



**GREEN  
CLIMATE  
FUND**

**Meeting of the Board**  
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Provisional agenda item 14 (g)

**GCF/B.18/04/Add.10/Rev.01**

**18 September 2017**

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# Consideration of funding proposals – Addendum XIII

## Funding proposal package for FP055

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### **Summary**

This addendum contains the following three parts:

- (a) A funding proposal summary titled “Poverty, Reforestation, Energy and Climate Change PROEZA Project”;
- (b) No-objection letters issued by the national designated authority(ies) or focal point(s); and
- (c) Environmental and social report(s) disclosure.



GREEN  
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# Funding Proposal

Version 1.1

**The Green Climate Fund (GCF) is seeking high-quality funding proposals.**

Accredited entities are expected to develop their funding proposals, in close consultation with the relevant national designated authority, with due consideration of the GCF's Investment Framework and Results Management Framework. The funding proposals should demonstrate how the proposed projects or programmes will perform against the investment criteria and achieve part or all of the strategic impact results.

Project/Programme Title: Poverty, Reforestation, Energy and Climate Change  
PROEZA Project

Country/Region: Paraguay

Accredited Entity: FAO

Date of Submission: February 09, 2017



## Acronyms

ADM	Archer Daniels Midland
AFD	Development Financial Agency
ARP	Paraguayan Rural Association
AFOLU	Agriculture, Forestry and Other Land Use
BCP	Central Bank of Paraguay
BNF	National Development Bank (Banco Nacional de Fomento)
CAF	Development Bank of Latin America
CC	Climate Change
CCT	Conditional Cash Transfers
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CPS	Country Partnership Strategy
CSO	Civil Society Organizations
CTNPF	Close-to-Nature Planted Forests
DINCAP	National Directorate for the Coordination and Administration of Projects
E-CCT	Environmental Conditional Cash Transfers
EC	Executive Committee
EEN	National Economic Team of the Presidential Cabinet
ENSO	El Niño Southern Oscillation
ESA	European Space Agency
ESMF	Environmental and Social Management Framework
ExACT	Ex-Ante Carbon Appraisal
FAO	Food and Agriculture Organization of the United Nations
FEPAMA	Paraguayan Federation of Timber Producers
FHH	Female-headed households
FLR	Forest and Landscape Restoration
FM	Financial Management
FPIC	Free Prior Informed Consent
GCF	Green Climate Fund
GDP	Gross Domestic Product
GHG	Greenhouse gases
GIZ	German Cooperation Agency
GoP	Government of Paraguay
ICB	International Competitive Bidding
ILO	International Labour Organization
INDC	Intended Nationally Determined Contributions
INDERT	National Rural and Land Development Institute
INDI	Paraguayan Institute for the Indigenous
INFONA	National Forest Institute
IP	Indigenous Peoples
IPCC	Intergovernmental Panel on Climate Change
IPPF	Indigenous Peoples Planning Framework
IRR	Internal Rate of Return
KfW	German Development Bank



LAC	Latin America and the Caribbean
LULUCF	Land-Use, Land-Use Change and Forestry
MAG	Ministry of Agriculture
MIC	Ministry of Industry and Commerce
MOPC	Ministry of Public Works and Communication
NAP	National Adaptation Plan
NDA	National Designated Authority
NDC	Nationally Determined Contributions
NDP	National Development Plan
NFI	National Forest Inventory
NFMS	National Forest Monitoring System
NGFP	New Generation Forest Plantations
NGO	Non-governmental Organizations
NPV	Net Present Value
NRP	National Reforestation Plan
OP	Operational Policy
PMU	Project Management Unit
PMRN	Sustainable Management of Natural Resources Project (MAG/GIZ/KfW)
PRODERS	Sustainable Rural Development Project (MAG/World Bank)
PROEZA	Poverty, Reforestation, Energy and Climate Change Project
PROFOR	Program on Forests
REDD+	Reduced Emissions from Deforestation and Forest Degradation
SAS	Social Action Secretariat
SEAM	Environment Secretariat
SLMS	Satellite Land Monitoring System
STP	Ministry of Planning for Social and Economic Development
t	Tonnes
TCP	Technical Cooperation Program
TEEB	The Economics of Ecosystems and Biodiversity
ToR	Terms of Reference
UNDP	United Nations Development Programme
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
UNFCCC	United Nations Framework Convention on Climate Change
UNREDD	United Nations Collaborative Program on Reducing Emissions from Deforestation and Forest Degradation
VMME	Viceministry of Mines and Energy
WB/WBG	World Bank Group



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**Please submit the completed form to:**

[fundingproposal@gcfund.org](mailto:fundingproposal@gcfund.org)

Please use the following name convention for the file name:

“[FP]-[FAO]-[06\_02\_2017]-[01]”

A.1. Brief Project / Programme Information		
<b>A.1.1. Project / programme title</b>	<b>Poverty, Reforestation, Energy and Climate Change (PROEZA)</b>	
A.1.2. Project or programme	Project	
<b>A.1.3. Country (ies) / region</b>	<b>Paraguay</b>	
<b>A.1.4. National designated authority (ies)</b>	<b>Ministry of Planning for Social and Economic Development (STP)</b>	
<b>A.1.5. Accredited entity</b>	<b>Food and Agriculture Organization of the United Nations (FAO)</b>	
A.1.5.a. Access modality	<input type="checkbox"/> Direct <input checked="" type="checkbox"/> International	
A.1.6. Executing entity / beneficiary	FAO	
A.1.7. Project size category (Total investment, million USD)	<input type="checkbox"/> Micro ( $\leq 10$ ) <input type="checkbox"/> Small ( $10 < x \leq 50$ ) <input checked="" type="checkbox"/> Medium ( $50 < x \leq 250$ ) <input type="checkbox"/> Large ( $> 250$ )	
A.1.8. Mitigation / adaptation focus	<input type="checkbox"/> Mitigation <input type="checkbox"/> Adaptation <input checked="" type="checkbox"/> Cross-cutting	
A.1.9. Date of submission	February 09, 2017	
A.1.10. Project contact details	Contact person, position	Martin Frick, Director CBC
	Organization	FAO
	Email address	martin.frick@fao.org
	Telephone number	(+39) 06 5705 3579
	Mailing address	Viale delle Terme di Caracalla 00153 Roma, Italia
A.1.11. Results areas <i>(mark all that apply)</i>		
<u>Reduced emissions from:</u>		
<input checked="" type="checkbox"/> Energy access and power generation (E.g. on-grid, micro-grid or off-grid solar, wind, geothermal, etc.)		
<input type="checkbox"/> Low emission transport (E.g. high-speed rail, rapid bus system, etc.)		
<input type="checkbox"/> Buildings, cities and industries and appliances (E.g. new and retrofitted energy-efficient buildings, energy-efficient equipment for companies and supply chain management, etc.)		
<input checked="" type="checkbox"/> Forestry and land use (E.g. forest conservation and management, agroforestry, agricultural irrigation, water treatment and management, etc.)		
<u>Increased resilience of:</u>		
<input checked="" type="checkbox"/> Most vulnerable people and communities (E.g. mitigation of operational risk associated with climate change – diversification of supply sources and supply chain management, relocation of manufacturing facilities and warehouses, etc.)		
<input type="checkbox"/> Health and well-being, and food and water security (E.g. climate-resilient crops, efficient irrigation systems, etc.)		
<input type="checkbox"/> Infrastructure and built environment (E.g. sea walls, resilient road networks, etc.)		
<input checked="" type="checkbox"/> Ecosystem and ecosystem services (E.g. ecosystem conservation and management, ecotourism, etc.)		

## A.2. Project / Programme Executive Summary

The Poverty, Reforestation, Energy and Climate Change Project (PROEZA<sup>1</sup>) will improve the resilience of 30,000 households that are highly vulnerable to the impacts of climate change (CC) in 64 municipal districts located in eight *departamentos* of Eastern Paraguay. These municipal districts have been selected because their environmental and social vulnerability is rated as extremely high<sup>2</sup>. Per IPCC climatic scenarios and the baseline information on the impacts of CC on people's livelihoods and ecosystems (see Section C.2), it is estimated that climatic variations would have significant and differentiated effects and intensities in various sectors. In particular, family farming would experience significant reductions in productivity in crops such as cotton, bean, cassava, sesame and sugarcane. Reduced productivity leads to a change of production type and can have important livelihoods impacts as well as social, environmental, economic and cultural effects in the rural sector that can ultimately impact resilience to CC.

In the selected municipalities, most poor and extreme poor households receive support from the public social protection program *Tekoporã* through monthly cash payments conditioned on social indicators (CCT), mainly education and health. Furthermore, these rural households are highly dependent on their natural environment for energy and food security; most cook with firewood and depend on local water sources. PROEZA will provide these households with technical and financial support to establish agroforestry systems, close-to-nature forest plantations or manage natural forest regeneration on their land<sup>3</sup>. These systems will provide shade, conserve soil, store CO<sub>2</sub> and regulate water flows, thus supporting small-scale agricultural production to adapt to drought and extreme climate events. They will produce firewood and highly valuable timber from native tree species to create an important long term family asset. PROEZA will top-up *Tekoporã*'s CCT during the 4-5 years required for the systems to be mature enough to generate income. It will do this by introducing environmental incentive payments (E-CCT), conditioned on the successful establishment and care of the agroforestry production systems promoted by the project, and accompanied by technical and legal advice on how to invest the money in improving land tenure and bioenergy use (i.e. through improved cooking stoves). PROEZA will establish more than 24,460 ha of CTNP/agroforestry systems through this innovative incentive system that blends social, environmental and CC objectives to create a new development paradigm in Paraguay.

To complement this and promote a holistic landscape approach to ensure CC resilience in target areas, PROEZA will promote the entry of small and medium land owners in the regional bioenergy market. To achieve this, concessional credit with national resources will be provided to private land owners in the project area to promote the establishment of 24,000 ha of "New Generation Forest Plantations" (NGFP) and will include more than 4,800 ha of riparian protection forests to protect watercourses.

The abovementioned interventions will be supported and sustained through PROEZA's strategic institutional interventions over a period of 5 years, designed to generate a profound transformation. The Government plans a 10 years programme including PROEZA project during the first 5 years. During PROEZA phase (Years 1-5), FAO will provide intensive institutional, legal and law enforcement support to forest, land use, environment and energy regulating entities to ensure compliance with project safeguards, environmental, land use and bioenergy regulations. After (Year 6 onwards) the Government envisions full operation of the afforestation incentive mechanisms and the payment for environmental services regime to secure project institutionalization and sustainability. In this context, PROEZA's support is crucial to enabling a paradigm shift from individual sector-based decisions/actions to a cohesive and coordinated inter-institutional decision-making framework. The project, itself, will provide the testing-grounds for this transformative change through its governance structure. Specifically, the six line agencies responsible for agriculture, forestry, social protection, indigenous peoples, environment and energy have agreed to an innovative project governance/implementation structure that ensures inter-sectoral coordination, swift execution and transparent management of the project's interventions. These agencies will collaborate and coordinate to oversee and control project execution through an inter-institutional Executive Committee (EC), chaired by the NDA, the Technical Secretariat of Planning (STP). FAO will provide the EC with technical assistance, project supervision, implementation and fiduciary support.

<sup>1</sup> *Proeza* means "colossal achievement" in Spanish and emphasizes the importance of this project.

<sup>2</sup> Building on previous work of the UN REDD and FAO, 2016 statistics were assessed regarding carbon density in biomass, poverty index, future deforestation risk and proximity to wood consuming industry. Please refer also to the maps in Annex F.

<sup>3</sup> Of 110,678 poor and extreme poor households surveyed by SAS in February 2017, 67% declared they have access to land. The average plot size estimated in the project is 0.8 hectares/household.

### A.3. Project/Programme Milestone

Expected approval from accredited entity's Board (if applicable)	Approved by FAO CBC on 25 <sup>th</sup> July 2017
Expected financial close (if applicable)	End 2023
Estimated implementation start and end date	Start: First quarter 2018 End: First quarter 2023
Project/programme lifespan	5 years 0 months

### B.1. Description of Financial Elements of the Project / Programme

The PROEZA consists of three mutually reinforcing components and will be executed for a period of 5 years. The total cost is US \$118.6 million, composed of US \$74.1 million national co-finance (budget and concessional credits) and a grant from the Green Climate Fund of US \$44.5 million.

Component I - "Planting for the Future" - will benefit poor and extreme poor households. It will be financed through the GCF Grant and National Co-Finance from the Public Budget of the Social Protection Program *Tekoporã* (SAS).

Component II - "Sustainable Landscapes and Responsible Markets" - will provide concessional credit with national resources to medium-sized private land owners through special credit lines offered by PROEZA, and will be operated within the public credit system through the *Agencia Financiera de Desarrollo* (AFD). To finance this project component, the GoP will provide US \$49.3 million in parallel funding that includes: i.) Financial resources provided through public financial entities like *Agencia Financiera de Desarrollo* (AFD); ii.) Incentives to the financial private sector to channel a bigger portion of its portfolio to afforestation projects; iii.) Incentives to private companies to re-invest their profits in afforestation projects and; iv.) Other mechanism and policy instruments to support the implementation of the National Reforestation Program (NRP).

Component III - "Good Governance and Law Enforcement" - will provide support to sectoral public institutions to put in place the political, institutional and normative changes to generate the sectoral transformation and paradigm change that PROEZA is intended to generate. FAO will provide this support during the first phase and GCF Grant of US \$3.5 million will be used to cover the majority of the costs associated with this Component.

#### Main Financial Elements of the PROEZA Project (USD)

MAIN FINANCIAL ELEMENTS	BUDGET
<b>TOTAL</b>	<b>118,626,013</b>
<b>GRANTS (GCF)</b>	<b>44,489,682</b>
<b>NATIONAL CO-FINANCING (SAS, INFONA)</b>	<b>24,804,000</b>
<b>CONCESSIONAL LOANS WITH NATIONAL RESOURCES (AFD)</b>	<b>49,332,332</b>

#### Budget by Funding Source (USD)

SOURCE	TOTAL BUDGETD	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
	<b>118,626,013</b>	<b>9,037,047</b>	<b>17,283,155</b>	<b>23,962,702</b>	<b>31,760,827</b>	<b>36,582,283</b>
<b>Component 1. Planing the Future</b>	<b>65,683,473</b>	<b>2,696,927</b>	<b>7,805,072</b>	<b>14,001,786</b>	<b>18,501,004</b>	<b>22,678,683</b>
<b>1 GCF</b>	<b>40,949,836</b>	2,334,200	5,655,981	9,114,513	11,066,458	12,778,683
<b>2 SAS</b>	<b>6,218,182</b>	109,091	627,273	1,336,364	1,854,545	2,290,909
<b>3 TECOPORA/SAS</b>	<b>18,316,364</b>	250,909	1,505,455	3,512,727	5,520,000	7,527,273
<b>4 INFONA</b>	<b>199,091</b>	2,727	16,364	38,182	60,000	81,818

<b>Component 2. Sustainable landscapes</b>		<b>49,402,695</b>	5,632,150	8,770,114	9,252,946	12,551,854	13,195,631
<b>5</b>	<b>AFD</b>	<b>49,332,332</b>	5,628,877	8,761,932	9,239,855	12,532,218	13,169,449
<b>6</b>	<b>INFONA</b>	<b>70,364</b>	3,273	8,182	13,091	19,636	26,182
<b>Componente 3. Good Governance and Law Enforcement</b>		<b>3,539,845</b>	707,969	707,969	707,969	707,969	707,969
<b>7</b>	<b>GCF</b>	<b>3,539,845</b>	707,969	707,969	707,969	707,969	707,969

The project has a joint mitigation and adaptation approach for the integral and sustainable management of forests<sup>4</sup> and landscapes. Indeed, mitigation and adaptation activities of the PROEZA project are mutually reinforcing and complementary; a disaggregation of financial resources by mitigation and adaptation is not plausible because project activities achieve both adaptation and mitigation results (“crosscutting”).

## B.2. Project Financing Information

	Financial Instrument	Amount	Currency	Tenor	Pricing		
<b>(a) Total project financing</b>	<b>(a) = (b) + (c)</b>	118.6	<u>million USD (\$)</u>				
<b>(b) GCF financing to recipient</b>	(i) Senior Loans		<u>Options</u>	( ) years	( ) %		
	(ii) Subordinated Loans		<u>Options</u>	( ) years	( ) %		
	(iii) Equity	.....	<u>Options</u>		) % IRR		
	(iv) Guarantees	.....	<u>Options</u>				
	(v) Reimbursable grants *	.....	<u>Options</u>				
	(vi) Grants *	44.5	<u>million USD (\$)</u>				
<p>* Please provide economic and financial justification in <a href="#">section F.1</a> for the concessionality that GCF is expected to provide, particularly in the case of grants. Please specify difference in tenor and price between GCF financing and that of accredited entities. Please note that the level of concessionality should correspond to the level of the project/programme’s expected performance against the investment criteria indicated in <a href="#">section E</a>.</p>							
	Total requested (i+ii+iii+iv+v+vi)	44.5	<u>million USD (\$)</u>				
<b>(c) Co-financing to recipient</b>	<b>Financial Instrument</b>	<b>Amount</b>	<b>Currency</b>	<b>Name of Institution</b>	<b>Tenor</b>	<b>Pricing</b>	<b>Seniority</b>
	<u>Grant</u>	24.8	<u>million USD (\$)</u>	SAS, INFONA	( ) years	( ) %	<u>Options</u>
	<u>Senior Loans</u>	49.3	<u>million USD (\$)</u>	AFD	( ) years	( ) %	<u>Options</u>
	<u>Options</u>	.....	<u>Options</u>		( ) years	( ) % IRR	<u>Options</u>
	<u>Options</u>	.....	<u>Options</u>				<u>Options</u>
Lead financing institution: SAS, INFONA, AFD							
* Please provide a confirmation letter or a letter of commitment in section I issued by the co-financing institution.							

