Report No: ICR2408

IMPLEMENTATION COMPLETION AND RESULTS REPORT (IBRD-73050 TF-55042)

ON A

LOAN IN THE AMOUNT OF US\$ 30.0 MILLION EQUIVALENT

AND A

GLOBAL ENVIRONMENTAL FACILITY GRANT IN THE AMOUNT OF US\$ 7.0 MILLION

TO THE

ORIENTAL REPUBLIC OF URUGUAY

FOR A

INTEGRATED NATURAL RESOURCES AND BIODIVERSITY MANAGEMENT PROJECT

April 29, 2013

Sustainable Development Department Argentina, Paraguay and Uruguay Country Management Unit Latin America and Caribbean Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective August 31, 2012)

Currency Unit = Uruguayan Peso Ur\$ 1.00 = US\$ 0.0454 US\$ 1.00 = Ur\$ 21.0482

FISCAL YEAR [January 1 – December 31]

ABBREVIATIONS AND ACRONYMS

AAA	Analytical and Advisory Activities
BCR	Borrower Completion Report
CAS	Country Assistance Strategy
CCU	Centro Cooperativista Uruguayo or Uruguayan Cooperative
	Center
CMU	Country Management Unit
CPS	Country Partnership Strategy
DACC	Proyecto de Desarrollo y Adaptación al Cambio Climático or
	Sustainable Management of Natural Resources and Climate
	Change Project
DGDR	Rural Development Directorate
DINAMA	National Directorate for the Environment
DINOT	National Directorate for Land Use
EIA	Environmental Impact Assessment
EMBRAPA	Brazilian Agricultural Research Corporation
FM	Financial Management
GEO	Global Environment Objective
GEF	Global Environment Facility
GIS	Geographic Information System
GOU	Government of Uruguay
IBRD	International Bank for Reconstruction and Development
INIA	National Institute of Agricultural Research
IOI	Intermediate Outcome Indicator
ISR	Implementation Status Report
IUCN	International Union for Conservation of Nature
KPI	Key Performance Indicator
LCR	Latin America and Caribbean Region
M&E	Monitoring and Evaluation
MEF	Ministry of Economy and Finance
MGAP	Ministry of Livestock, Agriculture and Fisheries
MTR	Mid-Term Review
NDVI	Normalized Difference Vegetation Index

NPRCC	National Plan of Response to Climate Change
NRM	Natural Resources Management
O&M	Operations and Maintenance
OPYPA	Office of Agricultural Planning and Policy
PAD	Project Appraisal Document
PDO	Project Development Objective
PEU	Project Executing Unit
PPR	Integrated Natural Resource and Biodiversity Management Project
PRENADER	Natural Resources Management and Irrigation Development
	Project
QAG	Quality Assurance Group
RENARE	General Office for Renewable Natural Resources (MGAP)
SMU	Sector Management Unit
SNAP	National System of Protected Areas
ТА	Technical Assistance
UY	Oriental Republic of Uruguay

Vice President: Hasan Tuluy Country Director: Penelope J. Brook Sector Manager: Laurent Msellati Project Team Leader: Holger Kray ICR Team Leader: Holger Kray

URUGUAY

Integrated Natural Resources and Biodiversity Management Project

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A. Basic Informatio	n		
Country:	Uruguay	Project Name:	UY Integrated Natural Resources and Biodiversity Management Project
Project ID:	P070653,P077676	L/C/TF Number(s):	IBRD-73050,TF-55042
ICR Date:	04/29/2013	ICR Type:	Core ICR
Lending Instrument:	SIL,SIL	Borrower:	URUGUAY
Original Total Commitment:	USD 30.00M,USD 7.00M	Disbursed Amount:	USD 29.97M,USD 7.00M
Environmental Catego	ry: B,B	Focal Area: B	
Implementing Agencie Ministry of Agriculture	s: Livestock and Fisheries		
Commanciers and Othe	r External Partners:		

B. Key Dates

D. Key Dates	D. Key Dails					
UY Integrated Natural Resources and Biodiversity Management Project - P070653						
Process Date Process Original Date Revised / A Date(s)						
Concept Review:	02/24/2004	Effectiveness:	10/05/2005	10/05/2005		
Appraisal:	07/14/2004	Restructuring(s):		06/28/2011		
Approval:	06/09/2005	Mid-term Review:				
		Closing:	08/31/2011	08/31/2012		

Integrated Ecosystem and Natural Resources Management (GEF) - P077676					
Process	Revised / Actual Date(s)				
Concept Review:	02/24/2004	Effectiveness:		10/05/2005	
Appraisal:	07/14/2004	Restructuring(s):		06/28/2011	
Approval:	06/09/2005	Mid-term Review:	06/08/2009	08/24/2009	
		Closing:	08/31/2011	08/31/2012	

C. Ratings Summary			
C.1 Performance Rating by ICR			
Outcomes	Satisfactory		
GEO Outcomes	Satisfactory		

Risk to Development Outcome	Low or Negligible
Risk to GEO Outcome	Low or Negligible
Bank Performance	Moderately Satisfactory
Borrower Performance	Satisfactory

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

C.3 Quality at Entry and Implementation Performance Indicators					
UY Integrated Natural Re	sources and Biodiversi	ty Management Project	- P070653		
Implementation PerformanceIndicatorsQAG Assessments (if any)Rating:					
Potential Problem Project at any time (Yes/No):	No	Quality at Entry (QEA)	None		
Problem Project at any time (Yes/No):	No	Quality of Supervision (QSA)	None		
DO rating before Closing/Inactive status	Satisfactory				

Integrated Ecosystem and Natural Resources Management (GEF) - P077676					
Implementation Performance	Indicators	QAG Assessments (if any)	Rating:		
Potential Problem Project at any time (Yes/No):	No	Quality at Entry (QEA)	None		
Problem Project at any time (Yes/No):	No	Quality of Supervision (QSA)	None		
GEO rating before Closing/Inactive Status	Satisfactory				

D. Sector and Theme Codes				
UY Integrated Natural Resources and Biodiversity Management Project - P070653				
Original Actual				
Sector Code (as % of total Bank financing)				
Agricultural extension and research	20	30		
Animal production	20	50		

Forestry	20	10
Irrigation and drainage	20	10
Sub-national government administration	20	
Theme Code (as % of total Bank financing)		
Other environment and natural resources management	50	70
Other rural development	50	30

Integrated Ecosystem and Natural Resources Management (GEF) - P077676			
	Original	Actual	
Sector Code (as % of total Bank financing)			
Agricultural extension and research		30	
Agro-industry, marketing, and trade	20		
Animal production		40	
General agriculture, fishing and forestry sector	70	30	
Sub-national government administration	10		
Theme Code (as % of total Bank financing)			
Biodiversity	40	50	
Climate change	20	10	
Other environment and natural resources management	40	40	

E. Bank Staff

UY Integrated Natural Resources and Biodiversity Management Project - P070653				
Positions	At ICR	At Approval		
Vice President:	Hasan A. Tuluy	Pamela Cox		
Country Director:	Penelope J. Brook	Axel van Trotsenburg		
Sector Manager:	Laurent Msellati	John Redwood		
Project Team Leader:	Holger A. Kray	Michael G. Carroll		
ICR Team Leader:	Holger A. Kray			
ICR Primary Author:	Timothy S. Valentiner			

Integrated Ecosystem and Natural Resources Management (GEF) - P077676				
Positions	At ICR	At Approval		
Vice President:	Hasan A. Tuluy	Pamela Cox		
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ICR Primary Author:	Timothy S. Valentiner			

F. Results Framework Analysis

Project Development Objectives (from Project Appraisal Document)

The project objectives are to assist the Borrower in its efforts to promote: (a) the adoption of economically and environmentally viable integrated production systems among small and medium-sized farmers and livestock producers, within a context of holistic ecosystem and natural resources management; and (b) an increased understanding of the role of biodiversity in agricultural landscapes and the potential impact of the various land use practices upon biodiversity and their economic and ecological sustainability.

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

Global Environment Objectives (from Project Appraisal Document)

To conserve Uruguay's globally significant biodiversity particularly through financing the incremental costs associated with promoting integrated production systems in key biodiversity areas.

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

Note: The PAD Results Framework and Monitoring Matrix included an excessive number of both KPIs and IOIs without initial targets. Specific target values for five KPIs were subsequently defined in the Implementation Letter (dated June 16, 2005), with more targets added through the first version of the Operational Manual (September 2005) and an M&E report prepared by PEU (dated November 21, 2005). During MTR, consolidation and clustering of indicators, as well as redefining of some targets, eliminated redundancies and streamlined relevant KPIs and IOIs. These revisions were reflected immediately following MTR and incorporated in the project Operational Manual. See Annex 2, Appendix 1 "Indicators Summary Table" for more details. Presented below are the PAD KPIs and IOIs with revised target values where applicable.

(a) PDO Indicator(s)

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator 1 :	Improvement of natural reso including regeneration of na- regeneration of natural fores	urces and biodiversit tural grasses and othe sts, reduced impact gr	y conservation a er vegetation, ma razing, and carbo	nd management, intenance and on sequestration.
Value (quantitative or Qualitative)	 (i) degradation of nat. grasslands, (ii) depletion of water resources - availability and quality, (iii) soil degradation, (iv) poor native forest management, (v) weed control, (vi) lack of biodiv. conserv mgmt in producers' and orgs' agendas 			Fully Achieved (17 Indicators)
Date achieved	10/05/2005			08/31/2012
Comments (incl. % achievement)	Fully achieved. Project's M& project, a total of 17 specific which provided a quantitativ	&E unit developed an indicators satisfactor e measure of achieve	d monitored, thr ry to the Bank (seement of PDO an	oughout the life of the ee ICR Annex 2) d GEO
Indicator 2 :	Maintenance of mosaics of r ecotourism and rural tourism	natural habitats within n	n rural landscape	through support for
Value (quantitative or Qualitative)	0	Develop an Eco- regional Plan on key biodiversity elements and priority settings		Ecoregional Planning Instrument and ecotourism-specific subprojects
Date achieved	10/05/2005	11/21/2005		08/31/2012
Comments (incl. % achievement)	Fully achieved. PPR contribution multidisciplinary Eco-region subprojects promoting ecoto operations	ution to maintain natural Planning study of urism allowed S&M	ural habitats thro UY's main nat. h farmers establish	ugh a comprehensive nabitats. 47 n rural tourism
Indicator 3 :	Number of beneficiaries that	present integrated pr	roposals at the fa	rm level
Value (quantitative or Qualitative)	0	3,000		6,196
Date achieved	10/05/2005	11/21/2005		08/31/2012
Comments (incl. % achievement)	Target exceeded. Project sup 206.5% of target.	oported over 6,000 NI	RM and biodiver	sity subprojects,
Indicator 4 :	Number of subprojects in wh system	nich biodiversity is m	ainstreamed into	their production
Value (quantitative or Qualitative)	0	900	1,200	1,523
Date achieved	10/05/2005	11/21/2005	06/15/2009	08/31/2012
Comments (incl. %	Target exceeded. 1,523 subprojects (127% of target, 29% of total 5,300 subproject beneficiaries - exceeding 18% contribution of GEF funds to total project costs),			

achievement)	received support to integrate biodiversity-related aspects/practices into prod. systems				
Indicator 5 :	Increased area of natural ha tourism activities	Increased area of natural habitats managed for conservation and sustainable use for tourism activities			
Value (quantitative or Qualitative)	0			47 ecotourism subprojects	
Date achieved	10/05/2005			08/31/2012	
Comments (incl. % achievement)	Achieved. PPR supported th smallholders through a total livestock producers in biodi	ne challenging objectiv of 47 demand-driven versity rich areas	ve of promoting subprojects, ma	ecotourism among inly benefiting	
Indicator 6 :	Increased management and integrated habitat managem	land restoration by co	mbining tools an	d methods of	
Value (quantitative or Qualitative)	0	15,000 producers and rural population		28,000 producers and rural population	
Date achieved	10/05/2005	11/21/2005		08/31/2012	
Comments (incl. % achievement)	Target exceeded. Through t integrated habitat managem target.	raining, TA and finan- ent was achieved by 2	cial support for s 28,000 project be	ubprojects, improved neficiaries, 187% of	
Indicator 7 :	Native biodiversity subject landscape, isolated or comb	to sustainable use by e ined with other means	either farming or s of rural product	ranching in rural ion	
Value (quantitative or Qualitative)	0			508,238 hectares	
Date achieved	10/05/2005			08/31/2012	
Comments (incl. % achievement)	Achieved. Of total area that over 500,000 (or 56%) impr ranching landscapes	Achieved. Of total area that received project support for improved NRM (881,882 ha), over 500,000 (or 56%) improved sustainable use of biodiversity in farming and ranching landscapes			
Indicator 8 :	Hectares of natural habitats for conservation and produc	including natural fore tion	ests under restora	tion or management	
Value (quantitative or Qualitative)	0	5,000		18,994	
Date achieved	10/05/2005	11/21/2005		08/31/2012	
Comments (incl. % achievement)	Target exceeded. As a resul grasslands and native forest original target	t of high demand for s s by beef producers, #	subprojects for re- has. affected rea	estoration of ached 379% of	
Indicator 9 :	Rural families assisted by the	ne project			
Value (quantitative or Qualitative)	0	13,000		28,000 Direct Beneficiaries (attended events, had a visit, direct correspondence, schools) 150,000 Indirect Beneficiaries (online hits, publication recipients)	

Date achieved	10/05/2005	06/16/2005		08/31/2012	
Comments (incl. % achievement)	Target exceeded. Project activities provided direct or indirect assistance to rural families, 215% of target *Included in Implementation Letter (06/16/2005)*				
Indicator 10 :	Hectares of land under impr	roved natural resource	es management		
Value (quantitative or Qualitative)	0	1,000,000	620,000	881,882	
Date achieved	10/05/2005	06/16/2005	06/15/2009	08/31/2012	
Comments (incl. % achievement)	Target exceeded. When new administration took office, project focused on S&M farmers, reducing avg beneficiary farm size and area covered. Project result was 142.2% of revised target *Included in Implementation Letter (06/16/2005)*				
Indicator 11 :	Farmers participating in trai	ining activities			
Value (quantitative or Qualitative)	0	5,000		6,459	
Date achieved	10/05/2005	06/16/2005		08/31/2012	
Comments (incl. % achievement)	Target exceeded. Farmers p Implementation Letter (06/1	participating were 12 16/2005)*	9% of target. *Ind	cluded in	

(b) GEO Indicator(s)

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator 1 :	Eco-regional vision based or	n key biodiversity ele	ments with prior	ity setting developed
Value (quantitative or Qualitative)	0	Develop an Eco- regional Plan on key biodiversity elements and priority setting		Ecoregional Planning Instrument and ecotourism-specific subprojects
Date achieved	10/05/2005	11/21/2005		08/31/2012
Comments (incl. % achievement)	Achieved. *Included in Implementation Letter dated June 16, 2005* Completion of comprehensive multidisciplinary Eco-regional Planning study of country's natural habitats; and 47 subprojects implemented to promote ecotourism.			
Value (quantitative or Qualitative)	0	10 Pilot Projects		10 Pilot Projects (319 beneficiaries)
Date achieved	10/05/2005	11/21/2005		08/31/2012
Comments (incl. % achievement)	Fully achieved. These pilot projects developed specific skills and biodiversity awareness in 319 project beneficiaries. *Included in Implementation Letter dated June 16, 2005*			
Indicator 3 :	Areas under improved pasture management techniques			
Value	0	-		465,300 hectares

(quantitative or Qualitative)					
Date achieved	10/05/2005			08/31/2012	
Comments (incl. % achievement)	Area assisted highly representative of family livestock producers. Due to high demand and blending of Bank and GEF resources for subprojects targeting grasslands, improved mgmt. of natural pastures represented 52% of total area benefiting from PPR				
Indicator 4 :	Area under sustainable use o	of natural resources	1		
Value (quantitative or Qualitative)	0	1,000,000 hectares	620,000 hectares	881,882 hectares	
Date achieved	10/05/2005	06/16/2005	06/15/2009	08/31/2012	
Comments (incl. % achievement)	Exceeded. When new admin reducing avg beneficiary far revised target.	istration took office, m size and area cove	project focused or red. Project resul	on S&M farmers, t was 142.2% of	
Indicator 5 :	Number of biodiversity-frien	ndly projects implem	ented		
Value (quantitative or Qualitative)	0	900	1,200	1,523	
Date achieved	10/05/2005	11/21/2005	06/15/2009	08/31/2012	
Comments (incl. % achievement)	Exceeded. Total of 1,523 farmers, 127% of revised target, 29% of total of 5,300 subproject beneficiaries (exceeding the 18% contribution of GEF funds to total project costs), received support to integrate biodiversity-related practices in prod. systems				
Indicator 6 :	easement implementation		incentive, such as		
Value (quantitative or Qualitative)	0			35	
Date achieved	10/05/2005			08/31/2012	
Comments (incl. % achievement)	Fully achieved. Through a collaborative agreement with two established groups of livestock producers, coordinated by a local NGO, pilot initiatives to define certification requirements and criteria were supported				
Indicator 7 :	Number of species and/or po	pulations under cons	servation		
Value (quantitative or Qualitative)	0	50		243 native species (83 fauna, 160 flora)	
Date achieved	10/05/2005	11/21/2005		08/31/2012	
Comments (incl. % achievement)	Target exceeded, 486% of original target. GEF-financed subprojects provided direct/indirect improvements to conservation of 243 native species, including 79 in IUCN's Red List, 18 by CITES, 51 priority species by National System of Protected Areas (SNAP)				

(c) Intermediate Outcome Indicator(s)

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Indicator 1 :	Number of proposals to adopt	ot integrated approach	n to natural resou	rces management
Value (quantitative or Qualitative)	0	3,000		6,196
Date achieved	10/05/2005	11/21/2005		08/31/2012
Comments (incl. % achievement)	Target exceeded. Of 6,196 to were approved (85.5%)	otal proposals present	ted (206.5% of or	riginal target), 5,300
Indicator 2 :	Number of hectares with soil	l conservation activit	ies	
Value (quantitative or Qualitative)	0			271,150 hectares
Date achieved	10/05/2005			08/31/2012
Comments (incl. % achievement)	Subprojects involving impro proportion of total project fin hectares (59% beef production	ved soil mgmt. practi nancial support (20% on, 37% dairy farmin	ices represented a), and covered an g, and 4% hortic	a significant a area of 271,150 ulture)
Indicator 3 :	Number of hectares with imp	proved irrigation	-	
Value (quantitative or Qualitative)	0			24,726 hectares (623 subprojects)
Date achieved	10/05/2005			08/31/2012
Comments (incl. % achievement)	Small and medium irrigation as dairy and beef producers,	system were develop representing 10% of	ped in horticultur total subprojects	and 3% of total area
Indicator 4 :	Number of business plans de of rural productive system	eveloped for specific	uses of biodivers	ity as an integral part
Value (quantitative or Qualitative)	0	900	1,200	1,523
Date achieved	10/05/2005	11/21/2005	06/15/2009	08/31/2012
Comments (incl. % achievement)	Target exceeded. Achieved 1 of blended NRM/biodiversit	127% of revised targe y subprojects in grass	et, mainly as a res slands	sult of implementation
Indicator 5 :	Number of demonstration ar productive landscape	eas implemented to in	ntegrate biodiver	sity in rural
Value (quantitative or Qualitative)	0	10 Pilot Projects		10 Pilot Projects
Date achieved	10/05/2005	11/21/2005		08/31/2012
Comments (incl. % achievement)	Achieved. Demonstration subprojects were demanded and implemented in all 10 priority eco-regions			
Indicator 6 :	Number of experiences publ	ished and socialized i	in each of the cou	untry's eco-regions
Value	0	10		116

(quantitative or Qualitative)				
Date achieved	10/05/2005	11/21/2005		08/31/2012
Comments (incl. % achievement)	Target exceeded, 1,160% of NRM & biodiversity techno publications, 9 biodiversity-	target. Strong empha logies among benefic related guides, 83 vid	sis on creation & iaries through 13 eos, 20 posters	dissemination of manuals & technical
Indicator 7 :	Local and national institutio and biodiversity as a produc soil, water and biodiversity	ns are empowered wi tive resource and pro- nanagement	th new tools for a vide a nationwide	managing soil, water e service to improve
Value (quantitative or Qualitative)	0	10 Institutions		56 Institutions
Date achieved	10/05/2005	11/21/2005		08/31/2012
Comments (incl. % achievement)	Target exceeded, 560% of ta agreements, farmer orgs. nat related services, including ca	rget. Via implementa ionwide were suppor apacity building, train	tion of 56 indivi- ted to improve N hing, TA, commu	dual and specific RM and biodiversity- nity initiatives
Indicator 8 :	management by means of at sites for the conservation of	least two demonstrations the Uruguayan biodiv	ion/pilot projects	in the most important
Value (quantitative or Qualitative)	0	20		319
Date achieved	10/05/2005	11/21/2005		08/31/2012
Comments (incl. % achievement)	Target exceeded (1,595% of (representing 20% of all spe conservation tools and techn	target). All 319 subp cifically biodiversity ologies adapted to dif	rojects done in k subprojects) pilo fferent productiv	ey biodiversity sites ted or demonstrated e landscapes
Indicator 9 :	Number and category of the	people trained		
Value (quantitative or Qualitative)	0	600 Technical Specialists and 15,000 people trained		2,615 Technical Specialists trained, 28,000 Primary Indirect Beneficiaries (attended events, had a visit, direct correspondence, schools). 150,000 Secondary Indirect Beneficiaries (online hits, publication recipients). 78 Formal Training Events.
Date achieved	10/05/2005	11/21/2005		08/31/2012
Comments (incl. % achievement)	Achievements exceeded all original training targets mainly due to high priority placed by MGAP on training, and proactivity and professionalism of PEU's Training & Communications Unit. Also, demand for NRM training from rural population increased			
Indicator 10 :	Number of beneficiaries had	technical services to	their needs	• •
Value (quantitative or	0	3,000 Beneficiaries 500 Groups		4,667 Beneficiaries 658 Groups

Qualitative)					
Date achieved	10/05/2005	11/21/2005		08/31/2012	
Comments (incl. % achievement)	Targets exceeded. Individual producers and groups which received project-financed technical assistance were 156% and 132% of targets respectively.				
Indicator 11 :	Number of people trained in	carbon balance sub-p	projects		
Value (quantitative or Qualitative)	0			1,086	
Date achieved	10/05/2005			08/31/2012	
Comments (incl. % achievement)	Achieved. Many NRM techr Training/TA: Conserv. Tilla biogas gen. & use (25), asses dairy farms	nologies had impact o ge (808), substitution ssment of CO2 emiss	n reduced carbon of CH4-emitting ion reduction pot	n emissions. g chemicals (153), tential in sample (100)	
Indicator 12 :	Number of new layers incorp	porated in the GIS			
Value (quantitative or Qualitative)				6 Layers	
Date achieved				08/31/2012	
Comments (incl. % achievement)	Achieved. Layers systematized: (i) Biodiv. Database (ii) Eco-regional maps (iii) environ. classification (iv) geo-location farm-level water-harvesting facilities (v) Freshwater Native Fish Database (vi) NRM subproject database w/ geo-referenced locations				
Indicator 13 :	Number of natural resources	management instrum	nents improved b	y the project.	
Value (quantitative or Qualitative)	0			12	
Date achieved	10/05/2005			08/31/2012	
Comments (incl. % achievement)	Achieved. Substitution of M control of invasive species, r fodder production in dairy &	ethyl Bromide, zero t native tree species, sn z beef farms	illage, tajamares nall-scale biodige	, water distribution, estors, irrigation for	
Indicator 14 :	A Project Executing Unit (Pl indicator to assess the evolution	EU) implements the p ion of the project imp	project and provi plementation	des periodically	
Value (quantitative or Qualitative)	0	PEU established		PEU established and fully functional throughout the life of the project	
Date achieved	10/05/2005	11/21/2005		08/31/2012	
Comments (incl. % achievement)	Achieved: Well-staffed PEU provided needed technical (both NRM and biodiversity), administrative and fiduciary support to MGAP and beneficiaries both at the central and decentralized levels				
Indicator 15 :	Relation between sub-project	ts presented and appr	oved		
Value (quantitative or Qualitative)	0			6,196 presented/5,300 approved	
Date achieved	10/05/2005			08/31/2012	
Comments (incl. %	Achieved a highly satisfactory ratio of 85% subproject approval from combination of widespread promotion and dissemination of subproject rules and procedures, as well as				

achievement)	support to beneficiaries by well-trained TA providers				
Indicator 16 :	Number of days to process the sub-projects				
Value (quantitative or Qualitative)	0			90 days	
Date achieved	10/05/2005			08/31/2012	
Comments (incl. % achievement)	Good achievement. Not systematically monitored by M&E given large variations between individual subproject processing times. Overall duration of subproject cycle was evaluated regularly. Reduced initial 6-8 months to average of 90 days in last call				
Value (quantitative or Qualitative)	0	Customized M&E software developed	Simplified system developed	Simplified System fully operational	
Date achieved	10/05/2005	11/21/2005	06/15/2007	06/15/2007	
Comments (incl. % achievement)	Partially achieved: Intended customized M&E software was not contracted due to GOU austerity constraints. Instead, peoject developed simplified Excel-based system that, although less automated, adequately captured required project data.				

