalent in tons. MP = Market prices (B/. / ton $_{equivalent}$).	
Calculation of the economic value of the water infiltration capacity: *Economic Value of Water = Ha * IP * CC* Where: Ha = Hectares reforested. IP = Infiltration Potential (m^3/hectare/year). CC = Conservation Costs (B/. /m^3 / year).	

3. ANALYSIS OF THE RESULTS

The productive associations that benefited from the project are of a low economic level. The income per person in some regions is barely US$ 31.00 per month, far below the minimum wage.

The net benefit generated by the productive model financed by CBMAP II accounts for a significant percentage of family income (from 12% up to 53%) and in the majority of cases this activity represents their main economic activity.

Table 5: Economic characteristics of the beneficiary associations.

Region	Net Benefits productive model	Annual Family Income	NB as percentage of the family income	Income per person/month
Comarca Ngäbe	1,049	3,623	29%	**75**
Bocas del Toro	1,923	9,038	21%	**188**

Coclé	786	1,497	53%	**31**
Chiriqui	1,615	13,515	12%	**282**
Veraguas	949	3,902	24%	**81**
Los Santos	850	1,758	48%	**37**
Kuna Yala	1,238	3,051	41%	**64**

Source: Financial Formats.

In every region of the CBMAP II Project monetary amounts varying between US$15,000 and US$25,000 were disbursed. The local contribution, which mainly consisted of manual labor, accounts for an average 17% of the investment made by the project.

Table 6: Average amount of the Environmental Investment and the Local Contribution

Region	**Average Contribution B./**	
	CBMAP II	**Association**
Comarca Ngäbe	17,534	3,829
Bocas del Toro	19,540	3,120
Coclé	20,757	2,534
Chiriqui	25,481	3,422
Veraguas	20,273	2,814
Los Santos	22,015	4,058
Kuna Yala	15,175	3,903

Source: Financial Formats.

Table 7 shows that all the members in all the regions received additional benefits by implementing the economic/productive models promoted by the CBMAP II Project.

However, given that there is a high percentage of household consumption, a part of the production was not commercialized, but rather formed part of the basic food needs of the families. This is not per se a negative development; however, if a large part of the production is home-consumed, the incomes are not available for reinvestment in a new productive cycle (e.g., due to the high level of household consumption, no earnings were realized in the region of Los Santos).

Table 7: Net benefits per member (family).

Region	**Total NB per family**	**Commercial NB per family**	**Incomes not realized due to self-consumption**
Comarca Ngäbe	1,253	760	39%
Bocas del Toro	1,923	1,499	22%
Coclé	726	397	45%
Chiriquí	2,981	2,886	3%
Veraguas	1,004	609	39%
Los Santos	850	(308)	-36%
Kuna Yala	743	217	71%

Source: Financial Format.

Net benefits can also be expressed by hectare to determine whether the investments have generated earnings, independent of the productive models, the size of the investment, and the area of intervention.

Table 8: Net benefits per hectare.

Region	NB per hectare
Comarca Ngäbe	20.2
Bocas del Toro	19.2
Coclé	11.7
Chiriquí	24.9
Veraguas	7.1
Los Santos	24.2
Kuna Yala	9.7

Source: Financial Format.

In terms of the Net Present Value, Table 9 analyzes the costs and incomes for a 5-year period. It can be seen that the commercial NPV (based solely on commercialized production) has the lowest NPV, and even presents negative values in Coclé, Los Santos, and Kuna Yala.

The total NPV (of total production total minus the natural losses) increases significantly, although there are some losses in Coclé.

Once the value of the positive externalities is calculated (the capacity of carbon fixation and the water infiltration capacity in reforested areas within the framework of the project),[24] the social NPV is estimated. The social NPV has the highest value and is positive for all the regions.

Currently the beneficiaries do not receive remuneration for the positive environmental externalities that are generated; however, the increase in social NPV shows that using the best productive practices brings returns to the inhabitants of the rural farms and to society in general.

Table 9: Comparison of Net Present Values (average values in US$)

Region	Commercial NPV	Total NPV	NPV of the carbon fixation	NPV of the water	NPV of the Externalities	Social NPV
Comarca Ngäbe	6,953	37,239	11,347	12,401	23,748	60,987
Bocas del Toro	40,996	86,201	17,034	18,617	35,651	121,852
Coclé	(23,084)	(1,541)	11,142	12,177	23,318	21,777
Chiriquí	217,307	223,796	12,433	13,588	26,021	249,816
Veraguas	479	21,940	6,669	7,289	13,957	35,898
Los Santos	(62,511)	7,125	9,656	10,553	20,209	27,334

[24] Based on the sub-samples analyzed, 2,232 hectares have benefited from the Environmental Investments, where 1,325 hectares have been reforested.

Kuna Yala	(5,035)	24,106	3,547	3,715	7,262	31,368

Source: Financial Format.

As tables 10 and 11 show, a majority of cases in every region had positive NPV (with profits at the end of the 5-year projections), with total NPV being significantly higher than commercial NPV. In other words, household consumption implies a loss of economic income, even though, as mentioned above, it may well contribute to food security for the families. Hence, the key is to find a balance between household consumption and reinvestment in productive activity.

Table 10: Number of cases with positive commercial NPV

Positive commercial NPV	Frequency	Percentage
Negative	69	47%
Positive	77	53%
Total	**146**	**100%**

Source: Financial Format.

Table 11: Number of cases with total positive NPV

Total positive NPV	Frequency	Percentage
Negative	30	21%
Positive	116	79%
Total	**146**	**100%**

Source: Financial Format.

Table 12 shows the distribution of cases with positive NPV by region.

Table 12: Distribution of cases with positive NPV by region

Region	Total NPV	Commercial NPV
Comarca Ngäbe	16	13
Bocas del Toro	29	15
Coclé	18	10
Chiriquí	12	12
Veraguas	21	18
Los Santos	5	2
Kuna Yala	15	7
Total	**116**	**77**

Source: Financial Format.

As in the cases of positive NPV, the cases of positive IRR greater than the Discount Rate (DR) are analyzed. Once again we observe that the percentage of cases with positive IRR increases when total production is compared with commercial IRR (88% vs 76% respectively).

Table 13: Number of cases with positive commercial IRR

Positive commercial IRR	Frequency	Percentage
Negative	35	24%

Positive	111	76%
Total	**146**	**100%**

Source: Financial Format.

Table 14: Number of cases with total positive IRR

Total positive IRR	Frequency	Percentage
Negative	18	12%
Positive	128	88%
Total	**146**	**100%**

Source: Financial Format.

Once again, there are cases of positive IRR in every region, which points to the success of the beneficiary productive associations at the national level.

Table 15: Distribution of cases with positive IRR by region

Region	Total IRR	Commercial IRR
Comarca Ngäbe	18	20
Bocas del Toro	30	24
Coclé	24	18
Chiriquí	12	12
Veraguas	21	19
Los Santos	7	6
Kuna Yala	16	12
Total	**128**	**111**

Source: Financial Format.

4. LESSONS LEARNED

In economic terms, 79% of the cases at the national level had positive Net Present Value, and 88% displayed a positive Internal Rate of Return, higher than the DR. Moreover, most of the experiences have not only been profitable but can be expanded and/or replicated.

By implementing a series of environmental measures, the productive models also generated positive social externalities (a carbon fixation capacity and a water infiltration capacity). This translates into tangible economic benefits. Since the producers who are generating these environmental benefits are not being compensated for their efforts, it is recommendable to support them in their request for further funding in order to ensure continuity to the practices that have been initiated.

Based on the data analyzed, the second phase of the CBMAP Project has had a positive economic impact on the beneficiary associations.

All of the beneficiaries who were interviewed individually or during workshops reported a high degree of satisfaction and appreciation for the support provided by the CBMAP II Project. A

majority of the beneficiaries had never before received support from other institutions, often due to their geographic inaccessibility.

In the case of agroforestry investment subprojects, the majority of cases involved renewing plantations. The local communities in general have considerable experience in agriculture, so the support provided by the project has served to give added value to the existing activity and add new plots to production.

The project supplied inputs, promoted the complementary planting of new crops with potentially better markets, and provided training that served to improve the efficiency of the productive plots.

The main result was that all the productive areas of the beneficiaries are engaged in organic production and the producers have learned to produce their own organic fertilizer.

In purely environmental terms, the measures promoted under the framework of the project have been successfully assimilated by the producers. The conservation of the ecosystem has brought improvements in production and in the quality of the lives of the families.

The main strength of these initiatives is that the environmental investments are productive experiences in terms of community-based organization; and this aspect enhances the overall impact of the project.

The beneficiary associations display a higher level of organization at the stage of requesting funding and entering into production; and a lower level of organization when it comes to commercializing their products which needs additional support.

In all the organizations the funds were distributed equitably among the members and the decisions about the use of the funds were consensual. In some indigenous communities (e.g., Kuna Yala), the benefits generated by the investments were distributed throughout the entire community.

Even so, the administrative component needs strengthening (so that all the associations have legal status, complete accounting records, and are capable of managing their own funds) to reach a level of greater independence, a higher capacity for growth, and access to new markets.

A vast majority of the associations have acquired a new vision about what it means to work together. They are ready to enter new markets where the demand for quality products is higher and the prices are more favorable.

Annex 4. Bank Lending and Implementation Support/Supervision Processes

(a) Task Team members: PRORURAL (P064918)

Names	Title	Unit	Responsibility/ Specialty
Lending/Preparation			
Matt McMahon	**TTL**, Lead Agriculturalist	LCSAR	
Mark Austen	**TTL,** Agricultural Economist	LCSAR	
Diana Rebolledo	Language Program Assistant	LCSAR	
Edward Bresnyan	Agricultural Economist	LCSAR	
Gerardo Segura Warnholtz	Sr Rural Development Specialist	LCSAR	
George Ledec	Lead Ecologist	LCSEN	
James Smyle	Sr. NRM Specialist	LCSER	
Juan Martinez	Sr. Social Scientist	LCSEO	
Teresa Roncal	Operations Analyst	LCSER	
Fabienne Mroczka	Financial Management Specialist	LCOAA	
Diomedes Barroa	Sr. Operations Officer	LCOPR	
Rosita Valencia de Estrada	Procurement Specialist	LCSPT	
Solange Alliali	Sr. Legal Counsel	LEGLA	
Juan Morelli	Consultant	FAO	
Dinesh Aryal	Operations Analyst	LCSEN	
Xiomara Morel	Sr. Finance Officer	LOAG1	
Supervision/ICR			
Edward Bresnyan	**TTL,** Agricultural Economist	LCSAR	
Pierre Olivier Colleye	**TTL,** Sr. Micro-Finance Specialist	LCSAR	
Dmitri Gourfinkel	Financial Management Specialist	LCSFM	
Dinesh Aryal	Sr. Natural Resources Mgmt. Spec.	AFTN3	
Diomedes Berroa	Lead Specialist	OPSOR	
Nabil M. Chaherli	**TTL,** Sector Leader	AFTSN	
Francis V. Fragano	Regional Safeguards Adviser	SARDE	
Mary Lisbeth Gonzalez	Senior Social Development Spec.	LCSSO	