<sup>4</sup> Proposed by the co-chairs to the GCF Secretariat (GCF/B.12/04/Rev.01\_4 March 2016)

(d) Financial terms between GCF and AE (if applicable)	<p><i>In cases where the accredited entity (AE) deploys the GCF financing directly to the recipient, (i.e. the GCF financing passes directly from the GCF to the recipient through the AE) or if the AE is the recipient itself, in the proposed financial instrument and terms as described in part (b), this subsection can be skipped.</i></p>				
	<b>Financial instrument</b>	<b>Amount</b>	<b>Currency</b>	<b>Tenor</b>	<b>Pricing</b>
	Grants	.....	<u>million USD (\$)</u>	years	( 0 ) %
<p><i>Please provide a justification for the difference in the financial instrument and/or terms between what is provided by the AE to the recipient and what is requested from the GCF to the AE.</i></p>					
<b>B.3. Financial Markets Overview (if applicable)</b>					
Not applicable					

## C.1. Strategic Context

### Country Context

Paraguay finds itself in a vicious cycle of poverty, unsustainable agriculture, forestry and energy practices that exacerbate vulnerability to CC.

### Socioeconomic Context

**While per capita income in Paraguay grew 22 percent between 2003 and 2011, extreme poverty remained persistently high.** In 2011, three out of 10 people were living below the poverty line and 18% could not afford the basic food basket (the extreme poor), placing the country among the poorest in Latin America. Since 2011, there have been substantial welfare improvements; by 2013, moderate poverty fell to 24%, extreme poverty reached an historical low of 10%, and inequality dropped below 0.48 for the first time in the last fifteen years. However, two main challenges to the sustainability of poverty reduction are vulnerability of the poor and near-poor, and inequality of opportunity for the poor. While employment opportunities have expanded, a large share of the population still faces a volatile economic environment. In rural areas, more than two-thirds of the extreme poor are largely self-employed in agriculture, a highly volatile sector. A sizeable proportion of those above the extreme and moderate poverty lines have incomes close enough to these thresholds that small changes in the economy or climate shocks could push them back into poverty.

**Non-labor income, especially public cash transfers of the social protection program “Sembrando Oportunidades”, which includes *Tekoporã*, *Tenonderã* and *Adultos Mayores*, account for one third of the decrease in rural poverty.** The conditional cash transfer program, *Tekoporã*, targets poor families with school aged children and offers a sizeable resource (providing an average of 20% of household income among the extreme poor). As of February 2017, the *Tekoporã* database reports 141,306 households, approximately 10% of the country’s population. To stabilize vulnerable households economically and help them escape the intergenerational poverty trap, SAS created the *Tenonderã* Program in 2014. It aims to improve the resilience of these households by increasing their productive, financial, human and social assets. These cash transfers may not be a major driver behind the change in the incidence of poverty but still serve an important role in protecting households from falling into extreme poverty and as a mechanism to cope with adverse shocks, including recent catastrophic flooding.

**Paraguay’s indigenous people and female-headed households continue to be the most vulnerable social groups in Paraguay.** There are about 20 different indigenous ethnic groups comprising around 115,000 people (1.7% of the country’s total) with the large majority living in rural areas (around 91.5%). Most indigenous people lack legal titles to their traditional territories, only 2.5% have access to potable water and 31.2% to electricity. To address this, Paraguay’s National Development Plan (NDP) considers strategies for income generation for these vulnerable indigenous groups, enabling access to basic services (water, sanitation and health, decent housing and electricity), and ensuring legal titling of indigenous lands. Many of Paraguay’s poor and vulnerable people live in remote areas, lack resource use and ownership rights, and are highly dependent on their natural environment. It is these households who derive most of their economic and social benefits from the forests and land that are most vulnerable to environmental degradation and most in need of sustainable use options regarding the natural resources they depend on.

### Sectoral Context

**Despite Paraguay’s substantial production of hydroelectricity, nearly half (45%) of national energy consumption comes from biofuels.** Paraguay’s expanding agricultural frontier and its heavy dependence on biofuels have contributed to globally high rates of deforestation, reducing native Atlantic Forests in Paraguay by 95% (see Map F.7 Deforestation risk in Annex F). Firewood and charcoal are used to dry grains for export, produce ceramics, and as the primary energy source in the bottling industry. The majority of rural households also depend on wood and charcoal to cook. Fuelwood has been identified as the primary energy source for 88% of rural households.

**Paraguay’s reliance on fuelwood represents both an opportunity and a challenge.** Paraguay will continue to rely heavily on renewable biomass energy but has opted to rapidly shift its model from one that depletes native forests to one that relies exclusively on sustainable sources of wood from planted forests and sustainable management of natural forests. Paraguay is poised to implement this transition having decreed the National Reforestation Plan as a national priority. The proposed activities build on existing legislation (Forestry Act -422/1973; Environmental Services - 3001/2006; and Watershed restoration - 4241/2010) and recent Presidential Decrees (No. 10.174 –Nov, 2012; No. 2285 – Nov, 2014; No. 3050 and 3077; No. 4050 – Sept, 2015) that provide a substantial platform and clear delegation of authority for launching this fundamental

transformation. Institutional arrangements, financial architecture and a detailed investment strategy have been developed to address both poverty alleviation and national reforestation objectives aligned with Paraguay's National Development Plan (NDP) and the country's Nationally Determined Contributions (NDCs). Implementation arrangements have been developed in dialogue with all key Government agencies under the leadership of the Ministry of Planning for Economic and Social Development (STP; which is also the NDA for GCF in Paraguay).

**The sustainability of Paraguay's growth model is under threat from environmental degradation.** Agricultural expansion and fuelwood harvesting are contributing to one of the highest deforestation rates in the world (over 290,000 ha or 1.5% per year - between 2005 and 2015) according to the National Forest Inventory (2015). These official estimates are roughly corroborated by CSO monitors such as *Guyra Paraguay*, which has reported rates of 232,000 ha/yr and 287,000 ha/yr in 2010 and 2014 respectively. Land use change has also resulted in major losses of unique and valuable biodiversity from the Atlantic Forest complex. Forests in Paraguay play a valuable role in stabilizing local hydrology (important for the substantial hydropower industry), as well as soil conservation (critical for a country dependent on agriculture). Although there has been increased public attention and effort to decrease deforestation and improve water resources management in recent years, progress has been slow and uneven due to weak enforcement of environmental legislation/regulation and limited institutional capacity, with overlapping and at times conflicting institutional responsibilities and weak governance. Land use change and forest degradation are the largest contributors to greenhouse gas emissions in the country. Agriculture is highly vulnerable to climate variability and, coupled with land degradation, contributes to increased volatility. The emission reduction potential is large, particularly through improved agricultural practices and reforestation. Carbon trading options are also worth exploring through continued efforts to develop the national REDD+ program.

## C.2. Project / Programme Objective against Baseline

The *project objective* is to improve the resilience of poor and extreme poor households vulnerable to the impacts of CC and to increase the forest cover in environmentally sensitive areas of Eastern Paraguay.

The National Program to Reduce Extreme Poverty "*Sembrando Oportunidades*" has surveyed 260,602 households nationwide, from which 215,452 (83%) are located in the eight *departamentos* of Eastern Paraguay selected by PROEZA for their high social and environmental vulnerability<sup>5</sup> (see Section C.3 and maps in Annex F) The vulnerability of the ecosystems and ecosystem services in the project area has been assessed with support of the UN-REDD<sup>6</sup>. 38% of the households in the project area are classified as "poor" or "extreme poor", totaling 82,099 households. On average, 42% of these are female-headed households FHH (see maps Annex F). In addition, 6,018 indigenous households have been surveyed in the targeted Departments<sup>7</sup>. The Project's target beneficiaries consist of 30,000 of these poor and extremely poor rural households that are highly vulnerable to the impacts of CC in 64 municipal districts.

The data in the table below show that vulnerable poor households in the project area are highly dependent on the natural environment for their daily domestic needs and food security. Currently, 22% of the rural poor and extreme poor households depend on water wells, and 36% depend on other open water sources including rainwater for all domestic purposes. This makes them extremely vulnerable to any fluctuations in water availability and quality. The Project will contribute to protecting micro-catchments from the impacts of CC through afforestation, and by doing so improve local livelihood resilience.

An average of 95% of the poor and extreme poor households in the targeted Departments use fuelwood to cook their food, and 88% do not have a cooking stove, therefore they cook on open fire with very low energy efficiency. It is estimated that each family consumes around 12.5t of firewood per year and that poor households spend up to US \$270/year to buy charcoal and firewood. The Project will introduce a more efficient and sustainable technology for domestic firewood consumption, which will bring about positive environmental and economic effects. PROEZA will also promote the establishment of multifunctional close-to-nature planted forests (CTNPF) to make households energy self-sufficient, allow them to offer firewood surplus to local/regional bioenergy markets, as well as create an opportunity for financial savings and time for other productive activities. Consequently, the Project will generate additional annual income as a result of improved forestry management, increased sale of sustainably sourced firewood, agroforestry products, timber and NTFPs. Increased

<sup>5</sup> Ficha Social, 2016

<sup>6</sup> UNREDD 2016: Mapping multiple benefits of REDD+ in Paraguay

[https://onedrive.live.com/?authkey=%21ABSCDEakAOUJr\\_c&cid=2E7ECD88D89ADE70&id=2E7ECD88D89ADE70%216411&parl\\_d=2E7ECD88D89ADE70%216398&o=OneUp](https://onedrive.live.com/?authkey=%21ABSCDEakAOUJr_c&cid=2E7ECD88D89ADE70&id=2E7ECD88D89ADE70%216411&parl_d=2E7ECD88D89ADE70%216398&o=OneUp)

<sup>7</sup> SAS, 2016

productivity and efficiency will improve self-reliance and reduce household expenditures, ultimately assisting vulnerable poor households to escape from extreme poverty and make them more resilient to CC.

**Baseline data of the poor and extreme poor families identified in the project area (Ficha Social Survey, STP 2016)**

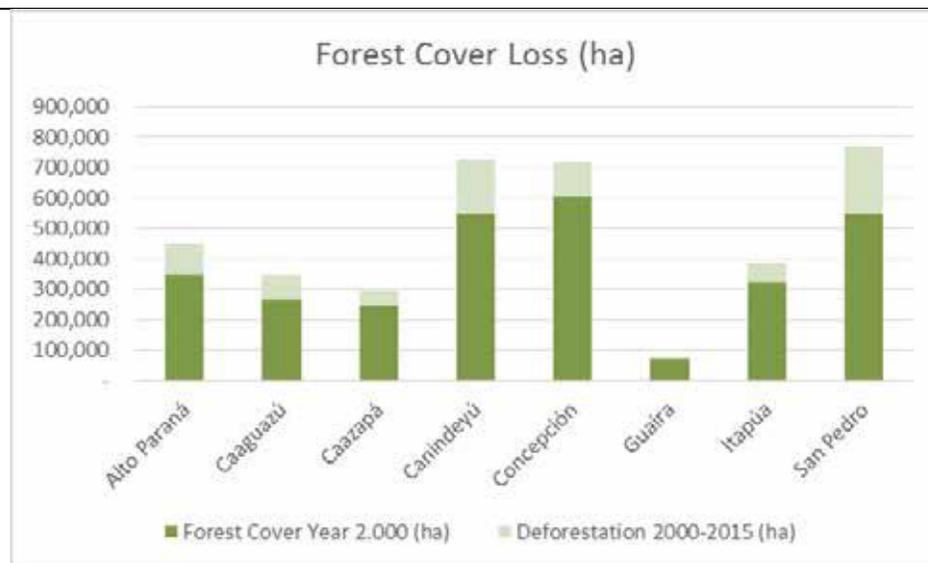
DEPARTMENT	Concepción	San Pedro	Guairá	Caaguazú	Caazapa	Alto Paraná	Canindeyú	Itapua	Total
INDICATOR									(% average)
Number Vulnerable households VHs (poor and extreme poor)	8,898	23,060	4,553	17,470	8,609	4,346	6,020	9,143	82,099
% female-headed VHs	61%	45%	37%	41%	38%	43%	39%	35%	42%
Number of VHs that use fuelwood for cooking	8,370	21,962	4,314	16,353	8,251	3,994	5,807	8,839	
% of fuelwood used in proportion to other types of fuel by VHs	94%	95%	95%	94%	96%	92%	96%	97%	95%
Number of VHs that do not have a cooking stove	7,985	21,326	4,041	15,550	7,719	3,547	5,507	7,625	
% of VHs that do not have a cooking stove	90%	92%	89%	89%	90%	82%	91%	83%	88%
Number of VHs that depend on water-wells	304	1,676	1,338	3,478	2,586	1,871	763	2,836	
% of VHs that depend on water-wells	3%	7%	29%	20%	30%	43%	13%	31%	22%
Number of VHs that depend on other sources including rain water	1,343	12,466	2,137	8,126	2,901	520	2,296	3,451	
% of VHs that depend on other sources including rain water	15%	54%	47%	47%	34%	12%	38%	38%	36%
Number of VHs that do not have access to land	847	8,179	1,796	5,728	3,063	1,500	2,063	3,852	
% of VHs that do not have access to land	10%	35%	39%	33%	36%	35%	34%	42%	33%
Number of VHs that own land between 1-25ha	726	6,815	1,372	4,774	2,449	1,081	1,758	3,192	
% of the total number of VHs who own 1 - 25 ha	8%	30%	30%	27%	28%	25%	29%	35%	27%
Number of VHs that own land over 25ha	2	40	7	46	22	7	16	26	
% of the total number of VHs who own over 25 ha	0.02%	0.17%	0.15%	0.26%	0.26%	0.16%	0.27%	0.28%	0.20%

Source: Ficha Social 2016, STP

Current deforestation rates are due to expanding soya cultivation (which accounts for more than 60% of land use change in Paraguay's eastern region), the preparation of land for livestock production, and population growth. In addition to forest loss, Paraguay has suffered extensive forest degradation, largely due to biomass extraction and the unsustainable mining of secondary forests for fuelwood and charcoal, which are the main energy sources for more than 51% of Paraguayan households<sup>8</sup>. The average annual deforestation rate between the years 2000 and 2015 in the Project's eight target Departments was 1.7%; with deforestation rates above 2% for Alto Paraná, Caaguazú, Canindeyú and San Pedro (2.7%), and less than 1% in Guairá (0.9%) – see maps in Annex F.

The main causes of deforestation and forest degradation include the lack of efficiency in enforcement of the legal framework, lack of economic incentives to make up the opportunity cost for sustainable forest use and conservation, insecure land tenure, land use and land use change monitoring systems, as well as weak institutional capacity at national, regional and municipal levels for land use planning and environmental law enforcement. Continued forest loss and landscape degradation pose serious obstacles to eliminating poverty, hunger and biodiversity loss and limit the ability of the most vulnerable and poor to adapt to CC impacts. These processes threaten the livelihoods, well-being, food, water and energy security, and resilience capacity of rural households. The aim of forest and landscape restoration is to restore degraded landscapes to a healthy and productive state in order to fulfill the needs of both the people and the environment in a sustainable way.

<sup>8</sup> Source: Mapping multiple benefits of REDD+ in Paraguay



Source: National Forest Monitoring System. INFONA 2016

Department	Forest Cover Year 2,000 (ha)	Deforestation 2000-2015 (ha)	Annual Rate (%)	Deforestation 2013-2015	Annual Rate (%)
Alto Paraná	348,147	102,467	2.0%	4,136	0.8%
Caaguazú	266,750	79,227	2.0%	5,936	1.5%
Caazapá	243,149	50,076	1.4%	2,653	0.7%
Canindeyú	547,428	180,737	2.2%	14,620	1.9%
Concepción	603,437	116,683	1.3%	5,859	0.6%
Guairá	69,992	9,931	0.9%	559	0.5%
Itapúa	324,667	62,096	1.3%	2,073	0.4%
San Pedro	547,553	224,889	2.7%	15,954	2.4%
		Average	1.7%		1.1%

Source: National Forest Monitoring System. INFONA 2016

In 2013, the solid biomass deficit in Paraguay was estimated to be between 8.2 and 9.9 million tons. To cover this gap, at least 24,000 ha of fast growing, high-yield forests plantations should be established every year<sup>9</sup>. The private sector is beginning to respond to this demand, not only because it is a business opportunity, but also because international grain and soybean traders are increasingly requesting their suppliers to prove that the firewood used to dry these commodities is sustainably sourced. Expanding areas of fast growing clonal Eucalyptus monocultures are being established. Monocultures of exotic tree species also called “green deserts” by the environmentalist movement can produce severe environmental and social negative impacts and are questioned particularly for their detrimental impact on biodiversity, as well as their high water consumption. Through PROEZA’s Component 2, the Government of Paraguay (GoP) will offer medium sized land owners (300 ha each) a strong incentive to increase the production of forest biomass in an environmentally sustainable way, adopting

<sup>9</sup> Unique, 2013

certified “New Generation Forest Plantations” (NGFPs) through which high yield forest plantations will have to be combined with natural forests in biodiversity reserves and watershed protection strips.

The potential for afforestation in Paraguay is enormous. INFONA estimates an area of 9.4 million hectares with good climatic, soil and market conditions to establish forest plantations<sup>10</sup> in the Eastern Region.

Specifically the 8 *departamentos* in which the project is located have a total land area of 10.9 million ha, but only 19.5% (2.1 million ha) remain covered with forests<sup>11</sup>. More than 3 million ha (28%) are occupied with agriculture<sup>12</sup>. The remaining area results in approximately 5.7 million ha (52%). The latest National Census of the Agricultural Sector<sup>13</sup> show similar figures for the project area: approximately 4.3 million ha are covered with pastureland and degraded land. Therefore it can be deducted that there are between 4 and 5 million ha with a potential for productive, agroforestry and CTNPF landscape restoration without competing nor affecting natural forests, protected areas, productive agricultural land or other land use forms.