G. Ratings of Project Performance in ISRs

-						
No. Date ISR	DO	GEO	IP	Actual Disbursements (USD millions)		
	Archived				Project 1	Project 2
1	06/02/2006	S	S	S	0.86	0.04
2	12/28/2006	S	S	S	1.13	0.06
3	06/08/2007	S	S	S	2.53	0.10
4	12/03/2007	S	S	S	5.43	0.48
5	05/02/2008	S	S	S	6.89	0.51
6	11/14/2008	S	S	MS	11.14	0.71
7	06/23/2009	S	S	MS	15.87	1.71
8	12/30/2009	S	S	MS	19.13	2.25
9	03/04/2010	S	S	MS	19.13	2.44
10	06/30/2010	S	S	MS	22.31	3.10
11	03/02/2011	S	S	S	23.85	3.63
12	12/19/2011	S	S	S	25.79	4.84
13	06/17/2012	S	S	S	29.67	6.57
14	09/06/2012	S	S	S	29.67	6.65

H. Restructuring (if any)

Restructuring	Board A	Approved	ISR Ratings at Restructuring		Amount Disbursed at Restructuring in USD millions		Reason for Restructuring & Key	
Date(s)	PDO Change	GEO Change	DO	GEO	IP	Project1	Project 2	Changes Made
06/28/2011	Ν		S		S	24.85		 (i) 12-month extension in project closing date to August 31, 2012; and (ii) reallocation of proceeds from both loan and grant, specifically the full allocation of "unallocated" funds to existing categories, mainly for additional funding to subprojects and to the PEU's role in project implementation. This extension was deemed necessary to allow the completion of subprojects and enable government to assist farmers affected by droughts and the financing of the team of specialists responsible for assisting beneficiaries in subproject preparation. Additionally, the extension ensured a smooth transition between PPR and the on-going Natural Resources Management and Climate Change Project with MGAP.

					(i) 12-month extension in project closing date to
					August 31, 2012; and
					(11) reallocation of
					proceeds from both loan
					and grant, specifically
					the full allocation of
					unallocated funds to
					existing categories,
					mainly for additional
					runding to subprojects
					and to the PEU's role in
					implementation
					implementation.
					This extension was
					deemed necessary to
		~	~		allow the completion of
06/28/2011		S	S	4.39	subprojects and enable
					government to assist
					farmers affected by
					droughts and
					the financing of the team
					of specialists responsible
					for assisting
					beneficiaries in
					subproject preparation.
					Additionally, the
					extension ensured a
					smooth transition
					between PPR and the
					on-going Natural
					Resources Management
					and Cl. D.
					Climate Change Project
					with MGAP.

I. Disbursement Profile



2013 03-

P077676



1. Project Context, Development and Global Environment Objectives Design

1.1 Context at Appraisal

1.1.1 **Country and sector background**: Uruguay has a rich natural resource base for livestock and agricultural production and at the time of appraisal (2005), the agriculture and agroindustrial sectors represented about 23 percent of national GDP. Over half of Uruguay's combined output was being exported, and further export growth was considered essential to support national economic development, focusing on production specialization, quality, and processing. Uruguay's biodiversity is globally significant due to its location in the confluence of the Amazonian and Chaco domains, with principal eco-systems comprising savannah, native forests, wetlands, coastal ecosystems (including associated wildlife). However, despite the value of its global biodiversity, Uruguay has very few national (or sub-national) protected areas, reinforcing the importance of conservation efforts through private properties or other arrangements.

1.1.2 The original savannah ecosystem with associated forests had been heavily altered by several hundred years of extensive and increasingly intensive livestock production. Severe and moderate soil erosion had affected about 10 percent of this area. Of the 16 million hectares appropriate for livestock and agricultural production, some 70 percent were still under natural pasture but in vulnerable condition due to fragmentation resulting in isolated plant populations and threatening the fauna associated with these native grasslands. At time of appraisal, awareness was growing that increased production and productivity in the livestock and agricultural sub-sectors had to come from sustainable intensification of existing areas and not further land conversion—compatible with the protection and conservation of the natural resource base. The Government of Uruguay (GOU) also acknowledged the public sector's key role in promoting sustainable rural development through supportive investment in public goods and an incentive structure that encourages responsible practices in the private sector.

1.1.2 It is important to note that due to the negative impacts of the regional economic and financial crisis of 2002, Uruguay was in the midst of a dual transition at the time of project design and launch: (i) an economic transition towards a path of equitable and sustainable development, as the economy continued to recover; and (ii) a political transition, as the victory of the *Frente Amplio* coalition in the October 2004 elections marked a new phase in the country's political history. As a result, the Bank Group's assistance over the period covered by the CAS discussed by Board on June 9, 2005 (FY05-10, Report No. 31804-UY) proposed a strategic program of lending and non-lending services to support the main objective of the new administration's development plan "*El Gobierno de Cambio–La Transición Responsable*," which was the attainment of equitable and sustainable economic development. To attain this longer-term goal, the GOU prioritized reducing vulnerability, sustaining growth, and improving living standards. The GOU sought to direct the goals and results of the project in order to achieve progress in the agricultural sector under all three of these priority areas.

1.1.3 **Rationale for Bank assistance**: The Uruguayan agricultural sector had benefited from more than 50 years of collaboration between the GOU and the Bank with efforts shifting over

time from a focus on productive aspects to a broader approach emphasizing environmental issues and longer-term sustainable production systems, mainly through improved natural resources management (NRM). The rationale for Bank involvement incorporated lessons from the Natural Resources Management and Irrigation Development Project or PRENADER (Loan 3697-UY, 1994-2002, P008173), Global Environment Facility (GEF) financed biodiversity projects in the region, and the Bank-led sector review report, *Uruguay: the Rural Sector and Natural Resources* (Report No. 24409-UR, 2002). The Integrated Natural Resources and Biodiversity Management Project (*Proyecto de Produccion Responable* or PPR) was partially financed through GEF resources (fully-blended) and, consistent with the GEF Strategic Priority of Mainstreaming Biodiversity in Production Landscapes, through: (i) developing systemic and institutional capacities of GOU agencies and other stakeholders and management procedures; (ii) disseminating relevant knowledge; and (iii) promoting partnership building between agencies, local communities and the private sector to secure biodiversity conservation.

Project Development Objectives ¹	Key Performance Indicators
1. Promote the adoption of economically and environmentally viable integrated production systems among farmers and livestock producers, within a context of holistic ecosystem and natural resources management.	 -Indicators showing improvement of natural resources and biodiversity conservation and management, including regeneration of natural grasses and other vegetation, maintenance and regeneration of natural forests, reduced impact grazing, and carbon sequestration -Number of beneficiaries that present integrated proposals at the farm level -Increased area of natural habitats managed for conservation and sustainable use for tourism activities -Number of farmers involved in projects in which biodiversity is mainstreamed into their production system Number of proposals to adopt integrated approach to NRM -Increased management and land restoration by combining tools and methods of integrated habitat management -13,000 rural families assisted by the project²* -1,000,000 hectares of land under improved NRM*
2. Promote an increased understanding of the role of biodiversity in agricultural landscapes and the potential impact of the various land use practices upon biodiversity and their economic and ecological sustainability.	 -Maintenance of mosaics of natural habitats within rural landscapes through support for eco-tourism and rural tourism -Native biodiversity subject to sustainable use by either farming or ranching in rural landscape, isolated or combined with other means of rural production -Hectares of natural habitats including natural forests under restoration or management for conservation and production -5,000 farmers participating in training activities*

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

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

Global Environmental Objective³	Key Performance Indicators
Conserve Uruguay's globally significant	-1 Eco-regional Plan developed on key biodiversity elements with priority
biodiversity particularly through financing	setting*
the incremental costs associated with	-10 pilot projects implemented in key biodiversity areas*

¹ The following sub-objective was also included in PAD Annex 3 Results Framework, although not referenced in the PAD main text or Loan/Grant Agreements: To develop partnerships between the public and private sectors, including effective institutional collaboration within the public sector, and to strengthen a demand-driven approach to investment decisions and financing.

² Indicator/target, and others designated with *, were established at negotiations and formalized in Implementation Letter, dated June 16, 2005. ³ GEO was not included in the PAD Annex 3 Results Framework with specifically linked KPIs. KPIs cited here came from the biodiversity-specific targets established at negotiations and formalized in the Implementation Letter and those listed in the PAD main text (pages 5-6).

promoting integrated production systems in	-Areas under improved pasture management techniques		
key biodiversity areas.	-Areas under sustainable use of natural resources		
	-Number of biodiversity-friendly projects implemented		
	-Number of farmers adoption innovative market incentive, such as		
	certification and easement implementation		
	-Number of species and/or populations under conservation		

1.4 Revised PDO (as approved by original approving authority) and Key Performance Indicators, and reasons/justification

The PDO was not revised during the project. The PAD Results Framework and 1.4.1 Monitoring Matrix (Annex 3) originally included an excessive number of both Key Performance Indicators (KPIs) and Intermediate Outcome Indicators (IOIs) without targets (see 2.1.5 for further details). As a first step, specific target values for five KPIs were defined in the Implementation Letter (dated June 16, 2005), as well as in preparation of the first version of the Operational Manual (September 2005), which was approved by the Bank prior to effectiveness. Further definition of indicators and targets for both KPIs and IOIs (as presented in the PAD) to be monitored throughout the life of the project by the M&E team of the Project Executing Unit (PEU) and the Bank were included in a report dated November 21, 2005 (prepared by the PEU and a Bank consultant specialized in M&E and incorporated into the Operational Manual) and progress was reflected in mission Aide Memoires and Bank ISRs. The Mid-Term Review (MTR) proposed the consolidation and improved clustering of some indicators, as well as the reduction of the target value for the area⁴ to be supported by the project, in order to reflect the actual average size of beneficiary farms and eliminate some of the initial redundancies in the KPIs and IOIs, for both the PDO and GEO. These changes occurred immediately post-MTR and were formalized via revision of the project Operational Manual.⁵ See table below, as well as Annex 2, Appendix 1 "Indicators Summary Table" for more details.

Project Development Objectives ⁶	Revised Key Performance Indicators
1. Promote the adoption of economically and	-3,500 proposals presented for integrated production systems at farm
environmentally viable integrated production	level
systems among farmers and livestock producers,	-3,000 proposals approved
within a context of holistic ecosystem and	-620,000 hectares incorporated to the integrated management of natural
natural resources management.	resources and biodiversity
2. Promote an increased understanding of the	-1,200 subprojects in which biodiversity is mainstreamed into production
role of biodiversity in agricultural landscapes	systems
and the potential impact of the various land use	-100,000 hectares administered by small and medium producers in the
practices upon biodiversity and their economic	management of biodiversity
and ecological sustainability.	-5,000 hectares of natural habitats including natural forests under
•	restoration or management for conservation and production

⁴Incoming administration's policy shift to target small and medium-sized farmers as eligible beneficiaries greatly reduced (and excluded in the case of NRM subprojects) the number of medium and large-sized farmers/producers as potential beneficiaries (as included in the original project design). This shift had a substantial effect on the target area (1,000,000 hectares) and amount of beneficiary co-financing. As a result of the MTR revision process, target area was reduced to 620,000 hectares (although ultimately the project did reach an area of 881,882 hectares).

⁵ While such changes/revisions would currently require a formal restructuring (OP guidelines, specifically "Processing Restructuring of Investment Projects, Guidelines for Staff," dated November 2009), the Team formalized them in revisions to the project Operational Manual, as restructuring, per the above guidelines, was still not required at the time these revisions were made.

⁶ The following sub-objective was also included in PAD Annex 3 Results Framework, although not referenced in the PAD main text or Loan/Grant Agreements: *To develop partnerships between the public and private sectors, including effective institutional collaboration within the public sector, and to strengthen a demand-driven approach to investment decisions and financing.*

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

1.5.1 The GEO was not revised during the project. Given that the Bank loan and the GEF grant were implemented in a fully integrated manner, the project's revision of indicators (Section 1.4) also included GEO KPIs and other IOIs linked to the conservation of biodiversity. In this case, the revision/consolidation process was particularly relevant, given that project design explicitly included an unusually high number of biodiversity-related IOIs to ensure that MGAP would adequately address the incorporation of biodiversity into the productive landscape.

Global Environmental Objective	Key Performance Indicators
Conserve Uruguay's globally significant	-1 Eco-regional Plan developed on key biodiversity elements
biodiversity particularly through financing	with priority setting*
the incremental costs associated with	-10 pilot projects implemented in key biodiversity areas*
promoting integrated production systems in	-740 activities in the management of water (Drought Alleviation
key biodiversity areas.	Program)
	-Number of events and participants regarding soil and water
	conservation

Revised KPIs Post-MTR

1.6 Main Beneficiaries (as approved)

1.6.1 As approved in the PAD, the primary target beneficiary population of PPR was small and medium-sized farmers, particularly those with interest in or need for incorporating NRM and biodiversity conservation practices in their operations. The project was demand-driven. At higher levels, MGAP was expected to strengthen its overall NRM capacity, while other relevant sector institutions at the central and regional levels would be strengthened to develop and implement national strategies for the conservation and sustainable use of agricultural biodiversity and to promote their mainstreaming/integration in sector development programs.

1.7 Original Components (as approved)

1.7.1 Project objectives were to be achieved through four components (see Annex 2):

Component 1: Natural Resources and Biodiversity Management (estimated total cost at time of appraisal US\$87.63 million, including US\$25.17 million IBRD financing and US\$4.97 million GEF resources): technical and financial assistance to demand-driven activities to promote sustainable management of natural pastures and rain-fed as well as irrigated agriculture. GEF resources would support mainstreaming demand for biodiversity initiatives in priority ecosystems.

Component 2: Establishment of Pilot Areas (estimated total cost US\$1.50 million, 100 percent GEF-financed): implementation of pilot demonstrations of sustainable use of natural resources and biodiversity in key micro-watersheds.

Component 3: Support Services (estimated total cost US\$3.86 million, including US\$2.87 million IBRD financing and US\$0.29 million GEF resources): training to farmers, institutional strengthening of local and central authorities, (through improved GIS and

studies), studies and applied research, and specialized training for technical staff providing technical assistance (TA) to farmers.

Component 4: Project Executing Unit (estimated total cost US\$2.61 million, including US\$1.80 million IBRD financing and US\$0.25 million GEF resources): overall project implementation and the Monitoring and Evaluation System.

1.8 Revised Components

1.8.1 Components were not revised.

1.9 Other significant changes

1.9.1 **Changes in target beneficiary population:** Following the change in government between appraisal and Board approval, the target beneficiary population focus shifted from medium-sized farming operations to a category called "family farmers." This category, officially defined by Ministerial decree, included several criteria related to size of holding (mostly comprised of small and the lower segment of medium-sized farmers, but differentiated by production system), on-farm labor structure, and residential status. This official definition was adopted in the Operational Manual as the criterion for determining eligibility. Exceptions were made for selected biodiversity subprojects, in which the objective of the subproject required project support to larger livestock producers with more extensive holdings. As a result, the beneficiary contribution to subprojects (and consequently overall project costs) was considerably lower than anticipated in the PAD due to a lower co-financing requirement from small farmers— although the loan amount and counterpart funding remained unchanged. The expected aggregate target area covered by the project was also reduced, but the number and location of project beneficiaries, as well as impact and behavioral change, were more widespread geographically.

1.9.2 **Revised important project dates:** (i) Loan Agreement was amended to extend the date of effectiveness by 21 days (September 14, 2005 to October 5, 2005), as all conditions of effectiveness had been met including adoption of the Operational Manual but the FM Specialist was unable to finalize discussion of Financial Management Report (FMR) format with Borrower; and (ii) Project closing date was extended 12 months to August 31, 2012 to permit full disbursement of the GEF Grant and achievement of project objectives (both Loan Agreement and Grant Agreement were modified accordingly).

2. Key Factors Affecting Implementation and Outcomes

2.1 Project Preparation, Design and Quality at Entry

2.1.1 The blending of GEF resources in project design to support biodiversity conservation represented, at that time, a highly innovative (and challenging) decision based on the assumption that the most important elements of Uruguay's biodiversity were located on private lands, primarily dedicated to extensive livestock production. This basic assumption supported the two main design elements of PPR and associated activities, that: (i) effective conservation of the country's biological resources required the active mainstreaming of biodiversity into the policies and instruments of the production-oriented MGAP, and (ii) Uruguay's unique features

constituted an ideal environment to fully integrate biodiversity as a key element of a project aimed at supporting a comprehensive NRM strategy.

2.1.2 Specific lessons from related GEF operations included the need for: innovative financing and support mechanisms for long-term conservation of biodiversity, especially outside protected areas; addressing the root causes of biodiversity loss, such as social and political factors; mainstreaming biodiversity in national economic development plans to avoid becoming an isolated, stand-alone activity; ensuring long-term sustainability; stakeholders' participation from beginning to build ownership in biodiversity conservation; private sector incorporated into biodiversity management, especially outside protected areas—as in Uruguay's case, where biodiversity conservation is primarily in private hands; and local/regional capacity-building as essential to ensure an adequate legal and policy framework and needed skills/knowledge.

2.1.3 **Risk Assessment:** This adjustment process during the latter part of project preparation provided substantial elements to increase the potential risks, mainly those associated with: (i) institutional capacity for project implementation (rated High in the PAD), and (ii) generation of demand among farmers for investments in NRM and biodiversity (rated Moderate in the PAD). The Bank's decision to delay Board approval by one year not only enabled the new administration to secure ownership, but also allowed for the development of a constructive dialogue with the incoming authorities to agree on measures to mitigate these risks. Although these factors did contribute to the initially slow implementation of the project, the overall physical and financial performance achieved by the project would suggest that the mitigation measures applied were adequate to address the envisaged risks.

2.1.4 **Indicators:** With regards to ensuring quality at entry, an area which required revisions at the time of the MTR was the inclusion by the Bank preparation team of an extensive list of both Key Performance Indicators (KPIs) and Intermediate Outcome Indicators (IOIs) in the PAD Results Framework and Monitoring Matrix. The initial over-design of this lengthy and broad list of KPIs and IOIs, many of which were difficult to quantify or adequately measure, created confusion at the time of project launch as to the actual number of indicators that could be effectively monitored due to limited resources, as well as later on during subsequent evaluations of the project and at project closure (Borrower Completion Report, or BCR, and this ICR). Furthermore, insufficient data collection during project implementation, along with no beneficiary production baseline established at the level of subprojects (nor indicators to measure production/productivity), did not allow for a full, traditional ex-post economic and financial analysis of subprojects, or alternatively, a full cost-effectiveness analysis (see Annex 3). This was primarily due to the nature of KPIs and IOIs focused on measuring NRM and biodiversity conservation improvements, but not sufficient to measure increases to income, productivity, or the economic viability of subprojects.

2.2 Implementation

Factors affecting project implementation and outcome:

2.2.1 Initial implementation progress was slow due to several factors: lack of experience by the new administration, PEU set up, promotion of subproject guidelines, development of

capacity/demand for biodiversity conservation subprojects, and the operational complexity of blended source of funds. However, once the initial pipeline of subprojects was established, PEU management began addressing needs of the remaining components/subcomponents of the project, and an acceptable/balanced rate of implementation was reached in Year 2 and effectively sustained throughout the life of the project. While the implementation approach was strongly focused on the subproject cycle, the overall positive outcomes of PPR were, to a large extent, the result of the effective integration of subprojects with activities under Components 2 and 3. The main challenge facing Component 1 was the development of initial demand for NRM proposals, and more so for biodiversity-related initiatives. These difficulties were gradually overcome through recruitment of a dedicated team of biodiversity specialists, consolidation of the technical and operational framework, and establishment of a network of individuals/institutions with interest in promoting biodiversity conservation initiatives.

2.2.2 Although PPR was implemented within the overall conceptual and operational framework developed during preparation, two important factors influenced implementation, which were overcome/mitigated through effective PEU planning and performance:

- (i) *Increasing climatic variability.* The agricultural sector was affected by three unusually severe summer droughts, with considerable impact on overall sector output, particularly the dairy and beef subsectors. The first drought occurred in the summer of 2006, coinciding with the initial stages of project implementation, and underscored the important role of PPR in substituting public emergency assistance with investments that would help prevent the devastating effects of subsequent summer droughts on "family farmers." In response to this and within PPR's existing menu of improved NRM activities, the GOU and Bank agreed on giving priority to farmers' demand for improved on-farm supply of water for livestock consumption. This experience emphasized the point that climate variability/beneficiary vulnerability should be taken into consideration at project design, as the benefits accrued by producers from project-financed investments can be easily lost as a result of droughts or other climate related adversities;
- (ii) *MGAP Structural Changes.* During initial years of implementation, MGAP experienced considerable institutional volatility primarily due to structural changes by the incoming administration and ministry authorities. After several adjustments among entities' roles and responsibilities within MGAP, in 2009 the Directorate for Rural Development (DGDR) was created and given responsibility to coordinate all MGAP programs involving support to "family farmers," including PPR (See Section 5.2).

2.2.3 **Mid-Term Review**: A full assessment of PPR's implementation performance was conducted in August 2009 as part of the MTR, including a comprehensive, independently-prepared report produced by a team working under the coordination of one of the nation's largest family producer organizations (*Centro Cooperativista Uruguayo* or *CCU*). The report was enriched by a participatory consultation process in which a broad sample of project beneficiaries and stakeholders contributed opinions and recommendations to improve project performance. The conclusions and recommendations of the report were jointly analyzed by MGAP authorities and the Bank, resulting in a series of adjustments to project implementation, which were reflected in a detailed Action Plan and subsequently in revisions to the Operational Manual.

2.2.4 **Project at Risk:** The project was never declared at risk.

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

2.3.1 **Design:** Specific software to ensure adequate project monitoring and evaluation (M&E) was included in project design and scheduled to be developed during the first year of project execution. This software, or Monitoring Information System (MIS), was intended to create a baseline and measure project performance, results, and provide data for the assessment of impacts. Shortcomings in design worth highlighting here, however, were the lack of (i) beneficiary production baselines established at the level of subprojects, and (ii) inclusion of indicators to measure the "economically-viable" aspect to the PDO. Nevertheless, some economic data points collected during the M&E process were able to be adapted in order prepare the ex-post analysis, as presented in Annex 3, and notwithstanding the limitations at project outset with regards to the M&E system, the project team was still able to report on almost all project indicators by project close.

2.3.2 **Implementation:** Due to budgetary constraints and consequent austerity measures enforced by the new administration, the intended tailor-made MIS system was not contracted and implemented. In place of that software system, the PEU developed a simplified (and less costly) spreadsheet-based M&E system which, although less automated and unable to provide as effective real-time data, still captured valuable project information. It was also able to produce an impressive amount of data, and capture/contribute important information used in training and dissemination materials (see Annex 9).