Yurie Tanimichi Hoberg	**TTL**, Senior Economist	AES	
George Campos Ledec	Lead Ecologist	AFTN3	
Juan Martinez	Sr. Social Scientist	EASIS	
Fabienne Mroczka	Financial Management Spec.	LCSFM	
Alexandre Borges de Oliveira	Senior Procurement Specialist	EASR1	
Diana P. Rebolledo	Language Program Assistant	LCSAR	
Teresa M. Roncal	Operations Analyst	LCSAR	
Erika Salamanca Duenas	Program Assistant	LCSSO	
Gerardo Segura Warnholtz	Senior Rural Development Spec.	LCSAR	
Norman Bentley Piccioni	**TTL**, Agricultural Economist	GDAR	
Mario Castejon	Agricultural Economist	FAO	
Yerania Sanchez	Agricultural Economist	FAO	
Maria del Mar Polo	Agricultural Economist	FAO	
Mary Lisbeth Gonzalez	Social Safeguards Specialist	LCSSO	

(b) Staff Time and Cost: PRORURAL (P064918)

Stage of Project Cycle	Staff Time and Cost (Bank Budget Only)	
	No. of Staff weeks	USD Thousands (including travel and consultant costs)
Lending		
FY04	4.98	17.80
FY05	4.63	11.63
FY06	34.08	178.74
FY07	37.42	183.49
Total:	**81.11**	**391.66**
Supervision/ICR		
FY08	22.73	96.07
FY09	21.51	97.70
FY10	25.01	151.60
FY11	29.53	138.42
FY12	30.64	149.06
FY13	28.20	139.79
FY14	39.51	202.00
FY15	15.15	90.36
Total:	**212.28**	**1,065.00**

(a) Task Team Members: GEF (P083045)

Names	Title	Unit	Responsibility/ Specialty
Lending			
Diana Rebolledo	Language Program Assistant	LCSEO	
Dinesh Aryal	Operations Analyst	LCSEN	
Diomedes Berroa	Sr. Operations Officer	LCOPR	
Edward W. Bresnyan	Agricultural Economist	LCSER	
Fabienne Mroczka	Financial Management Specialist	LCOAA	

George Ledec	Lead Ecologist	LCSEN	
Gerardo Segura	Sr. Rural Development Specialist	LCSER	
James Smyle	Sr. NRM Specialist	LCSER	
Juan Martinez	Sr. Social Scientist	LCSEO	
Juan Morelli	Consultant	FAO	
Katherina Gamharter	Legal Associate	LEGLA	
Matthew McMahon	Lead Agriculturalist, TTL	LCSER	
Rosita Valencia de Estrada	Procurement Specialist	LCSPT	
Solange Alliali	Sr. Counsel	LEGLA	
Teresa M. Roncal	Operations Analyst	LCSER	
Xiomara Morel	Sr. Finance Officer	LOAG1	
Matthew McMahon	**TTL,** Sr. Agricultural Specialist	LCSAR	
Supervision/ICR			
Dinesh Aryal	Sr. Natural Resources Mgmt. Spec.	AFTN3	
Diomedes Berroa	Lead Specialist	OPSOR	
Nabil M. Chaherli	Sector Leader	AFTSN	
Francis V. Fragano	Regional Safeguards Advisor	SARDE	
Mary Lisbeth Gonzalez	Senior Social Development Spec.	LCSSO	
Yurie Tanimichi Hoberg	Senior Economist	AES	
George Campos Ledec	Lead Ecologist	AFTN3	
Juan Martinez	Sr. Social Scientist	EASIS	
Fabienne Mroczka	Financial Management Specialist	LCSFM	
Alexandre Borges de Oliveira	Sr. Procurement Specialist	EASR1	
Diana P. Rebolledo	Language Program Assistant	LCSAR	
Teresa M. Roncal	**TTL,** Operations Analyst	LCSAR	
Erika Eliana Salamanca Duenas	Program Assistant	LCSSO	
Gerardo Segura	**TTL,** Sr. Rural Development Specialist	LCSAR	
Norman Bentley Piccioni	**TTL,** Agricultural Economist	LCSAR	

(b) Staff Time and Cost: GEF (P083045)

Stage of Project Cycle	**Staff Time and Cost (Bank Budget Only)** [25]	
	No. of staff weeks	**USD Thousands (including travel and consultant costs)**
Lending		
FY04	7.92	42.95
FY05	8.33	58.03
FY06	22.47	85.73
Total:	**38.72**	**186.71**
Supervision/ICR		
FY07	17.05	74.65

[25] Bank system does not show any cost information for FY15, including under the Trust Fund.

FY08	14.63	77.81
FY09	17.69	98.48
FY10	19.66	99.96
FY11	17.72	92.11
FY12	11.15	59.26
FY13	9.31	71.18
FY14	0.68	3.40
Total:	**107.89**	**576.85**

Annex 5. Beneficiary Survey Results

A. **PRORURAL** (Barzev, 2015)

Project context and Development Objectives

5.1 The Rural Productivity Project (PRORURAL) of the Ministry of Agricultural Development (MIDA) of Panama was begun in 2007 and concluded on the 27th of January, 2015, after receiving an 18-month extension to complete the disbursement of all of the funds, and another 6-month extension to do the required follow-up to account for all of the funds the associations received. To finance the PRORURAL Project, the government of the Republic of Panama took out a loan with the World Bank (IBRD 7439-PAN) for US$39.4 million, the Panamanian government added US$1.9 million, and the beneficiaries contributed an estimated US$5.6 million.

5.2 The Project Development Objective (PDO) was to contribute to increased productivity among organized rural small-scale producers through their participation in productive alliances, while ensuring the sustainable use of natural resources and the conversation of globally important biodiversity. A variety of sub-projects were proposed for associations with existing legal status in 3 provinces (Herrera, Los Santos, and Veraguas), plus the Region of Ngäbe Buglé. The prioritized productive activities were agriculture, livestock, fishing, apiculture, artisanry, and salt production. A total of more than 25 productive areas were identified.

5.3 According to the Project Appraisal Document (PAD), the project was designed to contribute to improving the incomes, employment, modernization, and productive organization of associations of small-scale producers with low income and low educational levels by integrating them into productive chains, while ensuring that due attention was given to social and environmental sustainability.

Factors affecting the implementation of the Project and its results

5.4 At the beginning of the process, several difficulties were encountered that limited the implementation of the sub-projects, such as the lack of the capacity to handle the administration and accounting, the lack of participation by the members of the associations, and the lack of markets for the products.

The design and implementation of the sub-projects was slow and on some occasions the proposals of the sub-projects were rejected by the PRORURAL Project.

Moreover, there were many problems and delays with the initial disbursement of funds, which delayed the execution of several sub-projects.

5.5 To achieve the proposed objective, first a series of training and technical assistance activities had to be carried out. The training focused on two areas: (i) on the organizational and administrative aspects; and (ii) on technical and productive issues. Although the sub-projects had a positive impact, there are still deficiencies that could be improved. It was not possible to conduct the financial analysis based on the Net Present Value (NPV) and the Internal Rate of Return (IRR), because at least half of the cases did not provide enough data to construct a cash flow based on several time periods. Since the initial investments were very high, one period was not sufficient to conduct an efficacious financial evaluation.

The lack of information was due to two reasons: (i) the delay in the execution of some of the sub-projects meant there were few periods to be observed; and, (ii) even though the associations maintained accounting records of their costs and incomes, the financial reports managed by the PRORURAL Project were of poor quality. The information presented in the financial reports was

in narrative form in "Word" format and did not break the data down in a way that provided an accurate picture of the cash flow. Moreover, much of the information was based solely on the transactions conducted with the commercial partner and often lacked information about transactions with independent intermediaries. Thus, data is significantly under-reported.

5.6 The Business Plans that were developed at the start of the project overestimated the needs of the project and did not serve as valid planning tools for the execution of the sub-projects. Financial reports form the basis of any analysis of this type. They must include all the pertinent information at the beginning of the sub-projects and an efficient follow-up at their conclusion. This was not the case in this project. The deficiencies and information gaps in the financial reports were later rectified using surveys to update the baseline of the associations and the individual producers, as well as a closing survey. Even using all the instruments of information collection mentioned above, the information itself was not homogeneous. For example, the net benefits information from the interviews with the associations does not necessarily correspond to the net benefits presented in the financial reports but analysis shows that at least the general trends were similar.

Methodology

5.7 To evaluate the results of the project, data available from the following sources of information were used: *i) Survey to update the baseline of the individual producers (2,493 observations); ii) Survey to update the baseline of the associations (77 observations); iii) Financial files of the sub-projects (65 observations); iv) Closing survey (65 observations); v) Direct interviews/meetings with the associations (9 observations) and; vi) Reports of systematization made by the associations (16 observations).* Since there was no reliable baseline and there were no specific indicators that could be monitored, these instruments were used to try and capture the impacts of the project. These instruments gathered information from the point of view of the beneficiaries, including their perspective about impact of the sub-projects on their household incomes.

5.8 During the visits to the field, it was observed that all the associations had some system of accounting. The financial data they recorded was sent to the project, where the financial reports were produced. Even though the association members have poor educational backgrounds, the person in charge of the financial dealings generally has the capacity to record the expenses and revenues in a satisfactory manner. However, on several occasions it was observed that the accounting data did not necessarily contain a complete and accurate picture of the real financial situation: (i) they were summaries submitted in "Word" format that did not allow an accurate reconstruction of the cash flows, since the costs and revenues were not broken down in sufficient detail; (ii) moreover, they did not include all the transactions made by the association, concentrating mainly on the transactions conducted solely with the commercial partner; and (iii) not all of them contained enough time periods to construct a reliable cash flow. In fact, out of a total of 65 cases, 30 cases reported data for only one time period and 7 cases submitted no financial data at all. Although some time periods recorded net benefits, considering the fact that the investments were relatively large and the periods few, the Net Present Value (NPV) necessarily ended up negative. For these reasons, the financial analysis used only those associations that had positive net benefits (NB).

Evaluation of the results

75% of the beneficiaries were men and 24% were women. The majority of the beneficiaries were in the provinces of Herrera, Los Santos, and Veraguas, although there were also a couple in the Region of Ngäbe Buglé.

The average age of the producers who were interviewed varied between 41 and 49 years of age and the family size varied between 3 and 5 persons.

A majority of the producers (60%) had never made it past primary school; 18% had attended secondary school; and 9% had attended university (of which only 5% had graduated).

With the exception of Herrera, indigenous persons were involved in the implementation of the sub-projects in all the provinces; however, these indigenous persons accounted for barely 2% of the total sample.