Until 2015 only 98,466 ha of forest plantations had been established reaching less than 2% of the potential (see maps in Annex F). PROEZA strives to introduce the incentives, normative improvement and market mechanisms to encourage small scale and medium land owners to increase planted forest areas (CTNPF, agroforestry or New Generation Forest Plantations -NGFP) and to link them to the local and regional bioenergy market. PROEZA will support an innovative scheme of economic incentives for sustainable forest management, afforestation and landscape restoration that partly compensates the opportunity cost of converting the land to other land use forms. Unsustainable biomass extraction for firewood that leads to forest degradation will be tackled by creating more than 48,000 ha of afforestation. Afforestation and reduction in forest cover loss will be registered and monitored by the National Forest Monitoring System. Furthermore, weak/non-existent land use planning and forest law enforcement will be improved through institutional strengthening and capacity building of INFONA and SEAM.

#### Adaptation baseline

The baseline information of the impacts of CC on people’s livelihoods and ecosystems in Paraguay takes the 1961-1990 period as a basis, including seasonal average values per Department per year, as prepared by the Ministry of Environment in coordination with the Ministry of Economy, with support from the Economic Commission for Latin America and the Caribbean (CEPAL)<sup>14</sup>. The climatic scenarios that were used are the A2 and B2 scenarios used by the IPCC. The A2 scenario represents a growing global economy based on the intensive use of fossil energy sources, with emissions generating concentrations of greenhouse gases far superior to the present level and the rise of the average temperature, as well as variations in rainfall patterns and extreme weather phenomena. The B2 scenario assumes a re-organization of the global economy and changes in the use of energy sources involving less greenhouse gas emissions than the A2 scenario and therefore less impact in the climatic variables. For the year 2100, a continuous increase of the average temperature equivalent to 4.2°C would occur in scenario A2 and 3.4°C in scenario B2, respectively. As for rainfall, the A2 scenario predicts that by 2050, the national average would be below average, while by the end of the century it would be far above average, with some areas more sensitive to these variations.

It is estimated that climatic variations would have significant and differentiated effects and intensities in the various sectors. These impacts are based on projections through 2100 in climatic scenarios A2 and B2 on the effect of rainfall and temperature levels on a set of variables in each sector. In the case of family farming, the fundamental variable is the yield for a set of crops: cotton, bean, cassava, sesame and sugarcane. Using the information of climatic projections corresponding to the A2 and B2 scenarios, it was possible to obtain the expected yields of the different crops and types of agriculture during the period 2010-2100 and compare them with the base yield, which corresponds to the average of the yields registered per Department in the period 1991-2007. Projections show that family farming would yield significant reductions in productivity from the beginning of the analysis period, and would be greater in the case of scenario A2. Reduced productivity leads to a change of

<sup>10</sup> INFONA/FAO, 2013

<sup>11</sup> INFONA, 2016. National Forest Monitoring System of Paraguay

<sup>12</sup> CAPECO, 2016 and National Agriculture Census of Paraguay 2008 —MAG

<sup>13</sup> National Agriculture Census of Paraguay 2008 —MAG

<sup>14</sup> “The Economy of the climate change in Paraguay” (CEPAL, 2014)

production type and can have important livelihoods impacts as well as social, environmental, economic and cultural effects in the rural sector that can ultimately impact resilience to CC.

To calculate the economic impact of CC on the agricultural sector, the variation in expected yield relative to the baseline was multiplied by the cultivated area to obtain the production by type of agriculture and crop. Multiplied by a reference price for each crop, provided by the Central Bank of Paraguay (2008), this defines the economic losses or gains regarding temperature and rainfall variations in the agricultural sector. In the case of family farming, losses could be observed for all crops, periods and scenarios. The CEPAL document also includes the baseline and scenarios for hydric resources, biodiversity, agriculture and livestock, health and energy as well as the increase of the number of extreme climatic events as a consequence of CC.

PROEZA's adaptation strategy consists of supporting 30,000 poor and extremely poor rural vulnerable households to increase their resilience to CC through the diversification of production and options to increase family income through intensive social and technical assistance for the establishment of climate-smart agroforestry production systems and/or multifunctional "Close-to-Nature" planted forests (CTNPF) on their land (about 24,460 ha with an average area of 0.8 ha per family). These production systems (alone and in combination) strive to enhance the economic and environmental resilience of these vulnerable households by providing firewood (complimented by the introduction of improved stoves), food and income in the short run, and by accumulating capital in the growing tree stock at the medium and long term. CTNPFs serve as savings accounts for poor rural families that can cut and sell individual valuable trees when there is an unforeseen expenditure. But they also create a micro-climate that increases the capability of the household's agro-ecosystem to retain humidity, prevent soil erosion and regulate the water cycle.

PROEZA recognizes that adaptation to CC will only be achieved if the efforts to reduce social vulnerability are combined with interventions that increase technical climate knowledge and improved practices for the main productive activities of target households. This will depend on technical support and financial incentives that build upon national social protection and cash transfer mechanisms. It will elevate the national social protection program for rural poor people in Paraguay to a new level regarding the needs of rural poor people to adapt to CC. In this scenario, PROEZAs' second component also includes the support of national resources to promote the increase of forest cover with medium land owners' focus on mitigation (following strict social and environmental standards to be promoted by PROEZA). This action will create and increase the business environment for forest products through market development that will benefit poor family farmers. This, in turn, will further incentivize adoption of PROEZAs' agroforestry models.

Finally, the adaptation scenario takes into account a strong need to ensure inclusion, support and development of female-headed households - by providing them with priority access to project benefits - as well as the participation of indigenous people, guaranteeing prior informed consent and training to increase awareness and knowledge on CC issues.

### Vulnerability

Vulnerability and adaptation to CC have been assessed for all the countries (at national and subnational level – departments / municipalities) of the Latin America and Caribbean Region<sup>15</sup> using the a Climate Change Vulnerability Index (VICC) that evaluates the actual risk of exposure to CC and extreme climatic events (50%) in relation with the present human sensitivity to that exposure (25%) and the capacity of the country to adapt or benefit from potential impacts (25%). Paraguay's vulnerability index is in the category of "extreme risk" to climate change, the highest in South America. As to the eight departments in which PROEZA will intervene all of them are in the category of "extreme risk".

Environmental and social vulnerability has also been assessed with support of the UN-REDD Program<sup>16</sup>: risk of future deforestation, carbon in biomass and poverty index are the highest in all eight departments in which PROEZA will intervene.

### Existing governance, capacity and law enforcement

A recent analysis of policies and institutions in the agricultural and rural sectors of Paraguay<sup>17</sup> reflects a limited ability of government entities to achieve effective interagency coordination and governance of programs directed at the same beneficiary group, particularly in combined agricultural, environment, social protection and bio-energy programs of the nature

<sup>15</sup> Índice de Adaptación al Cambio Climático en la Región de América Latina y el Caribe. CAF, 2014  
<http://www20.iadb.org/intal/catalogo/PE/2014/15019es.pdf>

<sup>16</sup> Mapping multiple benefits of REDD+ in Paraguay. UNREDD 2016

<sup>17</sup> FAO, 2016

envisaged in the PROEZA project. While there are a few examples of inter-agency program coordination and governance<sup>18</sup>, it is not the norm. Furthermore, there is a history of limited capacity of individual public institutions to successfully execute programs of the size and complexity of PROEZA. Consequently, the structure proposed by the PROEZA project is innovative since it is designed to improve interagency coordination and governance by building on the cooperative efforts of the PROEZA Working Group that linked key institutions from the beginning of the project design phase in early 2016. The PROEZA Working Group concluded that rather than one single institution, all those that play a key role in the project should work together through an Executive Committee to perform oversight and command and control functions, while the day-to-day management and implementation functions would best be provided by a PMU, and by technical service providers. It is envisioned that Component 3 of the Project will strengthen the existing Executive Committee structure through direct support interventions provided by FAO.

### C.3. Project / Programme Description

The *project objective* is to improve the resilience of poor and extreme poor households vulnerable to the impacts of climate change and to increase the forest cover in environmentally sensitive areas of Eastern Paraguay. Building on preparatory diagnostic work undertaken by INFONA and SEAM with support from the UN REDD Program, the *project area* comprises 64 Municipal Districts located in eight Departments of Eastern Paraguay: Concepción, San Pedro, Canindeyú, Caaguazú, Guairá, Alto Paraná, Caazapá and Itapúa. These 64 Municipal Districts were selected due to their high environmental and social vulnerability<sup>19</sup>. PROEZA's objective will be achieved through the following complementary and mutually reinforcing components:

#### Component I “Planting for the Future” (US \$65.7 million):

This component focuses on vulnerable households living in poverty and extreme poverty that receive support through the Government's social protection program “*Sembrando Oportunidades*” (see Section C.1). Given the extremely high vulnerability of these families to firewood and water scarcity due to extreme climatic events (see Section C.2), PROEZA's intervention will fortify *Tekoporã* with agro-ecological and climate-smart components through training, capacity building, investments in conservation agriculture, and afforestation with native and exotic tree species. This will be further strengthened by an environmental conditional cash transfer (E-CCT) payment.

PROEZA will actively engage 30,000 poor and extreme poor households in the project area, comprised of approximately 153,000 women, men and children (5.1 persons/household)<sup>20</sup>. The project will improve the environmental and social resilience of these families, offering them technical support and economic incentives to establish climate-smart agroforestry production systems and/or multifunctional “Close-to-Nature” planted forests (CTNPF) on their land (average area of 0.8 ha per family), totaling approximately 24,460 ha. The project will offer 6 proven<sup>21</sup> agroforestry climate-smart production systems that combine income generation with environmental protection (see Section E.6.4 and Annex B.1 Part A. Summary technical feasibility). The proposed production systems include:

- Fuelwood and timber producing mixtures of native and exotic fast growing tree species (mixtures of 20% and 50%) combined in strips in CTNPFs not only provide firewood and timber but also non-timber forest products and environmental public goods, protect the soil and water courses and the micro-climate of the agro-ecosystem, thereby reducing vulnerability to drought and extreme climatic events. Ten promising native tree species have been assessed

<sup>18</sup> Examples of interinstitutional coordination include the INDI's Food and Nutrition Security working group, the government's National Office on Climate Change, and the STP's Social Cabinet.

<sup>19</sup> Mapping multiple benefits of REDD+ in Paraguay, 2016: statistics were assessed regarding carbon density in biomass, poverty index, future deforestation risk and proximity to wood consuming industry. Please refer also to the maps in Annex F.

<sup>20</sup> Prioritization of the participating households is based on the following criteria:

- located in zone of highest environmental vulnerability including: closeness to fuelwood consuming industry, risk of deforestation, low vegetation cover and high land degradation
- female-headed and/or indigenous household
- minimal area of 0.8 ha of suitable land available
- peaceful land occupation and interest of initiated land titling process
- successful trajectory with *Tekoporã* determined by SAS
- availability and interest of all household members to participate in the training and cultivation activities
- sufficient labour from household members or community available and interested
- no substitution of native forest and commitment to conserve afforested forest cover

<sup>21</sup> The proposed technical models build on a yearlong experience of technical and financial cooperation supported by the FAO, GIZ, KfW and the WB (PRODERS) – see Section E.6.4 and Annex B Feasibility Study for more detail on the selected models.

through the feasibility study to be included in the CTNPFs (tree species list and properties provided in Table 6, Annex B.2 Part A. Technical feasibility study), although the models are open to include other native species depending on demand and interest of the beneficiaries as long as multi-functionality is granted.

- Restoration of degraded forest land through farmer assisted promotion of the natural regeneration of native tree species. To reestablish the forest and its productivity, farmers will be trained and incentives paid to undertake diverse measures including first inventory of saplings, pruning, liberation and maintenance cuts.
- Climate-smart agroforestry systems with native tree species: Eucalypts, combined with citrus production or mate tea plants; or mate tea shrub cultivation under the canopy of degraded natural forest.

These production systems (and combinations thereof) strive to enhance the economic and environmental resilience of vulnerable households by providing firewood and income in the short run, and by accumulating capital in the growing tree stock in the medium and long term. CTNPFs serve as savings accounts of poor rural families that can cut and sell individual valuable trees when there is an unforeseen expenditure. But they also create a micro-climate that increases the capability of the household's agro-ecosystem to retain humidity, prevent soil erosion and regulate the water cycle. The successful implementation of these models will be achieved through the following intervention strategies:

- Intensive social and technical assistance to the families for the establishment of the chosen agro-forestry systems, including payment for their wages and tree saplings, fertilizers and other inputs needed. The social workers (SAS, STP) will inform beneficiaries of PROEZA and give them orientation regarding the offer of PROEZA to intervene through contracted service providers. These will be selected from the NGOs and private service providers that work in Paraguay in sustainable forest management, agroforestry, afforestation, bio-energy and land tenure issues, with capacities that have been built-up during the last decades through important private investment but also with the support of international development cooperation<sup>22</sup>.
- PROEZA will develop a specific targeting strategy to ensure female-headed households (FHH) are given priority access to project benefits. The project would provide FHH the means to participate effectively and benefit from the project while trying to avoid an increment in women's time burden. An indigenous people's participation framework has been prepared to guarantee their prior informed consent on all project interventions and develop a strategy for their participation.
- Incentive and training to collect seeds of native trees species and produce saplings for own needs and other project beneficiaries, especially of rare and valuable native species to improve *in-situ* conservation and reproduction of genetic resources.
- Payment of incentives (environmental conditional cash transfers E-CCT) will be linked to successful implementation of the models/systems and will be made in the first 4-5 years until the production models produce a positive cash flow.
- The E-CCT offered through PROEZA will be operated as follows: if at the end of a given year the productive agroforestry/CTNPF model has been managed and maintained successfully and key indicators like survival rate of plants, the species mix and composition, pruning activities done, etc. are met, then the technical assistance report will trigger the payment of the annual instalment of E-CCT to the beneficiary.
- PROEZA's money transfers to the beneficiaries' schemes will benefit from the experience and good practices learned from the money transfer schemes currently used by the ISO 9001 certified SAS with its *Tekoporã* program *via* debit cards or electronic cash transfer offered by mobile telephone service providers<sup>23</sup>.
- Monitoring the successful planting and achievement of project objectives will be done by EC member institutions. The project will support them in strengthening this strategic, non-outsourcable function, with the intention to also obtain the ISO 9001 certification for all the processes related to this project.

Since 88% of beneficiaries cook on open fire <sup>24</sup>, this component would provide social and technical assistance to introduce/build 7,500 improved cooking stoves to eliminate smoke in the house, reduce time used for firewood collection (mainly by women), and reduce household wood consumption and pressure on the resource base. This would be achieved by

<sup>22</sup> Salient examples of CSOs are Guyrá Paraguay, WWF Paraguay, Fundación A Todo Pulmón, Fundación Moisés Bertoni, WCS, and in the private sector ITAIPI, an extensive list of private nurseries and others.

<sup>23</sup> <http://www.sas.gov.py/pagina/88-certificado-iso-9001.html>

<sup>24</sup> STP Ficha Social/ Ficha Hogar Data 2016

improving combustion efficiency by at least 25%. These stoves will benefit not only the users but also provide financial returns to artisanal-scale manufacturers who produce them locally and thus would be able to respond to future demand.

The data obtained through the social baseline survey indicates that 1/3 of the beneficiaries do not have secure land rights. This situation could be due to land titling processes that are unfinished, or not yet started. Once the beneficiaries indicate their willingness to participate in the project, the task of determining the legal status of their land will be undertaken by the government (based on existing information in the SNC, INDI, INDERT and SAS databases) and supported by the entity contracted by the Project to support the beneficiaries through the formalization process. INDERT's efforts to improve the formalization of rights under the SIRT project provide a solid base on which PROEZA will build to support land right formalization in the project area and to further strengthen land tenure security. The security of use and benefit will promote long-term investment and livelihood security. Therefore, project households will receive legal and administrative support to invest the income received from E-CCT payments to cover the cost of the land titling process in close coordination and support of INDERT and related projects. This is crucial not only to combat poverty and secure household asset, but also to set the basis for a future payment for environmental services scheme.

In addition to addressing households' domestic needs, the project aims to allow these households to generate surplus production destined for markets, which will be an important new source of income especially in FHH. To ensure optimal impacts, the project will also support the project beneficiaries in establishing market linkages and in marketing their produce in order to achieve tangible economic benefits from the investment. Given the nature of the production models, marketing tools such as branding and labeling will be explored to differentiate and increase the value of these products on the markets and where possible strive to achieve price-premiums.

#### **Component II “Sustainable Landscapes and Responsible Markets” (US \$49.4 million)**

Through this Component, the Government of Paraguay (GoP) will offer medium sized land owners (300 ha each) a strong incentive to increase the production of forest biomass in an environmentally sustainable way, adopting certified “New Generation Forest Plantations” (NGFPs) through which high yield forest plantations will have to be combined with natural forests in biodiversity reserves and watershed protection strips. The guiding principles for NGFP are:<sup>25</sup>

- Maintain ecosystem integrity
- Protect and enhance high conservation values
- Develop through effective stakeholder engagement processes
- Contribute to economic growth and fair employment practices

Concessional credit will be offered for the establishment of 24,000 ha of highly productive NGFPs for bioenergy, timber and silvo-pastoral production in the project zone. This will require the inclusion of 20% of the area with restored natural forests for watershed and riparian zone protection and biodiversity conservation corridors. Concessional financing will be used to compensate for *the opportunity costs associated with the production of public environmental goods and services*. Concessional loans will be on a sliding scale with a higher concessionality as the ratio of area used for protection versus production increases.