2.3.3 Utilization: Using the spreadsheet-based M&E system, the PEU and Bank team were able to assess progress and performance of project components, and suggest improvement/adjustments during regular Supervision missions. The collected data also assisted during Bank/GOU portfolio reviews and in preparation of ISRs, as well as supporting project evaluations, particularly at project mid-term and project-closure with the Sustainability Assessment, Beneficiary Survey (see Annex 5), and Borrower Completion Report (BCR). It is important to note the significant amount of information collected, reported, and analyzed through the BCR, regarding project results and performance.

2.4 Safeguard and Fiduciary Compliance

2.4.1 **Safeguards compliance:** PPR was classified Category B (Partial Assessment), and safeguards performance/compliance was rated uniformly *Satisfactory* by supervision missions. In conformity with OP 4.01, an ex-ante Environmental Assessment (EA) was carried out and determined overall that anticipated (demand-driven) project interventions would facilitate significant improvement in the quality of land and water resources. In general, irrigation activities were determined to be those posing potential risk of negative environmental impact. Other isolated cases were also identified during the EA where performance could have been improved and this led to the introduction (and included in the Operational Manual) of a "blacklist" which specified activities ineligible for funding. All subproject funding proposals from potential beneficiary farmers or groups were required to include a statement on any potential environmental consequences, which were then screened by the PEU following this "blacklist." The project team also included a Senior Environmental Specialist and supervision of compliance with triggered safeguards was thorough and consistent, aiming to avoid and/or

minimize any potential negative impacts. Of all 5,300 subprojects implemented, preparation of an Environmental Impact Assessment (EIA) was never necessary as none of the proposals presented were evaluated as having any foreseen negative environmental impacts.

Fiduciary compliance:

2.4.2 **Financial Management (FM):** FM performance varied over the course of the project, with most deficiencies occurring during the first two years of the project. FM supervision was intensive in the initial years, primarily due to the lack of experience of the PEU with Bank FM procedures/systems and human resource issues. Minor problems were diagnosed and evaluated, hands-on training was provided, and time-bound action plans and close follow-up sought to correct deficiencies. FM staffing, organization, information, archiving, and reporting were substantially improved by the MTR and through project closing. All FM project ratings were Satisfactory or higher in the case of government commitment and transparency.

2.4.3 <u>Audit:</u> Some audit misinterpretation by the PEU occurred at different times during the project and audits were at times delayed in following established timetables. Auditors' opinions were generally unqualified, and the few qualified opinions were adequately addressed—the latter reflecting the same internal control risks/deficiencies detected by Bank FM missions. MGAP and the PEU worked diligently with the Bank FM team to resolve all issues defined.

2.4.4 **Procurement:** Performance was mixed throughout project implementation, with some weaknesses identified, primarily due to inexperience with Bank procurement guidelines. Bank-administered training informed and assisted key PEU staff to become better-acquainted with Bank fiduciary requirements and accelerated procurement processing. Based on the findings of the final review (PPP) which indicated some shortcomings in shopping procedures (use of point system for goods, qualification of individual consultants), overall project procurement was rated *Moderately Satisfactory*.

2.5 Post-completion Operation/Next Phase

2.5.1 **New lending operations**: Largely due to the success of PPR, MGAP has continued to develop and implement an innovative, integrated, and inclusive "climate-smart" agricultural and rural development program. As a result, MGAP requested a new Bank-financed operation, prioritized in the 2010-2015 Country Partnership Strategy (CPS) (Report #55863-UY, discussed by the Executive Directors on August 18, 2010) which preserves the main pillars of PPR, while incorporating measures to address the main lesson learned regarding vulnerability of beneficiaries to the effects of climate variability. The recently-approved and effective operation Sustainable Management of Natural Resources and Climate Change Project (P124181), locally known as the *Proyecto de Desarrollo y Adaptación al Cambio Climático* or DACC, includes measures to enhance intra-ministerial (MGAP) collaboration between different departments, and financial incentives (matching grants) and TA for on-farm investments in economically and environmentally sustainable agricultural and livestock production practices (designed to improve their resilience to extreme climatic events) to some 4,000 "family farmers" and medium-sized farmers. This innovative project also includes the important technical design of an Agricultural Information and Decision Support System which will consolidate many different sources of in-

country information to generate short and medium term climate forecasting and inform policymakers and farmers alike with "actionable" data for implementing climate change adaptation strategies. Furthermore, the recently launched Climate-Smart Agricultural Water Management TA (P144985) is envisioned to build further upon the foundation laid by PPR's successes and continue the GOU's "climate-smart" agricultural and rural development program.

3. Assessment of Outcomes

3.1 Relevance of Objectives, Design and Implementation

3.1.1 PPR's objectives were innovative, both nationally and globally, and remain highly relevant to the Bank's partnership strategy and major pillars from the current 2010-2015 CPS (Report #55863-UY) with Uruguay. As mentioned, PPR laid important groundwork for the ongoing DACC project (P124181) which represents one element of an integrated results-oriented approach that would also include: (i) Bank assistance to MGAP to access other possible sources of bilateral and multilateral financing for climate change; (ii) Bank analytical support in the form of an AAA on "Low Carbon Growth Strategies for Agriculture and the Uruguayan Economy" and a feasibility study for the "Introduction of NDVI/Weather Index Insurance to cover grassland production in Uruguay"; and (iii) Bank TA and collaboration with MGAP regarding dissemination of experiences, organization of conferences, and participation in international events related to climate change. As did PPR, DACC continues to support the GOU's National Plan of Response to Climate Change (NPRCC) and Biodiversity Strategy.

3.2 Achievement of Project Development Objectives and Global Environment Objectives

3.2.1 PPR represents an exemplary blending of IBRD and GEF resources, which successfully achieved both the sustainable integration of NRM and the biodiversity conservation objectives of the PDO and the GEO, with most targets surpassed. The following results were achieved, citing key indicators and supporting evidence (see also Data Sheet and Annexes 2 and 3 for details).

Objective 1, Natural Resources Management: Adoption of economically and environmentally viable integrated production systems by small and medium-sized farmers in their production systems (both individually and in groups), within the context of holistic eco-system and NRM (*Substantially Achieved*)

3.2.2 PPR has made a considerable contribution to the improvement of NRM in Uruguay's agricultural sector by supporting agro-environmental on-farm investments (mainly in the beef and dairy subsectors) and promoting technologies that reduce the vulnerability of producers to the country's increasing climatic variability. The technical and financial assistance provided to over 4,600 small and medium producers (representing almost 25 percent of total number of "family farmers" in the country) resulted in improved soil and water management in almost 900,000 hectares of privately owned land. These direct interventions represented the main pillar within a broader strategy aimed at achieving the sustainable adoption and dissemination of improved NRM practices, that included outreach/training (2,600 public and private service providers, 28,000 producers, and 150,000 indirect beneficiaries), publications, and institutional strengthening (support to 56 local producer organizations, and relevant public agencies). In

addition, these important achievements were enhanced by providing complementary services which included TA to farmers, improved communication to raise awareness on NRM and biodiversity matters, and institutional strengthening of MGAP and farmer organizations. This integrated effort has led to increased understanding by all stakeholders that policies and technologies can be applied to ensure that productive intensification is achieved without deteriorating the country's natural resource base.

3.2.3 Specific NRM-related achievements can be summarized as follows:

- The comprehensive set of agro-environmental practices (and sample-derived estimated results, see Annex 2) supported by PPR, include: (i) manure management systems in dairy farms (improved milk quality, 20-25 percent reduction in milking times); (ii) substitution of chemicals with natural (solar) disinfection of soils in horticulture (30 percent decrease in costs, improved soil quality); (iii) improved water management in intensive grazing systems (live weight gain increase 20-30 kg/hectare/yr); (iv) reduced soil degradation and erosion through promotion of crop rotations, increased soil coverage, and conservation tillage (increase 20 percent in total gross production, reduced operating costs); (v) improved grassland management through fencing and water distribution systems (increased grazing time by 30 percent, increased pasture area by +30 percent, increased dry matter production by 10 percent); and (vii) communal infrastructure for storage, treatment and disposal/recycling of agrochemical containers
- PPR led to improved farmer income, primarily due to increased productivity in dairy, livestock, and agricultural systems: (i) **Livestock subsector**: productivity improvement of 344,240 livestock units (LU) by an average 20kg per year resulting in an estimated total incremental income of US\$20.9 million per year; (ii) **Dairy sector**: improved water distribution/quality to milking cows, resulting in an estimated increase in productivity of 1.3 liters animal/day and a total incremental income of US\$33.5 million per year; and (iii) **Horticulture sector**: productivity increase of about 15 percent on average, as well as anticipated output sustainability over time
- PPR led to significantly reduced losses during the severe droughts faced by farmers in 2008 and 2010, potentially exceeding avoided losses of US\$30 million, through co-financing 1,600 small on-farm reservoirs (*tajamares*), as well as developing a technological package for their improved design, construction, and management

Objective 2, Biodiversity: Increased understanding of the role of biodiversity in agricultural landscapes and the potential impact of the various land use practices upon biodiversity and their economic and ecological sustainability (*Substantially Achieved*)

3.2.4 PPR contributed important information, facilitated understanding, and led to behavioral changes within Uruguay's livestock and agricultural sectors towards the incorporation/mainstreaming of biodiversity conservation in production practices (producers) and policy/agendas (agricultural institutions/organizations). In addition, farmers' capacity for climate change adaptation has been strengthened due to project activities.

3.2.5 Specific biodiversity-related achievements can be summarized as follows:

• PPR carried out a total series of 78 capacity building events in relevant thematic areas including biodiversity conservation, making a substantial contribution to MGAP's efforts to

increase overall knowledge and understanding of biodiversity conservation at all levels (MGAP staff, central and local public institutions, farmer organizations, producers, private extension and TA providers, rural teachers and students, and general public). This was complemented by knowledge products developed or promoted by PPR, including publications, manuals, studies, videos, brochures, webpage, local and international conferences and seminars, etc. (see Annex 9 for details).

• 56 cooperation agreements (*convenios*) were signed with local and national agricultural organizations to promote government services to enhance the integrated management of natural resources and biodiversity conservation in the sector, all of which are expected to enhance the sustainability of the investments financed by PPR.

Global Environmental Objective: Conservation of important parts of Uruguay's globally significant biodiversity through financing the incremental costs associated with integrating production systems in key biodiversity areas (*Substantially Achieved*)

3.2.6 PPR successfully promoted among farmers/producers important biodiversity conservation and NRM practices, leading to conservation of globally significant biodiversity. Of the 5,300 subprojects, 1,308 were targeted specifically to promote biodiversity conservation practices (627 in extensive livestock operations blending NRM-biodiversity). Furthermore, 47 subprojects promoting ecotourism not only allowed small and medium farmers to establish rural tourism operations but also raised awareness. The more noteworthy "outcome" achievements include how PPR has led to a new biological vision (or "biodiversity-awareness") for both the productive sector and public institutions, spurring important behavioral changes for inclusion of biodiversity in production/management decisions and policy strategies. This has been achieved through the blending of actions supporting both NRM and biodiversity within both the public and private sectors—a particularly notable achievement, considering the fact that MGAP previously had very limited knowledge/experience related to biodiversity matters and the country's rich biodiversity is mainly concentrated in private lands.

3.2.7 Specific GEO-related achievements can be summarized as follows:

- Conservation protection measures providing direct/indirect improvements to conservation of 243 native species (83 fauna, 160 flora), including 79 listed by IUCN's Red List, 18 by CITES, and 51 defined as priority species by the National System of Protected Areas (SNAP);
- Regeneration/improved management of natural pastures and native forest;
- Establishment of conservation areas on farms to protect particular species or key sites of high biodiversity, e.g. conservation measures for wild deer populations, grassland birds, feathery palms, as well as numerous protected areas for regeneration of degraded environments in various parts of the country;
- Control of invasive alien flora and fauna species affecting both biodiversity and production;
- Protection of bio-diverse "riparian areas" which provide various ecosystem services: filtering pollutants, nutrient uptake in plant biomass, and habitat/food for many animal groups;
- Existing Geographic Information System (GIS) of MGAP improved by adding 6 biodiversity-related layers through over 70 individual layers and 210 maps. Themes include: (i) Biodiversity Database, (ii) Eco-regional maps, (iii) classification of environments, (iv)

geo-location of farm-level water-harvesting facilities, (v) Freshwater Native Fish Database, and (vi) NRM subproject database with geo-referenced spatial location;

• Completion of comprehensive multidisciplinary Eco-regional Planning Study of country's main natural habitats, and pilot projects developed in 10 biodiversity priority areas.

3.2.8 **Project costs and financing:** Total actual project costs were US\$47.59 million, comprising US\$30 million IBRD loan funds; US\$7 million GEF grant funds; GOU counterpart funds totaling US\$4.6 million; and beneficiary co-financing contributions of US\$6 million. Although the original loan, grant, and counterpart funding amounts remained unchanged and were fully disbursed, total project costs were approximately 50 percent lower than estimated at appraisal (see Annex 1), primarily due to the aforementioned shift in target beneficiary population focus from medium-sized farming operations to "family farmers" (see 1.9.1). As a result, beneficiary contribution to subprojects (and consequently, overall project costs) was considerably lower than anticipated in the PAD due to a lower co-financing requirement.

3.2.9 Component 1, Natural Resources and Biodiversity Management, accounted for the bulk of resources invested representing a high proportion of total project costs, 82.6 percent. Investments in the other Components were as follows: Component 2, Pilot Areas, 5.2 percent; Component 3, Institutional Strengthening and Training, 3.3 percent; and Component 4, Project Management, Monitoring and Evaluation, 8.8 percent.

3.2.10 **Co-financing:** Under Component 1, PPR financed demand-driven subprojects promoting/supporting integrated NRM and biodiversity conservation practices. Subprojects were classified into four sub-components: (1) Soil and water; (2) Water use; (3) Management of natural pastures; and (4) Conservation of biodiversity. Small-scale farmers co-financed 20 percent of the total subproject costs; and medium-scale farmers, 40 percent. For large farmers, their original co-financing rate was 80 percent of subproject costs, but it decreased to 40 percent in order to encourage the submission of subprojects focused on biodiversity conservation.

3.3 Efficiency

3.3.1 The ex-post analysis of the project (Annex 3) focused primarily on illustrating the direct economic and environmental impacts of the most common subprojects under the project by quantifying increases in the income of participating farmers.⁷ This analysis was based on a sample of subprojects in the livestock, dairy, and horticulture subsectors; the sample differed from models used during preparation, mainly due to the demand-driven nature and shift in focus to "family farmers" (the PAD analysis was mainly supported by medium-sized rice farmers, which were not included in the revised target population). PPR also achieved significant **positive environmental externalities** which could not be quantified in monetary terms during the ex-post economic analysis.

⁷ During project appraisal, a cost benefit analysis was conducted leading to an estimated overall economic rate of return of 22.5 percent and financial rates of return over 25 percent. Recalculation of the ERR and IRR at completion were not possible due to insufficient data collection during project implementation to allow for a full cost benefit analysis or, alternatively, a cost effectiveness analysis ex-post. The lack of economic data collection is attributable to the nature of project objectives/data being natural resource management and biodiversity conservation.

3.3.2 Another important element indicative of project efficiency was the relatively large amount of project funding (82.6 percent of project costs) that was transferred directly to the hands of beneficiaries, either through funding of subprojects and/or through provision of TA under Component 1. This proportional funding highlights not only the efficiency in allocation of funds for direct investments, but also the array of knowledge-related and institutional achievements obtained with the remaining 18 percent of project funds.

3.4 Justification of Overall Outcome and Global Environment Outcome Rating Rating: **Satisfactory**

3.4.1 Overall, PPR demonstrated notable levels of achievement with respect to PDO, GEO, and performance indicators based on the following: (i) efficacy of project activities and achievements as demonstrated through reported KPI and IOI final targets achieved; (ii) analysis indicating project efficiency judged by its positive direct and indirect economic and environmental benefits; and (iii) sustainability of project objectives ensured through demand-driven design, cost-sharing with beneficiaries, TA network established, contribution to DACC project design, and positive evidence/track record demonstrated in the Sustainability Assessment.

3.5 Overarching Themes, Other Outcomes and Impacts(a) Poverty Impacts, Gender Aspects, and Social Development

3.5.1 Complementing other MGAP initiatives specifically aimed at social and poverty issues in rural areas (namely the Uruguay Rural Project financed by IFAD, approved December 2000, US\$24.5 million), PPR contributed to social development, gender, and poverty alleviation efforts through a series of conceptual and operational elements. Most importantly, through focus on family-based operations, subprojects involved nearly all family members in the design, implementation, and subsequent benefits of subprojects and increased rural access to technology and financial resources. At the community level, PPR promoted the implementation of group-proposed subprojects and the empowerment of local producer organizations by strengthening and promoting their inclusion in the subproject cycle as local beneficiary "screeners." In addition, PPR was instrumental in the delivery of comprehensive TA/outreach programs targeted at key social development stakeholders (NGOs, cooperatives, rural development organizations, rural teachers and students, etc.), job creation (particularly in rural areas), and support to numerous community-based biodiversity subprojects.

(b) Institutional Change/Strengthening

3.5.2 Although the vast majority of project funds (82.6 percent) were utilized to support onfarm investments through Component 1, PPR achieved substantial results with regards to institutional strengthening, both for public and private institutions.

3.5.3 **Public sector institutional strengthening.** Despite the institutional changes that affected MGAP during the initial stages of the project, the support provided by ministry authorities allowed the PEU (in particular the 19 decentralized professionals) to gradually develop collaborative arrangements with key technical areas of MGAP. This served the dual purpose of strengthening the PEU's technical evaluation of subprojects and better aligning project actions
with MGAP's priorities. Two examples are emblematic of this approach: (i) MGAP's response to the 2006/2007 summer drought, which resulted in PPR's highly successful drought prevention subprojects, including the design and construction of small on-farm reservoirs (*tajamares*) and increased awareness of the vulnerability of Uruguayan producers to climatic variability (see DACC project); and (ii) PPR's successful contribution to mainstream biodiversity elements within the policies and instruments of public agricultural institutions through numerous awareness campaigns and training events, as well as the development and dissemination of high quality knowledge products focused on biodiversity (many technical studies and publications).

3.5.4 **Private sector institutional strengthening.** PPR also made a substantial contribution to the development and operation of private institutions, mainly through engagement with local producer organizations representing groups of "family farmers." Through 56 formal agreements (*convenios*) PPR provided technical and operational support to producer organizations, of which the majority were small entities based in rural areas. These organizations also came to understand the importance of sustainable NRM and biodiversity conservation, as well as the empowerment induced by collaborative actions to secure improved provision of services to members. Most importantly, the role of these organizations as facilitators in providing assistance to MGAP strengthened the development and delivery of public policies and programs. In the long run, these less tangible yet highly relevant contributions of the project represent important pillars not only for the achievement of project objectives, but also for the consolidation of a new collaborative model of public-private partnerships in the sector.

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

3.5.5 PPR was the catalyst for the following noteworthy, unanticipated outcomes:

- As the droughts of 2008 and 2010 were unexpected, flexibility under Component 1 (i.e. demand-driven process for subprojects) allowed for meeting farmer demand to sufficiently adapt to drought conditions and thereby reduce overall vulnerability and production losses.
- Contracting of local technicians to provide TA and training directly on the farm sites expanded MGAP's technical capacity and outreach. Also, beneficiaries in many instances were able to reciprocate and contribute to building further technical capacity by providing a producer-level, practical perspective for new ideas and approaches that could be replicated at a larger-scale in other parts of the country (where applicable).
- Under the demand-driven approach and the shift to "family farmers" as target beneficiaries, it was difficult for the PEU to estimate the amount and speed of initial responses to the first round of call-for-proposals. After an overwhelming response (possibly due to wide-spread communication and dissemination), the PEU was unable to disburse funding to approved subprojects rapidly enough to prevent frustration and disappointment from a number of initial beneficiaries. This experience, however, was limited to the first call for proposals and provided lessons for improving the subproject cycle and administrative capacity.
- Given PPR's focus on "family farmers," the demand/importance of partnerships (*convenios*) facilitating the growth and strength of producer organizations at the local level, with regards to NRM and biodiversity conservation, became an important element of project activities and helped facilitate longer-term sustainability.

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

3.6.1 PPR carried out a Beneficiary Survey during the final months of implementation (see Annex 5). Main findings were as follows: (i) beneficiaries assessed the overall project very positively; (ii) beneficiaries who benefited from "integrated subprojects" expressed the highest satisfaction levels; (iii) most beneficiaries reported that PPR contributed to improving their livelihood, both in terms of increased income, as well as improved quality of life; (iv) water management and pasture management were perceived as the most demanded interventions; (v) beneficiaries described their relationship with PPR as "good," and 70 percent of beneficiaries said PPR improved their opinion about MGAP; (vi) the strategy to promote consolidation of producers groups and stronger networks was rated as "successful;" (vii) most beneficiaries were "very satisfied" with the support provided by PPR's TA staff, and indications are that new technical ties or working relationships were established after project completion; and (viii) beneficiaries rated training, information sharing, and knowledge transfer activities as "very useful and helpful."

4. Assessment of Risk to Development Outcome and Global Environmental Outcome Rating: Low

4.1 The overall rating regarding the risk to the sustainability of project development and global environmental outcomes is supported by the following factors:

- Demand-driven approach helped ensure a "sense of ownership" in subproject investments, particularly as beneficiaries experienced positive direct and indirect benefits with regards to their productivity/incomes, quality of life, and physical environment (as documented in the MTR report, Beneficiary Survey, and Sustainability Assessment)
- Facilitation of private sector network (regionally-based) of TA providers supports the continuity and sustainability of services/activities demanded by producers
- Establishment of two Ministerial Task Forces to provide high-level advice on water and grasslands needs and priorities
- Mainstreaming of strategic alliances between MGAP and producer organizations as a means to enhance delivery of public support in rural areas
- Adoption of preventive public support instruments to replace traditional emergency assistance and help farmers cope with extreme climatic events
- Consolidation of decentralized institutional model of TA provision by DGDR
- Recent selection, through competitive procedures, of numerous former PEU members to become full-time staff of the Ministry
- Adoption by MGAP of key technical and operational elements through recently approved DACC Project and Adaptation Fund project
- Establishment of a permanent PEU by MGAP authorities to provide support to all multilateral lending operations and ensure continued administrative and managerial capacity for future Bank-lending operations

4.2 **Sustainability:** A comprehensive Sustainability Assessment of on-farm investments was conducted as part of the final impact review by an independent team of consultants shortly before project completion. The results of this Assessment were encouraging, determining that over 90 percent of subprojects approved and implemented in the first two years of the project

were still in a satisfactory state of operation and maintenance (O&M) four to five years later. These findings suggest that the approach pursued by PPR was effective, as the subproject investments not only contributed to improve NRM on-farm, but also had a positive impact on the physical and financial performance of individual farm operations. Further, all of the final batch of water-related subprojects will receive continued TA under the recently-approved lending operation (DACC) ensuring adequate O&M assistance beyond PPR.

4.3 Finally, positive results from the public investments supported by PPR have encouraged MGAP to adopt or mainstream many of its innovative instruments and methodologies into their policies and operational programs, as well as for the National Directorate for the Environment (DINAMA) to collaboratively support conservation efforts in/around protected areas.

5. Assessment of Bank and Borrower Performance

5.1 Bank Performance(a) Bank Performance in Ensuring Quality at Entry Rating: Moderately Satisfactory

5.1.1 The Bank provided a high level of support to MGAP during the entire project preparation process through a qualified and multidisciplinary team of specialists, including successfully obtaining blended financial resources from the GEF. Continuity in Task Team leadership also helped ensure that experience and lessons learned from prior Bank interventions in Uruguay, including the PRENADER project (1994-2002, P008173) and the *Uruguay: the Rural Sector and Natural Resources* Report (No. 24409-UR, 2002), were fully incorporated into PPR's technical, fiduciary, and operational design.