65% of the beneficiaries were in the lowest level of family income. This was in keeping with the objective of the PRORURAL Project to help producers who did not have sufficient financial capacity to improve the productivity of their plots and ensure the sustainable management of the ecosystems.

It is important to point out that only 40% of the producers had debts. However, 46% of them did not have the capacity to take out loans and, hence, had no financial support of any kind and no capacity to invest in productive improvements. In addition to their inability to cover their debts, 70% of the producers in the sample did not have the capacity to save.

In conclusion, a majority of the beneficiaries needed financial support to be able to invest in their farms and productive plots, make changes in their production, and improve sustainability.

Considering the various needs of the communities, the sub-projects funded a wide variety of productive activities. In Los Santos the most important sub-projects dealt with milk; while in Herrera, bean and corn production predominated; fish and bananas were the main sectors in Veraguas; and in the Region of Ngäbe Buglé, the main areas were handicrafts, bean production, and honey production.

Overall, the average PRORURAL investment per sub-project was US$160,000. The contribution made by the community, mainly manual labor and land, accounted for an average of 44% of the total PRORURAL investment (high because it includes – where relevant - the value of land allocated to the subproject, as well as labor).

However, only 76% of the members of the associations were beneficiaries of the sub-projects. For one reason or another, not all association members implemented sub-projects, i.e. were active participants.

The determination of who would be the beneficiaries of PRORURAL was discussed within the associations. At the conclusion of the project, of the beneficiaries who initially participated with PRORURAL, 74.8% continued their involvement in the sub-projects. The attrition rate was extremely low (1.2%).

Financing, training, and technical assistance were provided to the sub-projects to improve the administrative, organizational, and productive aspects and enhance the prospects for success. The goals in the productive, commercial, and organizational plans were established as part of this process.

All the provinces reported that they felt the goals of the project had been achieved, with an average of 77% for the productive goals, 80% for the commercial goals, and up to 97% for the organizational and administrative goals.

Almost all the beneficiaries of the sub-projects reported receiving financial and environmental benefits, not only for themselves, but for the communities at large where the projects were implemented (where 85% of all the individual producers were reported to be implementing conservation techniques as part of their productive activities).

In addition, the beneficiaries reported that they experienced a higher degree of satisfaction working with their commercial partners than with the independent intermediaries.

Overall 69% of cases in the sample had positive net benefits.

Conducting an analysis by productive activity, 100% of the cases involving fishing and salt production had positive net benefits; followed by 88% of the cases involving livestock, 67% in apiculture, 53% in agriculture, and 50% in artisanry.

The items with the highest frequency of production were milk, corn, rice, basic grains, yams, and yucca, among others.

Prior to the implementation of the project, only 821 of the 2,493 producers interviewed (barely 33%) reported having profits.

Table 16: Number of producers with profits without the project intervention

Description	Producers	Percentage
Without profits	1,672	67
With profits	821	33
Total	**2,493**	**100**

Source: Survey of individual producers.

With the implementation of the project, 1,076 of the same 2,493 producers interviewed (43%) reported having profits.

Table 17: Number of producers with profits due to the project intervention

Description	Producers	Percentage
Without profits	1,417	56.84%
With profits	1,076	43.16%
Total	**2,493**	**100**

Source: Survey of individual producers.

In conclusion, the intervention of the project generated a 10% increase in the number of producers who had profits and were engaged in any of the areas previously mentioned. In monetary terms, the average profit per producer with the project rose from 698 dollars to 1,180 dollars—an increase of **69%.**

Table 18: Increase in marginal benefits due to project implementation

Description	Profits without the project (US$)	Profits with the project (US$)
Average profit	698	1,180
Increase in profits due to the support from PRORURAL	69%	

Source: Survey of individual producers.

Overall, the sample of 2,439 producers generated total profits of 2.9 million dollars for the period of 1 year.

The items that generated the most profits were milk, bananas, fish, corn, beans, otoe, and yams.

Table 19: Total benefits by item, sample of 2,493 producers.

Product	Total Benefits (US $)
Chili Peppers	1,430
Sugar Cane	25,749
Ceba	7,000
Milk	743,066
Honey	14,396
Otoe	126,810
Fish	527,080
Pineapple	15,088
Watermelon	16,341
Squash	3,429
Organic Coffee	1,300
Corn	453,984
Bananas	708,523
Beans	177,972
Yams	109,340
Total (US$)	2,931,508

Source: Survey of individual producers.

Observations and lessons

The design and implementation of the sub-projects was slow and on some occasions the proposals of the sub-projects were rejected by the PRORURAL Project.

Several difficulties and limitations were encountered at the start of the process, which hampered the implementation of the sub-projects, including the lack of administrative capacity to manage the project and do the accounting, the lack of participation by the members, and the lack of markets for the products. To overcome these limitations and accomplish the proposed objective, a series of training and technical assistance activities had to be carried out prior to the implementation of the project. The training addressed, on the one hand, the organizational and administrative aspects of the project and, on the other hand, the technical and productive areas.

During the visits in the field, the producers reported that they were satisfied with the training activities that had been carried out.

In regard to the administrative aspects of the sub-projects, a satisfactory level of accounting management was observed; and with regard to the technical aspects, a number of best productive practices were implemented.

Overall, there was an increase in the level of involvement by the members of the associations and a heightened level of awareness with respect to working in teams.

There was a 10% increase in the number of producers who had profits once the sub-projects were implemented. Moreover, profits increased by 69% as a result of the improvements in the administrative and productive aspects.

A high proportion of the associations fulfilled their commitments to recover the investment in working capital under the revolving funds arrangement, thereby ensuring further funding for productive reinvestment. Other associations producing cattle for example, have a three-year repayment term and some had not started repayment.

All of the associations have at least one commercial partner, which significantly improves their access to the markets.

69% of the cases (of a sample of 65%) had positive net benefits. However, this percentage varies depending on the specific productive activity. Activities such as fishing and salt production saw the greatest net benefits, while activities such as agriculture and artisanry saw the least.

Unfortunately it was not possible to conduct a thorough financial analysis based on the Net Present Value and the Internal Rate of Return, because at least half of the cases did not provide enough data to construct a cash flow based on several time periods. As the initial investments were very high, one time period is not enough to allow an accurate financial evaluation. From discussions with the beneficiaries, it was clear that some financial reports of the PRORURAL Project did not accurately reflect the true distribution of benefits. In some cases the commercial partners benefited more from the investments than the direct beneficiaries of the sub-project.

It was a very positive development that the associations were able to establish agreements with commercial partners, which provided them greater access to the markets. However, these relations must be monitored and measured over the medium term to see whether they are advantageous for the associations in the following aspects: (i) the distribution of the benefits of commercialization; and (ii) the freedom and the means to develop other links in the productive chain (e.g., the transformation of products leading to the creation of added value; the diversification of commercialization possibilities).

Finally, in terms of measuring the impact, there was no reliable baseline from which to monitor specific indicators of the project development. Interviews with individual producers and associations had to be conducted in order to gain an understanding as to the impacts and changes brought about by the intervention of the project.

B. <u>CBMAP II</u> (Barzev, 2015)

Project Context Development Objectives

The CBMAP I project (1998 – 2005) was co-financed by a donation of US$8.4 million from the GEF. It was successfully implemented and the natural resources were jointly managed by establishing collaborative processes between the communities and ANAM to: (i) raise awareness about the Mesoamerican Biological Corridor of the Panamanian Atlantic, its natural resources, and threats to its biodiversity; and (ii) promote viable productive systems that generate economic and financial benefits for the rural communities in the Protected Areas and their buffer zones.

CBMAP II (2006 – 2015) was the second phase of the same project. Here the aim was to increase rural productivity and consolidate the Mesoamerican Biological Corridor of the Panamanian Atlantic Project. Component 1 of the project sought to build productive capacities and involved an investment of US$ 7.8 million dollars in Environmental Investments (EIs).

Factors that affected project implementation and results

Not all of the producer organizations had legal status prior to the intervention of the project and some of them did not go through the legalization process until the end of the project. However, all of them managed to organize themselves in a more efficient manner and form functional governing councils. Within the associations the funds were distributed equitably among the members and the decisions about the use of the funds were consensual.

Not all of the associations had procedures in place to manage their finances when the project began. However, during the course of the project, at least a minimum system of recording and managing of expenses was integrated into a high percentage of the EIs.

In the beginning, there was an evident lack of management skills with regard to the organizational and administrative aspects, as well as in the productive domain. Several training activities were needed to address these deficiencies in order to implement the EIs more efficiently. Despite improving the administrative and productive areas considerably, commercialization of the products had a variable experience. Many producers continued to do business through independent intermediaries – not part of an alliance - which reduced their profits with respect to the commercialization of their production. Further, such sales were usually not reported which meant that cash flow/related data was significantly under-reported.

Methodology

The CBMAP II Project financed support to 350 associations of producers to implement sustainable productive activities through various environmental investments.

To conduct the analysis, two instruments/formats of information collection were used: (i) the Format of Financial Analysis and the Format of Closing Protocols. The formats were applied directly to the sub-samples of the beneficiary associations of CBMAP II by region.[26]

[26] The EIs in Herrera province were not analyzed because the project technician did not submit the information in time.

The Financial Format used a sample of 146 randomly-selected EIs, which accounted for 42%, while the Closing Protocol Format comprised a sample of 60 EIs, which accounted for 17% of the total.

These two formats were used to analyze the following aspects that assessed the impact of the project:

- *Characteristics of the communities that implemented the EIs.*
- *Type of EIs funded.*
- *Solutions that addressed issues arising in the EIs.*
- *Expectations of the communities.*
- *Technical and administrative strengths and limitations of the groups that implemented the investments.*
- *Opportunities and restrictions regarding the implementation of the EIs.*
- *Change in the attitude of the communities towards the environment.*
- *Economic analysis of the EIs.*

The economic analysis is in essence a cost-benefit analysis carried out by analyzing the various financial indicators. The annual net benefits per family were estimations (incomes minus costs per year).

The Net Present Value (NPV) of the cash flow was projected for a period of 5 years: (i) the total NPV was estimated; (ii) the commercial NPV (total NPV minus self-consumption); (iii) the NPV of externalities (carbon fixation and water infiltration) and; (iv) the social NPV (adding total NPV and the NPV of externalities). This was used to determine the private and social contribution of the EIs.

In addition, the level of the Internal Rate of Return (IRR) greater than the Discount Rate (DR) of 10% was calculated.

1. **Evaluation of the Results**

Three main economic models were identified: i) silvopastoral models; ii) production models for organic fertilizers, and; iii) models based on tourism and sustainable handicrafts.

Table 20: Types of Environmental Investments.

Mixed Productive Models	Description	Items
Agricultural activities	Principal Crops	*bananas, coffee, cocoa, and oranges*
	In combination with other crops	*yams, pineapple, medicinal plants, orchids, coriander, pixbae, bananito (dwarf bananas), lemons*
Productive activities	Associated with agriculture	*compost, organic fertilizers; breeding of animals*
Non-agricultural activities	Compatible with the ecosystems	*Tourism and handicrafts*

Source: Financial Formats and Closing Protocols.