Clients would be selected using criteria that include:

- Land located in project areas;
- Higher concessionality of loan needed due to lower IRR;
- Bigger portion of the project area for riparian protection zones and native forest reserve;
- Biological connectivity function with natural forests and other adjacent NGFP projects;
- Larger proportion of native species compared with fast growing exotic species.

The EC will oversee fulfillment of the criteria and participate in the disbursement of the allocated finances. This initiative is the first of a series of initiatives planned by Paraguay to promote sustainable sources of biomass from planted forests and management of natural forests to close the energy gap. This project component is rather small but has the objective to pave the way for NGFP financing throughout Paraguay, where long-term investment in sustainable certified forestry needs to be created.

<sup>25</sup> <http://newgenerationplantations.org/en/what/> World Bank Country Partnership Strategy (CPS) for Paraguay

**Component III “Good Governance and Law Enforcement” (US \$3.54 million)**

Through this component, technical assistance will be provided by FAO and institutional capacities will be strengthened of forest, land use, environment and energy regulating entities such as INFONA, SEAM, SAS and VMME to support Paraguay’s sustainable bioenergy development path. This technical assistance will support and facilitate the normative adjustments and institutional changes needed to improve the business climate for afforestation as the Government plans to prepare an additional project proposal to meet the National Reforestation Program target of 450,000 ha. Specifically, INFONA and SEAM’s capacities for forest and environmental law enforcement need to be strengthened to effectively reduce deforestation and illegal timber and firewood exploitation, trade and consumption. This involves securing compliance with the compulsory legal forest reserve and restoration of riparian zones. VMME capacities to verify sustainable bioenergy consumption by the industry will also need to be reinforced.

Project design and institutional architecture relies on most implementation activities to be carried out by private financial, technical and social service providers: successful and efficient delivery of project benefits to beneficiaries by these private and non-governmental entities depends on supervision capacities of the public institutions that have delegated delivery of those services to the private sector. Therefore, this project component will strengthen capacities and offer training, mechanisms and instruments to all the institutions that are part of the Executive Committee to oversee them. More details on institutional strengthening can be found in the Budget (Integrated Financial Model).

Milestones:

Time	Milestones that trigger annual disbursements from the GCF	Amount (US \$)
<b>Project Start</b>	Funding agreement signed between FAO and the GCF	4,102,827
<b>End of Year 1</b>	1000 vulnerable households reached and more than 815 ha of CTNPF established in Component 1. More than 3000 ha of NGFP committed in Component 2.	6,940,364
<b>End of Year 2</b>	5000 additional vulnerable households reached and more than 4,077 ha of CTNPF established in Component 1. More than 4,500 additional ha of NGFP committed in Component 2	10,147,816
<b>End of Year 3</b>	8000 additional vulnerable households reached and more than 6,523 ha of CTNPF established in Component 1. More than 4,500 additional ha of NGFP committed in Component 2. Project Mid Term Evaluation Report.	12,059,798
<b>End of Year 4</b>	8000 additional vulnerable households reached and more than 6,523 ha of CTNPF established in Component 1. More than 6,000 additional ha of NGFP committed in Component 2	11,238,877
<b>End of Year 5</b>	8000 additional vulnerable households reached and more than 6,523 ha of CTNPF established in Component 1. More than 6,000 additional ha of NGFP committed in Component 2. Project Implementation Completion Report.	0

**C.4. Background Information on Project / Programme Sponsor (Executing Entity)**

FAO will act as Executing Entity of PROEZA. FAO will be responsible for the implementation of the GCF funded project. FAO will report to GCF on the disbursements of the co-financing and implementation as per information provided to FAO by the co-financing institutions. FAO will serve as the secretariat of the Steering Committee (SC) and Executive Committee (EC) of the project, whose membership is comprised of representatives of Paraguayan institutions with legal mandates relating to project implementation plus FAO:

- STP: Ministry of Planning for Social and Economic Development;
- INDI: The National Institute for Indigenous Development;
- INFONA: National Forestry Institute;
- MAG: Ministry of Agriculture and Livestock;
- SAS: Social Action Secretariat;
- SEAM: Environment Secretariat;
- VMME: Vice Ministry for Mines and Energy;
- FAO: Food and Agriculture Organization of the United Nations (Technical Secretariat)

The role of the Ministry of Planning for Economic and Social Development (STP) is to chair and legally represent the EC. The STP only votes when a tie-breaking vote needs to be cast. Its main functions in the EC are:

- Coordination to guarantee efficiency and effectiveness of the EC;
- Ensure compliance of the project with agreed covenants and safeguards and coordinate PROEZA's response to all legal issues.

The FAO received a formal request from the Government of Paraguay to support project formulation in March 2016. FAO was requested to assume the role of Accredited Entity by the NDA based on its well-established record of providing support to Paraguay and as such will be responsible for funds disbursement from the GCF to Paraguay, as well as accountability and reporting (Section H.2).

FAO will ensure the technical secretariat of the EC and will provide technical assistance in the various fields of PROEZA including financial M&E. Additionally and to this end, the EC will be supported by an experienced team composed of FAO Staff based in the southern cone and at Headquarters in Rome. FAO Regional Office in Santiago (RLC) will provide: (i) a Senior Forestry Officer as Team Leader, and (ii) specialists in social protection, land tenure, bioenergy and carbon accounting methods, natural resource economics and policy, carbon finance and climate smart agriculture. The FAO Country Office in Asunción will provide specialized support in forest policy and governance, gender and indigenous peoples, geospatial analysis, land tenure strengthening, social protection and poverty reduction coordinated under the Priority Area of Environmental Protection and Climate Change. This will help to ensure continuous project implementation support, timely and accurate reporting on implementation progress and will provide assistance to address emerging issues expeditiously. As detailed in Section H, FAO will also conduct at least two monitoring and technical support missions to Paraguay per year throughout the period of project implementation. After GCF Board approval, FAO will support GoP efforts to (i) prepare the final PROEZA Project Operations Manual and Procurement Procedures Manual for the Executive Committee's approval; (ii) carry out the preselection process and due diligence processes (PMU, other); and (iii) conduct start-up training events for the project prior to effectiveness. The operational manual should be consistent with FAO financial management and procurement policies and guidelines, and subject to FAO approval.

Institutional assessment of the participating agencies was prepared jointly by FAO and the World Bank. A brief summary of each institution's record in managing CC adaption and mitigation aspects of projects in Paraguay is reported in the institutional analysis in Annex B.8 Part B. Institutional and stakeholders analysis.

### C.5. Market Overview (if applicable)

Paraguay has a wealth of natural resources and is one of the world's largest producers of renewable energy. On the supply side of the National Energy Matrix (2015) 52% is hydro-energy, while 29% comes from biomass, and 19% is from hydrocarbons. Despite the abundant generation of clean energy, most of the hydroelectric power produced ends up being exported to neighboring countries. The country's final energy consumption structure consists of 18% electricity, 43% biomass, and 39% fossil fuels.<sup>26</sup> Biomass, principally in the form of firewood and charcoal, is used predominantly in agribusiness that exports grains, ceramics, and by thousands of homes to cook food. Around 45% of this biomass comes from firewood<sup>27</sup>, largely from unsustainable sources, putting pressure on the environment and resulting in deforestation and soil degradation.<sup>28</sup> Although unsustainable firewood and charcoal use has contributed to Paraguay's high deforestation rates, this bioenergy substitutes fossil fuels and provides an opportunity to mitigate CC, so long as wood energy is sourced from sustainable forest production.

Total annual demand for biomass in Paraguay varies between 13-17 million tons in the Eastern Region (this includes firewood, wood chips, solid wood, logs and charcoal).<sup>29</sup> Meanwhile, the sustainable supply of biomass from plantations and native forest production oscillates between 3.3-4.8 million tons annually, representing a sustainable biomass production deficit of approximately 10 million tons annually. The major consumers of solid biomass are homes, followed by agroindustry, wood industry and vegetable oil mills.<sup>30</sup> In 2015, the vibrant agro-industrial private sector produced around 15.5 million tons of soybeans, corn and wheat (65%, 24% and 11% respectively) for a total value of more than to \$2.5 billion dollars. Drying these grains with heat produced by inefficient boilers demands 3 million tons of firewood alone every year. Rural households use firewood for cooking with an estimated consumption of 4 to 6 million tons per year, which is relatively high, and is

<sup>26</sup> Viceministerio de Minas y Energía. Balance Energético Nacional (2015).

<sup>27</sup> Unique (2016). Estudio de Factibilidad PROEZA.

<sup>28</sup> Ministerio de Obras Públicas y Comunicaciones, Viceministerio de Minas y Energía, Cooperación Alemana de Desarrollo (2013). Producción y consumo de biomasa sólida en Paraguay.

<sup>29</sup> Unique (2016). Estudio de Factibilidad PROEZA.

<sup>30</sup> Ibid.

explained by inefficient combustion in open fires, which also has serious health implications mainly for women and children, who are the most exposed to smoke.

With regard to the solid wood market, prices have increased in all categories for logs from native species, with prices stabilizing from 2012-2015 at an average of US \$88 and \$40 /m<sup>3</sup> for first and second class species, respectively. Eucalyptus log prices have shown a similar increase.<sup>31</sup> Likewise, prices of firewood and wood chips have increased from 2008-2016, and are currently at \$35/ton and \$80/ton, respectively. It is important to note that the price of illegal wood is much lower, at \$5.50/ton.

There is considerable demand for citrus fruits, both for export and national consumption, and the market varies greatly in terms of price according to the place and the buyer. Citrus-buying companies buy from producers at a low price (120-150 Gs./kg), while prices at the local market are higher (300-500 Gs./kg), and at supermarket the prices can reach 1,200-1,500 Gs./kg. In Asuncion, citrus is sold for 3,400-5,600 Gs./kg.<sup>32</sup>

Paraguay is the third largest producer of yerba mate (a tea made from the *Ilex paraguariensis* tree that is highly consumed in the Southern Cone of South America). 92% of the yerba mate produced in Paraguay comes from family agriculture, with the remaining 8% produced in large-scale farms. According to the National Yerba Mate Plan, 9,052 farms spread over 18,750 ha produce 77,663 tons of green leaf, but a majority of the harvest from producers showed a decrease in yields.<sup>33</sup> In 2015, REDIEX reported that Paraguay produces 50 million tons of yerba mate annually, 960,000 tons of which are for export. Producers receive approximately 5,000-5,600 Gs./kg for dry leaf and 1,300-1,500 Gs./kg for green leaf.

Finally, Paraguay has developed a dynamic market of forest seedlings with two companies that produce high-quality eucalyptus clones with different species and clones apt for country. There are also small, private nurseries and other institutions with nurseries that produce native species seedlings, such as INFONA, FEPAMA, the Ministry of Agriculture and Livestock, and the National University of Asunción. According to INFONA, the maximum production capacity of saplings is 450,000 saplings, of which 97,000 are native species. However, seeds and plants (mainly Eucalyptus) are being illegally imported from Brazil, and there is no system for registering or certifying seeds of native species, which makes it difficult to discern the quality or origin as well as ecological zone for the plants.<sup>34</sup>

A more detailed market analysis is provided in the Feasibility Study. The challenge that this project will address is to link the poor and vulnerable communities to these markets and ensure that local producers capture as high a percentage as possible of the profit margins generated along the market chain, through product differentiation and targeted marketing.

## C.6. Regulation, Taxation and Insurance (if applicable)

An agreement should be signed with the Government for the implementation of the Project's activities. The agreement should contain special provisions of the Convention on the Privileges and Immunities of the Specialized Agencies to be applied by the Government to FAO, its property, funds and assets, and to its staff.

Forest Law 422 regulates all forest activity and requirements for management, restoration, and institutional regulatory aspects. Medium and large scale forestry operations must comply with this legislation and its regulations for preparation and approval of management plans as well as other provisions regarding transport and industrial use of timber and non-timber products. Law 294 requires an Environmental Impact Assessment for productive activities including forest plantation and native forest management. Several laws cover aspects related to biodiversity conservation at landscape and species level. Paraguay has signed and ratified most relevant international environmental conventions including UNFCCC, CBD, and CITES among others relevant to the forest and natural resources sector.

The Constitution recognizes original peoples of Paraguay, their rights to communal land sufficient for their form of life, among others. The Indigenous Community Statute designates INDI as the official entity to support land titling and provide access to other benefits provided for in the law and Constitution. Paraguay is a signatory of the UN Declaration on the Rights of Indigenous Peoples (UNDRIP) and ILO Convention 169, as well as other conventions and agreements related to Indigenous

<sup>31</sup> Ibid.

<sup>32</sup> Ibid.

<sup>33</sup> Ibid.

<sup>34</sup> Ibid.

and Tribal peoples, all ratified by the Paraguayan Congress. Free, prior, and informed consent does not currently have a specific national regulatory framework to guide the process as contemplated in the ratified conventions.

The new Law 5446 on Public Policies for Rural Women, promulgated on July 20th 2015, seeks to "to promote and guarantee the economic, social, political and cultural rights of rural women; fundamental for their empowerment and development". This Law is framed in the legal norms of Paraguay, which establish equality and non-discrimination for women and men<sup>35</sup>; as well as the responsibility of the State to remove obstacles to achieve equality and prevent factors that maintain or promote them "<sup>36</sup>. The governing body for compliance with this Law is the Ministry of Women in coordination with the Ministry of Agriculture and Livestock (MAG) and other responsible ministries and institutions. This law is also in line with international treaties and conventions, including the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), ratified by Law 1215 of 1986. The CEDAW is the most important international instrument, of a broad and legally binding nature with the laws of Paraguay, as it explicitly recognizes that "women continue to be subject to significant discrimination". Article 14 of this instrument and General Comment No. 34 (of 2016) specify the need to enforce the rights of rural women and the responsibility of the State to do so.

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<sup>35</sup> Articles 46, 47 and 48, National Constitution of Paraguay

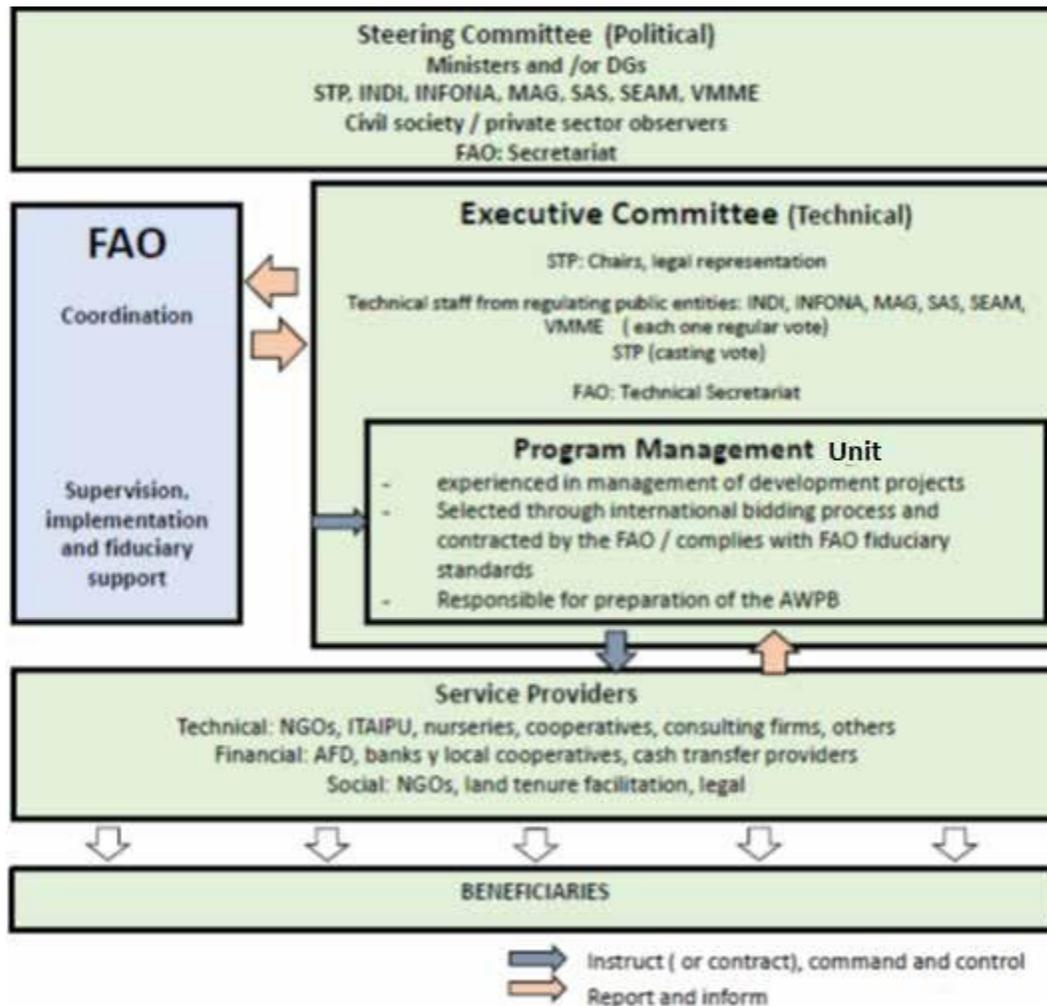
<sup>36</sup> Article 46, National Constitution of Paraguay

## C.7. Institutional / Implementation Arrangements

### I. PROEZA Governance and Implementation Arrangements for the GCF financed project to FAO.

The proposed governance and institutional arrangements are the result of a participatory process facilitated by the FAO project formulation team under the lead of GoP's National Designated Authority (NDA), the Ministry of Planning for Economic and Social Development (STP). Since March 2016 an on-going inter-ministerial dialogue and consensus building process involves the active participation of the Ministry of Agriculture and Livestock (MAG), the National Forestry Institute; (INFONA), the Social Action Secretariat (SAS); the Vice Ministry of Mines and Energy (VMME); the Environment Secretariat (SEAM); the Paraguayan Institute for the Indigenous (INDI) as well as other public offices, NGOs, and private associations, as it is documented in Annex B.6 Part B. Institutional architecture proposal. The final result of this dialogue is the institutional arrangement shown in the organogram and matrix of functions below, designed to facilitate good governance and coordination, and achieve rapid deployment of technical and financial resources to beneficiaries upon project effectiveness. High importance will be given to continue to improve interagency coordination and to strengthen efficient project management and control, as also oversight and law enforcement functions of key GoP entities: INFONA, SEAM and SAS.