5.1.2 The Bank team provided important post-appraisal support to assist incoming MGAP authorities to develop project ownership and define mutually agreeable targets to be used by the project M&E unit to monitor project performance. As a result of the aforementioned dramatic political change shortly after appraisal, the Bank engaged in a constructive dialogue with the new authorities, which resulted in an extended processing of the project (9 months between appraisal and negotiations). However, this was essential in order to successfully develop/instill project ownership by the new MGAP authorities, and to make the necessary operational adjustments to accommodate the priorities of the new administration overall planned project activities. The success of this effort was ratified by the Quality Assessment of Lending Portfolio (QALP-2) conducted by the Bank's internal Quality Assurance Group (QAG) in June 2010. This same report also addressed "Quality of Results Framework" and "Quality of Arrangements for M&E" (see Annex 2, Appendix 2).

5.1.3 Balancing these positive factors and the cited QAG ratings, the excessive number and complex nature/content of the PDO, GEO, KPIs, and IOIs during project design (as presented in the PAD Main Text and Annex 3 Results Framework), particularly in terms of measurability and lack of targets, negatively impacted quality at entry and required revision/consolidation at the time of the MTR in order to more effectively measure project outputs and outcomes. Furthermore, many of the KPIs and IOIs were more output-focused, as opposed to outcome focused, and lacked indicators for adequately measuring economic viability of subprojects.

(b) Quality of Supervision Rating: Satisfactory

5.1.4 **Frequent and Effective Supervision.** The Bank conducted 20 full supervision missions with extensive field trips to assess implementation on the ground, meet beneficiaries, decentralized project staff, and other key stakeholders. Aide Memoires were detailed and analytical, covering key issues and providing guidance to MGAP and the PEU through clear and constructive recommendations. Then Bank team provided flexible and responsive assistance to address unforeseen circumstances, in particular, recurrent droughts.

5.1.5 **Continued Bank Portfolio Activities.** Complementing supervision activities, in 2010 the Bank actively collaborated with MGAP/PEU in drafting a AAA on "Family Farming" (Title: *Uruguay - Family Agriculture Development*, Report No. 55220-UY, June 20, 2010). This AAA highlighted the need for an integrated and inclusive agricultural development strategy which technical and financial assistance is specifically targeted to "family farmers" to promote the adoption of new technologies and sustainable agro-environmental production practices. The report improved the Bank's supervisory role, helped lay the groundwork for the current lending operation (DACC), and provided important information that DGDR continues to use at present. Bank Management (local Representative, the SMU, and the CMU) support also assisted the Bank team in high-level dialogue with MGAP and Ministry of Economy and Finance (MEF) to address project issues, as well as facilitate numerous field visits by Bank managers to see project activities and meet with beneficiaries. In addition, the Bank team worked with the CMU on an innovative initiative to develop/establish the "UY Green Growth Cluster" which created a forum for cross-sector collaboration between related Bank projects/initiatives/task teams.

5.1.6 **Knowledge Events.** Bank team support to MGAP was highlighted through several knowledge events carried out in conjunction with PPR, including the GEF Assembly (June 2010), a highly successful CGIAR/GCARD event (2012), and a "South-South" Exchange Program event held in Colonia (June 2012) which focused on efficient water management in rural areas and highlighted the on-farm achievements of PPR. This "South-South" event included 70 participants from Brazil, Argentina, Chile, Paraguay, and Uruguay and underscored the importance of fluent communication and opportunities for exchanges on water-related issues among individuals and institutions within the region.

(c) Justification of Rating for Overall Bank Performance Rating: Moderately Satisfactory

5.1.7 This rating acknowledges that Bank performance in ensuring quality at entry was *Moderately Satisfactory*, primarily due to design-related challenges during preparation related to the Results Framework indicators and targets. However Bank supervision and support to the borrower/client during implementation was carried out in a *Satisfactory* manner to implement an innovative, complex, and widely-recognized project, which has led to continued Bank portfolio activities and effective dialogue with an innovation-friendly client.

5.2 Borrower Performance (a) Government Performance Rating: Satisfactory

5.2.1 During preparation, MGAP (under the previous administration) designated the General Office for Renewable Natural Resources (or RENARE, by its Spanish acronym) as the Directorate within MGAP responsible for overall project implementation (consistent with the PRENADER project). When the new administration took office, however, RENARE experienced a major internal restructuring process that limited its capacity to effectively fulfill its role as implementing agency of the project. Although this situation contributed to the slow start of PPR, this institutional and operational vacuum was eventually addressed by the: (i) active involvement of MGAP's Vice-Minister, designated by the Minister as the institutional focal point for PPR; and (ii) decision to strengthen the PEU in order to perform technical and operational functions (especially those related to the subproject cycle). Institutional functions were subsequently revised further with the creation of DGDR in 2009, designated to coordinate all MGAP programs involving support to "family farmers," including PPR. These changes, although conceptually sound, had an impact on project implementation due to the initial staffing and budgetary limitations of the newly established DGDR, which resulted in the need for PEU staff to combine project duties with institutional tasks, particularly affecting the performance of the PEU's decentralized staff.

5.2.2 Despite these institutional restructurings, not uncommon with changes of political administrations, actual GOU counterpart contributions to the project were 148 percent of projected amounts (from appraisal). This included critical support by the MEF to make budgetary adjustments to compensate for initial low financial performance within Uruguay's rigid 5-year fixed budget system.

(b) Implementing Agency or Agencies Performance Rating: Satisfactory

5.2.3 The commitment, dedication, and enthusiasm of PEU team members towards the successful administration and execution of the project were notable. Initial project implementation progress was very slow, however, due to several factors: lack of administrative experience of the incoming administration; need to recruit and train PEU team; operational complexity of blending loan and GEF grant resources (including incorporation of biodiversity within MGAP); delays caused by austerity measures disallowing the development and launch of the originally planned M&E system; and the unexpectedly long period required to initiate the flow of subprojects. As a result, during the first 12 months, the project's physical and financial progress was minimal. Following this somewhat disappointing start, the efforts of PEU management and staff to promote PPR in rural areas throughout the country began showing encouraging results, and demand for subprojects by project beneficiaries gradually increased. Through this process, an acceptable and balanced rate of implementation was reached in Year 2 and effectively sustained throughout the life of the project. This also included a comprehensive and well-prepared BCR, beneficiary survey, and Sustainability Assessment at project closure.

5.2.4 Led by a committed Director, the PEU had a well-qualified team of technical and administrative professionals, including centralized and decentralized staffing structure to perform all functions related to (i) promoting PPR's NRM and biodiversity objectives in rural areas; (ii) supporting and supervising the network of private TA providers that assisted beneficiaries in preparing and implementing subprojects; (iii) carrying out effective training, outreach, and communication strategies/programs; (iv) performing initial screening and assessment of subproject proposals; (v) linking PPR with local institutions and farmer organizations; and (vi) organizing project-sponsored events such as training, technical seminars, and field trips.

(c) Justification of Rating for Overall Borrower Performance Rating: Satisfactory

5.2.5 Overall, a large part of the project's success is attributable to the effective implementation, though delayed at first, by the PEU and support received through the life of the project from MGAP (and other GOU entities).⁸ This success has been further manifested through the recently-launched DACC operation promoting further institutional collaboration and mainstreaming of "climate-smart" agriculture, building on the successes of PPR.

6. Lessons Learned

- 6.1 The most important lessons learned from this project are:
 - A transparent demand-driven approach is critical to success of NRM projects. As the previous PRENADER project worked on a supply-driven basis, which led to some unsuccessful outcomes in beneficiaries' adherence to project concept and mechanisms, PPR promoted a demand-driven approach which helped ensure a better "sense of ownership," addressing real on-farm needs, and more cost-effective/sustainable investments;
 - **Integrating NRM and Biodiversity.** The integration of NRM and biodiversity within the structure and mentality of a traditionally structured, production-oriented Ministry of Agriculture was a key factor in promoting "green growth" in the agricultural sector;
 - **Output vs. Outcome Indicators and Targets.** Ex-post reviews highlighted the importance of KPIs with outcome-focused indicators and targets, and IOIs with output-focused indicators and targets to more effectively measure project impacts. Furthermore, KPIs and IOIs should be rationally and substantively consistent with project objectives;
 - **Detailed Design of the Subproject Cycle.** Within a broad-based demand-driven approach, the design and operational aspects of the subproject cycle, as well as the frequency/timing/budget of calls for proposals should be carefully addressed during preparation and validated during the initial stages of project implementation to avoid credibility issues and frustration within the beneficiary community when delays occur or expectations are not met;
 - Climate Change Adaptation Measures. In non-irrigated areas or production systems, climate variability and beneficiary vulnerability should be taken into consideration at project design, as the benefits accrued by producers from project-financed investments can be easily lost as a result of droughts or other climate related adversities;

⁸ One are of missed opportunity for greater impact on integrating biodiversity more fully throughout relevant government ministries was the limited participation and cooperation of DINAMA in project activities.

• Effective Dissemination Strategy. In order to maximize the dissemination, visibility and perception of project actions and results, the implementation of PPR demonstrated the importance of including, within the structure of the PEU, a communications team staffed by specialized professionals, responsible for the design and implementation of a communication plan suited to the features and needs of the project.

7. Comments on Issues Raised by Borrower/Implementing Agencies/Partners (a) Borrower/implementing agencies

7.1. Commenting on the Bank's draft ICR (see Annex 7, Appendix 1 with official letter/comments from Borrower/Implementing Agency), the Borrower provided the following comments/issues (in summary):

7.2 Borrower Summary Comments/Issues: The ICR is well-prepared, adequately demonstrates project achievements, and reflects well the findings/information documented in the BCR. However, the Borrower found the performance ratings regarding Bank and Borrower performance, particularly Bank Performance in Ensuring Quality-at-Entry, were lower than anticipated by the Borrower given the project's significant achievements and impacts regarding NRM, biodiversity conservation, and improvement in the quality of life for family farmers in Uruguay. The Implementing Agency (MGAP) found the project to be highly satisfactory and felt the justifications for the ICR performance ratings put undue emphasis on the perceived limitations of the indicators and M&E system used. In the Borrower's opinion, these restrictions did not have a significant impact on the implementation and results of the project. On the contrary, Borrower found the revision process to the project indicators and M&E system, which occurred after project launch and at MTR, were positive contributions by the Bank and PEU team which showed sensitivity to changes involving the change in government in 2005, as well as reflected the adaptive approach utilized during implementation and which contributed in part to the overall successful implementation and performance of the project.

7.3 **Team Response:** The team explained in the ICR review meeting⁹ held with the Borrower the rationale used for the assigned ratings. In summary, and as outlined in the appropriate sections of the ICR, the Moderately Satisfactory rating for Bank Performance in Ensuring Quality at Entry primarily reflects the initially complex/onerous design of the PAD Results Framework and Monitoring Matrix, including an excessive number of both KPIs and IOIs without initial targets, and which required revisions for improvement. Notwithstanding, the Satisfactory rating given for Bank Performance in Quality of Supervision, in part, reflects the discussed adaptive approach by both the Bank team and PEU.

(b) Co-financiers

Not applicable.

(c) Other partners and stakeholders Not applicable.

⁹ Note. The Borrower letter/comments were discussed during an official ICR review meeting where the letter was delivered by Borrower and discussion held with Bank preparation team on April 18, 2013 (Montevideo, UY).

Annex 1. Project Costs and Financing

Components	Appraisal Estimate (US\$ million)	Actual/Latest Estimate at 31/08/2012 (US\$ million)	Percentage of Appraisal (US\$ million)
1. Natural Resources and Biodiversity	87.62	39.13	
Management Soil and water		19.67	
Water use		7.95	45%
Management of natural pastures		7.06	
Biodiversity Conservation		4.43	
2. Pilot Areas	1.50	2.49	166%
3. Institutional Strengthening and training	3.61	1.64	45%
Institutional strengthening	1.468	0.86	59%
GIS	0.352	0.06	19%
Training	1.794	0.41	23%
Applied research	0	0.30	
4. Project Unit	2.52	4.17	165%
Executing Unit	2.443	3.35	137%
Monitoring and Evaluation	0.084	0.30	356%
Communication and dissemination		0.51	
Total Baseline Cost	95.27	47.44	
Physical Contingencies	0.117		
Price Contingencies	0.465		
TOTAL PROJECT COSTS	95.85 (*)	47.44	50%
Front-end Fee	0.15	0.15	100%
GRAND TOTAL	96.00	47.59	50%

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

(*) Identifiable taxes and duties are US\$8.5 million and the total project cost, net of taxes, US\$87.4 million. The share of project cost net of taxes is therefore 91 percent.

Note: Actual total project costs were 50 percent lower than estimated at appraisal primarily due to the change in government shortly after appraisal, resulting in a shift in project focus from medium and large farming operations to the category of "Family Farmers" comprised of small and medium-sized producers. The considerable difference in subproject co-financing levels for each type of farmer (20 percent for small farmers and 60-80 percent for large farmers) translated into the overall reduction in

beneficiary contribution to total project costs. Additionally, the appraisal estimation of beneficiaries' contributions included inkind family labor valued at market prices, whereas the final reported beneficiaries' contributions did not account for most "family-labor" in-kind costs, as most producers found it difficult to estimate the market value of family labor and did not keep records (see Annex 3 for further details).

(a) Co-financing

Source of Funds	Type of Financing	Appraisal Estimate (US\$ million)	Actual/Latest Estimate (US\$ million)	Percentage of Appraisal
Borrower	Counterpart financing	3.00	4.60	154%
Beneficiaries	Co-financing	56.00	6.00	11%
IBRD		30.00	30.00	100%
GEF		7.00	7.00	100%
	Total financing	96.00	47.59	50%

Annex 2. Outputs by Component

2.1 PPR provided technical and financial assistance to 4,667 small and medium-sized livestock producers and farmers to improve natural resources and biodiversity conservation, as well as to ensure medium to long-term sustainability of livestock and crop production. It also strengthened 658 producer groups. As a result of project activities, over 881,882 hectares benefited from improved NRM, thus contributing to the conservation of the natural resource base and the long term sustainability of agricultural development in the country. See "Indicators Summary Table" at end of this Annex for details.

2.2 PPR provided technical and financial assistance on a matching grant basis for 5,300 subprojects. One of the main challenges of PPR was to ensure that the supported subprojects were integrated, in the sense of combining measures enhancing NRM and biodiversity conservation. It is important to note that GEF resources supported only activities directly linked with biodiversity conservation.

2.3 PPR has been highly effective, as exemplified by the number of direct and indirect beneficiaries reached (as reported in the BCR) of 28,000 direct beneficiaries (meaning producers and their families) and 150,000 indirect beneficiaries (including everyone who has taken part in the project activities, including training courses, workshops, field work, rural schools, researches, institutional strengthening, etc). PPR also promoted private sector participation through capacity building and the provision of production support services, particularly TA to producers, training events, and extension materials and publications. Quality training was delivered to farmers and producer organizations in several technical areas. The technicians also received good quality training in natural resources and biodiversity management and now have appropriate knowledge to replicate such assistance services. PPR carried out a total series of 78 capacity building events in different thematic areas and a total of 2,615 technicians were trained.

2.4 Strong linkages were established between project beneficiaries and the private and public sectors operating in the agriculture sector. Some 56 cooperation agreements were signed with local and national organizations to promote government services to enhance the integrated management of natural resources and biodiversity, all of which are expected to enhance the sustainability of the investments financed by PPR.

2.5 Activities under Component 1, Natural Resources and Biodiversity Management, accounted for the majority of resources invested (82.6 percent), compared to Component 2 Pilot Areas (5.2 percent); Component 3 Institutional Strengthening and Training (3.3 percent); and Component 4 Project Management, Monitoring and Evaluation (8.8 percent). Through activities under Component 1, PPR financed over 5,000 demand-driven subprojects promoting integrated NRM and biodiversity conservation practices. Subprojects were classified into four subcomponents: (i) Soil and water; (ii) Water use; (iii) Management of natural pastures; and (iv) Conservation of Biodiversity. Table 2 shows the most demanded activities under each subcomponent as well as the resources released.

C	Component 1, Natural Resources and Biodiversity Management	Number of Activities	Resources Released (US\$)	%
1.	Soil and water:	5,380		
-	Soil conservation management including: zero	1,223		
	tillage system, green fertilizers, manure		19,654,735	50.3
-	Dairy farm effluent management: building or	596		50.5
	rehabilitation of holding pens, manure pumps			
-	Tree shade and shelter for livestock	484		
2.	Water use and management:			
-	Wells and small reservoirs (livestock and intensive	3,561	7,882,834	20.2
	crop production)			
3.	Management of natural pastures:			
-	Fertilization, improvements, interseeding,	1,742	7,069,139	18.1
	subdivisions			
4.	Conservation of Biodiversity:			
-	Conservation of flora and fauna, registration and	202	1 122 729	11 /
	management of native forests, environmental	382	4,432,738	11.4
	education			
	TOTAL	7,988	39,039,445	100

 Table 2: Most-demanded Activities under Component 1

2.6 Of the 5,300 subprojects implemented during PPR:

- 3,777 were specifically targeting NRM practices
- 627 targeted both integrated NRM and Biodiversity conservation
- 896 targeted specifically biodiversity conservation
- With regards to size of subproject beneficiaries: Small-sized 4,488 (86 percent); Medium-sized 685 (13 percent); Large-sized 76 (1 percent)

Breakdown by sector was as follows: Beef Production 3,094 (58.4 percent), Dairy 1,498 (28.3 percent), Intensive Horticulture 461 (8.7 percent), Subsistence farming 192 (3.6 percent), Other 37 (0.7 percent), Agriculture 11 (0.2 percent), Fish/Aquaculture 7 (0.1 percent)

- 2.7 Economic impacts of project activities can be summarized as follows:
 - Livestock subsector: project-funded activities improved the productivity of 344,240 livestock units (LU) by an average 20kg per year (liveweight) resulting in an estimated total incremental income of US\$20.9 million per year;
 - Dairy sector: project-funded activities led to improved water distribution/quality to milking cows, resulting in an estimated increase in productivity of 1.3 liters animal/day and a total incremental income of US\$33.5 million per year;
 - Horticulture sector: project funded activities led to average productivity increase of about 15 percent, as well as anticipated output sustainability over time.

2.8 The comprehensive set of agro-environmental practices supported by PPR, included the following: (i) manure management systems in dairy farms; (i) rainfall harvesting through small

reservoirs (or *tajamares*) in livestock operations; (iii) substitution of chemicals with natural (solar) disinfection of soils in horticulture; (iv) improved water management in intensive grazing systems; (v) reduced soil degradation and erosion through promotion of crop rotations, increased soil coverage, and adoption of conservation tillage; (vi) improved grassland management through fencing and water distribution systems; and (vii) communal infrastructure for storage, treatment and disposal/recycling of agrochemical containers.

2.9 Other significant achievements (expanded points as summarized in section 3.2 of the main text) include:

- PPR engaged with a total of 658 producer organizations (through endorsing individual beneficiaries' proposals)
- Of the 5,300 subprojects implemented, 1,308 were targeted specifically to promote biodiversity conservation practices, and 627 were implemented in extensive livestock operations applying innovative approaches blending support to biodiversity-specific investments with NRM practices
- Completion of comprehensive multidisciplinary Eco-regional Planning Study of the country's main natural habitats
- Implementation of 47 subprojects aimed at promoting ecotourism, which not only allowed small and medium farmers to establish rural tourism operations but also raised awareness
- Most significant biodiversity conservation and other environmental impacts from project activities:
 - Regeneration and improved management of natural pastures
 - Enhanced soil quality, primarily through better retention of organic material and nutrients, as well as carbon storage
 - Increased accessibility to water year-round and water quality
 - Recuperation of native forest and promotion of alternatives to sustainable uses of native flora and fauna
 - Establishment of conservation areas on farms to protect particular species or key sites of high biodiversity, e.g. conservation measures of wild deer populations, grassland birds, feathery palms (*Butia capitata*), and numerous protected areas for regeneration of degraded environments in various parts of the country
 - Control of invasive alien flora and fauna species, affecting both biodiversity and sustainable production. Species identified as particularly threatening were *privet*, *gleditsia*, *gorse* and *blackberry*, all of which were mitigated/controlled on important farm areas
 - Protection of "Riparian areas" of high biodiversity that provide various ecosystem services such as filtering pollutants, nutrient uptake in plant biomass, as well as habitat and food for many animal groups
- Total of 6 Geographic Information System (GIS)¹⁰ layers were systematized and incorporated into existing GIS within MGAP, through over 70 individual layers and 210 maps. The themes include: (i) Biodiversity Database, (ii) Eco-regional maps, (iii) classification of environments, (iv) geo-location of farm-level water-harvesting facilities, (v)

¹⁰ A Geographic Information System (GIS) integrates hardware, software, and data for capturing, managing, analyzing, and displaying all forms of geographically referenced information.

Freshwater Native Fish Database, and (vi) NRM subproject database with geo-referenced spatial location

• Conservation protection measures promoted under PPR provided direct or indirect improvements to the conservation of 243 native species (83 fauna, 160 flora), including 79 listed by IUCN's Red List, 18 by CITES, and 51 defined as priority species by the National System of Protected Areas (SNAP)

2.10 **Component 1: Natural Resources and Biodiversity Management** (estimated total cost at time of appraisal US\$87.63 million, including US\$25.17 million IBRD financing and US\$4.97 million GEF resources) financed technical and financial assistance to individual producers and/or groups for facilitating activities targeting integrated management of natural resources and biodiversity conservation through environmentally, economically and financially sustainable practices. The implementation of this component was demand-driven. GEF resources supported mainstreaming demand for biodiversity initiatives in priority ecosystems, and supported activities directly related to the conservation of biological diversity, whether included as an integral part of the subprojects or that constituted the entire subproject proposal in itself.