Based on the sub-samples, the intervention of the beneficiary associations occurred in an area comprising 2,232 ha and they reforested 1,325 ha.
The productive associations that benefited from the project are of a low economic level.

The income per person in some regions is barely US$ 31 per month, far below the minimum wage.

The net benefit generated by the productive model financed by CBMAP II accounts for a significant percentage of family income (from 12% up to 53%); and in the majority of cases this activity represents their main economic activity.

In every region of the CBMAP II Project monetary amounts varying between US$15,000 and US$25,000 were disbursed. The local contribution, which mainly consists of manual labor, accounts for an average of 17% of the investment made by the project.

Only associations representing groups of producers were funded (individual producers were not funded) to ensure a stronger impact on the communities selected for the project.

Beneficiary groups have an average of 28 members per association and comprise both men and women. There is a disparity in the proportion of men and women in the various regions: Chiriquí, with 52% men and 48% women, has the most equitable proportion; while Los Santos, with 94% men and only 6% women, has the least.

There were 350 beneficiary associations involved in the project, with approximately 10 thousand direct beneficiaries (members) and some 50 thousand indirect beneficiaries, when the members' families are included.

A majority of these beneficiaries do not have access to alternative financing other than the funds received for the project. Although a few associations in Veraguas and the Region of Ngäbe Bugle y Veraguas report that they have their own resources, the other provinces do not enjoy such possibilities. Moreover, even those that say they have their own funds, do not necessarily have enough to reinvest in productive activity.

As part of the implementation of the EIs, almost 100% of the beneficiaries of the project received technical assistance during the period of the investments (3 years on average). All of the productive models encouraged the use of manual labor and local inputs; in other words, the use of resources available in the local area.

The efforts were focused on improving the productive process. In this regard, the beneficiaries improved their production of raw materials, but without changing the physical state or form of the product (that is, without significantly adding value to the raw materials).

All of the productive models promoted organic agriculture, agroforestry, and a series of environmental measures (described below).

The attitude of the producers towards the environment changed as a consequence of the implementation of the EIs. They intend to replicate in their own plots of productive land (which were not included in the project) what they learned during the implementation of the EIs.

Moreover, the implementation of the EIs has generated additional resources for the family finances due to the productive improvements and the diversification of production.

The process strengthened the organization of the associations, formalizing their legal status, installing a minimum kind of accounting system, and establishing some goals.

Nearly 100% of the beneficiaries stated that they were interested in continuing to use the productive models once the project support finished (either by implementing them on their own or by seeking additional funding).

As for the prospect of a new project, all the beneficiaries were interested and willing to present work proposals once funding became available and the call for the project was officially announced.

Finally, the number of goals that were set at the beginning of the implementation of the EIs were analyzed and compared with the number of goals that were achieved 100% when the time period of the project intervention ended. On average there were 3-4 goals per EI. Most of the regions experienced a high success rate in achieving the goals (the only province with a low success rate was Boca del Toro, with 66%).

Table 2 shows that all the members in all the regions received additional benefits by implementing the economic/productive models promoted by the CBMAP II Project. However, given that there is a high percentage of household consumption, a part of the production was not commercialized, but rather formed part of the basic food needs of the families. This is not per se a negative development; however, if a large part of the production is consumed on-farm, the incomes are not available to be reinvested in a new productive cycle (e.g., due to the high level of household consumption, no earnings were realized in the region of Los Santos).

Table 21: Net benefits per member (family).

Region	Total NB per family	Commercial NB per family	Incomes not realized due to self-consumption
Comarca Ngäbe	1,253	760	39%
Bocas del Toro	1,923	1,499	22%
Coclé	726	397	45%
Chiriquí	2,981	2,886	3%
Veraguas	1,004	609	39%
Los Santos	850	(308)	-36%
Kuna Yala	743	217	71%

Source: Financial Format.

In terms of the Net Present Value, Table 9 analyzes the costs and incomes for a 5-year period. It can be seen that the commercial NPV (based solely on commercialized production) has the lowest NPV, and even presents negative values in Coclé, Los Santos, and Kuna Yala.

The total NPV (total production minus the natural losses) increases significantly, although there are some losses in Coclé.

Once the value of the positive externalities is calculated (the capacity of carbon fixation and the water infiltration capacity in reforested areas within the framework of the project), the social NPV is estimated. The social NPV has the highest value and is positive for all the regions.

Currently the beneficiaries do not receive remuneration for the positive environmental externalities that are generated; however, the increase in social NPV shows that using the best productive practices brings returns not only to the inhabitants of the rural farms, but also to society in general.

Table 22: Comparison of Net Present Values (average values in US$).

Region	Commercial NPV	Total NPV	NPV of the Carbon Fixation	NPV of the Water	NPV of Externalities	Social NPV
Comarca Ngäbe	6,953	37,239	11,347	12,401	23,748	60,987
Bocas del Toro	40,996	86,201	17,034	18,617	35,651	121,852
Coclé	(23,084)	(1,541)	11,142	12,177	23,318	21,777
Chiriquí	217,307	223,796	12,433	13,588	26,021	249,816
Veraguas	479	21,940	6,669	7,289	13,957	35,898
Los Santos	(62,511)	7,125	9,656	10,553	20,209	27,334
Kuna Yala	(5,035)	24,106	3,547	3,715	7,262	31,368

Source: Financial Format.

As Tables 4 and 5 show, a majority of cases in every region had positive NPV (with profits at the end of the 5-year projections), with total NPV being significantly higher than commercial NPV. In other words, self-consumption implies a loss of economic income, even though, as mentioned above, it may well contribute to food security for the families.

Hence, the key is to find a balance between self-consumption and reinvestment in productive activity.

Table 23: Number of cases with positive commercial NPV.

Positive commercial NPV	Frequency	Percentage
Negative	69	47%
Positive	77	53%
Total	**146**	**100%**

Source: Financial Format.

Table 24: Number of cases with total positive NPV.

Total positive NPV	Frequency	Percentage
Negative	30	21%
Positive	116	79%
Total	**146**	**100%**

Source: Financial Format.

As in the cases of positive NPV, the cases of positive IRR greater than the Discount Rate (DR) are analyzed. Once again we observe that the percentage of cases with positive IRR increases when total production is compared with commercial IRR (88% vs 76% respectively).

Table 25: Number of cases with positive commercial IRR.

Positive commercial IRR	Frequency	Percentage
Negative	35	24%
Positive	111	76%
Total	**146**	**100%**

Source: Financial Format.

Table 26: Number of cases with total positive IRR.

Total positive IRR	Frequency	Percentage
Negative	18	12%
Positive	128	88%
Total	**146**	**100%**

Source: Financial Format.

Based on the data analyzed, the second phase of the CBMAP Project has had a positive economic impact on the beneficiary associations.

Lessons Learned

All of the beneficiaries who were interviewed individually or during workshops reported a high degree of satisfaction and appreciation for the support provided by the CBMAP II Project. A majority of the beneficiaries had never before received support from other institutions/programs, often due to their geographic inaccessibility.

In the case of agroforestry EIs, the majority of cases involved renewing plantations. The local communities in general have considerable experience in agriculture, so the support provided by the project has served to give added value to the existing activity and add new plots to production.

The project supplied inputs, promoted the complementary planting of new crops with potentially better markets, and provided training that served to improve the efficiency of the productive plots.

The main result was that all the productive areas of the beneficiaries are engaged in organic production and the producers have learned to produce their own organic fertilizer.

In purely environmental terms, the measures promoted under the framework of the project have been successfully assimilated by the producers. The conservation of the ecosystem has brought improvements in production and in the quality of the lives of the families.

The main strength of these initiatives is that the EIs are productive experiences in terms of community-based organization; and this aspect enhances the overall impact of the project.

The beneficiary associations display a higher level of organization at the stage of requesting funding and entering into production; and a lower level of organization when it comes to commercializing their products.

In all the organizations the funds were distributed equitably among the members and the decisions about the use of the funds was consensual. In some indigenous communities (e.g., Kuna Yala), the benefits generated by the EIs were distributed throughout the entire community.
Even so, the administrative component needs strengthening (so that all the associations have legal status, complete accounting records, and are capable of managing their own funds) to reach a level of greater independence, a higher capacity for growth, and access to new markets.

In economic terms, 79% of the cases at the national level had positive Net Present Value, and 88% displayed a positive Internal Rate of Return, higher than the DR. Moreover, most of the experiences have not only been profitable but can be expanded and/or replicated.

By implementing a series of environmental measures, the productive models also generated positive social externalities (a carbon fixation capacity and a water infiltration capacity).

This translates into tangible economic benefits. Since the producers who are generating these environmental benefits are not being compensated for their efforts, it is recommendable to support them in their request for further funding in order to ensure continuity to the practices that have been initiateA large majority of the associations have acquired a new vision about what it means to work together. They are ready to enter new markets where the demand for quality products is higher and the prices are more favorable.

Annex 6. Stakeholder Workshop Report and Results

ANAM organized a series of consultations with key stakeholders between April and June 2014, prior to project closure. Consultations involved various stakeholder groups based in Bocas del Toro, Coclé, Veraguas, Herrera, Chiriquí, Los Santos and the Ngabe Buglé *Comarca*. Results of these forums are presented below.

A. National and International Experts:

Achievements of CBMAP II in supporting environmental conservation:

The project was very important for Central America and the Caribbean because of its contribution to conserving biological diversity in this key area between the north and south Americas, and has facilitated a better comprehension of all the natural, historical and actual processes which have played a role.

The project was also well-conceived in terms of the link between conservation and sustainable use of natural resources by local communities, indigenous groups and the preservation of socio-cultural values in Panama.

CBMAP II helped to improve the image of sector institutions at the community level by providing them with viable responses which can contribute to improving their lives and in having less conflict with environmental authorities over the use of environmental resources.

CBMAP is well-positioned and dealt with themes in the interior of the country but more communication and dissemination on conservation is needed in the capital where decisions are taken.

What were the principal achievements of CBMAP II which might be replicated in the future?

The strengthening of SINAP through updating of knowledge, plans and programs, methodologies, training and support to participation of communities in managing natural resources focused on conservation over the long-term. In this way, SINAP has a methodological proposal for preparing standardized management plans which can be replicated in all areas.

There is now an extensive methodology for evaluating managerial effectiveness (SMAP) with the inclusion of new indicators to evaluate implications for and effects on eco-tourism, valuation of the public impacts and use of the marine portion of Protected Areas and indicators for

vulnerability and risk, as an improved tool for evaluating management capacity in PAs and in this way to take better decisions about their management.

In regard to products generated, which recommendations would you make to ensure their sustainability and integration into environmental institutions?