#### Project Organogram



**Main functions of PROEZAs governing, executing and implementing entities**

Main function		Project Unit	Responsible Entities
<b>PROJECT GOVERNANCE AND EXECUTION</b>	<ul style="list-style-type: none"> <li>Provides highest political decision makers and sector actors information project progress, results and impacts.</li> <li>Provides political and strategic orientation.</li> <li>Secures good inter-institutional coordination.</li> <li>Provides transparency, accountability and participation.</li> </ul>	STEERING COMMITTEE (SC)	<ul style="list-style-type: none"> <li>STP Minister: being the NDA chairs and invites. (FAO Secretariat).</li> <li>POLITICAL LEVEL: Ministers and Executive Directors of INDI, INFONA, MAG, SAS, SEAM, VMME.</li> <li>Civil society observers by invitation from STP: industry, social and environmental sector.</li> </ul>
	<ul style="list-style-type: none"> <li>Reviews the Annual Working Plan and Budget (AWP&amp;B) prepared by the PMU.</li> <li>Participates in selection panels of consultants and bidding process to ensure transparency.</li> <li>Monitors implementation performances and safeguard compliance on each agency's mandate and technical competence.</li> <li>Requests and receives the co-financers reports (financial and implementation).</li> </ul>	EXECUTIVE COMMITTEE	<ul style="list-style-type: none"> <li>TECHNICA LEVEL: Composed of technical staff permanently appointed from INDI, INFONA, MAG, SAS, SEAM, VMME (each institution holds one regular vote).</li> <li>STP: Chairs, holds the casting vote and legally represents the Project on behalf of the Government of Paraguay.</li> </ul>
	<ul style="list-style-type: none"> <li>Manages the GCF funded project.</li> <li>Implement the GCF funded activities of the AWP&amp;B supported by the PMU.</li> <li>Provides technical assistance to the Executive Committee.</li> <li>Provides secretarial technical assistance to the Steering Committee.</li> </ul>	FAO	<ul style="list-style-type: none"> <li>Act as executing agency for the GCF funded project.</li> </ul>
<b>IMPLEMENTATION</b>	<ul style="list-style-type: none"> <li>Administers grant resources exclusively for project results delivery.</li> <li>Executes payments.</li> <li>Reports to the GCF.</li> </ul>		
	<ul style="list-style-type: none"> <li>Prepares AWP&amp;B for the EC review and FAO approval.</li> <li>Following FAO rules and procedures, prepares procurement documents (shortlists, TORs, draft contracts) of consultants and services providers.</li> <li>Reports to Fao on execution (physical and financial).</li> </ul>	PROJECT MANAGEMENT UNIT (PMU)	<ul style="list-style-type: none"> <li>Specialized Unit hired by FAO to speed up the project implementation providing support for the FAO management of the project.</li> </ul>
	<ul style="list-style-type: none"> <li>Delivers goods and services according to the contracts signed with FAO.</li> </ul>	SERVICE PROVIDERS	<ul style="list-style-type: none"> <li>Technical: NGOs, ITAIPU, tree nurseries, cooperatives, consulting firms.</li> <li>Social: NGOs, legal services.</li> <li>Financial: local banks, cooperatives, money transfer providers.</li> </ul>

### Project Governance and Execution

The PROEZA project will be governed by the Ministry of Planning for Economic and Social Development (STP), the Ministry of Agriculture (MAG); the National Forestry Institute (INFONA); the Social Action Secretariat (SAS); the Vice Ministry of Mines and Energy (VMME); the Environment Secretariat (SEAM); and the Paraguayan Institute for Indigenous Affairs (INDI). To this Ends a Project Steering Committee (SC) at the highest political and sectoral level composed by Ministers or Vice-Ministers, DGs and civil society representatives will meet twice a year to provide for political guidance and visibility, inter-sectoral coordination, information sharing, accountability and transparency. Private sector and civil society representatives will be invited by STP, according to criteria set in the Operational Manual.

Executive Committee (EC) will be chaired by the STP with the facilitation of the FAO, which will act as executing entity of the project. Recommendations for the project execution will be prepared at a technical level within the EC. Appointed technical staff of the six line agencies (MAG, INFONA, SAS, VMME, SEAM and INDI) will have one regular vote when a recommendation should be agreed and the STP will only hold the casting vote. The FAO will ensure the technical secretariat and provide technical support to the EC.

In order to implement the project FAO will contract a Project Management Unit (PMU) and manage its contract for the full length of the project. FAO will support the EC and its members with managerial and technical support and legal advice in:

1. Preparing the Project Inception Package that will have to be approved by the EC and will include:

- a) Decision making norms and procedures for the SC and the EC in accordance with existing legal framework and competences of each member institution.
- b) Terms of Reference and bidding process for the Project Management Unit.
- c) PROEZA Project Operational Manual and Procurement Procedures.

2. Ensuring Project Results Monitoring and Evaluation: The logical framework contains performance indicators by component and sub-component which will be jointly monitored by the EC and the FAO during program implementation via two annual supervision missions and via the regular monitoring and evaluation procedure established for the project<sup>37</sup>.

3. Establishing Technical Standards and exercise control: The EC member institutions, as public entities with a responsibility to exercise sectoral authority, will set the technical standards and guidelines which the Project Management Unit (PMU) and the individual service providers will have to adopt when implementing project activities in accordance with FAO standards and regulations. Procurement and Financial Management Standards will follow FAO covenants, standards and regulations as mentioned. Financial control will also be undertaken by FAO procedures and internal control systems.

### Project Implementation

An innovative aspect of PROEZA's institutional architecture is GoP's decision to include specialized entity, the Project Management Unit (PMU), which could be an internal project unit or an external entity. The PMU will be hired through an open bidding process by FAO to manage the entire procurement of goods and services of the project.

The PMU will: (i) prepare the annual work plan and budget for review by EC and final approval by FAO; (ii) manage the procurement, contracting, administrative and accounting processes needed under the direct and permanent control, monitoring and supervision of FAO; and (iii) manage the bidding, evaluation, and selection processes to hire technical and financial service providers<sup>38</sup> with the participations of FAO and the national organizations. Additionally, the PMU will secure data collection and reporting to the EC in accordance with the reporting to be provided to GCF.

Grant funds for the PROEZA project will flow from the GCF to the FAO and the PMU will operate according to approved annual working plans and budget. Fund flow will be regulated by FAO covenant, rules and standards. Acquisitions of goods or services, including inputs for the implementation of the project, training and consulting, and financial services done by the PMU will be governed by applicable guidelines, in accordance with the procurement plan presented in this proposal, and in accordance with the Procurement Manual to be developed prior to project effectiveness. The PMU will

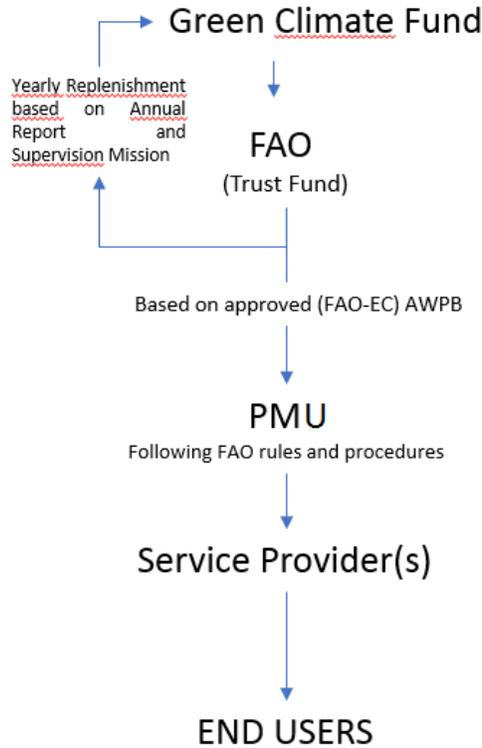
<sup>37</sup> For more details on monitoring and evaluation kindly refer to section H.

<sup>38</sup> Technical service providers may be cooperatives, consulting firms, NGOs or others.

be under the direct and permanent control, monitoring and supervision of FAO. The PMU will produce quarterly financial and procurement reports for review by FAO. FAO will share the information with the EC as necessary.

**Funds Flow**

Every year the PMU will present an annual work plan and budget (AWPB) that will include a specific procurement plan. FAO will validate and approve the AWPB and FAO will expend funds according to its covenants, rules and standards. Funds will flow as follows:



Every year, FAO will present the Green Climate Fund with the annual report as well as the yearly replenishment plan prepared jointly with the EC.



### D.1. Value Added for GCF Involvement

Through PROEZA, a highly innovative development concept is being created in Paraguay by which cash transfers conditioned to social indicators (*Tekoporã*) would be topped-up by environmental conditional cash transfers: This creates a new program to be implemented by PROEZA through which rural households highly vulnerable to the impacts of climate change that are living in poverty will benefit from incentives and E-CCT to improve their environmental resilience and produce public benefits. GCF involvement is critical for the project because GCF financing will enable the following outcomes:

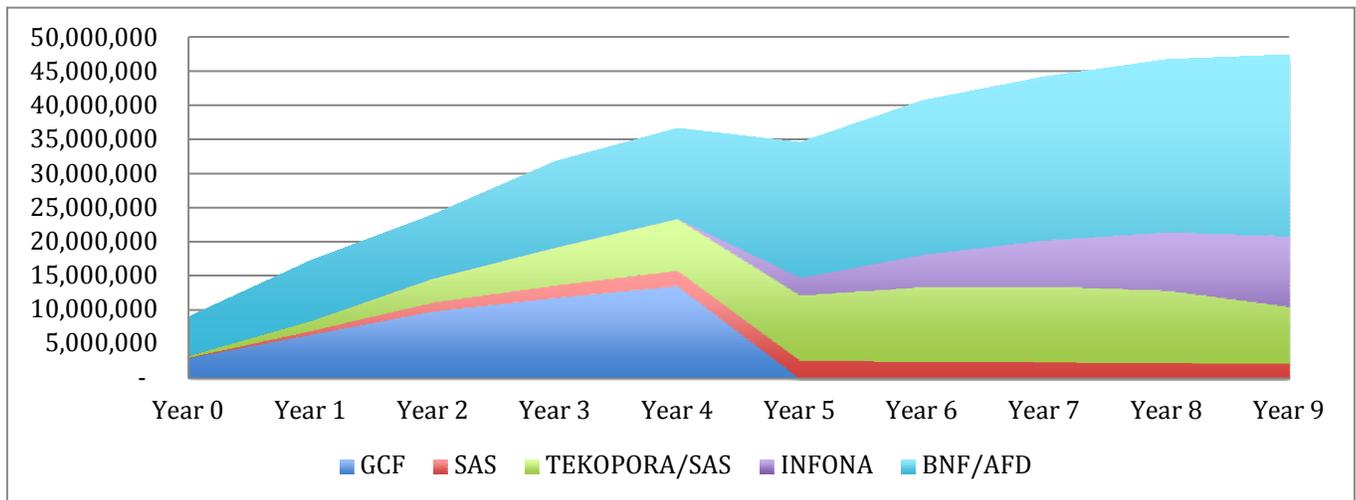
- a. **Accelerate Paraguay’s planned shift towards a low-emissions, sustainable development path.** Paraguay is poised to shift rapidly from depletion of native forests to a reliance on sustainable sources of fuelwood from planted forests. GCF support for the proposed program of activities builds on existing legislation that provides a substantial platform and clear delegation of authority to launch this fundamental transformation. With GCF support, PROEZA will advance the national/local regulatory frameworks to systemically promote investment in climate-resilient development. GCF support will catalyze this shift by supporting a change in incentives for market participants by reducing costs and risks, eliminating barriers to the deployment of climate-resilient solutions, thereby accelerating Paraguay’s progress along this path.
- b. **Larger scale of impact.** GCF investments will enable Paraguay to implement this project (i.) more efficiently through the proposed public/private execution and implementation arrangements, and (ii.) on a larger scale than would be possible without GCF support. The GCF grant provides an opportunity to engage approximately 30,000 families in the establishment of 24,460 ha of multifunctional, climate resilient planted forests (0.8 ha per family). The inclusion of concessional loan financing for medium and large landowners will allow the project to engage innovators (early adopters; estimated to include 300 individual landowners) to establish “new generation forest plantations” that protect both riparian zones and remnant native forests by shifting fuelwood demand toward sustainable fast growing forests for bioenergy. Concessional loan financing for Component 2 will also provide proof of concept for a second much larger phase on investment in growing forests for bioenergy.
- c. **Increased focus on the most vulnerable populations.** The GCF grant resources will be directed to financing afforestation activities in areas of high social and environmental vulnerability. The GCF grant financing will be directed towards communities that are most vulnerable to climate threats and where the poorest and marginalized groups are more likely to reside (including indigenous and women-headed households). The GCF contribution will, therefore, allow a larger share of vulnerable groups to benefit from climate adaptation and contribute to mitigation measures through one single operation. GCF resources will also be used to mainstream the use of impact evaluation in poverty alleviation as the program of conditional cash transfers will be subject to a rigorous impact evaluation using either the SWIFT or PMT methodology (Survey of Well-being via Instant and Frequent Tracking, Proxy Mean Testing).
- d. **Greater innovation and multiple co-benefits.** GCF grant funding will support the establishment of multifunctional forests that provide both economic and multiple co-benefits (climate resilience, diversified income sources, increased well-being of beneficiaries, including gender and social inclusion, among others). By supporting the rapid adoption of multifunctional forest management models in land belonging to small, medium and large landowners, the GCF will help accelerate the adoption of climate-resilient strategies by all Paraguayans. With the strong focus of Component 1 on the poor, extreme poor (including women-headed households) and indigenous communities, the GCF investments will help improve both livelihoods and ability to confront climate impacts in these particularly vulnerable groups.

**D.2. Exit Strategy**

Paraguay has a legal base upon which PROEZA will establish a sustainable framework to ensure the continuation of project impact beyond its lifetime. In April 2017, the President of Paraguay issued a Presidential Decree (7031/2017) that regulates Forest Law 422/72, which creates the compulsory “Forest Reserve”. This means that land owners that have more than 25 ha in “forest zones” and who have not reforested 5% of their property have to reforest that percentage, or alternatively, buy Environmental Services Certificates (ESC) to compensate this deficit. Law 3001/2006 creates the Regime of Environmental Services, but this still has to be regulated and implemented. Meanwhile, there is strong Government interest to update Law 536/95 to provide incentives for reforestation and afforestation in order to implement the National Forest Development Plan.

The financial sustainability and the institutionalization of the transformation triggered by PROEZA will be ensured by intensive institutional support provided to INFONA and SEAM oriented also to enforce forestry, land use and environmental regulations, and to operationalize the Environmental Services Regime (see also E.2.4). Financial flows from these instruments are expected to increase gradually at a pace of 20% every year from year 6 onwards to finance the incentives for afforestation and the E-CCT as shown in the following table and graph below. As the government is pursuing a total intervention period of 10 years including PROEZA phase (5 years), this longer period has been used to estimate the exit strategy below.

FUNDING (in million US\$)	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	TOTAL
GCF	3.0	6.4	9.8	11.8	13.5	-	-	-	-	-	44.5
SAS	0.1	0.6	1.3	1.9	2.3	2.7	2.6	2.5	2.3	2.2	18.5
TEKOPORA/SAS	0.3	1.5	3.5	5.5	7.5	9.5	10.8	11.0	10.5	8.3	68.5
INFONA	0.0	0.0	0.1	0.1	0.1	2.6	4.7	6.8	8.5	10.3	33.2
BNF/AFD	5.6	8.8	9.2	12.5	13.2	19.7	22.5	23.9	25.2	26.6	167.2
<b>TOTAL</b>	<b>9.0</b>	<b>17.3</b>	<b>24.0</b>	<b>31.8</b>	<b>36.6</b>	<b>34.5</b>	<b>40.7</b>	<b>44.1</b>	<b>46.6</b>	<b>47.4</b>	<b>331.9</b>



## E.1. Impact Potential

Potential of the project/programme to contribute to the achievement of the Fund's objectives and result areas

### E.1.1. Mitigation / adaptation impact potential

Building resilience to CC is a priority for poverty reduction and shared prosperity in Paraguay. CC projections point to higher temperatures, increased frequency and intensity of rainfall and associated flooding, along with more frequent and prolonged droughts. Climate variability, in particular, poses a significant risk to vulnerable small-scale landowners and indigenous communities. Projected impacts threaten many of the country's development priorities (food and energy security in particular).

While the population is vulnerable as a whole, indigenous communities and WHH living in poverty and extreme poverty are particularly affected as they depend more directly on depleted natural capital (land, water, and forest resources). Diversification of income streams and reduction of the high-rate of dependency on natural resources will directly contribute to reducing the risk of over-exploitation of natural resources. However, especially in the case of remote communities with limited economic alternatives, the development of assets such as forest-based savings can provide a crucial safety net and a means to confront periodic climate shocks. PROEZA investments are targeted to benefit the poorest and most vulnerable rural districts in Paraguay. The selection of districts to be included in PROEZA Component 1 has taken into account the degree of both social and environmental vulnerability, such as the risk for future deforestation prepared by INFONA and SEAM with support of the UNREDD Programme in 2016 (see maps in Annex F).