- PPR provided technical and financial assistance on a matching grant basis for 5,300 subprojects, directly benefiting 4,667 small and medium-sized farmers and livestock producers, to improve natural resources and biodiversity conservation, as well as to ensure medium to long-term sustainability of livestock and crop production.
- 881,882 hectares of land benefited from farmers' adoption of project-supported improved NRM practices/systems, thus contributing to the conservation of the natural resource base and the long term sustainability of agricultural development
- PPR led to improved farmer income, primarily due to increased productivity in dairy, livestock, and agricultural systems (see Annex 3)
- PPR led to significantly reduced losses during the severe droughts faced by Uruguayan farmers in 2008 and 2010, potentially exceeding US\$30 million (see Annex 3 for details)
 - Addressing recurrent water shortages during dry summer months, mainly affecting family livestock producers, PPR improved the traditional technology of spring rainfall harvesting through co-financing some 1,600 small temporary reservoirs (*tajamares*)
 - Developing a technological package for the improved design, construction, and management of *tajamares* (including specifications for location/dimensions, fencing, water distribution, planting of native species for shade, and additional fencing for improved management of native grasslands)
- Small-holder farmers/producers were overwhelmingly the largest category of project beneficiaries, comprising 86 percent of subproject activities, with medium-sized with 13 percent and large-sized 1 percent
- Project beneficiaries constituted over 10 percent of family farming households in Uruguay
- 2.11 PPR provided financial and TA to promote specifically:

i) **Livestock systems**: adoption of improved NRM emphasis on the improvement of natural pastures and biodiversity. Specifically, this included investments in fencing, water supply systems for livestock and irrigation systems (used for strategic production of

summer forage), soil improvement measures, management/maintenance of natural grasslands, establishment of natural shelters, preferably with native species. Specifically in the Departments of Artigas, Salto, Paysandu, Rivera, Tacuarembó, Flores, Durazno, Treinta y Tres, Maldonado and Rocha, Component 1 co-financed the construction, repair, and/or cleaning of embankments, fencing, well construction, glens cleaning channels, troughs, distribution pipes, mills, pumps, and tanks.

ii) **Dairy production systems**: adoption of improved management of animal excrement/effluent and/or holding pens and feeding stalls; new or improved water sources; including distribution, to ensure quality pasture and soil management; improved tillage rotational feeding practices to prevent erosion and improve soil quality; systematization of internal roads in order to avoid or mitigate soil erosion; incorporation of wetlands based on native macrophytes for wastewater treatment.

iii) **Horticulture and fruit production systems**: substitution of Methyl Bromide, in greenhouses, adoption of improved soil management through conservation tillage and rotational practices; direct planting/seeding; erosion control practices, including land leveling for improved soil and water conservation, as well as reducing contamination of water sources and improved physical and chemical properties of soils.

iv) **Irrigated farming systems**: adoption of NRM practices on irrigated areas; irrigation technology to improve efficiency of water use; investments to expand the diversification of high value crops, such as vegetables and fruits; and investments to consolidate and expand the areas of irrigated agriculture developed by the PRENADER.

v) **All production/farming systems**: priority was given to promote the environmentally sound management of agrochemicals, including the responsible/safe disposal of containers.

vi) **Integrated biodiversity conservation**: In all types of production systems, activities were piloted or given grant funding which incorporated the productive use and conservation of biodiversity in rural areas. Special emphasis was placed on activities aimed at improving rural practices to promote increased species populations, increasing and maintaining key habitats for conservation of biological diversity in the country, increased private conservation areas of biodiversity, and increased income from productive uses of biological diversity. Specifically, these measures included GEF funding for:

- Incremental costs for the use, management and conservation of biological diversity of natural pastures
- Incremental costs for the registration of existing native forest lands by beneficiaries to help ensure the sustainable management of these forests in perpetuity Practices to promote sustainable yields of timber and native forest
- Sustainable management and conservation of native wildlife
- Practices for integrated livestock production/management on native grasslands and forest landscapes
- Eco-tourism

- Initiatives to control growth of invasive alien flora species (i.e. *privet*, *Gleditsia*, *gorse*, *blackberry*) and fauna species (i.e. wild boar) that threaten both sustainable production as well as native biodiversity
- Artisanal fishing, including support for activities related to sustainable fishing practices and fisheries, including the consolidation of cooperatives' initiatives
- Initiatives in aquaculture for incorporation of native fish species to promote diversification of production, as well as increased supply of protein options in rural areas

vii) **Renewable energy.** As pilot/demonstrating activities in different production systems, initiatives promoted adoption of renewable energy, including biogas digestors, windmills for water pumping, solar power, and micro–hydro.

2.12 Drawing on the project archive including the BCR, the following summarizes the main outputs/achievements under individual components/sub-components and end-project results:

Natural	Activity		Environmental	Economic
Resource	Activity		impact	impact
	Paddock division and sub-	•	Maintenance and	Increase live- weight gain from
	Improving coverage		the resource	20 to 30 Kg per
NATURAL	Controlling grazing	•	Biodiversity	hectare per year
PASTURE Grazing management according to resource capacity		maintenance of the species within the	(From 90 to 110Kg/ha/year)	
	to resource capacity		system Wildlife/fauna conservation	Increase of 10% in pregnancy rate
WATER	New water sources – retention ponds	•	Quality maintenance and	Increase of 15%
	Water distribution in paddocksSpring enclosures and watertroughs for livestock		improvement of the resource	rate
	Registration and management			Live-weight
NATIVE	plan for native forests	•	Reduced energy	increase of 15%,
FOREST	Shade with natives species		loss of animals	with restricted
RESOURCES	Natural shelters with native	•	Animal welfare	summer months
	species			summer months

Table 3: Project Activities in Livestock Systems - Environmental and Economic Impacts

The table below summarizes the main environmental and economic impacts associated with project activities in the dairy sector:

Table 4: Pro	ject Activities	in Dairy S	Sector - Env	vironmental a	and Economic In	npacts
	J					1

Natural Resource	Activity	Environmental impact		Economic impact				
WATER	Water distribution in	٠	Better distribution of	>	Increase	of	5%	in

	grazing systems	manure on the farm	annual milk production
	Well for dairy activities	• Decreased sanitary problems on farm	✓ Improved milk quality (Quality Award impacting on market price)
	Irrigation	 Reduced pasture degradation Increased pasture duration Forage availability during dry summers 	✓ Stability of milk production in summer (+20%) and autumn (+15%)
	Effluent	 Decreased groundwater contamination Improved stream water quality around the farm, recovering environmental services 	 ✓ Improved milk quality ✓ Reduced milking time by 20/25%
SOIL	Incorporating tillage system - direct seeding cultures Increasing persistence of grassland (inclusion of perennial grasses in the mixture – summer legume) Land use planning in the medium term	 Reduced erosion Rehabilitation of gullies and ditches Increased soil organic carbon 	 ✓ Reduced operating costs ✓ Increased grazing time (+30%) ✓ Increased pasture areas in autumn (+30%) ✓ Reduced costs for forage rotation ✓ Increased Dry Matter production (10%)

Table 5: Project Activities in Horticulture Systems - Environmental and Economic Impacts

Natural	Activity	Environmental	Economic
Resource		impact	impact
SOIL	Use of "green manure" with crops rotation use of organic fertilizers Systematization of soils (drains, rural roads) Land use planning in the medium term Use and handling of agro- chemicals 1. Management of agro- chemicals in soil 2. Substitution of CH3Br by	 Reduced erosion Sustainability of the soil quality in the long term Reduce agrochemical quantity by 50% 	Increase of 20% in total gross production Output stability over time Decrease of 30% in crop sanitation costs Increased prices

	solarization and bio-spraying3. Adoption of integrated crop production standards	•	Decrease in GHG emissions	and marketing due to improved quality (+10%)
WATER	Efficiency of irrigation water use Replacing irrigation system components; underground pipes Adopting drip irrigation New water sources – Drilling Including check valves in the system	•	Avoided contamination of water Responsible use of the resource	Increase of 15% of in crop yields Output stability over time

Farm-Level Indirect Indicators	Project Launch	Project Closing
Soil improvements as % of total land area	3%	9%
Average number of paddocks per farm	8	11
% of projects that implemented paddock "resting"	24%	95%
% of projects that implemented forage "resting"	11%	74%
Average number of troughs per farm	6	10
Average number of shaded paddocks per farm	4	7

NRM Practices Implemented (Horticulture)	% of total sample (119 subprojects)
Crop Rotation	90
Planned use of organic amendments/fertilizers	74
Efficient irrigation system	74
Responsible management of agro-chemicals	51
No or Low-Till ("Green Manure")	46
Integrated pest monitoring in production	44

NRM Practices Implemented (Livestock)	% of total sample (267 subprojects)
Construction or rehabilitation of water harvesting reservoirs, fencing wells (drilling) water distribution systems and troughs	87
Seed drill planting (low or no-till)	71
Natural grassland improvement, "green manure," rotational grazing, electric fencing, grazing management	68
Rotational grazing, seasonal paddock adjustments (winter, summer)	65
Use of local/native species for shade plants	32

2.13 **Component 2: Establishment of Pilot Areas** (estimated total cost US\$1.50 million, 100 percent GEF-financed): implementation of pilot demonstrations of sustainable use of natural resources and biodiversity in key micro-watersheds.

2.14 The original project plan was to organize demonstration projects in 10 priority areas selected during the project preparation phase. Execution of this component, however, proved

problematic initially. After adjustments made around the time of MTR, the project successfully implemented subprojects and other pilot activities in all priority areas, with specific demonstration activities held in three specific cases identified as priority areas: Arerunguá, Laureles, and Lake Castillos.

2.15 Furthermore, GEF-financed activities supported many innovative (demand-driven) approaches for mainstreaming biodiversity in the productive sector, for example, a pilot experience now gaining wider interest as an additional income source for producers/landowners is the collection and sale of fuel wood collected from invasive species. The practice was financed by PPR and now has become cost-effective without subsidies (PPR produced a video now widely disseminated).

2.16 **Component 3: Support Services** (estimated total cost US\$3.86 million, including US\$2.87 million IBRD financing and US\$0.29 million GEF resources): training to farmers, institutional strengthening of local and central authorities (through improved GIS and studies), studies and applied research, and specialized training for technical staff providing TA to farmers.

2.17 Key activities carried out under Component 3 include the following:

- PPR carried out a total series of 78 capacity building events in relevant thematic areas and trained a total of 2,615 technicians. Through these events/trainings, PPR reached an estimated 28,000 direct beneficiaries (producers and their families) and 150,000 indirect beneficiaries (including everyone who has taken part in the project activities, including training courses, workshops, field work, rural schools, researches, institutional strengthening, etc).
- PPR promoted private sector participation through capacity building and the provision of production support services, particularly TA to producers, training events, and extension materials and publications.
- Substantial contribution to MGAP's efforts to increase overall knowledge and understanding of biodiversity conservation at all levels (MGAP staff, public central and local institutions, farmer organizations, producers, private extension and TA providers, rural teachers and students, and general public) through a significant number of knowledge products developed or promoted by PPR, including publications, manuals, studies, videos, brochures, webpage, local and international conferences and seminars, etc. (see Annex 9 for details).
- Some 56 cooperation agreements (*convenios*) were signed with local and national agricultural organizations to promote government services to enhance the integrated management of natural resources and biodiversity conservation in the sector, all of which are expected to enhance the sustainability of the investments financed by PPR.
- Substantial contribution to MGAP's efforts to increase overall knowledge and understanding of NRM and agro-environmental practices at all levels (MGAP staff, public central and local institutions, farmer organizations, producers, private extension and TA providers, rural teachers and students, and general public) through a substantial number of knowledge products developed or promoted by PPR (technical publications, manuals, studies, videos, brochures, webpage, local and international conferences and seminars, etc.). See Annex 9 for details.

2.18 An important element of Component 3 was the creation of the Institutional Liaison Unit within the PEU. This Unit worked to promote participation at the local level and provided training, in close coordination with the Communications Unit of the PEU. The project intervention model, using farming subprojects which stimulate group formation and have institutional backing, was crucial. Among other functions, the groups served as forums for producer-to-producer learning, in the same way as institutional backing was a means of publicizing the project and of recognizing the role of organizations in the territory.

2.19 The Institutional Liaison Unit promoted activities such as:

(a) Specialized training for professionals providing TA to producers for the design and execution of subprojects;

(b) Training of producers on innovative ways of conserving natural resources and biodiversity in the productive sector. One of the innovative instruments supported by PPR (beginning in 2008) was Participatory Outreach Workshops. These workshops were held usually on producers' farmland and with the participation and involvement of various stakeholders. The workshops began by identifying problems and needs of "family farmers" at the local level. Producers in the area and in other areas with similar production systems were also invited to participate actively in each workshop, as well as relevant extensionists, TA providers, producer organizations, and local authorities. The methodology used in these workshops consisted of stakeholder participation, a combination of practical, empirical, and scientific knowledge geared to problem-solving and specific needs, and an efficient multi-media approach incorporating various strategies and communication technologies for knowledge-sharing.

2.20 PPR also funded studies and applied research designed to improve the framework of policies for NRM and to develop new techniques in areas posing special difficulties, with a focus on achieving corresponding environmental benefits. Thus special emphasis was placed on prevention of soil erosion and on the use and responsible management of pesticides.

2.21 The system of working agreements (*convenios*) were also valuable in publicizing project proposals and facilitating the strategy of enhanced institutional coordination to ensure that NRM remained on the agenda of local organizations. Although there were various types of *convenios*, their focus was on NRM and biodiversity conservation awareness-raising and training in these issues, as well as to support the infrastructure needed for an integrated approach. The training made it possible to identify and address future needs, provide technical resources required, as well as develop the capacity to help ensure sustainability of project activities following project closure.

2.22 **Component 4: Project Executing Unit** (total cost US\$2.61 million, including US\$0.25 million of GEF resources) financed the Project Executing Unit (PEU), responsible for overall project implementation and the M&E System.

2.23 PPR's success can be in large part attributed to the commitment, dedication, and enthusiasm of the PEU team members towards the successful execution and administration of the

project. As mentioned in the main text, although initial implementation progress of the project was very slow during the first 12 months with regards to the project's physical and financial progress, mostly due to necessary set-up of the PEU and needed training, the PEU was able to arrive at an acceptable and balanced rate of implementation by Year 2 and effectively sustained throughout the life of the project. This also included a comprehensive and well-prepared BCR, beneficiary survey, and sustainability study at project closure.

2.24 Initial challenges causing the delay at project launch were due to several factors, including the lack of administrative experience of the incoming administration; the need to recruit and train the entire implementation team that would staff the PEU; the operational complexity of blending loan and GEF grant resources (including incorporation of biodiversity within MGAP); delays caused by austerity measures disallowing the development and launch of the originally planned M&E system; and the unexpectedly long period required to initiate the flow of subprojects. Following this somewhat disappointing start, the efforts of PEU management and staff to promote PPR in rural areas throughout the country began showing encouraging results, and demand for subprojects by project beneficiaries gradually increased.

2.25 Led by a charismatic Director, the PEU became a well-qualified team of technical and administrative professionals. In addition to the valuable role of the PEU members in implementing key project aspects such as training, communications, and administration, a key positive feature of the PEU was the synergy created through centralized and decentralized staffing structure being able to perform all functions on-the-ground throughout the country related to the subproject cycle. Despite their initial lack of technical and operational experience, the decentralized team of young professionals recruited to coordinate project activities in the country's 19 Departments was instrumental in the difficult task of promoting PPR's NRM and biodiversity objectives in rural areas; supporting and supervising the network of private TA providers that assisted beneficiaries in preparing and implementing subprojects; performing the initial screening and assessment of subproject proposals; linking PPR with local institutions and farmer organizations; and organizing project-sponsored events such as training, technical seminars, and field trips.

2.26 More specifically, the successful implementation of PPR by the PEU was strongly linked to: (i) effective dedication and outputs from the PEU and the network of regional TA providers; (ii) the training program; (iii) outreach and communication strategy; (iv) support to farmer organizations; and (iv) strong support from MGAP's authorities to the administrative and managerial requirements of the PEU.

2.27 In addition to regularly monitoring and evaluating project indicators, providing ongoing feedback and follow-up reporting, the project's M&E Unit was also responsible for the design and application of specific systems for measuring environmental impacts resulting from implementation of subprojects. These systems provided objective findings regarding the impacts of subprojects on producers' farms, permitting subsequent analysis and interpretation of the environmental impact of PPR during its execution.

2.28 In conjunction with the Sustainability Assessment, a Beneficiary Satisfaction Survey was also conducted by the PEU (see Annex 5). Its sample size and methodology were different: the

goal was to measure the level of satisfaction of beneficiary producers and to ascertain their attitude towards conservation practices. The study concluded that beneficiaries generally had a very positive view of the project. In addition, a large majority of beneficiaries agreed that PPR had improved their production, their income and their quality of life.

2.29 With regard to training and workshops with producers, 56 percent of beneficiary producers participated in a training activity, of which 95 percent indicated that they found these activities "very useful" or "useful" (64 percent and 31 percent respectively).

Annex 2, Appendix 1.

INDICATORS SUMMARY TABLE RESULTS FRAMEWORK (RF) vs. POST-MTR REVISIONS

RF Indicators	Target ¹¹	Achieved	Post-MTR Indicators	Target	Achieved
		PDO Key Perforr	nance Indicators		
Indicators that show the improvement of the natural resources and biodiversity conservation and management, including regeneration of natural grasses and other vegetation, maintenance and regeneration of natural forests, reduced impact grazing, and carbon sequestration	 (i) degradation of natural grasslands, (ii) depletion of water resources - availability and quality, (iii) soil degradation, (iv) poor native forest management, (v) weed control, (vi) lack of biodiversity conservation in producer's and organization's agendas 	Fully Achieved (17 Indicators)	Indicates RF indicators/targets not continued following post- MTR revision process		
Maintenance of mosaics of natural habitats within rural landscape through support for ecotourism and rural tourism	An Eco-regional Plan developed on key biodiversity elements and priority setting	Ecoregional Planning Instrument and ecotourism-specific subprojects			
Number of beneficiaries that present integrated proposals at the farm level	3,000	6,196	Number of proposals presented for integrated production systems at the farm level	3,500	6,466
			Number of proposals approved	3,000	5,300
Number of subprojects in which biodiversity is mainstreamed into production system	1,200	1,523	Number of subprojects in which biodiversity is mainstreamed into production systems	1,200	1,523
Indicates post-MTR indicators/targets not originally included in RF			Hectares administered by small and medium producers in the management of biodiversity	100,000 hectares	379,873 hectares
Increased area of natural habitats managed for conservation and sustainable use for tourism activities	NA	47 ecotourism subprojects			
Increased management and land restoration by combining tools and methods of integrated	Specific training for 15,000 people	28,000 people trained			

¹¹ Targets not included in PAD Annex 3 Results Framework, but rather established at negotiations and formalized in the Implementation Letter (dated June 16, 2005) and in initial project Operational Manual.

habitat management					
Native biodiversity subject to sustainable use by either farming or ranching in rural landscape, isolated or combined with other means of rural production	NA	508,238 hectares			
Number of hectares of natural habitats including natural forests under restoration or management for conservation and production	5,000	18,994	Number of hectares of natural habitats including natural forests under restoration or management for conservation and production	5,000	18,994
Rural families assisted by the project*	13,000	28,000			
Hectares of land under improved NRM*	1,000,000	881,882	Number of hectares incorporated to the integrated management of natural resources and biodiversity	1,000,000	881,882
Farmers participating in training activities*	5,000	6,459		· · · · · · · · · · · · · · · · · · ·	
	Р	DO Intermediate (Dutcome Indicators		
Number of proposals to adopt integrated approach to natural resources management	3,000	6,196			
Number of hectares with soil conservation activities		1,223 subprojects (hectares being confirmed)			
Number of hectares with improved irrigation	NA	24,726 hectares (623 subprojects)			
Number of demonstration areas implemented to integrate biodiversity in rural productive landscape	10 pilot projects	10 pilot projects			
Number of experiences published and socialized in each of the country's eco- regions	10	116	Number of experiences published and disseminated in each of the country's ecoregions	10	116
Local and national institutions are empowered with new tools for managing soil, water and biodiversity as a productive resource and provide a nationwide service to improve soil,	10 Institutions	56 Signed agreements with private sector organizations			

water and biodiversity management					
Local and regional stakeholders capitalize mainstreaming of natural resource management by means of at least two demonstration/pilot projects in the most important sites for the conservation of the Uruguayan biodiversity	20	319			
Number and category of the people trained	600 Technical Specialists and 15, 000 people trained	2,615 Technical Specialists trained, 26,500 people trained (78 Formal Training Events)	Number and category of people trained	1,500	6,459
Number of beneficiaries had technical services to their needs	3,000 Beneficiaries 500 Groups	4,667 Beneficiaries 658 Groups			
Number of people trained in carbon balance subprojects	NA	1,086 (808 in zero tillage, 153 in solarization, 25 in small biodigestors, 100 dairy farmers)			
Number of new layers incorporated in the GIS	NA	6 Layers			
Number of natural resources management instruments improved by the project	NA	Several improved technologies by the project – "solarization," IPM, on-farm reservoirs or "tajamares", zero tillage, grassland management, effluent handling and disposal			
A Project Executing Unit (PEU) implements the project and provides periodically indicator to assess the evolution of the project implementation	PEU established and fully functional throughout the life of the project	PEU established and fully functional throughout the life of the project			
Relation between subprojects presented and approved	NA	6,196 presented/5,300 approved			
Number of days to process the subprojects	NA	NA			
Development of a M&E system	Customized M&E software developed	Simplified Spreadsheet System fully operational			

			Number of events (outreach, SIG courses, workshops with rural teachers and field days in training of NRM)	1,500	5,019
		GEO Key Perform	mance Indicators		
Eco-regional vision based on key biodiversity elements with priority setting*	An Eco-regional Plan developed on key biodiversity elements and priority setting	Eco-regional Consultancy	Eco-regional vision based on key biodiversity elements with priority setting*	An Eco-regional Plan developed on key biodiversity elements and priority setting	Eco-regional Consultancy
Pilot projects implemented in key biodiversity areas*	10	319	Pilot projects implemented in key biodiversity areas*	10	319
Area under improved pasture management techniques	NA	1,732 subprojects/465,300 hectares			
Area under sustainable use of natural resources	1,000,000 hectares	881,882 hectares			·
Number of biodiversity- friendly projects implemented	1,200	1,523			
Number of farmers' adoption innovative market incentive, such as certification and easement implementation	NA	35			
Number of species and/or populations under conservation	50	243 native species (83 fauna, 160 flora)			
			Activities in the management of water (Drought Alleviation Program)	740	761
			Number of events and participants regarding soil and water conservation	NA	112 events, 6,459 participants

Annex 2, Appendix 2.

Selected relevant sections from Quality Assessment of Lending Portfolio (QALP-2) conducted by the Bank's internal Quality Assurance Group (QAG) in June 2010

Quality of Design and Project Launch: "This is a thoughtfully designed project introducing new concepts in reaching out to smallholder farmers. The PAD provides a very good overview of sector issues and shows the Bank's familiarity with the agricultural sector after many years of engagement. Largely neglected by previous [Government] policy, smallholder farmers are a focal point of attention of the current [Government], which came into office at a time when the project was ready for Board presentation. However, to gain ownership by the new administration, LCR management decided to delay Board approval by one year, a wise decision with hindsight. The Bank's 'pause' during processing of the project to enable secure ownership by a new [Government] Administration highlights the importance of this practice for future operations, when a similar situation arises."

Quality of Results Framework: "Given Uruguay's high level of development and sophisticated administration, the indicators used in the Results Framework could have been defined more accurately in terms of expected outcomes and results, and less as interim measures (such as ha of land covered, or No. of subprojects. Rating: MS"

Quality of Arrangements for M&E: "The OM sets guidelines and clarifies the roles of the key implementing agencies. The PEU has full responsibility for project monitoring, including development of baseline and performance indicators, frequency of monitoring and preparation of reports. Greater effort could have been placed in integrating the M&E activities within MGAP, and using the project's M&E system and activities for broader institutional strengthening (this is now occurring). Rating: S"

Quality of Supervision, Indicators, and M&E: "Supervision AMs and ISRs, as well as the MTR, detail progress on key indicators and revised indicators if the original choice did not prove to be salient to measuring DOs. Indicators are very quantitative and tend to measure outputs more than outcomes. However, the project performance indicators are reflective of a project that is meeting many, and surpassing some, of its objectives. Yet the qualitative progress assessment focus on outcome and the M&E, once fully operational, will do so too. Also, various analytical studies in process need to be completed and used as inputs for the analytical assessment of project progress and emerging impacts. Rating: S"

Annex 3. Economic and Financial Analysis

A. Summary of Project benefits and costs in the ICR

3.1 **Background:** Through financing from the World Bank (US\$ 30.0 million) and a grant from the Global Environmental Facility (GEF) (US\$ 7.0 million), the Ministry of Livestock, Agriculture and Fisheries (MGAP, in Spanish abbreviations) implemented from 2005 to 2012 the Integrated Natural Resources and Biodiversity Management Project (locally known as *Proyecto Produccion Responsable*, or PPR). PPR focused on the adoption of economically and environmentally-viable, integrated production systems within a context of holistic ecosystem and NRM, while mainstreaming biodiversity.

3.2 **Overall impacts of the project:** Based on the subprojects analyzed in each productive system, the positive economic results and environmental impacts are consistent with the initial project hypotheses and the basic strategic principle of promoting "win-win" technologies that would combine public and private environmental benefits with incremental financial returns to the beneficiaries. As a result of the investments financed by PPR, the main <u>economic benefits</u> could be summarized as improved farmer income (primarily due to increased productivity), and reduced losses during the severe droughts faced by Uruguayan farmers in the summer months of 2008 and 2010.

3.3 With regard to positive environmental impacts the important contribution to natural resources and biodiversity preservation is notable, from the regeneration of natural pastures associated with productive subprojects to enhanced soil erosion prevention, improved soil quality (primarily through better retention of organic material and nutrients, and indirectly through carbon storage), improved accessibility to water year-round, water quality, and the efficient use of water. Other major impacts have been the restoration of native forest, recuperation of bio-diverse habitats, and ecosystem services. From a biodiversity perspective, PPR has enhanced the geographic configuration that maintains the mosaic nature of Uruguay's original habitats and restoring biological globally-significant areas through a diversified rural landscape.