To strengthen SINAP, support implementation of their Management Plans (MP) already prepared and updated such as executing the activities in their respective programs (in both cases); prioritize measures for protection and security in PAs; include in MPs an analysis of the objectives of conservation and studies on the vulnerability of the PAs in regard to climate change; strengthen technical and methodological instruments for planning and mechanisms for coordination and management as well as revising, updating and normalizing the legal framework for SINAP and declaration of the PAs. Bring in private firms which could cooperate through their social responsibility programs to co-finance research activities in the PAs.

In regard to the SNIMDB, elevate the level of knowledge about biological diversity, continue promoting the compilation and updating of information at the national, regional and local levels through research, monitoring and carrying out rapid ecological evaluations.

Revise environmental norms and if necessary modify them, e.g., norms for evaluating aggregate impacts of various projects on the same resource (soil, water, forests, biodiversity) of the EIA. Establish a fund to recuperate resources affected.

Work in a more integrated way with local authorities and strengthen their technical and logistical capacities and their resources so that they can play a role in the desired environmental decentralization policy. The PAM are an opportunity to guide them in environmental themes and demonstrate the essential role of the municipality in environmental management as is already done in other countries, and involve civil society more and train them. There is much information which is not shared with the municipalities.

Strengthen the organizational level of the rural population, and facilitate this so that a greater number of CBOs can obtain legal status; work in coordination with other MIDA programs, for example, rural development.

Strengthen assistance, from the start of a project, in marketing and commercialization to improve competitiveness and consolidate the environmental investments integrated with markets. It is recommended not to work with isolated groups, only chains linked to a strong economic actor which can facilitate commercialization, increase product quality and strengthen the value chain.

Construct a project baseline and have measurable indicators which enable evaluation of investment impacts whether in the PAS or community groups.

Increase the number of personnel in the coordination unit to attend to all demands which often exceed the unit's capacity.

Establish the means for direct communication with Regional Administrative Offices responsible for executing field activities.

Based on your experience, would the CBMAP II cooperative model of alliances and agreements be a recommended mechanism for future actions?

The model for cooperation within and outside Panamá is recommendable because the collaboration is enriched with experiences, knowledge and strengthens the quality of the results achievable. ANAM needs to have agreements with institutions, UP, NGOs – this model was successful under CBMAP II.

CBMAP II supported strong collaboration with universities and STRI. These agreements supported CBMAP II structurally as well as the structure of data bases so that they could become compatible with STRI at the global level which has been very positive for knowledge related to the status of biodiversity in Panamá. Also, as STRI has relationships with international institutions, this management/development has expanded to other sites (STRI).

Construction of the forest coverage and soil usage map (2014) under agreements with FAO-UN/REDD-ANAM/CBMAP II has been a major experience because it created institutional and technical capacities (MIDA, ANAM, ARAP).

Could you identify, in your judgment, aspects which could be improved or strengthened in future projects dealing with environmental management?

From a technical viewpoint, the implementation of follow-up projects could strengthen training for park guards in themes such as planning and the management of PAs; train specialists in the design of touristic projects to increase the public's sustainable use of the PAs, as well as training specialists in geographic information and to promote the study and planning of the marine component of coastal and marine areas.

While the environmental part had strong indicators, one perceives an imbalance in the distribution of resources to achieve these indicators and that these indicators are reflected in institutional performance. There is a lack in some cases of the means to convey project results to decision-makers.

In regard to poverty alleviation, the project worked with very small organizations and focused mostly on food security. Since the beginning, the project had to work with an inter-institutional committee (including MIDA) to guide the subprojects and not duplicate efforts in supporting the environmental investments. Internally, the project vision initially was somewhat fragmented which limited its early results, and diverse institutional demands were difficult for a single project to absorb.

What is your general opinion about project implementation?

The project in general terms was an integrator with its results linking various aspects of the larger reality related to the conservation of biological diversity, its use and community participation. The implementation process was intense, dynamic, disciplined and efficient and required a huge effort from the coordinating staff who in their own right promoted a high degree of recognition and joint action in the country.

ANAM, through CBMAP II, brought the project to the neediest and those without access, with positive values such as financing and other services. However, this needs more monitoring/oversight and there were only one or two specialists per region with a large number of subprojects to attend to. In the commercialization aspects, motivated by the delay in the first four years, the beneficiaries of CBMAP I were not worked with. This experience demonstrated that changes in behavior require a process lasting several years beyond the life of an environmental

investment. By starting again and organizing new groups, the project lost the opportunity to further strengthen the beneficiaries and gains of CBMAP I.

In respect of the SNIMDB, there was no system of scientific information on biodiversity, but to initiate it late in project execution diminished or under-valued this effort and it needs further strengthening with a new initiative.

B. Protected Area Managers and Administrators:

What has been the major contribution of CBMAP II for improving the management of PAs under your responsibility?

In addition to preparing the Management Plan of the HIIDM (Comarca Ngabe-Buglé), having a workshop on CBMAP II in parallel with ANAM's which facilitated the coordination, participation and permanent exchange of involved actors; and facilitated ANAM's presence in our locations where before there were not the resources to go there. Effective work was done with little resources and the training received was a great help for everyone. We achieved projects which had never been developed in the Comarca, and in which women participated in the execution and direction of many of them.

We organized community groups located on the periphery of the PNGDOTH (Coclé), trained them and strengthened their organizations, facilitating the execution of projects enabling them to improve their quality of life. These groups have now become defenders of the protected areas and helped to recuperate degraded areas through their subprojects, improve the environment via the connectivity of reforested areas with agro-forestry projects and incorporate them into existing forests.

Achieved positive impacts through the environmental investments in cooperatives and micro-firms such as the case of Montuoso (Herrera Province) where we strengthened six cooperatives focused on production and the theme of environment with the management of various funds to strengthen their organizational capacity and localities. Also, we facilitated the constitution of a high level inter-institutional committee in the province which grouped together all the entities coordinating interventions in the PAs with ANAM. We also prepared a Manual for organic production of sweet potato which has been adopted by MIDA and producers.

In the PNCH (Province of Los Santos) we worked in buffer zones having a strong impact on the populations there and strengthening the natural reserves, providing monitoring of some 35,000 ha making up this park.

What is your recommendation for achieving sustainability of the actions developed under this project?

Create a local unit to monitor and follow the projects.

Strengthen PAs as a key measurement of ANAM's environmental management, for which it is necessary to strengthen, with more human resources for the protection of PAs and to define a baseline to evaluate impacts of execution in each PA.

Establish direct channels of communication with Regional Administrative Offices and have a more direct coordination of SINAP with the PAs and maintain relationships with the community to support PA improvement.

Project activities ought to be included in the POAs, with a budget and clear institutional directives to enable projects to be followed closely and sustained, seeking new sources of financing and strengthening coordination and communication with the communities and organized groups.

ANAM needs to establish a round-table which includes all local actors in the development of institutional activities and regional projects.

What is your general impression about the management of CBMAP II in supporting the strengthening of SINAP?

In general terms the project substantially helped the PAs. It invested a lot and had wide general support in the Santa Fé Park, helping many people. It could be a model project and be applied at small scale in each community. Its contribution to SINAP was extraordinary and has updated many plans and has improved limits and titles, including in negotiations with *Minera Panamá*.

The project had an efficient administrative and institutional structure, good leadership and was managed in an efficient and efficacious way. However, monitoring and communication with the regional structure needed strengthening. It needs to be more fluid and continuous/permanent.

C. Indigenous Leaders, NGOs, Municipal Authorities and ANAM Technicians:

126 stakeholders concluded that CBMAP II, executed by ANAM, was a successful experience: funds were managed transparently, as demonstrated by financial reports and audits. This experience ensures that the capacity and experience will be used to execute a new project in a similar manner.

It was recommended that marketing and commercialization receive greater attention in the new operation.

Base organizations requested that the new project continue to support community groups and that what was built be sustained.

In regard to the new GEF, all agreed that the concept was sound.

Indigenous groups expressed satisfaction with the new GEF and asked that in the framework of the Indigenous Peoples Participation Plan, laws pertaining to *comarcas* and indigenous people – in particular Law 10 of 1977 regarding the Ngabe-Buglé *Comarca* and collective land ownership of these Indigenous Peoples, and Law 11 of 2012 which established a special regimen for the protection of mineral, water and environmental resources in the Ngabe-Buglé *comarca*.

In regard to the proposal for *fideicomiso* for SINAP, this proposal for a patrimonial fund comprising resources from diverse sources including the private sector, and payment for services, penalties, taxes, fees in PAs, emerged from recommendations from the project's exit strategy and the need to provide sustainability for the activities of CBMAP II and financial independence for SINAP. Up till this point, steps had been taken to create a foundation which would administer these funds, and mechanisms would be defined by the new GEF.

There are two positions regarding this proposal: environmental NGOs which do not agree with a private foundation managing public funds (it is estimated that some funds will be provided by the private sector but others, above all those generated in the PAs, will be public funds). Base

organizations stated that they do not object to the creation of a *fideicomiso* arrangement and a foundation.

NGO representatives considered that an organization which already exists, such as the NATURA Foundation could administer a *fideicomiso* (they already administer other funds) however, it is necessary to take into account that the future administration of the *fideicomiso* will have among its functions the generation of mechanisms designed to ensure the sustainability of SINAP and to continue activities with community groups, which are outside the competence of the NATURA Foundation.

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

Formal Translation

A. Summary of Borrower/Client ICRs

PRORURAL: Executive Summary of Borrower Completion Report[27]

The Rural Productivity Project (PRORURAL) was a credit operation for US$39.4 million between the Government of Panama and the IBRD/BM (No. 7439-PAN). It was executed jointly, from November, 2007 to January, 2015, by the Ministry of Agricultural Development (MIDA) and the National Environmental Authority (ANAM), now the Ministry of the Environment (MIAMBIENTE).

In this operation, US$29.4 million of the loan from the IBRD was allocated for PRORURAL activities (Components 1, 2, and 4) to be executed by MIDA and US$10.0 million (Component 3) to be executed by ANAM as part of the Mesoamerican Biological Corridor of the Panamanian Atlantic Project (CBMAP II). With counterpart support from the Government of Panama (US$1.9 million) and contributions from the beneficiaries (US$5.6 million), the total size of the project was estimated at US$46.90 million.

MIDA-PRORURAL was implemented in 26 districts of the provinces of Herrera, Los Santos, and Veraguas, and in the district of Ñürün in the Ngäbe Buglé region.

The Global Objective of the project was "*to contribute to increased incomes and employment of rural small-scale producers in Panama*," and its Developmental Objective was *"to contribute to increased productivity among organized rural small-scale producers through their participation in productive alliances, while ensuring the sustainable use of natural resources and the conservation of globally important biodiversity."*

MIDA-PRORURAL was organized in four components. Components 1, 2, and 4 were executed by MIDA and component 3 by ANAM. The results of component 3 were presented in the Completion Report of the Project, CBMAP II. The three components executed by MIDA were the following:

Component 1. Support for Productive Alliances (Total Cost US$6.4 million; IBRD financing US$6.1 million and the Government of Panama US$0.3 million). The purpose was to help the producer organizations comply with the requisites (viable business plans) to opt for PRORURAL investment funds in the form of the subprojects financed by Component 2.