#### Mitigation Benefits

One of the primary objectives of GCF-funded activities is to mitigate CC by reducing carbon emissions from land use, deforestation and through sustainable management of forests. The GCF financed activities under PROEZA are expected to contribute directly to mitigation by a) reducing loss of native forests; b) expanding the use of improved stoves for heating and cooking; and c) rapidly shifting toward sustainable production of wood-based bioenergy and the substitution of unsustainable with sustainably produced biofuel. The project places emphasis on assessing, monitoring and reporting on mitigation in the Logical Framework (Section H1) and M&E (Section H 2). Mitigation benefits have been estimated and analyzed ex-ante, and will be assessed and reported in the Project's Completion Report.

#### Adaptation Benefits

A second primary objective of GCF-funded activities is to foster adaptation to CC by increasing resilience and enhancing livelihoods of the most vulnerable people, communities and regions. The GCF-financed activities under PROEZA are expected to contribute directly to adaptation by increasing resilience to climate shocks in poor and extreme poor households including WHH and indigenous communities by a) diversifying climate resilient productive activities, and b) building household assets (valuable planted forests) to enhance economic resilience in the face of climate shocks and fostering the inter-generational transfer of wealth. The climate impacts of the Project's investments will be measured using the Fund-level impact indicators and end of project targets outlined in the table below (E.1.2).

As noted in Section C1, despite Paraguay's substantial production of hydroelectricity, nearly half (45%) of national energy consumption is sourced from biofuels. Paraguay's expanding agricultural frontier and household dependency on wood and charcoal has resulted in globally high rates of deforestation, reducing native Atlantic Forests in Paraguay by 95%. In this context, Paraguay's reliance on fuelwood represents both an opportunity and a challenge. Paraguay has an opportunity to maintain its reliance on renewable biomass energy but must shift rapidly from depletion of native forests to a reliance on sustainable sources of wood from planted forests. To effectively implement (and "lock-in") this transition, several conditions will have to be met:

First, Paraguay must rapidly increase sustainable production of wood for bioenergy in areas located near major wood burning facilities (especially but not limited to silos which dry grains for export with wood fuel).

Second, facilities that consume large quantities of fuelwood will need to undergo energy audits to identify opportunities to upgrade installed facilities and move toward more fuel-efficient equipment.

Third, medium and large-scale producers of grains for export must gain familiarity with market trends and the response of several major commodities purchasers including Archer Daniels Midland, Cargill, and Bunge, who have recently adopted policies that exclude purchase of grains that cause deforestation (so-called zero deforestation policies).

Fourth, the GoP's agencies with legal mandates for oversight and monitoring of plantation development and environmental compliance (e.g. INFONA and SEAM) must be staffed and equipped with sufficient technical and financial resources to support and encourage the transition at the level of policy, legal framework and field implementation.

The proposed roll-out of geographically explicit purchase restrictions by grain consolidators as well as the mandatory verification of sustainably sourced bioenergy that will be progressively put in place by the authorities, may provide a significant and highly effective incentive to move this process forward.

E.1.2. Key impact potential indicator

<i>GCF core indicators</i>	<i>Expected tonnes of carbon dioxide equivalent (t CO<sub>2</sub> eq) to be reduced or avoided (Mitigation only)</i>	<i>Annualy</i>	315,965 tonnes of CO <sub>2</sub>
		<i>Lifetime</i>	9,478,962 tonnes of CO <sub>2</sub> (lifetime 30 yrs) <i>(Calculation details see Annex H)</i>
	<ul style="list-style-type: none"> <li><i>Expected total number of direct and indirect beneficiaries, disaggregated by gender (reduced vulnerability or increased resilience);</i></li> <li><i>Number of beneficiaries relative to total population, disaggregated by gender (adaptation only)</i></li> </ul>	<i>Total</i>	As PROEZA's adaptation strategy consists of supporting poor and extremely poor rural vulnerable households to increase their resilience to climate change: Direct: ~ 153,000 people living in poverty and extreme poverty in the project area affected by climate change, of which ~76,000 are women and ~ 14,800 are indigenous. Indirect beneficiaries are the 141,306 poor and extremely poor households (720,000 people/360,000 women) registered in Tekoporã (social protection programme) that could also be benefited from the transformational change to be promoted by PROEZA. <i>Source: Tekoporã database 2017. (Refer to C.1, C.2, C.3, E.5.3)</i>
		<i>Percentage (%)</i>	Direct: 2,27 % of national total population Indirect: 10,7 % of national total population
<i>Other relevant indicators</i>	<p><b>Please refer to the Logical Framework in Section H.1.1</b></p> <p><u>Main Indicators:</u></p> <ul style="list-style-type: none"> <li>M 4.1 Tonnes of carbon dioxide equivalent (t CO<sub>2</sub>eq) reduced or avoided (including increased removals) as a result of Fund-funded projects/programs.</li> <li>Number of technologies and innovative solutions transferred or licensed to promote climate resilience as a result of Fund support</li> <li>A 1.2 Number of males and females benefiting from the adoption of diversified, climate-resilient livelihood options (including fisheries, agriculture, tourism, etc.)</li> </ul> <p><u>Social, environmental, economic co-benefit index/indicator at impact level:</u></p> <ul style="list-style-type: none"> <li>People in targeted forest and adjacent communities with increased monetary and non-monetary benefits from forests disaggregated by Female / Indigenous people (number) *</li> </ul>		

The estimation of emissions for this project takes into account the sequestration, reduction and/or avoidance that result from the implementation of the various activities proposed under components 1 and 2 of the project. The GHG analysis considers a 30 year period to align it with the proposed production cycle for reforestation of native species. This assumption is within IPCC recommendation for considering the timeframe between transitions from the existing state to reach a new equilibrium for measuring carbon stocks.

The project will carry out afforestation/reforestation activities in areas that were initially forest (more than 20 years) but were more recently converted to crop or grazing lands. These lands were abandoned once their fertility declined. The analysis was done following IPCC guidelines and using a combination of models and tools to account for the carbon sequestration/removals. These includes the Ex-Ante Carbon Appraisal (EX-ACT), developed by FAO and the World Bank as well as a standalone model developed to account for the harvesting and removal of biomass for bioenergy and wood uses. The Ex-ACT tool was used to estimate the GHG related to silvicultural inputs (fertilizers, pesticides, fuel etc.) and activities associated with silvopastoral systems. Ex-ACT has mostly been developed using the Guidelines for National Greenhouse Gas Inventories in conjunction with other methodologies and reviews of default coefficients for mitigation option as a base, so as to be acceptable to the scientific community. Default values for mitigation options in the agriculture sector are mostly from Smith et al. (2007). Other coefficients such as embodied GHG emissions for farm operations, inputs, and transportation and irrigation systems implementation are from Lal (2004). The standalone model followed the IPCC Harvested Wood Products recommendations to correct for the impacts of harvesting of biomass on carbon sequestration. The model was developed based on the area planted every year as defined in the economic and financial analysis. The accrual of biomass was then estimated according to the area planted each year and any accumulated/removed growth from previous years was considered. A summary of the equations and main variables used in the model and the analysis are presented below:

*Equation 1. Volume per year per ha= Initial volume (m3) \* Annual Increment (m3/ha) – Thinning/Harvest*

*Equation 2: Volume = volume per year per ha \* Area*

*Equation 3. Above-Ground Biomass (AGB) = V\*BEF\*D*

*Equation 4. Below-ground Biomass (BGB) = ABG\*R*

*Equation 5. Tons of CO2= (AGB+BGB) \*Carbon Fraction tones of C per t biomass \*t of CO2 per ton of C*

Variable	Value	Unit	Reference
Carbon fraction	0.47	ton of carbon/tdm	Paraguay Reference Emissions Level and IPCC 2003
Root to shoot ratio (R)	0.33	tdm/tdm	IPCC 2003
Wood density of trees (D)	0.5	Tdm/m3	IPCC 2003
Biomass expansion factor (BEF)	1.6	dimensionless	IPCC 2003
Mean Annual Increment (V)	For close to nature planted forest and agroforestry systems with small scale producers: Native species 10 Exotic species 16  For plantations Large scale producers: Biomass for bioenergy 40 Biomass for Wood 35  For Regeneration natural forest/yerba mate bajo monte with small scale producers: 3	m3/ha/yr	Project Technical Feasibility Analysis
Agrochemicals	Nitrogen 190 Compost 138 Phosphorus 190 Potassium 190 Herbicides 160 Insecticide 135	Ton / year ( implementation only, not capitalization)	

The analysis considers only the above- and below-ground biomass carbon pools<sup>39</sup>. The sources/removals of GHGs taken into account in the analysis are: Carbon dioxide (CO<sub>2</sub>) removals from biomass growth; CO<sub>2</sub> emissions from use of agrochemicals in silviculture, Methane (CH<sub>4</sub>) from silvopastoral activities and Nitrous oxide (N<sub>2</sub>O) emissions from the use of organic and synthetic fertilizers.

The results of the analysis are presented below:

### Biomass Sequestration

Type of Intervention	Area (ha)	Volumen Standing after harvest removals (m3)	Biomass equivalent (tonne)	Tonns CO2 equivalente sequestered Above ground biomass	Tonns CO2 equivalente sequestered Below Ground Biomass	Tonns CO2 equivalente sequestered in biomass
Plantations 20% mix native / 80% exotic	11,548	586,720	469,376	808,892	266,934	1,075,826
Plantations 50% mix native / 50% exotic	8,007	866,853	693,482	1,195,101	394,383	1,589,485
Natural Forest Restoration	1,500	77,755	62,204	107,198	35,375	142,574
Natural forest regeneration with Yerba Mate	1,050	86,415	69,132	119,137	39,315	158,453
Agroforestry Citrics	1,005	156,000	124,800	215,073	70,974	286,046
Agroforestry Yerba Mate	1,350	348,323	278,658	480,221	158,473	638,694
<b>Component 1.</b>	<b>24,460</b>	<b>2,122,066</b>	<b>1,697,653</b>	<b>2,925,622</b>	<b>965,455</b>	<b>3,891,077</b>
Silvopastoral	6,240	0	0	0	0	0
Plantation Biomass for Bioenergy	8,880	0	0	0	0	0
Plantation Quality Wood	8,880	0	0	0	0	0
<b>Component 2.</b>	<b>24,000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total (a)</b>	<b>48,460</b>	<b>2,122,066</b>	<b>1,697,653</b>	<b>2,925,622</b>	<b>965,455</b>	<b>3,891,077</b>

**PROEZA will contribute with a carbon sequestration in biomass of about 3.9 million tCO<sub>2</sub> eq.**

<sup>39</sup> It is important to note that the CO<sub>2</sub> sequestration in biomass calculated in the analysis for above ground biomass for native species were similar to values obtained using the carbon coefficient values for Bosque Húmedo Region Oriental (52.36 ton C per ha) as presented in the Paraguay Forest Reference Level.

These production systems also generate emissions. These emissions are associated with inputs used in plantation management in reforestation and agroforestry and silvopastoral activities. These were calculated using EX-ACT and are estimated at 490,958 tCO<sub>2</sub>eq. The summary of the emissions emitted in the production systems are as follows:

Emitted emissions from inputs			
Emissions generated by the production systems	Tonns of CO <sub>2</sub> emitted from inputs		
	Component 1	Component 2	Total
Inputs (fertilizer, insecticides, pesticides etc)	197,641	126,773	324,414
Silvopastoral		166,543	166,543
<b>Total (b)</b>	<b>197,641</b>	<b>293,316</b>	<b>490,958</b>

Considering the sequestration/reduction from *biomass (a)*, and *emissions generated (b)*, the total balance for the proposed production systems (*a-b*) is **3,400,120 tonnes of CO<sub>2</sub> equivalent over 30 years**.

The proposed project activities also contribute to *avoidance of emission* from 1) the displacement of fossil fuel consumption from the use of sustainable biomass for energy and 2) reduction of fuelwood consumption from the introduction of clean and efficient cooking stoves in poor households.

As mentioned before the Paraguayan energy matrix depends heavily on biomass for energy. Thus, a portion of the harvested biomass will supply bioenergy uses in particular to the grain drying industry, which relies heavily in this source of energy for grain drying. The avoided emissions from the displacement of heating oil with sustainable bioenergy was calculated by transforming the volume of harvested biomass to its equivalent energy content. The energy content was converted to equivalent liters of heating oil. The embedded energy was then multiplied by the emission coefficient of fossil fuels to calculate the emissions avoided.

The emissions avoided from the use of improved stoves was estimated based on the current fuelwood consumption in participating households (7,500) and the expected efficiency gains for the improved cooking stoves that will be distributed by the project. It was assumed that the improved cooking stoves can decrease fuelwood consumption by 25%. The potential fuelwood savings was calculated taking into account the fuelwood uses with current stoves and the new fuelwood use with improved stoves. The total fuelwood savings was then multiply by the emissions for fuelwood consumption to calculate the avoided emissions. The summary of the avoided emissions are as follows:

Emissions Avoided		
Intervention		Tonns of CO <sub>2</sub> avoided
Improved Cooking Stoves	Number	7,500
	CO <sub>2</sub> Avoided	2,082,101
Substitution of Heating Oil with Sustainable Biomass	Component 1	53,628
	Component 2	3,943,113
<b>Production</b>	<b>Subtotal</b>	<b>3,996,741</b>
<b>Total avoided emissions (c)</b>		<b>6,078,842</b>

Once both sequestration and avoided emissions are accounted for, the PROEZA will contribute with a reduction of **9,478,962 tonnes of CO<sub>2</sub> equivalent over a 30 year period**.

<b>Final Balance Sequestered + Avoided - Emitted</b>	
<b>Item</b>	<b>Tonns of CO2 avoided</b>
<b>Sequestered biomass (a)</b>	3,891,077
<b>Emitted (b )</b>	490,958
<b>Avoided (c)</b>	6,078,842
<b>Total (d )</b>	<b>9,478,962</b>
<b>Annually</b>	<b>315,965</b>

## E.2. Paradigm Shift Potential

### E.2.1. Potential for scaling up and replication

In parallel to the actions outlined in this proposal, the GoP is pursuing delivery of its unconditional INDC commitments through a combination of national and private sector investments. There are identifiable opportunities for achieving replication built directly upon the GCF supported models and financing mechanisms.

**Replicating Component 1 “Planting for the Future”:** The request for GCF grant to support this component (US \$44.5 M) is limited by the narrow focus on the poor and extreme poor households in the target districts. The GoP and members of the EC recognize the potential to expand and scale-up support to other smallholders who are also a) exposed to risks from climate shocks and b) could easily be pushed back into poverty or extreme poverty due to such shocks. The total number of non-poor, but vulnerable rural smallholders who might benefit from an eventual replication of the GCF finance activities under Component 1 is around 700,000, yielding a potential numerical multiple of 3.4.

If the Component 1 institutional arrangement (public-private partnership using contracted financial and technical services to deliver benefit packages to rural recipients while government agents focus on policy, legal frameworks, compliance and oversight) functions as efficiently and cost effectively as envisioned, then this model could be replicated (with local adaptation) in many GCF client countries where governance challenges prevail.

**Scaling-up Component 2 “Sustainable Landscapes and Responsible Markets”:** Under the VMME, the government is currently developing a second large lending operation to scale-up efforts that will be piloted in Component 2 of PROEZA. The scale and duration of this initiative is under discussion but the program would support delivery of Paraguay’s recently signed NDCs and is aligned with sustainable energy goals defined in the National Development Plan 2030. In broad terms, the proposed second investment operation would seek to reduce by half the current national deficit in wood energy (currently estimated to be between 7 and 10 Million Tonnes per year) by planting an additional 160,000 ha over 4 years to produce approximately 3 Million tons of fuelwood per year. This proposal is being developed by the Government of Paraguay in dialogue with the Latin American Development Bank (CAF). The likelihood of scaling-up actions and models supported under Component 2 is high and the anticipated multiplication factor is in the order of 25 to 40 times the initial investment.

It is worth noting that adoption of improved (more efficient) combustion chambers through retrofitting or replacement of existing facilities may make an important contribution to closing the current national deficit in wood energy, although the scope of this opportunity is not yet properly quantified. Conversion of some wood fired facilities to hydroelectric power may also become possible as the national transmission grid is developed in the coming years.

### E.2.2. Potential for knowledge and learning

FAO has maintained a substantive dialogue with the EC line agencies that will oversee the implementation of the project. The technical team has a shared sense of political commitment to finding a sustainable solution to the fuelwood shortage in Paraguay. The potential financial support of GCF has already yielded benefits in terms of strengthening knowledge and catalyzing inter-ministerial dialogue and information exchange. There has been active participation and sharing of data required to construct a shared view of the problem in all its complexity. The consensus that emerged around the design of the two components and the scope and allocation of responsibilities (guided by existing legal mandates of each institution) was adjusted to reflect the available human and budgetary resources and to rely substantially on contracted financial, technical and social services to deliver benefit packages to vulnerable rural households, while government agents focus on policy, legal frameworks, compliance and oversight. The solid technical collaboration established during preparation will be the base for constructing broader inter-ministerial coordination through the creation and operations of the EC during project implementation and beyond.