3.4 Most importantly, PPR led to important long-term behavioral changes within Uruguay's livestock and agricultural sectors (project beneficiaries constituted over 10 percent of the entire farming population, and 25 percent of the universe of "family farmers") towards the adoption of agro-environmental practices. More specifically, the incorporation/mainstreaming of natural resource management and biodiversity conservation in production systems, as well as national agricultural institutions/organizations more fully mainstreaming these responsible practices into their agendas. In addition, farmers' capacity to adapt to the effects of climate variability has been strengthened due to project activities.

3.5 **Project costs and financing:** As shown in Annex 1, total project cost was US\$47.59 million, approximately 50 percent of the appraisal estimate. The IBRD loan and GEF grant contributed US\$30 million and US\$7 million, respectively. The GOU counterpart funds contribution was US\$4.6 million, 154 percent of the original estimate of US\$3.0 million. The contributions from beneficiaries reached US\$6 million, only 11 percent of the original estimates of US\$56.0 million. One reason for this unusually high estimate was the initial inclusion of

primarily medium and large farming operations as the targeted beneficiaries in the original project design (particularly rice farmers), which would contribute larger proportions of total subproject costs. However, as previously explained, the change in government shortly after appraisal resulted in a shift in project focus from medium and large farming operations to the category of "family farmers" comprised of small and medium-sized producers. The considerable difference in subproject co-financing levels for each type of farmer (20 percent for small farmers and 60-80 percent for large farmers) translated into the overall reduction in beneficiaries' contributions included in-kind family labor valued at market prices, whereas the final reported beneficiaries' contributions did not account for most "family-labor" in-kind costs, as most producers found it difficult to estimate the market value of family labor and did not keep records.

Size	Number of approved subprojects	Percentage
Large	76	1%
Medium	685	13%
Small	4,488	86%

Table 1: Number of approved subprojects by farmers' size

(*) Furthermore 51 subprojects approved with cooperatives, which cannot be classified by producer's size, although majority of member are small producers.

3.6 Small-scale producers received financing equivalent to 80 percent of the total subproject costs while medium-scale producers received 60 percent. For the large farmers, the original subsidy was 20 percent but increased to 40 percent of the total subproject costs to encourage the presentation of more biodiversity conservation proposals. Operational costs were kept low primarily because mobilization of project-related staff and consultants was minimized through contracting local project staff and TA providers, who conducted most training directly on the farm sites, which expanded both the Ministry's technical capacity and reach. The technicians' contributions included: direct technical in-field support, systematization of information, beneficiary training, and dissemination/promotion. Project beneficiaries contributed to building technical capacity as well through providing new ideas, manpower, family labor and the above-mentioned subproject cost-sharing resources.

B. Ex-ante Economic and Financial Analysis in the PAD

3.7 The economic and financial analysis carried out during project preparation, as presented in the PAD, was based on a sample of investment subprojects expected to be demanded by beneficiaries, following the experience of the predecessor PRENADER¹³ project. The impact of these investments on natural resources and biodiversity management, agricultural productivity, and farmers' incomes was analyzed using farm models, illustrating the most common production systems used by producers and situations in which biodiversity was mainstreamed into farmers' investment decisions. The PAD economic and financial analysis included twenty (20) illustrative farm models which consisted of:

¹³ The Natural Resources Management and Irrigation Development Project (PRENADER), World Bank Loan No. 3697-UR, P008173

- Traditional rice/livestock systems
- Small and large livestock producers with/without pasture
- Livestock production (full cycle) with/without irrigation
- Livestock/crops with pastures
- Livestock/crops with pastures and irrigation
- Livestock/crops without pastures
- Small and medium dairy farmers with/without irrigation
- Horticulture
- Fruits
- Vineyard with irrigation
- Citrus with irrigation

3.8 The economic and financial return calculations presented in the analysis included the cost of incremental on-farm productive investments and recurrent expenditures related to the adoption of practices to be promoted under PPR. The estimated overall economic rate of return of the project was estimated at about 22.5 percent. As expected, given the level of financial incentive provided, the selected farm models showed relatively high financial rates of return (> 25 percent). Input and output prices were assumed constant, as was the real exchange rate, throughout the 20-year time horizon used in the financial analysis. The discount rate used was 10 percent.

C. Ex-post Analysis

Summary Findings

3.9 In the **livestock subsector**, the positive impacts from project activities on productive parameters include improved livestock growth rates, reproductive coefficients, and overall herd productivity. The project-funded activities improved the productivity of 344,240 livestock units (LU) on average by 20kg per year resulting in an estimated total incremental income of US\$20.9 million per year. In the dairy sector, PPR successfully promoted improved water management through higher quality water distribution to milking cows, resulting in an estimated increase in 1.3 liters animal/day, which at current prices translates into an incremental income for project beneficiaries of approximately US\$33.5 million per year (based on analyzed increased milking rates and current prices). PPR also contributed to the overall performance of the livestock subsector by reducing the negative impact of severe summer droughts faced by Uruguay in 2008 and 2010. Although an exact quantification of avoided losses is not possible, as prior losses by project beneficiaries were not recorded, MGAP's Agricultural Planning and Policy Office (OPYPA) estimated the direct losses of the livestock sector from the 2008 and 2010 droughts at US\$ 342 million.¹⁴ Project activities analyzed in the sample of horticulture subprojects were estimated to lead to an average productivity increase of about 15 percent, as well as anticipated output sustainability over time. There was an estimated 30 percent decrease in crop phyto-

¹⁴ Assuming that only 10% of the country's livestock farmers became more resilient as a result of project activities (conservative estimate), this would represent a benefit (in terms of prevented losses) of over US\$ 30 million (equivalent to IBRD loan which financed PPR).

sanitary costs as a consequence of project interventions and an increase of final output prices and marketing due to improved quality of the products. Overall, project activities were carried out on 1,328 hectares, or 57.7 percent of the total horticultural production operations in the country. This accounts for almost one-third (29 percent) of total producers nationally.

Methodology of the Ex-post Analysis

3.10 The estimation of costs and benefits for the purposes of this ICR differs from the approach followed by the PAD, due to a series of methodological and operational limitations encountered when re-assessing the economic impact of PPR – particularly insufficient economic data collection for individual subprojects during project implementation to allow for traditional economic and financial analysis of subprojects or, alternatively, an ex-post cost-effectiveness analysis. During the first call for proposals, subproject applications requested information regarding gross income and variable costs per beneficiary household, but this information was assessed as not reliable and difficult to collect, and therefore, the requirement to include it as part of beneficiaries' proposal submissions was removed by the PEU. As a result, there was also no beneficiary production baseline established at the level of subprojects. Furthermore, the lack of data to prepare a traditional economic and financial analysis can also be attributed to the nature of project indicators being focused primarily on measuring outputs related to effective NRM and biodiversity conservation practices, not on economic indicators that would facilitate the preparation of a traditional economic and financial analysis.

3.11 PPR however did carry out a Sustainability Report and collected some other general economic data during the latter half of implementation, upon which was based most of the findings of this ex-post analysis. Also, MGAP with Bank assistance recently carried out a detailed economic and financial analysis as part of the preparation of the PAD (Report No. 62277-UY, 17 October 2011) for the recently-launched Sustainable Management of Natural Resources and Climate Change Project (P124181), or DACC. This analysis was based on a sample of investment subprojects most likely to be demanded by beneficiaries and included replications of some of the on-farm investments implemented under PPR. In the selected farm models, economic return calculations included the cost of incremental on-farm productive investment and recurrent expenditures for the adoption of sustainable agricultural production systems promoted under DACC that would also increase farmers' resilience to extreme climatic events. The analysis of the sample of illustrative subprojects found them to be both economically and financially viable with an economic IRR of 18 percent and high financial IRRs, ranging from 25 percent to 42 percent.

3.12 Given the above, the ex-post evaluation for PPR is focused primarily on illustrating the direct economic impacts and environmental impacts of the subprojects most commonly demanded by beneficiaries. Table 2 shows the relative importance of the main subproject types in the overall project portfolio:

Production system	Approved Subproject s	Percentage of Total
Livestock (Meat production)	3,094	58.4%

 Table 2: Number of approved subprojects by productive system

Dairy	1,498	28.3%
Intensive agricultural production	461	8.7%
Subsistence production	192	3.6%
Other	37	0.7%
Agriculture	11	0.2%
Artisanal fisheries and aquaculture	7	0.1%
TOTAL	5,300	100%

3.13 A sample of subprojects for the production systems of livestock, dairy, and horticulture were examined as part of this analysis, as they represented the bulk of the subprojects and resources invested. The following considers the situation (i) *Without Project*, and (ii) the hypotheses of results expected *With Project* by subproject beneficiaries and consistent with the initial project hypothesis.

BEEF PRODUCTION

3.14 A sample of 267 subprojects in two typical areas of livestock production were selected to evaluate PPR interventions:

(i) Area A: Central-Northern Uruguay, characterized by shallow soils (*Basalto*) where 123 subprojects were monitored, comprising a total area of 51,172 hectares (average farm size: 416 hectares)

(ii) Area B: Eastern Uruguay characterized by shallow soils (*Cristalino*) where 144 subprojects were monitored, comprising a total area of 41,520 hectares (average farm size: 288 hectares)

Situation Without Project:

3.15 In the case of livestock grazing on natural pastures in Area A, the conventional system over the years has resulted in significant environmental problems. The main problems (in order of importance) were identified as: (i) degradation of natural pasture, (ii) depletion of water resources in terms of availability and quality, (iii) lack of shade, (iv) soil degradation, (v) poor native forest management, and (vi) weed control. In the sample of subprojects analyzed, problems (i) and (ii) had occurred in over 90 percent of cases, and (iii) occurred in 58 percent of cases analyzed (see Table 3 below).

3.16 Similarly, in the case of livestock grazing on natural pastures in Area B, the primary environmental problems were consistent with those identified in Area A: degradation of natural pasture (100 percent of cases analyzed), water quality and availability (72 percent), and lack of shade (44 percent).

Tuble et Elitestoen systems "Hum Entri eminentar problems						
Environmental problems	Area A		Area A		Are	a B
identified	(Basalto)		(Crista	alino)		
	No of	Freq. of	No of	Freq. of		
	subproject	occurrenc	subproject	occurrenc		
	S	e	S	е		

 Table 3: Livestock systems - Main Environmental problems

Degradation of natural pasture	120	98	144	100
Water quality and availability	112	91	104	72
Lack of shade	71	58	63	44
Soil degradation	32	26	21	15
Poor native forest management	21	17	8	6
Weed control	16	13		

Situation With Project:

3.17 **To mitigate the degradation of the natural pasture**, interventions included: (i) controlled grazing, (ii) division or subdivision of pastures into "paddocks," (iii) measures for improving quality of natural pasture, (iv) adjustments to stocking rates, and (v) weed control (Table 4).

 Table 4: Livestock - Proposed interventions to mitigate the degradation of natural pasture

1. Degradation of natural pasture	Area A (Basalto)		Area B (Cristalino)
Proposed interventions	Number %		Numbe	%
			r	
Controlled grazing	110	92	113	78
Paddocks	110	92	137	95
Improving natural pasture	107	89	135	94
Adjustments to stocking rate	105	88	57	40
Weed control			51	35

3.18 Table 5 shows a collection of indirect indicators or farm-level proxies before and after project interventions, which evaluate the potential impact achieved by project activities on the livestock system in Area A and Area B.

	Before the project	After the project
Improved field as percentage of total area	3%	9%
Average number of paddocks	8%	11%
Subprojects with paddock "resting"	24%	95%
Subprojects with forage "resting"	11%	74%
Average of watering points	6%	10%
Average of shaded paddocks	4%	7%

 Table 5: Livestock system (Basalto) - Farm level proxies

3.19 **To mitigate water scarcity and declining water quality,** the most widely demanded intervention funded by PPR was installation of systems for water distribution in areas where water availability is limited any time during the growing season. Activities included installation of wells, pipes, distribution systems, troughs for livestock, automated mechanical refilling systems (floats, buoys), storage tanks, rainwater tanks, pumping equipment, and retention ponds.

Where water was not yet available, requests were made for accessing new water resources (see Table 6).

Table 0. Livestock. Troposed water interventions						
Water quality and quantity	Area A		Area A		Area B (Cr	ristalino)
	(Basalto)					
Proposed interventions	Number	%	Number	%		
Water distribution	96	86	106	77		
Water sources	47	42	37	27		

 Table 6: Livestock: Proposed water interventions

3.20 **To mitigate other environmental problems**, such as lack of shade and/or mismanagement of native forest, various practices were put in place in both Area A and Area B. Such interventions included: investments for registration and preparation of management plans for native forests; regeneration of pastures with native trees species; and establishment of mixed pastures, including silvo-pastoral initiatives.

3.21 To mitigate or reverse soil degradation, actions were taken to adjust stocking rates, decreasing bare soil with species that cover the ground quickly, monitoring grass species, presence of weeds, and limiting bare soil.

3.22 **Positive Environmental impact:** Practices resulted in: (i) recovered and improved grasslands; (ii) improved conservation of biodiversity through protective practices; (iii) increase in land cover and the diversity of species around retention ponds; (iv) improved quality and increased availability of drinking water for cattle; and (v) increased awareness among producers on the need for protection of water resources and biodiversity. With the use of innovative water delivery systems for livestock grazing, PPR also improved use of organic fertilizers through spraying of livestock manure on pastures. Among the most successful measures was found in demonstrating the benefits of providing water to livestock in each paddock where they are grazing. Providing shade was also important, not only for improving feed conversion efficiencies, but to prevent cattle deaths due to heat stress. Heat stress has also been found to reduce fertility in sheep and affect the well-being and weight of calves, and energy requirements in livestock are reduced by shelters.

3.23 **Economic impact:** The positive environmental impacts from project activities are expected to improve livestock growth rates, yields, and productivity. PPR estimated an average increase of live-weight between 20 to 30 Kg per hectare per year (from a base of 90 Kg to 110 Kg per hectare per year). An increase of 10 percent was also estimated in pregnancy rates (from 70 to 80 percent) and an increase of 15 percent in stocking and reproduction rates. Investments made in providing shade and shelter for livestock are expected to translate into an increase of 15 percent live-weight.

3.24 Furthermore, the BCR estimated that PPR achieved quality water storage and distribution for 344,240 livestock units (LU) grazing on natural pastures, which ensured water supply for a period of up to six months without rain. This estimation was based on real data from implemented livestock subprojects. As PPR's interventions took place on a total of 465,300 hectares of natural grassland, and considering the incremental increase in productivity of 20 Kg

per hectare per year, and an average price of livestock unit of US\$2.25 per Kg live-weight, the incremental benefit would be an estimated **US\$20.9 million per year**.

3.25 <u>Other impacts</u>: As a result of the severe drought suffered in 2008, PPR supported the livestock sector through specific water supply interventions through the prioritization of subprojects aimed at reducing the vulnerability of farmers to drought since 2007 and a call for proposals specifically related to "Quality Water" and "Water for Animal Production" in 2009 and 2010, respectively. These specific programs benefited small and medium "family farmers" by co-financing subprojects for wells, small on-farm rainfall harvesting reservoirs ("tajamares"), irrigation systems, water supply and distribution systems The total investment in these specific practices was US\$9.9 million.

3.26 The GOU's Agricultural Planning and Policy Office estimated (see Paolino et al. 2010) that the direct losses of the livestock sector as a result of the 2008/2009 drought exceeded US\$342 million, broken down as follows: US\$250 million in cows and steers not sold/slaughtered, US\$13 million due to increased mortality, US\$59 million associated to the loss of permanent artificial pastures, and US\$20 million associated with the loss of forage. Therefore, even if only 10 percent of livestock farmers became more resilient as a result of project-financed adaptation measures, this would represent a benefit (in terms of prevented losses) of over US\$30 million (total amount of the IBRD loan).

DAIRY

3.27 A sample of 662 subprojects covering a total area of 73,481 hectares was observed to characterize the dairy production system in the *Without Project* and *With Project* scenarios. Most subprojects were located in the major milk producing areas (South-West and South) of the country.

Situation Without Project:

3.28 The conventional dairy production system has created significant environmental problems. In order of importance, the main problems identified in the sample of 662 subprojects were: (i) water availability and quality (81 percent of the cases examined), both of which are extremely important to guarantee proper milking procedures; (ii) management of effluent and area surroundings (67 percent), which became increasingly important with rising sizes of production units; and (iii) soil erosion and gullies (61 percent).

3.29 Other problems observed in the sample of subprojects analyzed related to natural pasture management (33 percent of cases); access to dairy processing facilities (32 percent); use and management of agro-chemicals (26 percent); and low forage persistency and grass management (19 percent).

Situation With Project:

3.30 For the 662 subprojects analyzed, the total investment made by PPR was US\$4.22 million in addition to TA of about US\$1.5 million, paid by PPR for and on behalf of the beneficiary. Beneficiaries contributed a total of US\$1.4 million in counterpart contributions,

which translated to about 19.7 percent of the total amount of approved subprojects. 94 percent of farmers were small-sized and the remaining 6 percent medium-sized, with most farmers members of a groups of five (on average).

3.31 The primary interventions used to address the problem of water quality and availability were: (i) water distribution systems in different plots, implemented in approximately 54 percent of the subprojects analyzed; (ii) new water sources (perforation) in 49 percent of the subprojects analyzed; and (iii) retention ponds in just over a third (35 percent) of the cases analyzed. It is important to highlight that in many subprojects, more than one of these interventions were implemented simultaneously.

3.32 With regards to the management of effluents, 41 percent of the subprojects distributed effluents on their fields as organic fertilizers. 38 percent of the subprojects installed a "flooring" system in livestock holding pens for more effective effluent management/distribution. One-quarter of the subprojects constructed lagoons (aerobic and anaerobic), and about 10 percent used manual separation of solids, mainly in those production units with few milking cows.

3.33 With regards to soil erosion and gully mitigation, the main practices adopted were aimed at reducing the overall loss of soil, including critical topsoil and nutrients. As a result, 85 percent of subprojects implemented a variety of activities targeting soil conservation management, such as the incorporation of zero tillage systems. Six out of ten subprojects (60 percent) established a medium-term rotation, while nearly one in four farms (25 percent) increased pasture health and longevity by including perennial grass and legumes in the pasture seed mixture. It is important to emphasize that numerous subprojects incorporated more than one of these three interventions mentioned.

3.34 **Positive Environmental Impact**: PPR expects to have had a positive environmental impact through subprojects implemented in the dairy sector. Project interventions related to water resulted in: (i) better distribution of livestock excrements on farms; (ii) decreased sanitary problems on farms; (iii) reduced pasture degradation and increased longevity; (iv) decreased likelihood of groundwater contamination; and (v) improved stream-water quality around the farm. Soil conservation/management practices resulted in reduced erosion, mitigated gullies and ditches areas, and increased soil quality in terms of organic matter ("soil carbon").

3.35 **Economic Impact:** PPR had a positive economic impact on 156,140 hectares in the country (representing 22 percent of the country's dairy production) and ensured higher quality water distribution for a dairy cows. Considering the average milk price to the producer of US\$0.43 per liter, and project activities resulting in an approximate increase in 1.3 liters per animal, per day (assuming average production of 20 liters per animal, per day and 6.5 percent increase in production due to project activities to improve water supply/distribution), this presented an incremental income of about US\$33.5 million per year.

HORTICULTURE SYSTEM

3.36 A sample of 119 subprojects affecting a total area of 1,328 hectares was taken to characterize the typical horticulture system in the *Without Project* and *With Project* scenarios. All these subprojects were located in the departments of Salto and Artigas (Bella Unión). The

profile of farms analyzed was mainly small-sized (9 out of 10 farms were small-sized and the rest were medium-sized).

Situation Without Project:

3.37 An estimated 91 percent of the cases analyzed suffered from poor/degraded soil management practices; 84 percent over-used agrochemicals; and 62 percent were inefficiently using water for irrigation purposes.

Situation With Project:

3.38 Of the 119 subprojects analyzed, the total investment per subproject was US\$11,400 (on average), of which US\$9,500 (on average) was financed by PPR. These figures do not include TA provided by PPR, approximately US\$2,835 per beneficiary on average. The total investment reached US\$1.7 million, of which PPR contributed US\$1.47 million, including subproject and TA costs. Beneficiaries contributed US\$226,000 in counterpart contributions which translates into 13.3 percent of the total amount. The duration of subprojects averaged about 2.5 years, including technical advice. Some 97 percent of farmers were part of groups with an average of 8 members per group, mostly young farmers.

3.39 The main interventions/practices implemented to address problems related to poor soil management practices were: (i) use of "green manure" in crop rotations (89 percent of total subprojects analyzed); (ii) use of organic amendments (79 percent); (iii) farm infrastructure improvements, including contouring, drains, sewers, and leveling (26 percent); and (iv) crop rotation planning (15 percent). It should be noted that many subprojects included more than one practice to mitigate and/or address the problem of poor soil management practices. With regards to agrochemical use and management, nearly three-quarters of the subprojects implemented several practices in the use and handling of chemicals in horticultural systems. Some 61 percent of subprojects implemented environmentally-friendly practices such as "solarization" instead of conventional soil sterilization practices typically utilizing harmful gases (e.g. methyl bromide). Finally, about 36 percent of farms adopted the "Integrated Production Standards" promoted under PPR, which cover all aspects of production for each crop from ecological, ethical, and social aspects for responsible agricultural production to aspects of food quality and safety. The standards are based on the use of natural resources, and regulating mechanisms to replace potentially polluting inputs.

3.40 The third problem in order of importance shown in subprojects analyzed was the inefficient use of water for irrigation. Some 62 percent of horticultural farms addressed this issue by replacing old equipment and 44 percent of farms installed new drip irrigation systems. It is worth noting that 11 percent of subprojects implemented required access to new water supply through boreholes.

3.41 **<u>Positive Environmental Impact</u>**: Project interventions included the use of low or no-till practices in crop rotation—usually best suited to horticultural production systems, as they produce large quantities of dry matter. "Green manure" is particularly useful as it decomposes
slowly and has a high capacity for recycling nutrients, allows for effective weed control, erosion control, and sustainably increased production. Similarly, the use of organic amendments increased the soil organic matter, stabilized soil aggregates, increased total porosity and soil biological activity, and helped to improve soil nutrient content. Use of crop rotations methods also reduced seed materials required, and helped to avoid crop health problems and soil nutrient depletion during crop development.

3.42 Other positive environmental impacts which PPR expects to have contributed are: reduced erosion, enhanced medium to long-term sustainability of soil quality, estimated 50 percent reduction in the quantity of agro-chemicals used, and decreased GHG emissions. With regards to activities related to water management, PPR anticipates to have avoided water contamination and increased responsible use of the resource.

3.43 **Economic Impact:** Project activities analyzed in the horticultural subprojects sample were estimated to lead to an average productivity increase of 20 percent total gross production, as well as anticipated output sustainability over time. There was an estimated 30 percent decrease in crop sanitary costs as a consequence of project interventions, and an increase of final output prices (+10 percent) and marketing due to improved quality of the products. With regards to subprojects activities related to more efficient water use and/or distribution, PPR estimates an increase of about 15 percent in crop productivity.

3.44 Overall, project activities benefitting horticultural production were carried out on a total of 1,328 hectares, or 57.7 percent of total horticultural production operations in the country. This accounts for 29 percent of total producers nationally (based on MGAP, Agricultural Statistical Yearbook, 2008). Furthermore, 1,226 hectares (or 53.3 percent of total horticulture area nationally) adopted improved management practices in use of agro-chemicals. Efficient irrigation systems were installed on 823 hectares (or 36 percent of the total area for horticulture). In the horticultural and fruit systems of the Metropolitan Region (Canelones), project activities succeeded in reducing erosion and land degradation on 8,600 hectares and were able to establish the responsible management of chemicals on 4,560 hectares.