Component 2. Rural Productive Alliances (US$18.7 million; with IBRD financing the entire amount, US$18.7 million)[28]. The objective was to create productive and commercial capacities,

[27] Completion Report of the Rural Productivity Project (Final Document), ANAM/Alicia Pitty Navarro, March, 2015.

[28] The subprojects were financed 100% with IBRD funds and local contributions; no accounting records were kept of local monetary contributions.

as well as financial capital, in rural producer associations by facilitating commercial alliances and providing financing and technical assistance.

Component 4. Project Management, Monitoring and Evaluation. Total cost US$4.1 million; with IBRD financing US$3.3 million and the Government of Panama US$0.8 million**.** The objective was to facilitate the implementation and supervision of the financial, accounting and administrative aspects of the execution of the other components.

Among the aspects that had a negative impact are the following:

Weak implementation capacity during the first years. The design of the project overestimated the amount of money needed to finance the project (by around US$500,000) and the size of the organizations (50 or more members per association). This limited execution during the first years of the project because this capacity simply did not exist in the areas where the project was being implemented. Moreover, it generated unwanted effects, such as drawing up business plans with administrative, financial, and productive dimensions that were out of keeping with the local reality. This, in turn, led to poor technical and financial execution, with only 21.4% of the funds in the PAD budgeted for the period between 2007 and 2011 being used.

Poor quality of the profiles and business plans to finance the subprojects. Until March, 2011, the medium-term evaluation (MTE) showed the following: a lack of efficiency in selecting, approving, and financing the subprojects; limited potential to develop economic ventures; producer associations with little capacity to enter the market; a productive approach centered on primary production; little interest and potential to develop value-added products; and a lack of monitoring during the implementation of the subprojects executed by MIDA. More than half of the profiles and business plans that had been approved, but whose funds had not yet been disbursed, had to be revised and corrected starting in 2011, and the quality of the new plans had to be supervised until the completion of the project.

Slowness in the approval/financing process of the subprojects. The process of making adjustments so the funds could be disbursed to the producer associations (open accounts, and have $500 available in order to open these accounts, obtain legal status when they did not have it, and complete the registration procedures) lasted up to 6 months, hampering the execution of the portfolio of subprojects. This resulted in the Finance Ministry cutting the budget for the project, further restricting the funds to finance the subprojects until 2013.

Changes in government during the implementation of PRORURAL. There was a change in governmental administrations during the project. This resulted in a different interpretation as to the commitments to the beneficiaries and affected relations with MIDA, all of which had repercussions on the technical and financial execution.

Aspects that had a positive influence to drive the project forward:

Drawing up the PRORURAL-WB action plan to improve the performance of the project. Defining the activities and setting goals, along with constant advising and supervision from the WB, rectified the situation and improved performance. The execution of funds rose from 21.4%, for the period from 2007 to 2010, to 76.6%, for the period from 2011 to 2013, finally reaching 98% upon the completion of the project. Among other things, the plan included: (i) lowering the ceiling of the subprojects (up to $250,000) and the size of the organizations (15 members or more / down from 50); (ii) a deep restructuring of the quality of technical assistance; (iii) modifying the criteria for subproject selection; and (iv) restructuring the UCP to form a technical unit and

integrate a monitoring unit.

Management dynamic of the UCP. The project went from being moderately satisfactory in 2011 to being satisfactory in its final year (2014), thanks to the improvements/reforms in the personnel structure of the UCP (incorporation of technical personnel to follow up on the subprojects, a specialist in M&E, and a financial administrator), along with improving/refining the accounting and financial information, among other things.

The main achievements of the execution of MIDA-PRORURAL associated with components 1 and 2 were the following:

Component 1. Support to the Productive Alliances

- From a social perspective, a change in the productive culture of the beneficiaries was achieved. They learned how to work as a group to attain added benefits and they realized the importance of strengthening their organizations to carry out economic activities more effectively in partnership.
- The managerial skills of the association improved. The producers were able to manage their products, enter the market, and raise their incomes in such a way as to recover their investment and obtain financing for the expenses of their families. A sample of 2,496 beneficiaries of the subprojects was surveyed, with 43% (1,076 producers) stating that they had increased their earnings by participating in the project.
- Improvements in knowledge through constant training in production techniques that increased productivity as part of the technical assistance provided to the subprojects and acknowledged as being satisfactory by the producers.

Component 2. Rural Productive Alliances:

- 130 subprojects were executed by producer associations, directly benefiting 4,577 producers in productive activities that involved commercial allies who facilitated their entry into the market.
- Transformation of the primary productive projects into agro-businesses, in at least 50% of the producer associations.
- Introduced and validated a new form of funding in Panama for rural producers with little or no access to traditional means of financing. The producer organizations were funded directly. They, in turn, funded their members and provided them with opportunities to recover part of the funding.
- Created financial equity that could be reinvested in the 130 producer associations. By January, 2015, 72 organizations had recovered US$2.0 million, which accounted for 11% of the financing of the subprojects (US$18.7 million). This figure should increase over time as the projects generate more earnings (for example, livestock and agro-industries).

During the execution of MIDA-PRORURAL several lessons were learned, which must be taken into account in future projects and initiatives directed at small rural producers, particularly those in poverty. Some of the most important are the following:

The development of businesses in rural communities requires other types of support beyond mere financial support. The experience of PRORURAL demonstrates that a combination of actions (financial assistance, technical assistance, training, etc.) and the association with an agent is effective. At least 50% of the small beneficiary organizations of the project managed to enter the market successfully and make improvements in their production processes, product management, and sales selection. A recommendation for the future is that a system of monitoring

the agreements be included and that adequate assistance be provided from the start to ensure the project progresses efficiently.

The process of consolidation of rural businesses exceeds the duration of the project. The results of the project demonstrate that the consolidation of businesses, in particular, agro-businesses, requires continuity of technical and financial assistance that extends beyond the life of the project, especially when the beneficiaries are at varying degrees of development, capabilities, and access. In the case of MIDA-PRORURAL, although improved capacities have been introduced, they are fragile in most of the producer associations, as they attempt on their own to stay in the market and sort out the typical difficulties encountered by small businesses (small margins on earnings for reinvestment, poor access to credit, weak management, etc.). Although the project was implemented over a 7-year period, in practice, a majority of the subprojects were executed during the final 2 years, and have not had enough time to be fully consolidated.

Financial assistance to rural communities must be in line with the capabilities of the actors to manage the funds. It was shown that the overestimation of the capacities (organizational, productive, managerial, etc.) of the beneficiaries led to undesired consequences that impacted the results of the project. To avoid this problem with project design, the recommendation is to create a baseline of preference during the planning of the project and conduct economic and cultural analyses of higher technical quality.

CBMAP II: Executive Summary of Client Completion Report[29]

General context of CBMAP II

Rural Productivity Project/ Consolidation of the Mesoamerican Biological Corridor of the Panamanian Atlantic (CBMAP II) is a credit operation with the IBRD, with a donation from the GEF executed by the National Environmental Authority (ANAM), the current Ministry of the Environment, from January, 2007 to January, 2015. This credit operation corresponds to Component 3 (Productive Alliances and the Strengthening of SINAP) of the Rural Productivity Project (PRORURAL/PAN-7439-IBRD), executed by the Ministry of Agricultural Development (MIDA); and the donation to Phase II of the Mesoamerican Biological Corridor Project of the Panamanian Atlantic (CBMAPII/ No. TF 056628–GEF).

The total cost of the project was US$18.1 million, with US$10 million from the IBRD loan, US$6 million from the donation of the Global Environment Fund (GEF), US$1.2 million from the government of Panama, and US$900,000 as a community contribution by way of manual labor and other inputs.

CBMAP II was organized in three components and 7 subcomponents:

Component 1. Environmental Investment Fund (FNDIA) *(total cost US$9.4 million, with US$6.4 million from IBRD and US$3.0 million from GEF)*. The objective was to facilitate technical and financial resources to community groups in communities located within the buffer zone of prioritized protected areas for the development of agribusinesses through two subcomponents:

[29] The Completion Report of the Technical and Financial Execution of the proposed activities for CBMAP II, Final Document, Alicia Pitty Navarro, 2015.

1A – Environmental Investments and 1B– Management support for environmental investments.

Component 2. Management of Natural Resources and the Sustainability of the National System of Protected Areas (SINAP) *(total cost US$1.5 million, with US$0.9 million from the IBRD and US$0.6 million from the GEF)*. The objective was to strengthen the institutional management capabilities in 13 prioritized protected areas, by means of 3 subcomponents:
2A. Strengthen the SINA; 2B. Promote the participation and the decentralization of environmental management; and 2C. Provide opportunities for self-financing (from SINAP)

Component 3. Monitoring and Evaluation *(total cost US$4.7 million, with US$2.3 million from the IBRD and US$2.4 million from the GEF)*. It focused on installing a biodiversity monitoring system and facilitating the implementation of the project through 2 subcomponents:
3A. Monitoring and Evaluation; and 3B. Project Management.

The Developmental Objective of the project was **"***to contribute to increasing the incomes and employment of small small-scale rural farmers in Panama,*" and its Global Environmental Objective was "*to conserve the biological diversity of global importance and protect important forest, mountain, and coastal-marine ecosystems in Panama.*" The project focused on 13[30] protected areas and their buffer zones located in 26 districts, 2 regions, and 2 indigenous territories in the Atlantic and Pacific zones of the country.

Factors that had negative and positive impacts on the results of the project

Factors that had a negative impact: (i) Up to June 2011 the recommendations in the PAD to establish a UEP and hire qualified technical and management personnel were not followed. Instead execution was delegated to ANAM, which adversely affected the bureaucratic processes of the public institutions; (ii) an ongoing reduction in the State budget to meet the needs of SINAP, which diminished the ability of the managers of the prioritized PAs to perform tasks, such as patrolling, monitoring, conducting field research, and attending to other proposed activities; (iii) it was decided to work with new organizations instead of capitalizing on the existing capacities of the organizations involved in CBMAP I. This delayed the initiation of the new organizations and produced poor technical and financial execution, as noted in the medium-term evaluation (June, 2011).

Factors that had a positive impact: (i) Establishment of the UEP within the General Management of the ANAM at the beginning of July, 2011, allowed the project to operate with qualified personnel with managerial and operational independence; (ii) adoption of a model of participatory-collaborative execution supported by a strategy of communication, information, and training; (iii) collaboration with high profile technical and scientific entities inside and outside of the country; (iv) orientation of the subprojects with an approach that promotes sustainability in the market; and (v) political support of ANAM to comply with the donation and loan agreements and support the formalization of the agreements of collaboration.