Itaipú, a globally significant bi-national (with Brazil) hydroelectric company, is widely recognized as an important source of both knowledge and practical experience on watershed and riparian zone protection using native species; this company has an ongoing program of support in the riparian corridors within the project area and has expressed interest to participate as an active service provider during project implementation. Likewise, the experience of SAS in transparent and efficient management of social conditional cash transfers under Tekoporã serves as an important functional model in the design of the environmental conditional cash transfers of PROEZA. Experiences gained by FAO and UNICEF through the “From Protection to Production (PtoP) Project”, a multi-country impact evaluation of cash transfers in sub-Saharan Africa will be brought to bear with support of FAO’s Social Protection Team. Similarly, FAO’s work on development and dissemination of the *Voluntary Guidelines on Tenure* and a detailed analysis of the land sector prepared by the World Bank will underpin and inform the national dialogue on tenure strengthening within the proposed project.

### E.2.3. Contribution to the creation of an enabling environment

**Linking Remote Observation and Compliance Monitoring.** PROEZA support for developing remote sensing and early warning systems will be based on previous support through the UN REDD Programme, as well as on recent experiences of FAO with partnerships to be developed with Google (Google Earth Engine) and the European Space Agency (ESA). The increased capacity for real-time oversight and compliance enforcement within key EC agencies (INFONA and SEAM) will create both awareness and incentives for improved environmental performance among private sector operators. Both current and emerging best practices of small, medium and large landowners will be highlighted in PROEZA's communications strategy.

**Green Commodities as an added Incentive.** As noted previously, there is a significant opportunity for PROEZA to collaborate with and build upon the ongoing UNDP Green Commodities Program in Paraguay. Active support from the EC will allow PROEZA to disseminate information about evolving market demand for deforestation-free commodities and strategies for adapting production models to these changing market conditions.

**Piloting New Generation Forest Plantations with Links to Responsible Markets.** VMME plans to use PROEZA's Component 2 as a model to launch a significantly larger wood energy planting program financed by private borrowing. The scale of this effort will depend on the adoption of improved (more efficient) combustion methods and possible future conversion of some wood fired facilities to hydroelectric power as the national transmission grid expands.

**Conditional Cash Transfers Foster Change in Vulnerable Households.** The PROEZA model builds upon the existing national conditional cash transfer program to promote creation and protection of forest assets in vulnerable poor communities. It could be used to foster adoption of a host of other environmentally sound and climate-smart practices in subsequent projects and programs of GoP (and in other GCF recipient countries).

**Active Private Sector Participation.** PROEZA's adoption of a public-private partnership approach using contracted financial and technical services to deliver benefit packages to rural recipients while government agents focus on policy, legal frameworks, compliance and oversight helps build both government capacity and collaborative approaches to manage forests sustainably in a challenging governance environment.

### E.2.4. Contribution to regulatory framework and policies

Law 3001/2006 created the Regime of Environmental Services and, subsequently, its Article 12 states that those land owners owning more than 25 ha in "forest zones" and have not reforested 5% of their property, as mandated by Forest Law 422/73, may buy Environmental Services Certificates to compensate this deficit. While SEAM Ministerial Resolution 531/06 regulates this mandate, "forest zones" will still need to be defined, as well as mechanisms and instruments to improve and establish the Environmental Services Regime, which is crucial for the environmental conditional cash transfer scheme introduced by the Project and its long term financial sustainability and scalability. Therefore, PROEZA will invest a substantial effort and resources in supporting SEAM and INFONA in this process.

Presidential Decree No. 4050-14/09/2015 mandated the VMME to establish a certification, control and incentive regime of solid biomass for energy use, to make sure that industrial bioenergy consumers are sourced with sustainably sourced fuelwood. The objective is to improve the competitiveness and market access for products of forest plantations that nowadays still have to compete with wood from illegal deforestation. The Decree instructs the VMME to coordinate with the Ministry of Industry and Commerce (MIC), INFONA, SEAM, and specifically with the STP on actions to support small producers with afforestation and efficient use of bioenergy. In order to fulfill this mandate, PROEZA will not only strengthen INFONA, SEAM and VMME's capacities for strategic oversight, verification and control, but also contribute with analytical and technical advice to create the normative framework for a verification and control regime for the industrial use of sustainable bioenergies. This will go in hand with the development and promotion of a business environment for long term sustainable forestry investment.

### E.3. Sustainable Development Potential

#### Wider benefits and priorities

##### E.3.1. Environmental, social and economic co-benefits, including gender-sensitive development impact

PROEZA has tangible sustainable environmental and socio-economic benefits for forest-dependent communities and, in particular, the more vulnerable indigenous groups and female-headed households in the project area. The project promotes positive environmental externalities such as soil stability, promotion of native species, and protection of key watersheds and bio-habitats through improved practices. Above all, it will result in retaining the total economic value (both use and non-use value) of forested areas for the benefit of local communities in the near and long-term future. These will be achieved through the adoption of the proposed CTNPF and agro-forestry production systems that will introduce climate-smart agriculture and resilient production systems and generate inter-generational assets in poor households. Furthermore, it will change household fuel consumption habits towards more efficient and sustainable practices, resulting in reduced emissions and fuel consumption rate by introducing simple technologies, such as new cooking stoves that can be replicated and promulgated locally.

In terms of sustainable social and economic benefits, assistance in security of tenure will generate tangible household economic capital and stimulate long-term stewardship of forestry resources and the continued investment in their sustainable use. The nature of the proposed production management practices ensures continued and sustainable short and long-term economic benefits derived from the land and forests. Families will have the possibility of diversifying and increasing their income through the production of wood and non-timber forest products in their CTNPF plots. Importantly, project interventions will also impact Environmental Services Law implementation and indigenous rights of resource use and ownership that would strengthen these communities' voice in regional and national decision-making regarding natural resource management and pave the way for to exit intergenerational poverty.

The project seeks to foster the development of a sustainable value chain for firewood and charcoal and improve the country's energy efficiency. The project will build on REDD+ progress with cross agency coordination and delivery, as well as build coordination platform and capacity across multiple agencies with legal mandate to address CC in the AFOLU sectors.

### E.4. Needs of the Recipient

#### Vulnerability and financing needs of the beneficiary country and population

##### E.4.1. Vulnerability of country and beneficiary groups (Adaptation only)

###### Country vulnerability and financing needs

The CAF study "Index of Vulnerability and Adaptation to Climate Change in the Latin American and Caribbean Region" places Paraguay in the category of "extreme risk," ranking 8th out of 33 countries in the LAC region.<sup>40</sup> These results are partly due to high levels of poverty and inequality in the country as well as the economy's high dependence on the environment, which make Paraguay extremely vulnerable to climatic variability and extremes. Indeed, Paraguay's climate is marked by periods of floods and droughts associated with the El Niño Southern Oscillation (ENSO) variation,<sup>41</sup> such as flooding of the Paraguay and Parana rivers, affecting several coastal cities. El Niño's torrential rains, storms and floods cause tremendous physical and economic damage in urban and rural areas, resulting in material and even human losses, with the most vulnerable populations suffering most of the impacts.

Agriculture makes up 30% of Paraguay's GDP, and around 40% of exports.<sup>42</sup> Given Paraguay's economic and geographic reliance on natural resources, the sectors most at risk from CC are agriculture, energy, and transport. Climate variability and the impacts of CC have already affected Paraguay's productive systems, both in terms of consumption and profitability. The country has also experienced an increase in temperatures, variability in availability of water resources, changes in

<sup>40</sup> Ibid.

<sup>41</sup> Oficina Nacional de Cambio Climático (2016). Plan Nacional de Adaptación al Cambio Climático.

<sup>42</sup> World Bank (2015). Paraguay Agricultural Sector Risk Assessment.

rainfall patterns, as well as the increase of intensity and frequency of extreme climate events, most notably floods, freezes and droughts.<sup>43</sup> It is estimated that Paraguay loses an average of \$237 million annually due to production risks, with numbers reaching \$1 billion in years with extreme events.<sup>44</sup>

#### E.4.2. Financial, economic, social and institutional needs

##### **Economic and Social Development Level of the Country and the Affected Population<sup>1</sup>**

The Paraguayan economy has grown at an average rate of 5% over the last decade, higher than in neighboring countries. This growth has centered on high production rates in agriculture, livestock and the two (2) major dam projects, Itaipú and Yacyreta, accounting for over 60% of Paraguayan exports in 2015. In addition to this positive overall economic growth, inroads have been made in the social arena, particularly via the offering of free access to primary health care, and the expansion of the conditional cash transfer program, *Tekoporã*, which is aimed at the PROEZA project's largest single target population, the extremely poor and vulnerable.

Through the Social Action Secretariat's (SAS) *Tekoporã* program and overall economic growth, the number of people living in poverty fell to 24%, and extreme poverty to 10%. However, the SAS estimates that 1,1650,000 people still live in extreme poverty and vulnerability. The SAS currently works with about 57% of that population, or nearly 134,000 families in 226 municipal districts in the country's 17 departments, 14,000 of which are indigenous families. This is the single largest target population for the PROEZA project, via Component 1: Planting for the Future.

**Gender gaps of peasant women:** In Paraguay, there is a greater percentage of poor women in rural areas: poverty at the national level measured by income indicates that 24.5% of women are in this situation compared to 23.2% of men. In urban areas, this difference decreases, while in rural areas it widens. Around 35.6% of women are in poverty compared to 32.2% of men. It is also noted that women farmers are the most affected by the lack of their own income, and 37.3% are in this situation (three times more than men and more than urban women at 28.6%). The situation worsens in conditions of poverty, since 46.5% of poor rural women do not have their own income.

**Absence of Alternative Sources of Financing:** There has yet to be a program implemented in Paraguay that has achieved motivating extremely poor and vulnerable rural families to invest in the installation of multi-functional forest and agroforestry plantations on their farms, as an alternative income source and a tool for CC mitigation and adaptation. This is mainly due to the fact that extremely poor and poor families literally live day-to-day, and often go hungry. As such, trying to convince this population to invest in, install and maintain these systems on their farms and wait anywhere from 3-5 years to produce a financial return, seems unreasonable at best.

The PROEZA project is designed to fill this gap with the innovative use of the existing conditional cash transfers to participating families during key phases of the project implementation process, in close coordination with the SAS by combining efforts with the *Tekoporã* program. PROEZA will support participating families with the necessary inputs, ranging from plants to fencing and other materials, and will pay farmers for their work in the preparation, installation and maintenance phases of the multifunctional forest and agroforestry production systems. Additionally, based on successful establishment and maintenance of their new forest and/or agroforestry systems, they will receive further conditional cash payments until the first positive cash flow is expected. In this sense, the PROEZA project is offering an innovative approach that no other program offers, and fulfills a financing need for programs that facilitate greater family income and climate mitigation and adaptation at the same time.

**Need for Strengthening Institutions and Implementation Capacity:** The institutional assessment and analysis carried out during preparation (see Annex B) show that the sectoral ministries and public offices in Paraguay generally have insufficient implementation capacities for a project of the dimension and complexity like PROEZA. The line agencies that were initially considered to serve as implementing agencies for the project - the Ministry of Agriculture's National Directorate for the Coordination and Administration of Projects (DINCAP), and the National Forestry Institute (INFONA) - are currently unable to implement a project like PROEZA. Therefore, an innovative approach for project execution and

<sup>43</sup> Ibid.

<sup>44</sup> Oficina Nacional de Cambio Climático (2016). Plan Nacional de Adaptación al Cambio Climático.

implementation has been chosen that emphasizes institutional strengthening for INFONA, SEAM, VMME and SAS, particularly in the areas of strategic planning, project monitoring and oversight.

## E.5. Country Ownership

Beneficiary country (ies) ownership of, and capacity to implement, a funded project or programme

### E.5.1. Existence of a national climate strategy and coherence with existing plans and policies, including NAMAs, NAPAs and NAPs

Paraguay delivered its National (2001), Second (2011) and Third (2016) National Communications, its Intended Nationally Determined Contributions (INDCs) in 2015 and Biennial Update Report (2015) to the UNFCCC, which it ratified in 1993. Although it does not currently have a NAMA, the National Adaptation Plan (NAP) was launched in October 2016 and includes NAPAs for implementation by sectors.

The GoP's first National Development Plan 2014-2030 (PND 2030) marks the priorities and lines of action for all government sectors. The PND centers public policymaking around three strategic pillars: 1) Poverty Reduction and social development, 2) Inclusive economic growth, and 3) Insertion of Paraguay in global markets. Each strategic pillar interacts with four cross-cutting themes, one of which is environmental sustainability. Finally, the Plan includes several guiding strategies under each pillar, some of which include a sustainable and adequate habitat, valuation of natural capital, and sustainability of the global habitat.

The PND 2030 is the basis for the country's INDCs: a 20% reduction of emissions projected to 2030 (10% unilateral, 10% conditional; Baseline: GHG Inventory Presented in Second National Communication, 2000). The INDCs highlight several economic, social and environmental objectives related to CC mitigation and adaptation identified in the PND 2030. PROEZA aims to directly address some of these objectives, such as: effective control of deforestation, increase coverage of forest areas and protected biomass, increase of national income through sale of environmental services, increase of renewable energy use by 60% (% of participation in the energy matrix), reduction of fossil fuel use by 20% (% of participation in the energy matrix), and increase in efficiency of productive farming systems. Furthermore, PROEZA will directly contribute to the following lines of action established in the PND 2030: "Promotion of sustainable forest management of ecosystems, boost afforestation activities for protection and income generation, for the reduction of illegal deforestation and forest degradation" and "Manage risks associated with variability and climate change: Development of prevention mechanisms and risk mitigation, with a new focus on productive management essential to a renewed, protected, sustainable and competitive agriculture".<sup>45</sup>

The National Reforestation Plan (NRP) establishes a general goal of 450,000 ha of forest plantations by 2030: 290,000 ha of which are destined for timber production, and 160,000 ha for energy purposes. The implementation of the NRP enjoys political priority at the highest level (declared of National Interest by Presidential Decree) and is understood not only as a tool to stimulate the economy, balance the energy matrix, contribute to mitigation of GHGs and underpin family farmers' adaptation to CC, but also as an important tool to combat rural poverty.

CC Adaptation is a national priority, particularly in the following sectors: water resources, forests, agriculture and livestock production, energy, land-use planning, infrastructure, health and sanitation, risk and natural disaster management, and early warning systems. Paraguay's ratification of the Paris Agreement in 2016, demonstrates its belief that economic development can go hand-in-hand with emissions reductions. Paraguay reaffirms Principle 7 of the Rio Declaration on "common but differentiated responsibilities," and calls for parties to progressively increase their ambitions so as to prevent global temperatures from surpassing the 2°C threshold.<sup>46</sup>

PROEZA activities will support and strengthen implementation of several national strategies and programs as described above, particularly the cross-cutting issues of Poverty, Reforestation, Energy and CC, in line with Paraguay's PND as well as its NDCs. The country's regulatory framework and the interest of major groups of agricultural exporters in certifying their compliance with current environmental legislation and their products as "deforestation-free" are the basis for

<sup>45</sup> Secretaría Técnica de Planificación (2014). Plan Nacional de Desarrollo 2014-2030.

<sup>46</sup> Oficina Nacional de Cambio Climático (2016). Posición Nacional.

projecting that private investment in multifunctional close-to-nature planted forests of native and exotic species will be important in the future.

#### E.5.2. Capacity of accredited entities and executing entities to deliver

FAO is the Accredited Entity and also will act as Executing Entity. FAO has been accredited to act as Implementing Entities for GCF financed projects. FAO, is an international organization whose main goals are the eradication of hunger, food insecurity and malnutrition; the elimination of poverty and the driving forward of economic and social progress for all; and the sustainable management and utilization of natural resources, including forest, land, water, air, climate and genetic resources for the benefit of present and future generations. FAO has 194 member states and one member organization (the European Union).

FAO has supported projects for climate adaptation and mitigation, and has led and managed numerous CC related GEF projects, including: (a) “Sustainable management of tuna fisheries and biodiversity conservation” (USD 177.9 million); (b) “Delivering sustainable environmental, social and economic benefits in West Africa through good governance, correct incentives and innovation” (USD 33.4 million); and (c) “Strengthening national policy and knowledge framework in support of sustainable management of Brazil’s forest resources” (USD 65 million).

FAO has a long-lasting cooperation on forest matters including the UN-REDD Programme (in LAC, FAO delivers approx. USD 100 million). FAO cooperation in Paraguay on forest matters refers to the support for designing the National Forestry Law and subsidiary legislation, Strengthening the National Forest Institution (INFONA), formulation of the National Forest Policy and also the Plan for Facilitating the Forest Investments, participation in the process of designing the REDD Strategy, and the implementation of the last National Forest Inventory, among others.

The FAO country office in Paraguay is authorized to conduct all the financial, administrative and management processes for the implementation of the FAO projects funded by different donors with the support of the FAO regional officers based in Santiago, Chile. The regional office has a team of forestry officers and consultants that are already available for the implementation of the project, in coordination with the Forestry Department Staff of the FAO Headquarters.

#### E.5.3. Engagement with NDAs, civil society organizations and other relevant stakeholders

The Ministry of Planning (STP) took a leading role as the Paraguayan NDA in the coordination of the project design and the stakeholder engagement strategy. After having solicited support from FAO and the World Bank in March 2016, the STP utilized a three-prong strategy to ensure ownership of the PROEZA funding proposal and the inclusion of multiple stakeholders. The strategy included:

1. The PROEZA Working Group: An inter-institutional working group was created, comprised of professionals from institutions with a direct national mandate to implement the following priority national programs: the Climate Change National Policy, the National Reforestation Plan, the Poverty Reduction Program “*Sembrando Oportunidades*” and the National Development Plan. These institutions are INFONA, MAG, SAS, SEAM and VMME-MOPC.
2. Consultation with Multiple Stakeholders: An open consultation process was used in which civil society organizations and forestry, agriculture and industrial sector associations provided their input to the funding proposal. Input was received from the NGO and private trade association communities, such as the Paraguayan Federation of Wood Manufacturing companies (FEPAMA), and the Paraguayan Livestock Association (ARP). A series of workshops were held in PROEZA’s proposed intervention zones. The purpose was to share specific information regarding PROEZA implementation with local community leaders who could add local knowledge to the project’s proposal.
3. Political Validation: The project proposal was validated within existing Paraguayan decision-making processes and institutions such as the National Economic Team, the National Climate Change Commission and the Poverty Eradication National Coordination Program “*Sembrando Oportunidades*”.