BIODIVERSITY

Conservation of Natural Pastures

Situation Without Project:

3.45 The primary factors affecting sustainable use of natural pastures are the risk of degradation and loss of species, related to continuous stocking, high stocking rates, and high sheep/cattle ratios. Degradation signs are the increase of *weeds and stoloniferous* grasses adapted to such grazing conditions and reduced frequency of bunch grasses, as well as a reduction in number of species. Such changes in botanical composition result in an estimated 12 percent reduction in annual forage production (Beretta et al., Uruguay May 2006).

Situation With Project:

3.46 Of the 5,300 subprojects approved under PPR, 1,523 subprojects incorporated biodiversity conservation activities financed by the GEF. Of that total, 896 subprojects were

funded exclusively by GEF and 627 received a grant/funding from both Bank and GEF (Table 8).

Tuble of Humber of upproved subprojects b	j fundeu source
Type of subprojects	Number of approved subprojects
Integrated Natural Resources and Biodiversity (GEF & IBRD funds	627
Biodiversity (100% GEF–funded)	896
Natural resources (100% IBRD-funded)	3,777
Total Approved	5,300*
Total Executed	5,141

 Table 8: Number of approved subprojects by funded source

(*) Around 3% or 159 of all approved subprojects were not executed, primarily due to death of the applicant

3.47 Given that the predominant productive use for natural pastures in Uruguay is livestock production, the largest contribution (in terms of quantity) of GEF funds was assigned to integrated management practices in livestock production on natural pastures, promoting native forage species. The most commonly promoted practices were aimed at the preservation of valuable native grass species through: (i) adjusted stocking rates and grazing management, according to resource capacity; (ii) increased paddock divisions/sub-divisions and water availability to promote rotational grazing; (iii) improved coverage of soil and quality of forage (legumes); (iv) natural fertilizers (phosphorus); and (v) forest shade/shelter using native species.

3.48 **Positive Environmental Impact:** PPR had a positive environmental impact on a total of 465,300 hectares of natural pastures through promoting sustainable resource use and encouraging biodiversity conservation/responsible management. PPR also achieved the installation of forest shade and shelter using native species in 484 different subprojects.

3.49 Through adjusting stocking rates and including more frequent fallow periods in grazing management, PPR expects to have contributed to the effective maintenance and encouraging sustainable growing conditions for natural pastures, as well as maintaining a more stable ecosystem—and therefore improved the capability for recovering after droughts. PPR also introduced an increased number of paddocks which encouraged more efficient grazing system designs and improved re-growth of natural species.

Other important results supported through GEF project funds were the following:

- Recovery of native forest and promotion of alternatives to sustainable uses of native flora and fauna
- Establishment of conservation areas on farms to protect particular species or key sites of high biodiversity, e.g. conservation measures of wild deer populations, grassland birds, feathery palms (*Butia capitata*), and numerous protected areas for regeneration of degraded environments in various parts of the country

- Control of invasive alien flora and fauna species, affecting both biodiversity and responsible production. Species identified as particularly threatening were *privet*, *gleditsia*, *gorse* and *blackberry* (*flora*), and wild boar (fauna), all of which were mitigated/controlled on important farm areas
- Protection of "Riparian areas" of high biodiversity that provide various ecosystem services such as filtering pollutants, nutrient uptake in plant biomass, as well as habitat and food for many animal groups.

3.50 While the Environmental Impact Assessment System for PPR (see Stachetti et al. – EMBRAPA, 2012) has not yet applied quantitative parameters which could prove favorable impacts associated with sustainable resources exploitation and natural habitats conservation, results from others projects indicate the improvements associated with conservation of biodiversity.

Annex 4. Bank Lending and Implementation Support/Supervision Processes

Names	Title	Unit	Responsibility/ Specialty
Lending			
Michael G. Carroll	Lead Natural Resource Mgmt Specialist	LCSER	TTL
Enzo De Laurentiis	Sr. Procurement Specialist	LCOPR	
Edgardo M. Floto	Sr. Economist	LCSER	FAO/CP
Michael Nelson	Environment Specialist	ECSSD	
Alberto Yanosky	Biodiversity Specialist (Consultant)	LCSER	Biodiversity & Safeguards
Luiz Correa Noronha	Institution Specialist (Consultant)	LCSER	
Emilio H. Rodriguez	Procurement Specialist (Consultant)	LCOPR	Procurement
Antonio Blasco	Financial Management Analyst	LOCA	FM
Roberto Adrian Senderowitsch	Social Scientist	LCSPR	Social Assessment
Jeannette Ramirez	Operations Analyst	LCSER	
Marisa Miodosky	Junior Professional Associate	LCSES	
Mauricio Cifuentes	Extended-Term Temporary	LCSES	
Greicy Amjadi	Information Assistant	LCSEN	
Supervision/ICR			
Michael G. Carroll	Sr. Natural Resource Mgmt Specialist	LCSAR	TTL (to 7/2011)
Ayat Soliman	Sr. Rural Development Specialist	LCSAR	TTL (from 7/2011)
Angel Alberto Yanosky	Biodiversity Specialist (Consultant)	LCSAR	Biodiversity & Safeguards
Diego L. Paysse	Consultant	LCSAR	
Edgardo M. Floto	Sr. Economist	LCSAR	FAO/CP
Emilio H. Rodriguez	Procurement Specialist (Consultant)	LCSPT	
Jeannette Ramirez	Operations Officer	LCSAR	
Andres Mac Gaul	Senior Procurement Specialist	LCSPT	Procurement
Luiz Correa Noronha	Institution Specialist (Consultant)	LCSAR	
Natalia Cecilia Bavio	Financial Management Specialist	LCSFM	FM
Ricardo Eduardo Lugea	Senior Procurement Specialist	LCSPT	Procurement
Simon Nicholas Milward	Junior Professional Associate	LCSEN	
Timothy S. Valentiner	Junior Professional Associate	LCSAR	
Daniel Nolasco	Biomass Specialist (Consultant)		

(a) Task Team members

Annex 5. Beneficiary Survey Results

5.1 During the final months of the Uruguay Integrated Natural Resource and Biodiversity Management Project (or PPR, as known locally) conducted a survey to measure project beneficiary satisfaction with various aspects of its implementation and to gauge opinions about various issues. The survey results are useful for the formulation and development of strategies designed to integrate NRM and biodiversity conservation in further similar rural development practice and activities. In line with this development goal, the GOU's policy is to frequently take into consideration the opinions and perceptions of project participants to improve the quality of rural development projects and programs.

5.2 **Objectives:** The overall objective of this survey was to measure the level of project beneficiaries' satisfaction and to suggest recommendations for improvement of specific measures and policies supporting responsible production in the context of rural development. The specific objectives were: (i) to evaluate project beneficiaries' perceptions of project implementation; and (ii) to characterize the attitudes of producers about the sustainability of natural resource management and biodiversity conservation practices implemented on their farming operations.

5.3 **Methodology:** The study used a qualitative descriptive approach to learn from beneficiaries about their experience with PPR. Two quantitative research techniques were used, including a survey and interviews. The information was collected from a representative sample of project beneficiaries by sector of production and location (Department in Uruguay). The survey research methodology facilitated the objectives to assess satisfaction of beneficiaries with PPR activities and the sustainability of project objectives. It also compared the general expectations of beneficiaries and their perceptions regarding the services provided by PPR. In this way, it was possible to measure, in part, the quality of project services and the gap between expectations and perceptions as strong indicators for future improvement.

5.4 Regarding beneficiaries' perceptions, the survey focused on: (i) different aspects of project implementation (financial, technical advice, training, management); and (ii) key themes addressed by PPR such as integrated NRM and biodiversity conservation in agriculture. The "attitudinal survey" analyzed beneficiaries' conduct in relation to continued sustainable practices of NRM and biodiversity conservation on-farm.

5.5 PPR's technical unit led the formulation of the questionnaire for the survey, and data collection work was carried out by a contracted consulting firm.

5.6 **Study population:** The study population comprised 3,357 subprojects covering various types of production systems, approved within the first two calls for proposals in the years 2007 and 2008¹⁵ and implemented nationwide. A representative sample was designed through a stratified random sampling technique in order for the information collected to be generalized to the entire universe of 3,357 total subprojects.

¹⁵ This does not include the subprojects of the last call for proposals "Water for Livestock Production."

5.7 **Main survey specifications**: The sample was stratified in two-stages according to geographical location (Department) - the primary unit of selection - and the main source of funding (World Bank or GEF):

- Selection of the departments Canelones, Salto, San Jose, Rivera, Peach and Lavalleja was based on expert knowledge, concentration of subprojects, and variety of types of production
- The unit of observation in the sample was "producer"
- 154 producers were interviewed between 24 July to 5 August 2012
- The questionnaire comprised 58 questions and the interview lasted approximately 20 minutes
- The respondents were the decision-makers on the farm, or their substitute

Main Findings:

A. Overall assessment of PPR

In general, beneficiaries express high satisfaction with the overall project. Figure 1 shows that over 99 percent of the beneficiaries when asked to assess their participation in PPR expressed satisfactory (55 percent) and very satisfactory (44 percent) opinions, implying strong support for the process of project implementation.

Figure 1: Overall assessment of beneficiaries' participation in the project



When analyzing the overall satisfaction level according by type of subproject, the respondents who carried out "integrated subprojects" assessed the overall project more positively (54 percent indicated very positive). When analyzing by sector of production, the dairy producers assessed PPR more positively (49 percent indicated very positive).

Figure 2: Overall assessment of the beneficiaries' participation in the project by type of funding and sector of production



Turning to the identification of what was the main goal in doing a subproject, 71 percent of the beneficiaries believed their subproject solved a problem on their farming operation, 58 percent reported that they incorporated a new technological practice, and 33 percent stated that the main goal was to attract a grant. With regards to the implementation of the subproject activities, the majority of respondents noted an improvement in their level of production and their quality of life (Fig 3).



Figure 3: Appraisal of the effect of the subprojects

With regards to the main contributions of PPR, the respondents noted that the project meant a significant financial support on-farm in terms of farming and water improvements, production techniques, and TA.

Regarding the improvements and changes introduced on-farm by the subprojects, 66 percent of beneficiaries made changes in terms of water management and 41 percent introduced pasture management practices. Activities such as chemical container management and linkages with local institutions received fewer mentions (Figure 4).



One of the key objectives of MGAP has been to strengthen support to "family farming" operations, as well as enabling and encouraging public and private partnerships. With this intention, PPR facilitated local meeting points for information sharing, measures to reduce "rural isolation" and to enhance horizontal and vertical cooperation. As shown below, 61 percent of respondents perceived the relationship with the project as "good" and 34 percent as "very good." Only 4 percent perceived this relationship as "regular" (Figure 5).



Figure 5: Relationship between producers and PPR

In addition to the positive relationship between PPR and beneficiaries, over 70 percent expressed an improved opinion of MGAP as a result of the project (Figure 6). PPR proved to be a good mechanism for linking household production and MGAP, and when beneficiaries were surveyed about their previous involvement with MGAP programs, over half indicated that they had no prior involvement with the Ministry (Figure 7).



Figure 7: Changes in the Ministerial image

B. Initial knowledge of PPR

32 percent of the respondents were aware of the existence of PPR through producer organizations in their areas (Figure 8). This reaffirms the importance of social organizations and their crucial role in articulating the initiatives promoted by the GOU.

Figure 8: Knowledge of PPR's existence



The main reasons given by producers for their participation in PPR were to (i) improve the natural resources of their farms, (ii) raise funds, and (iii) obtain TA (Figure 9).



Once potential beneficiaries learned about PPR and expressed a desire to prepare a proposal for submission, producers first contact with PPR were with field technicians, mainly agronomists. This reinforced the importance of field technicians working on behalf of PPR/MGAP locally and also consolidated the working relationship between the producer and the technician for tailored results to meet beneficiaries' needs.

C. Integration in producer groups

Producers believed that the strategy of PPR/MGAP to promote the consolidation of producers' groups was successful. The calls for proposals launched by PPR also encouraged group/cooperative-led subprojects: 64 percent of the beneficiaries interviewed submitted their subprojects within a group framework (See Figure 10). Some 56 percent of these groups were newly established and 42 percent of them already existed. PPR was a plausible instrument for strengthening producer networks. The graph on the left-hand side of Figure 10 shows that most of the producers (94 percent) were satisfied with the work of their group after subproject completion, and 50 percent of them were still conducting joint activities. This represented an improvement on previous projects, where groups mostly disintegrated after completing the execution of project activities.

Figure 10: Integration in Producer Groups



68 percent of the producers considered integration in a producer group as "very useful" and 68 percent believe that the functioning of the group was "good," as shown in Figure 11.

Figure 11: Integration in producer groups



D. <u>Satisfaction with project procedures and presentation of subprojects</u>

Beneficiaries were satisfied with different aspects of project implementation, with the highest ratings for clarity in explaining conditions for accessing grant funding – in other words, PPR successfully communicated objectives and eligibility criteria well, as well as the usefulness of receiving payment in advance at the beginning of the subproject.

E. Satisfaction with field technical assistance

Some 86 percent of the interviewed beneficiaries stated that their subproject proposal was developed jointly with the field technician, while only 69 percent established subproject goals and targets jointly with the field technician. However, 20 percent of the interviewed beneficiaries stated that their subproject proposal was developed solely by the technician.

Some 70 percent of producers presented their proposals to PPR through: (i) technicians from their own producer associations, (ii) technicians introduced by another producer, or (iii) other ways. This might indicate the establishment of new technical ties or a new working relationship between the technician and the producer after PPR.

About 15 percent of interviewed beneficiaries acknowledged difficulties in accessing to a private field technician following project support, mainly due to inability to afford such services.





F. Satisfaction with technical assistance from project regional technicians

The regional technician played a key role during the project. He/she was the MGAP reference locally and an indispensable interlocutor for PPR. The interviewed beneficiaries were consulted on the field visits conducted by the regional technician. 85 percent of the respondents said that the regional technician visited the farm regularly. But often these field visits were either to perform audits (34 percent) or to end-monitor (9 percent). Some 58 percent and 38 percent of the interviewed producers felt "very satisfied" and "satisfied," respectively, with the work completed by the regional technician.



Figure 14: Satisfaction with the work carried out by the regional technician

G. Training activities, capacity development and knowledge transfer

Since inception, PPR promoted capacity-building activities aimed at training producers, technicians, and rural communities. These activities had a strong impact on local areas and provided a mechanism to strengthen productive activity and quality of life for rural families. Through PPR, meeting points were established for the purposes of information sharing and knowledge transfer.

Some 54 percent of the respondents participated in some form of training activity (Figure 15). Of these, 95 percent evaluated these activities as "very useful" (64 percent) and "helpful" (31 percent).



More than half of the producers interviewed had access to project technical manuals, brochures, and/or videos (54 percent). Those who were able to access communication materials evaluated them as "very useful" (59 percent) or "useful" (35 percent).

Conclusions

- Beneficiaries assessed the overall project "very positively" and most of them agreed that PPR contributed to the improvement of both income and quality of life
- Beneficiaries implementing "integrated subprojects" expressed the highest satisfaction levels
- Water management and pasture management were perceived as the most demanded interventions
- Beneficiaries described their relationship with PPR as "good," and 70 percent of them had an improved opinion about MGAP
- Although most of the respondents perceived changes in their relationships with other farmers and producer organizations due to PPR, only a few of them highlighted these as the most relevant or the most important project achievement. Half of the producers who submitted their subproject as part of a group still maintained joint activities with their group
- Most beneficiaries were "very satisfied" with the support provided by project TA
- Beneficiaries rated training, information sharing, and knowledge-transfer activities as very useful and helpful

Annex 6. Stakeholder Workshop Report and Results

No official Stakeholder Workshop was held at project closing. However, a formal project closing meeting was held September 17-18, 2012 in Piriápolis, Uruguay, in which many stakeholders attended and participated in a presentation discussing findings from the Borrower Completion Report (see Annex 7 for Executive Summary) and overall project achievements. No formal written outputs/minutes were generated from this meeting.

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

URUGUAY INTEGRATED NATURAL RESOURCES AND BIODIVERSITY MANAGEMENT PROJECT (PPR)

BORROWER COMPLETION REPORT EXECUTIVE SUMMARY (TRANSLATED)

Uruguay is essentially an agricultural country and is very well endowed with natural resources for production in this sector. The agriculture and agro-industry sectors combined account for over 25 percent of the national gross domestic product (GDP). The output of these sectors is exported and in the early 2000s accounted for 70 percent of Uruguay's total export earnings.

Any increase in agricultural production must come from an increase in productivity, because there is limited scope for additional land conversion and, in order to achieve long-term sustainability, it is vital that intensification should not undermine the supporting natural resource base.

In a general context of lower production, agreement was reached in 1994 on the first World Bank-supported project designed to improve the management of natural resources in the agricultural sector and to promote irrigation development: the Natural Resources Management and Irrigation Development Project (PRENADER). The duration of the project was over seven years and it helped to disseminate techniques of sustainable NRM, particularly through the pilot micro-watershed project.

Despite the progress made by PRENADER, however, at the beginning of the twenty-first century, before the new Ministry of Livestock, Agriculture and Fisheries (MGAP)/World Bank project was launched, there were still some problems of NRM. These mainly concerned soil degradation, natural pasture degradation, excessive use and poor handling of insecticides in agricultural, horticultural and fruit production systems, lack of rational management of expired containers and insecticides, water and groundwater contamination, quantitative and qualitative problems with water supply systems for livestock production, lack of shade for livestock, inefficient use of irrigation, degradation of native forests, planting of alien species in soils suitable for agriculture, and proliferation of invasive alien flora and fauna species. In addition, there was no national eco-regional biological vision and nothing was being done to promote and enhance native biological diversity and allow its rational use. Artisanal fishing in inland waters was not managed rationally.

MGAP decided to tackle these problems, selecting a project focused on improving NRM and mainstreaming biodiversity by supporting plans for integrated management of natural resources in agricultural establishments.

In May 2005, the World Bank conducted an appraisal of the proposed project and prepared the relevant Project Appraisal Document (PAD), summarizing the agreements reached with the GOU on the project proposal. These agreements establish, inter alia, that the project would

receive technical and financial support from the World Bank, under the Loan Agreement for an amount of US\$30 million, and financial resources consisting of a grant from the Global Environment Facility (GEF) in the amount of US\$7 million, MGAP matching funding (US\$3 million) and a significant contribution from the project beneficiaries.

The date of effectiveness of the project (arrival of the first funds) was November 2005.

The project was extremely successful and in 2011, by agreement between MGAP and the World Bank, it was extended for one year with a final completion date of August 31, 2012.

One of the project's most striking features was that it succeeded in mainstreaming the biodiversity component, not only at the production/farm level but also by including the topic in the country's agricultural institutional arrangements and generating support for the identification and adoption of production-compatible conservation practices.

The overall project objective was to promote the adoption of economically and environmentally viable systems of integrated and efficient management of natural resources for agricultural use, including biological diversity.

In order to do this, specific goals were set to resolve the issues described and an implementation strategy was designed focusing on:

- A financial incentive scheme for producers to encourage sustainable management of natural resources;
- Use of all public and private institutions already existing in Uruguay, with particular emphasis on trade unions and producer organizations, cooperatives and rural development associations;
- Strong emphasis on communication at various levels of society in order to publicize the goals, activities and benefits of involvement in the project;
- Private TA. The project funded local in-field technicians to design, formulate and supervise the execution and correct completion of subprojects. The TA funding was additional to the grant and project support therefore consisted of TA and direct disbursement;
- Encouraging producer groups to put forward technical proposals for project funding. Group work fosters interaction between neighboring producers for the design and execution of subprojects, as well as for more productive organization of training and participatory outreach events;
- Working agreements concluded with producer organizations and other agricultural institutions. Under these agreements, the project funded a part and the institution made a matching contribution;
- Special attention to training, both of technicians and of producers, participatory outreach and communication, using various media and instruments.

PPR initially came under the authority of the General Directorate for Renewable Natural Resources (RENARE). Subsequently, following the creation in 2008 of the General Directorate for Rural Development (DGDR), it was transferred to that new Directorate, together with the

other externally-financed MGAP projects. However, there continued to be close contact and coordination with RENARE and other MGAP General Directorates: the General Directorate for Forestry (DGF), the General Directorate for Agricultural Services (DGSA), the General Directorate for Farms (DIGEGRA), the Department Directors and the Decentralization Unit (created in 2007).

Apart from MGAP, the project coordinated and interacted with directorates in other ministries as well as public and private institutions connected with the agricultural sector. These public institutions included the National Directorate for the Environment (DINAMA), the National Directorate for Land Use (DINOT) and the newly created National Directorate for Water (DINAGUA), which are all part of the Ministry of Housing, Land Use and Environment. The private institutions included the National Institute for Agricultural Research (INIA), the Agricultural Planning Institute (IPA), the Land Settlement Institute (INC) and the Directorate for Development Projects (DIPRODE) of the Office of Planning and Budget (OPP).

There was also extensive technical coordination with the University of the Republic (UdeLaR) and in particular with the Faculty of Agronomy, the Faculty of Veterinary Medicine, the Faculty of Science and the Faculty of Engineering.

Lastly, mention should be made of the interaction with producer organizations and particularly with two cooperative trade unions (the National Rural Development Commission (CNFR) and Federated Agrarian Cooperatives (CAF)) and a number of cooperatives and rural development associations throughout Uruguay affiliated with the above-mentioned trade unions.

In March 2005, discussions began between the team designing the new project, the new administration and the World Bank mission. Agreements were concluded and progress was made in drafting the basic documents. Shortly afterwards, the document entitled "Integrated Natural Resources and Biodiversity Management" ("Responsible Production") was approved.

After two months of joint work and on the basis of the discussions and consensus achieved, the initial agreements were signed at the World Bank office in Buenos Aires. Later, in June 2005, the loan agreement and GEF grant were signed at the recently inaugurated World Bank office in Montevideo. The signatories were: for the World Bank, Ms. Pamela Cox, Vice-President; for the GOU, the Minister for Livestock, Agriculture and Fisheries, Mr. José Mujica, and the Minister for Economy and Finance, Mr. Danilo Astori. They are currently President and Vice-President of the Republic, respectively.

Throughout its execution, PPR received important technical and supervisory support from the World Bank through various channels. There were 20 supervisory missions, ten portfolio reviews and a number of fiduciary review missions. A mid-term review was also conducted by an independent consultant.

The project was organized by a Project Executing Unit, which was given the necessary technical and administrative staff and the teams needed for its normal operation. Shortly after the start of activities, 16 regional technicians were hired. They were the executive arm of the project throughout the country.

TA for the subprojects was entrusted to a technician selected by the producer and his group. Thus a large number of technicians trained in agrarian science (agronomists, veterinarians, agricultural technicians) and in other specific disciplines needed for projects of a particular kind (geologists, biologists, etc.) worked throughout Uruguay.

In order for goals to be met and for the strategy to be implemented, the project was divided into four components. A detailed description is given below of the components, the activities for each of them and the results achieved.

Component 1: Natural resources and biodiversity management

This project channeled financial resources directly to individual producers or groups of producers interested in implementing farming projects (subprojects) for integrated natural resources and biodiversity management.

The project provided financial resources and TA to promote conservation practices and management of natural resources and biodiversity in livestock, dairy and intensive crop production systems.

On a smaller scale, work was done on farming systems and artisanal fishing in inland waters.

Analysis of a sample consisting of 75 percent of the subproject completion reports shows that, in general, implementation of the various activities far exceeded what had originally been proposed.

An analysis of what was actually done compared with what was proposed in the subproject shows that the practices included in the systematization item (leveling, systematization of planting, road lowering, contouring and terracing) had high rate of implementation (86.4 percent in the sample analyzed). The implementation rate was also high for activities involving management of soil, natural pasture and water for livestock, because climate events during the project lifetime (droughts) encouraged producers to engage in such activities in order to have water of sufficient quantity and quality as well as forage for animal feeding.