The main results achieved by the project were, by component:

[30] In the original design 14 protected areas were selected; however, when implementation began, a pending ruling by the Supreme Court of Justice left the protected are of Donoso (one of the 14 PAs) in legal limbo and it was excluded from the project.

Component 1. Environmental Investment Funds (FIA)

- The financing of 350 subprojects (environmental investments) that benefited 10,761 producers (6,098 men and 4,673 women).
- Contribute to improving the local capacities of more than 300 organizations in communities in the biological corridor in Panama with financial, human, social, and economic capital.
- Facilitate the market integration of these organizations; upon completion of the project, 141 subprojects were participating in the market in a sustained manner, either through commercial partners or direct sales in the local and regional markets.
- Integrate effectively more than 100 communities in indigenous territories, where 42% (146) of all the subprojects (350) were executed, with a direct investment of US$2.7 million. These actions benefited 5,727 indigenous producers, 44.5% women and 55.5 men, which account for 54.33% of the direct beneficiaries of the project.
- The adoption of biodiversity-friendly practices, for example, no burning (78%), the use of barriers, both live and dead (67%), the use of organic fertilizers (91%), crop rotation (90%), waste management (63%), contour lines (70%), and others, especially waste management.
- Privileging agroforestry productive systems, which not only helped the producers increase their environmental awareness, but also generated foods and incomes in different seasons of the years by combining crops.

Component 2. Management of Natural Resources and Sustainability of the National System of Protected Areas (SINAP)

- Provide 15 municipalities with positive impacts in protected areas with significant global biodiversity, through Municipal Environment Plans (PAM) developed collaboratively with the local authorities, the Environment Consulting Committees, community organizations, the private sector, and the NGO. 754 persons (482 men and 272 women) received training in this process.
- The formation of five (5) Municipal Environment Units (UAM) in 5 of the municipalities where the PAMs were developed: Las Minas (2014), Mariato (2014), Santa Fe (2014), Olá (2014), and Pedasí (2015).
- Generate the Map of Forest Cover and Soil Use 2012, published in 2014 with the cooperation of ANAM, ONU-REDD, and FAO, using new technology with more accurate results than the previous maps. The current map has 32 different cover classifications (twice as many as the map of 2000), including forests, tree plantations, agricultural and cultural uses. The map has been accepted as the tool for the measurement, reporting and verification of the ONU-REDD program in Panama.
- Obtain new data about the forest cover of the country, now estimated at between 51% and 52% in comparison with 45% on the map of 2000; it was verified that vegetation cover was 61.9%, with the areas in the Panamanian portion of the Mesoamerican Biological Corridor containing the most forests.

Component 3. Monitoring and Evaluation (2014-2015)

- The Information and Monitoring System of Biological Diversity (SNIMDB) was launched with the cooperation of ANAM, the Universidad Autónoma de Chiriquí (UNACHI), the Universidad de Panama (UP), the Smithsonian Tropical Research

Institute (STRI), and the Ministry of Science, Technology, and the Environment (CITMA) of Cuba. Panama is the first country in Central America to have its own biodiversity monitoring system compatible with IBRD protocols. The monitoring system has a technological platform that is integrated with research centers, mirror sites, and provides public access.

- The mapping and classification of 6,758 plants and animals (708 species of fauna and 668 species of flora), found in 4 national parks: Volcán Barú (Chiriquí), Omar Torrijos (Coclé), Santa Fe (Veraguas), and Parque Internacional La Amistad (Chiriquí).
- Classification of two new species of flora for science: the "*calathea sp*" and the "*microlejeunea sp*", and two (2) species of frogs still without scientific designation.
- Improved knowledge about endemic and rare species at risk: (i) 104 species of threatened flora and fauna were recorded (37 in appendices I & II of CITES, 28 in the appendices of UICN, and 39 in national categories); (ii) 8 endemic species of flora and 9 of fauna were found; (iii) for the first time in Panama and Central America, the species (*Prionolejeunea diversitexta)* was recorded. It is an extremely rare plant that was previously collected only in Trinidad and Tobago and in the mountainous regions of Bahía in Brazil.
- Improved knowledge about the state of conservation of these protected areas, with the recording of species such as the phyllostomidae (leaf-nosed) bat, *Platyrrhinus vittatus*, (Parque Omar Torrijos) and the *Anoura cultrata* bat (Parque Santa Fe) as indicators of the status of the habitat; and felines, such as *Panthera onca* (Parque Santa Fe), and *Puma concolor* (Parque Volcán Barú), indicative of the abundance of prey and the high quality of the PA.

The main lessons learned are synthesized in the following:

Conservation of biodiversity cannot be seen as the exclusive responsibility of environmental authorities. Environmental management involves high-ranking environmental authorities, but local populations and authorities, along with other State agencies must also participate in drawing up environmental policies and regulations that will achieve sustainable development. Effective management requires, among other things, complying with the regulations of access and use of natural resources; strengthening the capacity, rules, and mechanisms to administer the PAs and their natural resources; creating capacities in the local authorities to decentralize the management of natural resources; developing and facilitating the application of tools that promote the environmental use of soils at the local level, in particular, monitoring mechanisms that register changes (positive and negative) in the natural resources and the PAs.

The alleviation of poverty requires an institutional fabric that works jointly towards a common objective. During its first and second phases, the CBMAP worked with very small organizations that required support related to both social and economic well-being. Deficiencies, such as the lack of channels of communication and public services, mainly potable water and electricity, had to be overcome. Improving education and health is also indispensable to lift people out of poverty. Many beneficiary organizations of CBMAP II were located in areas that were difficult to access and had no basic services. This limited the development of businesses and the creation of opportunities to increase the incomes of the beneficiaries.

The design of the project must be coherent with respect to the indicators and the capacity to achieve the objectives. The design of the project must establish attainable, measurable, realistic indicators that correspond to the capacities and resources (local or financed from outside) and ensure that the proposed activities are achievable within the timeframe of the project. The experience of CBMAP II showed that, as the medium-term evaluation indicated, it was necessary

to change the framework of the results because several of the indicators were not attainable given the resources and time available for execution.

B. Borrower/Client Comments on Bank's Draft ICR

The Bank's draft ICR was sent to MIDA and MIAMBIENTE (formerly ANAM) for comment. MIAMBIENTE sent minor comments which were incorporated in the draft, but no letter. See MIDA's letter below. Should MIAMBIENTE send a letter it will be archived in WB Docs.

Ministerio de Desarrollo Agropecuario
PROYECTO PRODUCTIVIDAD RURAL

Panamá, 23 de julio 2015
PPR-1284-2015

Señor
NORMAN PICCIONI
Gerente PRORURAL en Panamá
The World Bank
Washington, D.C.

Referencia: Reporte No.ICR03415

Estimado Sr. Piccioni:

Tengo el agrado de dirigirme a Usted a fin de referirme al Reporte No. ICR03415 con relación al Informe final de ejecución y resultados del Proyecto de Productividad Rural (PRORURAL).

Sobre el particular se les informa que se ha revisado dicho Reporte No. ICR03415, recibido vía correo electrónico el día 15 de julio del 2015. Y al no tener comentarios que añadir, se considera dicho documento aceptable en base a toda la información con que cuenta PRORURAL y que les fue suministrada.

Aprovecho la oportunidad para reiterarle las seguridades de mi estima y distinguida consideración.

GERARDO IRIMIA AROSEMENA | Asesor Ministerial
Y representante del Despacho Superior para el cierre del Proyecto PRORURAL
Ministerio de Desarrollo Agropecuario

c.c. Su Excelencia
Jorge Arango Arias | Ministro de Desarrollo Agropecuario

Su Excelencia
Esteban Girón | Viceministro de Desarrollo Agropecuario

GIA/vy

Annex 8. Comments of Co-financiers and Other Partners/Stakeholders

N/A

Annex 9. List of Supporting Documents

A. PRORURAL:

Concept Note

Internal Preparation Memoranda

ISDS

Project Appraisal Document (Report 39056-PA)

Loan Agreement

Supervision Aide Memoires

Implementation Supervision Reports (ISR)

Financial Management Supervision Reports

Project Procurement Reviews and BTOs

Operational Manual

Restructuring Paper (November 2012)

Mid-Term Review Report, 2011

Indigenous Peoples Plan (2014)

Indigenous Peoples Participation Framework

Involuntary Resettlement Framework

Economic and Financial Analysis - PRORURAL (FAO, 2015)

Borrower Completion Report (MIDA/Alicia Pitty, 2015)

Analysis of Achievements: PRORURAL Results Framework (MIDA/Alicia Pitty, 2015)

Final Impact Evaluation: PRORURAL (MIDA/Radoslav Barzev, 2015)

B. GEF: CBMAP II

Internal Preparation Memoranda

GEF Project Executive Summary

Project Appraisal Document (Report 39795-PA)

ISDS

Grant Agreement (GEF/CBMAP II)

Supervision Aide Memoires

Implementation Supervision Reports (ISR)

Financial Management Supervision Reports

Project Procurement Reports and BTOs

Mid-Term Review Report, 2011

Operational Manual (as revised)

Analysis of Achievements: GEF/CBMAP II Results Framework (ANAM/Alicia Pitty, 2015)

Client Completion Report – GEF/CBMAP II (ANAM/Alicia Pitty, 2015)

Final Impact Evaluation: GEF/CBMAP II (MIDA/Radoslav Barzev, 2015)

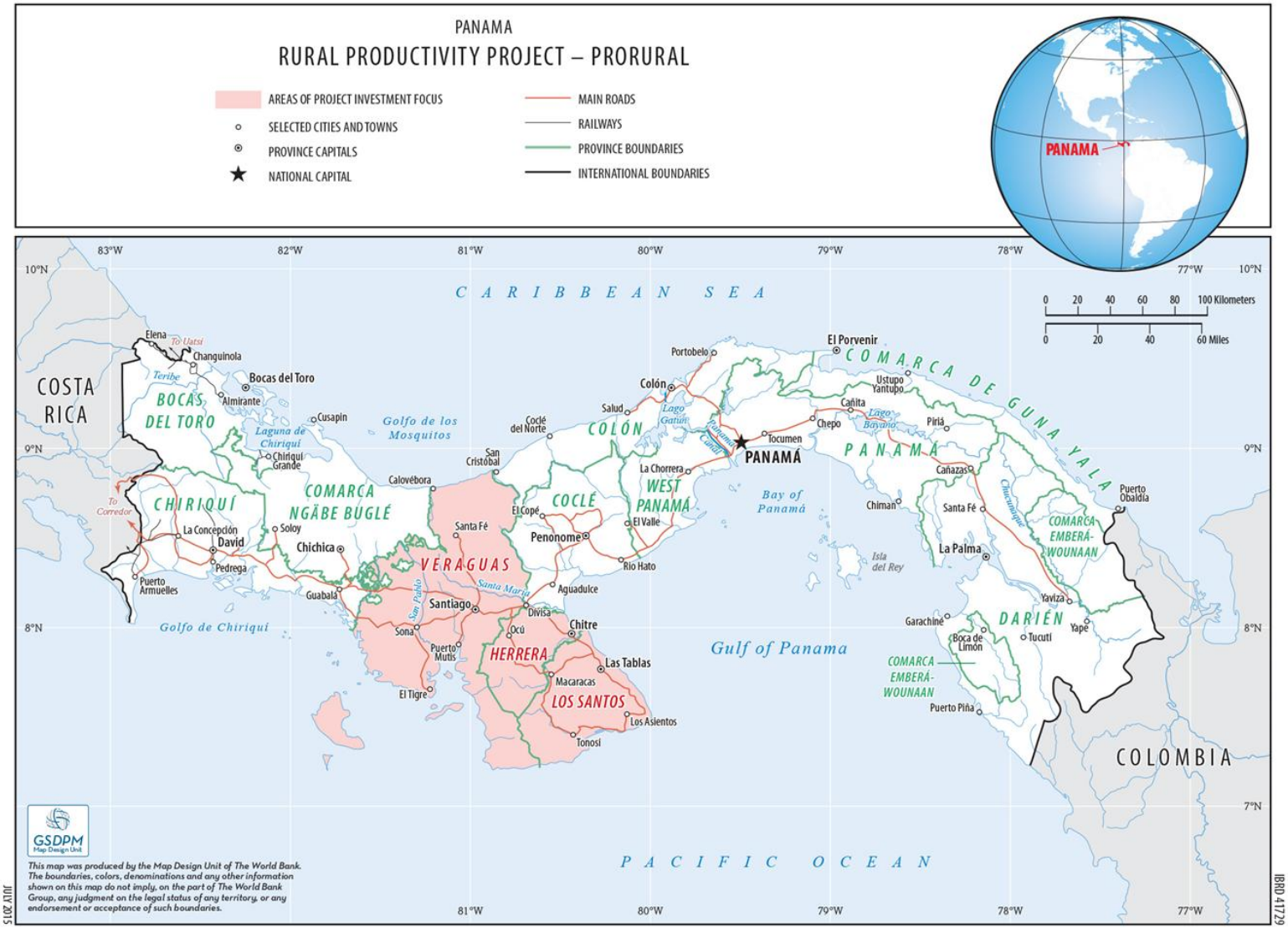
PPT: Ministry of Environment Overview of CBMAP II Achievements (2015)

PPT: Technical and Financial Summary of CBMAP II (Ministry of Environment, 2015)

Legal-Normative Framework: Environmental Organization in Panama, Final Report, (L. Bojorquez, June 2009)

Financial-Economic Analysis and Market Study of Sustainable Production Systems Consistent with Biodiversity and Conservation of Protected Areas: Product 3B – Analysis of the Financing Gap in the National System of Protected Areas (SINAP), ANAM/R. Barzev, November 2013

Strategic Proposal for Sustainability of the Panamanian Mesoamerican Biological Corridor, ANAM/C. Guevara and M Urquijo, November 2012


PANAMA
RURAL PRODUCTIVITY PROJECT – PRORURAL
AREAS OF PROJECT INVESTMENT FOCUS
SELECTED CITIES AND TOWNS
PROVINCE CAPITALS
NATIONAL CAPITAL
MAIN ROADS
RAILWAYS
PROVINCE BOUNDARIES
INTERNATIONAL BOUNDARIES
PANAMA
CARIBBEAN SEA
PACIFIC OCEAN
Gulf of Panama
COSTA RICA
COLOMBIA
BOCAS DEL TORO
CHIRIQUÍ
COMARCA NGÄBE BUGLÉ
VERAGUAS
HERRERA
LOS SANTOS
COCLÉ
COLÓN
WEST PANAMÁ
PANAMÁ
COMARCA DE GUNA YALA
COMARCA EMBERÁ-WOUNAAN
DARIÉN
PANAMÁ
Golfo de los Mosquitos
Golfo de Chiriquí
Bay of Panamá
Isla del Rey
Laguna de Chiriquí
Lago Gatún
Lago Bayano
Panama Canal
Chucunaque
Elena
To Uatsi
Changuinola
Teribe
Bocas del Toro
Almirante
Cusapin
Chiriquí Grande
To Corredor
La Concepción
David
Pedrega
Puerto Armuelles
Soloy
Chichica
Guabalá
Calovébora
Santa Fé
Santiago
San Pablo
Santa María
Sona
Puerto Mutis
El Tigre
Aguadulce
Divisa
Chitre
Ocú
Las Tablas
Macaracas
Los Asientos
Tonosí
El Copé
Penonome
Río Hato
El Valle
La Chorrera
San Cristóbal
Coclé del Norte
Portobelo
Colón
Salud
Tocumen
PANAMÁ
El Porvenir
Ustupo Yantupo
Cañita
Chepo
Piriá
Cañazas
Chiman
Santa Fé
La Palma
Puerto Obaldía
Yaviza
Garachiné
Boca de Limón
Yapé
Tucutí
Puerto Piña
0 20 40 60 80 100 Kilometers
0 20 40 60 Miles
83°W
82°W
81°W
80°W
79°W
78°W
77°W
10°N
9°N
8°N
7°N
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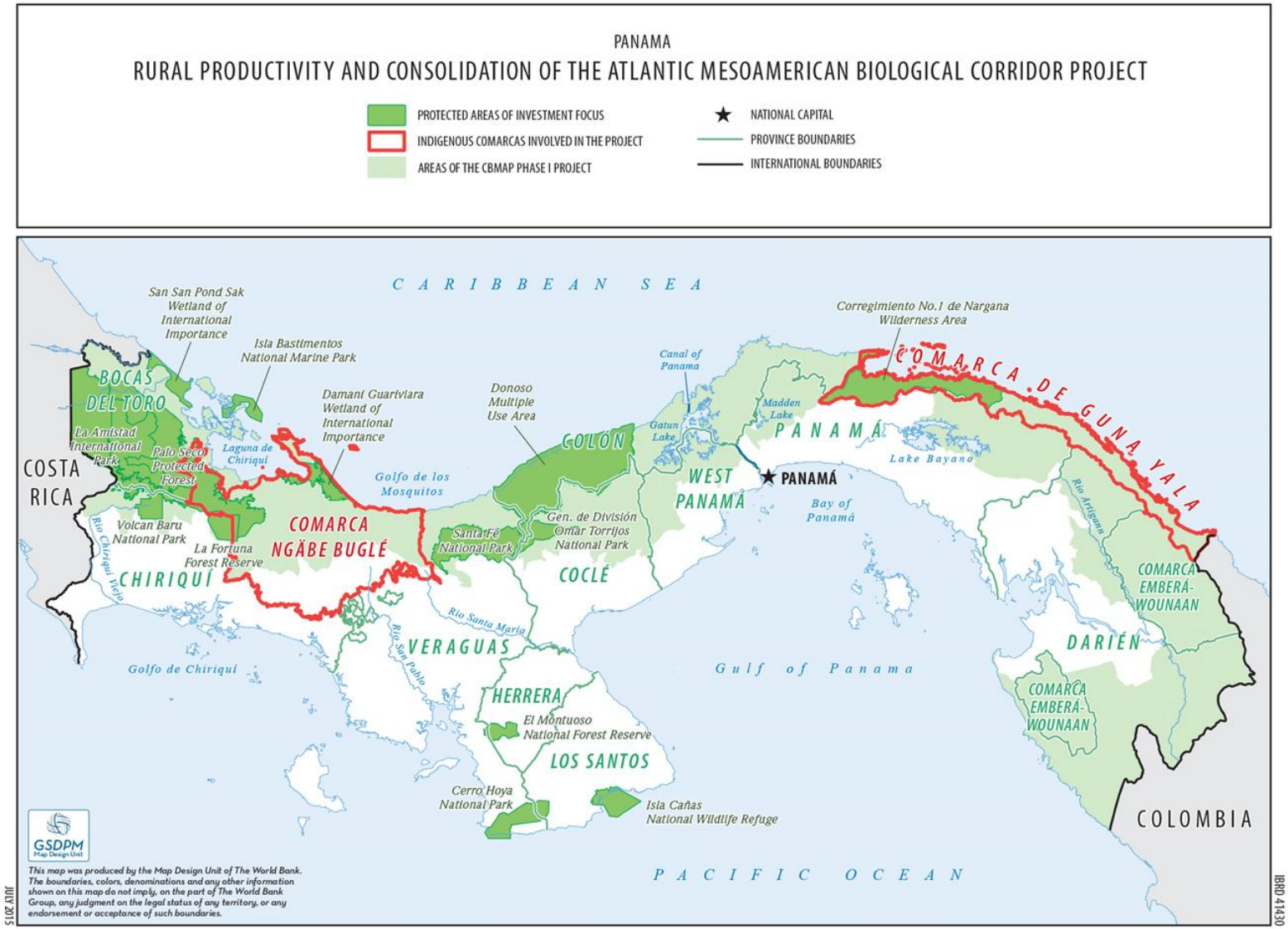
PANAMA
RURAL PRODUCTIVITY AND CONSOLIDATION OF THE ATLANTIC MESOAMERICAN BIOLOGICAL CORRIDOR PROJECT
PROTECTED AREAS OF INVESTMENT FOCUS
INDIGENOUS COMARCAS INVOLVED IN THE PROJECT
AREAS OF THE CBMAP PHASE I PROJECT
NATIONAL CAPITAL
PROVINCE BOUNDARIES
INTERNATIONAL BOUNDARIES
CARIBBEAN SEA
San San Pond Sak Wetland of International Importance
Isla Bastimentos National Marine Park
Damani Guariviara Wetland of International Importance
Donoso Multiple Use Area
Corregimiento No.1 de Nargana Wilderness Area
Canal of Panama
Madden Lake
Gatun Lake
COMARCA DE GUNA YALA
BOCAS DEL TORO
La Amistad International Park
Palo Seco Protected Forest
Laguna de Chiriqui
Golfo de los Mosquitos
GOLÓN
PANAMÁ
Lake Bayano
COSTA RICA
WEST PANAMÁ
★ PANAMÁ
Bay of Panamá
Río Artigana
Volcan Baru National Park
La Fortuna Forest Reserve
Río Chiriqui Viejo
COMARCA NGÄBE BUGLÉ
Santa Fé National Park
Gen. de División Omar Torrijos National Park
CHIRIQUÍ
COCLÉ
COMARCA EMBERÁ-WOUNAAN
Río Santa Maria
Río San Pablo
VERAGUAS
Golfo de Chiriqui
Gulf of Panama
DARIÉN
HERRERA
El Montuoso National Forest Reserve
COMARCA EMBERÁ-WOUNAAN
LOS SANTOS
Cerro Hoya National Park
Isla Cañas National Wildlife Refuge
COLOMBIA
PACIFIC OCEAN
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