One of the project's main goals was to integrate all the supported subprojects, including biodiversity of production systems, and to integrate the two main sources of funding (World Bank and GEF) for supported subprojects.

While it was difficult to reconcile biodiversity with the national production system, the cofinancing of subprojects with loans and grants did much to overcome these difficulties, providing excellent additionality.

Of the 5,300 subprojects funded under PPR, 1,523 specifically incorporated the biodiversity component by emphasizing conservation and/or sustainable use, funded by the GEF. Of this total, 896 subprojects were funded exclusively by the GEF and 627 had combined GEF/World Bank funding. As regards the size of the farms where the GEF funds were used, there were 1,220 small-scale producers, 248 medium-scale producers and 50 large-scale producers (MGAP definitions).

Upon conclusion of the project, there were 1,732 proposals for improving natural pasture management, most of which have some GEF funding. In addition, a total of 465,300 hectares of natural pasture are affected, with promotion of sustainable use of the resource and of biodiversity. There are 484 activities for shade and shelter creation using native species, combined with integrated management of natural pasture.

In pursuit of the biodiversity goals, the project encouraged registration of native forests of beneficiary producers, subsidizing the costs under farming subprojects. It also promoted various alternative sustainable uses of native flora and fauna.

The creation of conservation areas on productive farms has been encouraged, in order to protect particular species or key sites of high biodiversity. Examples are conservation of wild deer, grassland birds, feathery palms and numerous protected areas for regeneration of degraded environments in various parts of the country.

Worked was also done on control of invasive alien flora and fauna species affecting both biodiversity and, to a great extent, agricultural production.

With regard to biodiversity, mention should be made of the coordination with the DINAMA, through ongoing participation of the project in the Expanded Project Executing Agency of the Directorate's National System of Protected Areas, as well as with various non-governmental organizations.

Following the severe drought which affected the north of the country at the end of 2005 and in 2006, MGAP asked the project management and the World Bank whether funds from PPR could be used to finance a special program to supply water for livestock. The World Bank issued the necessary "no objection" and the Fund for Prevention of the Effects of Drought was designed. It became operational in late 2006 to deal with the effects of the drought. The new program helped small-scale and medium-scale "family farmers" in the departments of Tacuarembó, Paysandú, Salto, Rivera and Artigas.

The subprojects of this component consisted of specific financial support in the form of cofinancing of construction of wells, embankments and water management and distribution systems for livestock farmers. Both small-scale and medium-scale "family farmers" received 80 percent of the total cost of the project and provided 20 percent as a matching contribution.

Modeled on the Fund for Prevention of the Effects of Drought and its impact, and following another drought which affected the east central part of the country, the Quality Water Project was launched in 2009. This was an initiative of the *intendencias* of Durazno, Flores, Maldonado, Rocha and Treinta y Tres.

Lastly, another drought affected a large part of the country in 2010. This was the reason for the "Water for Livestock Production" (or APA, per its Spanish acronym) initiative, designed to find ways of supplying water on farms of small-scale and medium-scale livestock and dairy producers throughout the country, in a context of climate change.

Following a unanimous decision by MGAP authorities, the DGDR and PPR, funding for these subprojects is shared between this Project and the new MGAP/World Bank project "Development and Adaptation to Climate Change", which is already operational.

This arrangement whereby execution is shared between two projects (one ending and the other beginning) is viewed as promoting a smooth transition between the two and gives the new project a platform of subprojects enabling it to be launched without any pressure to generate demand for the activities offered to the beneficiary population.

Component 2: Priority Biodiversity Areas

The plan was to organize demonstration projects in ten priority areas selected during the project preparation phase.

Execution of this component proved problematic. It was finally possible to cover all the priority areas through farming subprojects, although consultations for demonstration projects were held in only three cases: Arerunguá, Laureles and Lake Castillos.

Component 3: Support Services

An important element of this component was the creation of the Institutional Liaison Unit. This Unit worked to promote participation at the local level and provided training, in close coordination with the Communication and Dissemination Unit.

The project intervention model using farming subprojects which stimulate group formation and have institutional backing was crucial. Among other functions, the groups served as forums for producer-to-producer learning, in the same way as institutional backing was a means of publicizing the project and of recognizing the role of organizations in the territory.

The system of working agreements was helpful in publicizing project proposals and was a good strategy of institutional coordination to ensure that the issue remained on the institutional and social agenda.

Although there were various types of agreement, they all concerned integrated natural resources and biodiversity management, awareness-raising and training in these issues and infrastructure support needed for an integrated approach.

The training made it possible to identify and acknowledge future needs, as well as technical resources required, and to develop human resources for the actual project.

Within this sub-component, the Institutional Liaison Unit promoted activities such as:

(a) Specialized training for the professionals providing TA to producers for the design and execution of subprojects.

(b) Training of producers in innovative ways of using and conserving natural resources and biodiversity.

Mention should be made of the Participatory Outreach Workshops which, in addition to being a working tool, were also a reaffirmation of the project approach and modus operandi. The Workshops started in 2008, on producers' farms and with the participation and involvement of various stakeholders. They began by identifying problems and needs of "family farmers" at the local level. Producers in the area and in other areas with similar production systems were thus able to participate actively and enthusiastically in each Workshop. The relevant technicians, producer organizations and local authorities also participated.

The methodology used in the Participatory Outreach Workshops consisted of stakeholder participation, a combination of practical, empirical and scientific knowledge geared to problem solving and specific needs, and an efficient multi-media approach incorporating various strategies and communication technologies for knowledge sharing.

The project also funded studies and applied research designed to improve the framework of policies for natural resource management and to develop new techniques in areas posing special difficulties, with a clear environmental benefit. Thus special emphasis was placed on prevention of soil erosion and on the use and responsible management of insecticides.

Component 4: Project Administration

The project's M&E Unit provided ongoing follow-up of the variables involved in the subprojects being implemented and in the project as a whole using the indicators specified and agreed in the Logical Framework for PPR.

It was also responsible for the design and application of specific systems for measuring environmental impacts resulting from implementation of subprojects. Use was made of tools generated by the project, such as the Assessment of Environmental Impact of Rural Activities and the sustainability indicators for family dairy farming. Both provided objective findings regarding the impacts of subprojects on producers' farms, permitting subsequent analysis and interpretation of the environmental impact of PPR during its execution.

Also for the purpose of assessing the impact of PPR, a Survey on Adoption and Sustainability of Management Practices was conducted. The complete results of this survey will be published separately from this report.

For the study, a methodology based on "continuity of measures" and "perception of impact of measures" indices was used. The management measures with a clearly positive impact were: subdivisions, embankments, irrigation equipment, fertilization and refertilization of natural pasture, adjustment of livestock load per hectare, "green manure", storage tanks, semi-artesian wells; and direct seeding or minimum tillage.

Seeding coverage with legumes, overhaul of water sources, monitoring of fallow periods and occupation of natural pastures; drinking stations, effluent management, other organic

amendments, crop rotation, mitigation of gullies and improved fertilization schemes had a positive impact, with scope for improvement in some aspects.

The measures with insufficient impact were: planting of shade and shelter woodlands, creation of pastures, systematization of land plots, control of erosion, improvement of infrastructure and working conditions, rotary hoeing and water quality analysis.

The team of consultants found that the water collection and distribution installations are in good shape and doing their job, providing an acceptable supply. They deliver good quality water and the parts are working well. This is one of the measures with the greatest impact at the level of the farming system and with the highest level of acceptance among producers.

However, there are a few cases in which some of the technical criteria promoted by the project are not fully met.

With the exception of special circumstances due to disbursement delays (to be improved in future activities) or to increased costs over the period, the measures planned were implemented.

Producers find that the measures adopted are appropriate for production and conservation of natural resources and that the differences in results or continuity concern specific aspects which have been addressed in this study.

It is considered essential for the field technician to monitor implementation of actions that integrate production with conservation. This is true of the various phases: for identification of problems and possible solutions, as a way of revitalizing an area, for technical adjustment of measures, etc.

In conjunction with the Adoption and Sustainability Assessment, a Beneficiary Satisfaction Survey was conducted. Its sample size and methodology were different: the goal was to measure the level of satisfaction of beneficiary producers and to ascertain their attitude towards conservation practices.

Generally speaking, beneficiaries were found to be extremely satisfied with the project in general. When the degree of general satisfaction was analyzed by type of project and item of production, it was found that producers with "integrated" financing had a generally more positive view of the project (54 percent were very positive).

Similarly, a more detailed analysis showed that those with the most positive view of the project are producers engaged in dairy farming (49 percent were very positive).

When asked to identify the main reason for implementing a project, producers generally replied that it was to solve a problem on their farm. They said that implementing the project usually brought about an improvement in their production and quality of life; on the other hand, it most infrequently meant access to services and inputs, reflecting producers' interests and the fact that the country's agriculture is well organized. When asked how they viewed the contribution of the

project, producers replied that it provided considerable financial assistance for farming, obtaining water, improving production and technical aspects.

Producers considered their relationship with PPR to be good (61 percent) or very good (34 percent). Only 4 percent viewed the relationship as average.

A corollary of this positive relationship is the change in producers' image of MGAP as a government institution brought about by implementation of PPR. Over 70 percent of producers said that the Ministry's image had been enhanced by their participation in the project.

PPR created a good link between family farming and MGAP. When asked about their previous contacts with the Ministry, over half of the beneficiary producers said that they had none until they participated in the project with that Ministry.

As regards producers' degree of satisfaction with various aspects of the project execution, considerable satisfaction was expressed with all aspects (over 75 percent). Producers particularly appreciated the clear explanation of conditions for obtaining project funding, demonstrating the excellent ability of the project to communicate its goals and criteria, and the fact that they were able to obtain an advance of funds to commence the farming project.

With regard to training and workshops with producers, 56 percent of beneficiary producers participated in a training activity. Of that 56 percent, 95 percent found these activities very useful or useful (64 and 31 percent respectively).

The study concluded that beneficiaries generally had a very positive view of the project. In addition a large majority of beneficiaries agreed that PPR had improved their production, their income and their quality of life.

The Communication and Dissemination Unit was requested to implement the Communication and Dissemination Plan and it started work by drafting the Plan for the entire project period.

The approach adopted was to publicize the existence and the features of the project and to keep up a permanent flow of information on the progress of activities and the results obtained, as well as the concepts involved in the final goal of the project: to solve the problems identified with the existing state of national resources and to reverse the process of deterioration which they have suffered, by creating a general awareness and adopting the recommended management practices.

In order to attain the goals of the project, it was necessary to reach different audiences, depending on the topic covered. For topics relating to the operation of the project, the target audience was groups of producers, local governments and the technicians directly involved in the farming or group projects being funded. In the case of natural resources and biodiversity management, it was a broader audience encompassing the entire rural family in addition to producers and technicians.

The target audience for promotion and dissemination activities was the rural dweller, his family and his groups, together with the agriculture technicians. Various strategies, instruments and activities, which are described in the body of this report, were used to implement the Communication and Dissemination Plan. It is worth mentioning the number of promotion and dissemination workshops: 230 workshops attended by 5,450 participants.

The Participatory Outreach Workshops were an important method of communication, outreach and training.

The technical visits to farms were also crucial and a key role was played by the technicians from the Natural Resources Unit and the regional technicians, at field workshops, following up on Component 1 subprojects in various parts of the country.

Lastly, one-day training workshops were held for various audiences on specific topics. There were workshops for producers, on topics such as management of agrochemicals and triple washing of containers, biodigestors, gorse control, treatment of effluents etc.

The topics covered for technicians included construction and maintenance of boreholes, construction of embankments, renewable energies, etc.

In the education sector, which will be dealt with in a separate chapter of this report, training workshops were organized for rural teachers, for geography teachers and for students at urban and rural schools.

In addition, at project start-up, intensive training was provided to 90 mass media specialists throughout the country on sustainable management of natural resources and biodiversity and on how responsible production works.

Audiovisual materials were used extensively in project communication activities, because of their strong impact and lasting effect. In this context, promotional materials were prepared for the media, as well as testimonial videos in which producers themselves recount their experiences, and thematic videos designed to remain relevant after the completion of PPR. In all, over 150 complete sets of material were prepared.

Similarly, the technical and communication aspects of PPR were reflected in printed matter of various kinds and with different objectives, including books (manuals). Particular emphasis was placed on work with the education sector, in the belief that it is essential to introduce the topic of the environment to the very young. Rural schools are an excellent way of reaching rural families, because they are the most widespread institutions in Uruguay. Rural teachers are models for their community and therefore influence their environment.

Before starting to plan the materials, training sessions were held with 360 rural teachers and workshops at which the teachers proposed methods and types of material best suited for the classroom. This method, in which teachers were consulted beforehand, was very much appreciated and ushered in a new type of relationship between the Ministry and the teaching profession.

The Administration and Finance Unit was in charge of project administration, financial management and accounting. It was also responsible for hiring, financial transfers, procurement, consultancies, financial evaluation of subprojects and everything needed for the project to function.

Its main task was to keep an accounting record of financial transactions in order to provide financial information to the project management, the World Bank, the GOU and third parties in order to facilitate decision-making, project implementation monitoring and participation in operational planning. It was responsible for management of the procurement needed for project implementation and for administration of the human and material resources of the Project Executing Unit.

All project operations involving movements of funds were processed and monitored by the Administration and Finance Unit. It was responsible for the coordination of mechanisms and operations with the Court of Accounts of the Republic, the Auditor's Office of the Nation, the General Treasury of the Nation and the Auditor's Office of MGAP.

The Administration and Finance Unit coordinated all monitoring by government agencies, the Court of Accounts of the Republic and the Internal Auditor's Office, processing and providing information to the auditors and arranging for implementation of the recommendations made by those agencies.

It performed the same duties with regard to World Bank supervision missions, portfolio reviews, financial reviews and procurement.

The Administration and Finance Unit was also responsible for the general administration, logistics and secretariat of the project. This task required considerable effort and commitment and, as noted below, should have been entrusted to a specialized unit.

Details of the statements of accounts and financial management are given in the body of the document, although it should be noted that the financial performance data are not final and that the accounts have not yet been closed.

Overall Conclusions

After seven and a half years, the following conclusions can be drawn about PPR:

- The project succeeded in putting responsible production on the agenda of the various institutional stakeholders in the agricultural sector.
- By offering financial incentives to producers, the GOU is promoting the adoption of new practices and activities which benefit the producers and society as a whole and motivate them to invest in their own establishments.
- The support of all the public and private institutions already existing in Uruguay, and particularly of trade unions and producer organizations, cooperatives and rural development associations, made it possible to reach a larger number of beneficiaries more rapidly.

- The permanent presence of regional technicians throughout the country ensured follow-up of subproject execution and completion of the multiple field tasks related to the project. The regional technicians interact on a regional basis with the direct beneficiaries, their technicians and public and private local institutions.
- The methodology for evaluation of the subprojects was found to be very good. The regional technicians performed the field validation jointly with private technicians and producers. In addition, the Central Evaluation Commission, an internal interdisciplinary body, acted independently and complied strictly with criteria for technical, environmental and financial viability.
- The outreach, training and dissemination programs made it possible to keep a large number of technicians, producers, rural schoolchildren, high school students and rural inhabitants in general informed about the premises and concepts of NRM and environmental conservation.
- It was a good idea to become involved in the education of children and young people in order to create and sustain interest in environmental conservation, sustainability of natural resources and biodiversity at an early age. It is assumed that a child or a young person who has received an environmental education will pass on these concepts to his or her family and milieu.
- In addition, this creates a very important logistical base: every Uruguayan schoolchild has a computer and computers are also being provided to secondary school students. Information technology is extremely important for dissemination of the concepts of environmental conservation and NRM.
- The use of technology to interact and share experience, methods and techniques for sustainability of natural resources and biodiversity at the various levels of the target audience (producers, technicians, managers, general public) is extremely important for the understanding and acceptance of the technical and methodological messages conveyed.
- The TA given to all beneficiary producers provided ongoing technical guidance concerning new practices and activities and fostered a good relationship between technicians and producers. This is acknowledged even by producers who had never received TA on their farms.
- Also in the case of farming projects, PPR operated through groups of producers. Some groups already existed and others were formed on the basis of MGAP projects. Producers and their trade unions realized the need for technical and methodological support for the formation of groups to ensure that they were harmonious.
- Special attention was paid to training for technicians and producers, to participatory outreach and to communication using various media and instruments. From the outset, the emphasis was on production of technical materials, publications, audiovisual material and anything that could help to disseminate the premises of conservation and sustainable use of natural resources and biodiversity.
- Interaction with the various technicians, farm advisers, regional technicians and producer groups revealed the need for ongoing training either to provide updates on the various issues or to cover topics on which people had not had an opportunity to be trained as part of their professional development.
- PPR leaves operating capacity (infrastructure, practices, instruments) with the potential to improve NRM and to ensure appropriate treatment of biodiversity. Thus the project is leaving the country a great deal of infrastructure for better development and use of natural

resources, especially in the case of "family farmers" for whom the GOU subsidies are justified.

- A team specializing in integrated natural resources and biodiversity management will build the institutional capacity of MGAP to work on this issue.
- At the right time (and to a certain extent ahead of time), PPR promoted the adoption of practices and strategies with the potential for policy formulation.
- When the project was launched, the central team thought that it would be difficult to sell the topic of NRM to producers, who were more concerned with productivity and profitability. Today producers recognize that many good water and soil management practices result in almost immediate increases in productivity.
- Unfortunately, this linkage between conservation and productivity was not perceived to the same extent in the case of the biodiversity resource. PPR succeeded in promoting recognition of the advantages of biodiversity in its various aspects, including natural pastures.
- The idea of environmental impact assessment at the level of agricultural production was introduced through the Assessment of Rural Environmental Impact. This assessment has considerable potential, although it could be used to only a limited extent in PPR.
- PPR had a high execution rate, with more projects, direct and indirect beneficiaries and impacted areas than had been initially envisaged.
- Support was received from a large number and great variety of institutions and in particular from producer organizations, which helped to disseminate the objectives and methodology, approved and supervised field projects and acted as catalysts in the training, outreach, communication and dissemination processes.
- During the period in question, major organizational changes in MGAP and important climatic phenomena occurred. Fortunately the project design made it easily adaptable and able to accommodate these new institutional and climatic situations.
- MGAP has acquired extensive experience in integrated natural resources and biodiversity management connected with agricultural production, which must continue and be encouraged when PPR comes to an end.

Annex 7, Appendix 1. Borrower Comments on Draft ICR





Montevideo, 17 de abril de 2013

Dr. Holger A. Kray Departamento de Desarrollo Sostenible Banco Mundial America Latina y el Caribe Presente

Ref: Comentarios Informe Banco Mundial de Cierre Proyecto PPR

Estimado Dr. Kray:

En respuesta a vuestra correspondencia del 29 de marzo de 2013, tengo el agrado de comunicarle que hemos revisado el informe de referencia y tenemos los siguientes comentarios:

El informe está bien elaborado y refleja adecuadamente los resultados del proyecto, así como los conceptos e información incluidos en el Informe de Cierre del Proyecto (Julio 2012) elaborado por la UEP - PPR.

No obstante, creemos que los "ratings" asignados en el documento respecto al desempeño del Banco y del MGAP, en particular la calificación del Banco en la fase de preparación del proyecto, no reflejan los logros obtenidos, relativizando así los importantes impactos que tuvo el proyecto sobre los recursos naturales, la biodiversidad y la calidad de vida de los productores familiares del Uruguay; siendo para el MGAP un proyecto muy satisfactorio.

Creemos que dicha calificación se debe a que el informe pone excesivo énfasis en las limitaciones de los indicadores y el sistema de seguimiento y evaluación utilizados. En nuestra opinión dichas restricciones no tuvieron un impacto significativo sobre la ejecución y los resultados del proyecto.

Por el contrario, consideramos que el proceso adoptado para la elaboración de los indicadores representó una contribución positiva del Banco, que demostró sensibilidad a cambios que implicó el inicio de una nueva administración que asumió el gobierno en 2005, y es consistente con el enfoque flexible que caracterizó el diseño e implementación del proyecto, una de las causas principales de su exitoso desempeño.

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UNISTERIO DE GANADERÍA



Queremos aprovechar la oportunidad para ratificar que el PPR ha sido un proyecto que ha contribuido significativamente a desarrollar una visión integral en los productores e Instituciones del Uruguay, donde el cuidado del medio ambiente y los recursos naturales se ha convertido en un elemento clave en la elaboración de las estrategias productivas.

Asimismo, el conocimiento y valoración de la biodiversidad, la creación de equipos técnicos descentralizados para llevar adelante las acciones del proyecto, y la importancia de apoyos financieros puntuales para enfrentar situaciones extremas de productores familiares frente a la variabilidad climática, también representan elementos exitosos promovidos por el PPR que han pasado a formar parte de los planes y políticas públicas del MGAP y otros Ministerios.

Aprovechamos la oportunidad para agradecer el apoyo técnico y financiero del Banco que contribuyeron al éxito del proyecto, y confiamos que el PPR representa una operación que no solo consolida la larga y fructífera relación del Banco Mundial con el sector agropecuario del Uruguay, sino que ha sentado las bases para la colaboración presente y futura del Banco en el desarrollo de nuevas iniciativas innovadoras.

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Annex 8. Comments of Cofinanciers and Other Partners/Stakeholders

Not Applicable.

Annex 9. List of Supporting Documents

Manuals Published by PPR (MGAP-BM-GEF)

Manual for Rural Environmental Impact Assessment. (EIAR), PPR, IICA, EMBRAPA, 2007

Manual for Design and Construction of Water Dams for Cattle Water Supply. Mario Garcia, Pancrazio Canepa, Carlos Ronzoni. February 2008 and July 2012.

Manual for Dairy Effluent Management. Soledad Gutierrez, agreement PPR - Faculty of engineering, 2008.

Manual for Family Dairy Farm Assessment Through Sustainability Indicators Systems. Agreement with Dairy farmers Association of San Jose - PPR, 2009.

Practical Handbook for Beekeepers. Cristina Tor. PPR - Beekeeping Society of Uruguay Agreement, February 2009.

Direct Seed Drilling Guide. Agreement with Uruguayan Association for direct seed drilling (AUSID) - PPR, 2009.

Sustainable Management of Natural Resources and Family Farming. National Commission for Rural Development (CNFR) - PPR, 2009 agreement.

Sustainability Evaluation of Agricultural Activities in Family Units. National Commission on Rural Development (CNFR) - PPR, 2010 agreement.

Uruguay Freshwater Fish Manual. Franco Teixeira. Agreement Colonia Aquarium - PPR, may 2011.

Castillos Lagoon and Butia Palm Trees: Conserving Biodiversity. Consultancy Vida Silvestre-Facultad de Agronomía - PPR, September 2011.

Experiences With Freshwater Fishermen. Agreement between Federation of cooperatives of production of Uruguay - PPR, July 2012.

Mitigation and Adaptation to Climate Change on Farming Systems in Uruguay. Joaquin Lapetina. Agreement with National Commission for Rural Development (CNFR) - PPR July 2012.

Groundwater Manual. Paula Collazo, Jorge Montaño, July 2012.

Herbaceous Plants, Grasses and Associated Birds of the Atlantic Coast of Maldonado. Amalia Robredo, Eduardo Arballo, June 2011. Manual-Guide of Fauna and Flora of the North-East of Uruguay. Eduardo Arballo, November 2011.

Manual-Guide of Fauna and Flora of Merin Lagoon. Eduardo Arballo, November 2011

Manual-Guide of Fauna and Flora of the Ranges of the Southeast of Uruguay. Eduardo Arballo, November 2011

Bases for Eco-Regional Planning of Uruguay. Alejandro Brazeiro et al. Agreement between PPR-CIEDUR-Facultad de Ciencias-Sociedad Zoológica del Uruguay-Vida Silvestre, August 2012.

Family Agricultural Production and the Conservation of Natural Resources: The Responsible Production Project Experience. Joaquin Lapetina. Agreement PPR - National Commission for Rural Development (CNFR), August 2012.



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