Through its efforts to create the original innovative concept of merging poverty alleviation and economic development through forestry projects with mitigation and adaptation activities to reduce CO<sub>2</sub> levels, the STP has led the funding proposal

process from the beginning and engaged relevant stakeholders from a variety of levels and sectors. A document summarizing the beginning of this process and the inputs from the participants are included in Annex E.3.

Stakeholder engagement plan during project implementation: The stakeholder engagement plan contemplates conducting bi-annual meetings at the national, regional and local levels, open to all who are interested from the public and private sectors, and NGOs and the public at large, as well as beneficiaries. Beneficiaries will also have the opportunity to provide direct feedback during project monitoring activities, which will be conducted on a quarterly basis. The organizational chart also reflects civil society participation in the project's Executive Committee to supervise the project's execution. The project will also distribute and socialize existing anti-corruption mechanisms, such as the National Anti-Corruption Secretariat's website. The project proposes the following threefold strategy to ensure stakeholder engagement and reporting during the implementation of the project:

a. On the ground via direct contact with beneficiaries: The Paraguayan government, through the EC institutions, will assign local coordinators in each of the 64 districts where the beneficiaries are located. These local coordinators will be selected through a specific application process within the national government and will be the main point of contact with other social and technical professionals working with the beneficiaries. Their main role will be to ensure that the implementation of the project goes according to plan and to facilitate access to local services and communication with local authorities and service providers.

The Paraguayan government has ample experience with these types of on-the ground stakeholder engagement models through the SAS *Tekoporã* "Family Guides" where social workers directly assist beneficiaries with the conditional cash transfer program. Also, in the past two years, the Paraguayan Government implemented an innovative approach to social work through the National Volunteer Program, *Arovia*, where highly skilled professionals who recently graduated from university serve for 12-24 months working and living in the most vulnerable communities. Additionally, the INFONA, MAG, SEAM and other stakeholders have field-based technical staff who will be given a specific role to assist the beneficiaries in their communities and ensure they receive the best governmental and non-governmental support.

b. At the local level with the Local Development Councils: Paraguay recently received international recognition from the Open Government Partnership for its implementation of the Open Government Plan 2014-2016. Among its best practices, the Government of Paraguay facilitated the creation of 216 local development councils in 216 of 250 municipalities nationwide in a two-year period. The local development council is a space where the local governments, along with representatives of the private sector and civil society design, implement and monitor their local development plans through a participatory and transparent process. PROEZA will connect beneficiaries with the local development councils in order to ensure not only national ownership but also local engagement and oversight.

c. At the national level, through reports to the National Poverty Reduction Program "*Sembrando Oportunidades*" and the Climate Change National Commission: The GoP already has a national system to coordinate both poverty eradication and climate change mitigation and adaptation efforts. The PROEZA EC believes in strengthening the already-existing mechanisms instead of creating unnecessary and parallel processes. Therefore, there will be a constant interaction between the EC, the technical staff and the Program, and with the National Climate Change Council to ensure the NDCs, the NRP and the PDN are coordinated with PROEZA.

## E.6. Efficiency and Effectiveness

Economic and, if appropriate, financial soundness of the project/programme

### E.6.1. Cost-effectiveness and efficiency

The total Project costs are estimated to be of US \$ 118.6 million of which US \$ 44.5 million are requested from the GCF. The estimated emission reduced and avoided are 9.5 million t CO<sub>2</sub>eq. resulting at a cost for GCF of 5 US\$ / t CO<sub>2</sub>eq (see also Sections E.1.2 and E.6.5).

The PROEZA Project is sound from a financially as well as from an economic perspective (please refer to Sections E.6.3, F.1 and Feasibility Study in Annex B).

#### E.6.2. Co-financing, leveraging and mobilized long-term investments (mitigation only)

With the US\$ 44.49 million investment from the GCF, US\$ 24.80 million will be leveraged from the Social Action Secretary, Environment Secretary and National Forest Institute. Also for the component II, the National Development Bank and the Development Financial Agency will ensure the availability of US\$ 49.33 through national concessional loans for private sector, focus mainly on mitigation. The total co-financing will be in amount of US\$ 74.13. This corresponds to a 1:1.6 ratio in resource leverage.

As the government is pursuing a total intervention period of 10 years including PROEZA phase (5 years), this longer period has been used to estimate the exit strategy in which is expecting to leverage US\$ 213.3 million additionally.

In this sense, it is expected that the US\$ 44.49 million investment from the GCF will leverage in 10 years an amount of US\$ 287.4 million. It corresponds a ratio of 1:6.5 in resource leverage.

#### E.6.3. Financial viability

Financial viability of all the planting models proposed are thoroughly described and analyzed in the Feasibility Study. Section E.6.4 includes summaries of the models for both components and the internal rate of return (IRR) for each. Financial Viability is discussed in Section F.1 below.

For Component 1 it is evident that all but the agroforestry citrus model are financially viable with IRRs above the discount rate (i.e. 9.7%) for their respective base-scenarios. Beyond the intrinsic financial worthiness of the modeled systems, when including E-CCT the financial viability from the producer's perspective increases considerably creating a strong incentive for long-term investment, landscape restoration and sustainable local economic development. This is of particular importance when dealing with poor populations without access to financing and longer-term investments where short-term net financial returns provide insufficient incentive to adopt the new systems.

The IRR for the models proposed in Component 2 are all above the discount rate for their respective base scenarios, while they are all below the discount rate when the period of analysis is reduced to 10 years. The calculation of the IRR for each of the three production models includes 20% of restoration area (riparian area, biodiversity corridors). Restoration in itself has a negative financial viability but affects the IRR of the productive models only marginally. Nevertheless, strong promotion and concessional credit will be needed to incentivize long-term investment in a context that is very adverse to invest at a term longer than one year.

#### E.6.4. Application of best practices

PROEZA will build upon best practices that have been developed in Paraguay during the last decade, through the introduction of climate smart agroforestry systems, planted forest and natural forest management at the small scale. A key stepping stone that the project builds upon is the *Manejo Sostenible de Recursos Naturales* Project (PMRN), which was implemented by MAG with technical and financial support from GIZ/KfW during 2003-2011 in Eastern Paraguay<sup>47</sup>. An analysis of this initiative includes the results of a survey and monitoring process with 9,000 farmers, as well as a level of achievement of 90% to 95% regarding forest management (7,100 ha), and an increase in yearly income by US \$200 (base US \$1,900/year). The majority of the farmers were convinced of the relevance of the native and planted forest for increasing their welfare and their income. All the farmers declared their interest in forest conservation and increasing the area of forest on their farms.<sup>48</sup>

Meanwhile, FAO, with support from PROFOR, has researched and documented case studies of best practices of *Close to Nature Planted Forests* (CTNPF) in Latin America, including Argentina, Ecuador and Paraguay. CTNPF are forest plantations generally established with more than one tree species, often native, adapted to the site and its ecological conditions. These forests are often vertically structured in more than one layer (both above and below ground), and may be

<sup>47</sup> MAG-GIZ-KfW 2011: Forest Management and Conservation Agriculture. Experiences of smallholder farmers in the Eastern Region of Paraguay <http://www.fao.org/publications/card/en/c/79003f0d-836a-532c-8fd6-1448bb9cc6fa/> ).

<sup>48</sup> Final report. Sustainable Management of Natural Resources Project (PMRN). Identification of the forestry impacts of the PMRN. AGE – International Consulting Services, Eco Consulting Group, Unique – The Forestry Consultants (2009)

unevenly aged. They may be managed by several management practices such as the mixture of coppice and planting, and provide a range of products and environmental services<sup>49</sup>. While conventional tree plantations have primarily a “productive” function (wood, fiber, latex, others), CTNPF follows an alternative silvicultural approach that tries to balance multiple economic, environmental and social functions and values. An adequate diversity of functions in an ecosystem is considered a condition to achieve stability and resilience. Therefore, combinations of multiple species that provide a range of different functions, combined with good forest management contribute to increased resilience and stability since they balance productive, environmental and social functions. Since it is very difficult to conserve forests unless they are productive, it is very important that CTNPF are not seen as only fulfilling environmental functions. Sustainable production of wood, fiber, fuel and/or NTFPs is an essential function of close-to-nature-forest management. CTNPF should satisfy the requirements of local communities, for whom revenue from the forest is needed in order to sustain their livelihoods, maintain conservation and provide environmental public goods<sup>50</sup>.

The FAO project formulation team contracted UNIQUE Forestry and Land Use to gather and document the best agroforestry, CTNFP and NGFP practices suitable for the actual context of Eastern Paraguay. For Component 1, six different CTNPF and agroforestry production models were developed specifically for vulnerable households, while three models of NGFP were proposed for Component 2. These models are described and analyzed from socioeconomic, technical, financial and market aspects in the Feasibility Study (Annex B).

#### E.6.5. Key efficiency and effectiveness indicators

GCF core indicators	Estimated cost per t CO <sub>2</sub> eq, defined as total investment cost / expected lifetime emission reductions (mitigation only)	
	(a) Total project financing	US\$ 118,6 million
	(b) Requested GCF amount	US\$ 44,5 million
	(c) Expected lifetime emission reductions (30 years)	9.5 million metric tonnes of CO <sub>2</sub> eq
	<b>(d) Estimated cost per tCO<sub>2</sub>eq (d = a / c)</b>	<b>US\$ 13 / tCO<sub>2</sub>eq</b>
	<b>(e) Estimated GCF cost per tCO<sub>2</sub>eq removed (e = b / c)</b>	<b>US\$ 5 / tCO<sub>2</sub>eq</b>
	<i>(Methodology for calculation: please refer to Section E.1.2 above and Annex H)</i>	
	The GCF project “Priming Financial and Land Use Planning Instruments to Reduce Emission from Deforestation” in Ecuador estimated a cost of US\$5.53 per t CO <sub>2</sub> eq. but the emissions perspective in each of the programs is different. Ecuador’s focus is on agriculture and other activities to minimize deforestation whereas Paraguay’s main objective is to carry out afforestation/reforestation activities. Thus, the nature of the investments required to address each of these approaches is different. In the case of Paraguay, the afforestation/reforestation activities have a higher price tag than the actions proposed in Ecuador.	
	Meanwhile, the GCF project “Development of Argan orchards in Degraded Environment – DARED” in Morocco estimated a cost of US\$ 66.25 per t CO <sub>2</sub> eq. That project focuses on strengthening the Argan biosphere reserve by planting 10,000 ha of Argan tree orchards and aims to relieve anthropogenic pressure on the natural Argan forest while improving livelihoods. Like Paraguay, activities in the Morocco project support the establishment of intercropping farming system based on planting of trees.	
	According to the World Bank <sup>51</sup> on voluntary markets trends, the majority of emissions (85 %) are priced at less than US\$10/t CO <sub>2</sub> , which is considerably lower than the price that economic models have estimated is needed to meet the 2°C climate stabilization goal recommended by scientists.	
Expected volume of finance to be leveraged by the proposed project/programme and as a result of the Fund’s financing, disaggregated by public and private sources (mitigation only)		

<sup>49</sup> Kanowski, 1997, in FAO 2009

<sup>50</sup> FAO 1992, based on Wormald W.T. et. al.

<sup>51</sup> <http://www.worldbank.org/content/dam/Worldbank/document/Climate/State-and-Trend-Report-2015.pdf>

	<p>The project is expected to leverage USD US\$ 118.6 million in a five-year period, which will allow to establish incentives to mitigate climate change while increasing at the same time the resilience and adaptation to climate change of poor and extremely poor people households. This project is highly supported by the Government that will co-finance the project in amount of US\$ 74.1 million. The expected contribution of the GCF as a grant is in the amount of US\$ 44.5 million.</p>
<p>Other relevant indicators (e.g. estimated cost per co-benefit generated as a result of the project/programme)</p>	<p>Please refer to next section F.1</p>

## F.1. Economic and Financial Analysis

**Economic Analysis:** This economic analysis considers the public goods the project will generate that are not yet recognized by the local and national markets, including climate benefits, carbon sequestration and storage benefits, watershed values, and existence values. This analysis separates the benefits of carbon sequestration and storage from other broader climate benefits, and only considers direct improvements of the area affected; other secondary impacts, like broader improvement of governance and forest management, have not been accounted for as benefit attribution is challenging. The following assumptions were made for quantifying costs and benefits:

**Climate and carbon:** The incremental carbon benefits were modelled over a period of 30 years although it is expected that project impacts would endure longer. A shadow value of US \$70/tCO<sub>2</sub> was used, per the official guidance for the social value of carbon<sup>52</sup>. Carbon sequestration and storage values of forest ecosystems are different from climate regulation benefits, broadly encompassing adaptation and resilience services. Climate regulation benefits are additional values provided by forest ecosystems. According to a case study in Cameroon<sup>53</sup>, associated values ranged from US \$842 to US \$2,265 per hectare per year (ha/year), while in another study<sup>54</sup>, values for the same service ranged from US \$360 to US \$2,200 per ha/year. This analysis assumed a very conservative baseline value of US \$50/ha/year.

**Watershed values:** Pearce (2001) values watershed benefits for tropical forests between US\$15 and US\$850 per ha/year, with the higher-bound value corresponding to tropical forests. The World Bank estimates watershed values at US\$27/ha/year for developing countries. This analysis assumed a conservative baseline value of US \$27/ha/year.

**Existence values:** Estimates associated with sheer preservation value of tropical and sub-tropical forests show a wide variety of values in the literature. One reference<sup>55</sup> uses a contingent valuation study that looked into the willingness to maintain conservation units in the Amazonia among a sample of people in the United Kingdom and Italy. The results put the average value at US \$50 per ha/year for the 5% option, and US \$67 per ha/year for 20% alternative. When the order of the questions was inverted (first 20%, followed by 5%) the results were different, at US \$36 per ha/year for 5%, and US\$50 per ha/year, 20%. TEEB (2009) estimated existence values at US \$43 per ha/year, while Pearce et al. (2001) provided a range of existence values between US \$2-12/ha/year. This analysis used the lowest reference, US\$2/ha/year.

**Methodology:** A threshold analysis identifying the break-even point where the project's net benefits equal net costs was performed. In addition to applying conservative values for the quantitative assessment, a sensitivity analysis was undertaken with respect to key simulation parameters, most notably the discount rate and benefit assessment. Alternative discount rates of 5%, 10%, and 20% were used, and the results were tested against benefit reductions of 20% and 50%. Quantitative results were contrasted to qualitative benefits to arrive at overall project feasibility.

The economic cost/benefit analysis was based on the incremental flow of net benefits from the "with-" and "without-" project scenarios. The "with" scenario assumed that the baseline area for re- and afforestation was zero (no forest ecosystem prior to project intervention). For improved management, an increment of 25% in area was assumed. A 15-year and a 20-

<sup>52</sup> Shadow value based on World Bank guidance (2016) since the market price of carbon does not reflect the social value of carbon storage of forests.

<sup>53</sup> TEEB, 2009

<sup>54</sup> Pearce et al., 2001

<sup>55</sup> Horton et al., 2003

year period of analysis were used. While Project costs are spread over 10 years, economic benefits would be generated beyond the Project.

**Results**

The results of the analysis are summarized in the Table below. The Project would be a worthwhile investment from society’s perspective. The results are significantly robust with respect to variations in key parameters. Using a 20 years’ time horizon, only the most extreme and unlikely scenario (50% benefit reduction and 20% discount rate) proved to not be economically feasible. In the shorter time horizon, all but those with 50% benefit reduction proved economically feasible.

<b>Benefits (15 year project benefits, incl. project implementation years)</b>						
	<i>Baseline</i>		<i>Baseline (-20%)</i>		<i>Baseline (-50%)</i>	
	NPV	BC-Ratio	NPV	BC-Ratio	NPV	BC-Ratio
<b>Discount Rate 5%</b>	245,311,532	2.430	142,946,253	1.944	-10,601,666	0.960
<b>Discount Rate 10%</b>	178,447,400	2.183	102,624,070	1.746	-11,110,926	0.945
<b>Discount Rate 20%</b>	83,171,340	1.780	42,006,482	1.424	-19,740,805	0.839
NPV = Net Present Value						
BC-Ratio = Benefit Cost Ratio						
<b>Benefits (20 year project benefits, incl. project implementation years)</b>						
	<i>Baseline</i>		<i>Baseline (-20%)</i>		<i>Baseline (-50%)</i>	
	NPV	BC-Ratio	NPV	BC-Ratio	NPV	BC-Ratio
<b>Discount Rate 5%</b>	381,081,140	2.430	251,561,939	1.944	57,283,138	1.215
<b>Discount Rate 10%</b>	237,367,405	2.183	149,760,073	1.746	18,349,076	1.091
<b>Discount Rate 20%</b>	95,671,136	1.780	52,006,319	1.424	-13,490,906	0.890
NPV = Net Present Value						
BC-Ratio = Benefit Cost Ratio						

**Financial Analysis:** The financial cost-benefit of each of the ten production models proposed by the Project was assessed, based on the technical information presented in the Feasibility Study (Annex B). The projected stream of costs for each model included all expected establishment and maintenance expenses, while the stream of benefits accounted for all expected revenues from the sale of wood/timber and other products (e.g. citrus and mate). Both costs and revenues were estimated using market prices for inputs and outputs. To be able to compare financial indicators between models, the net income was estimated in a per hectare basis. The analysis was done using a discount rate of 9.7%. Financial indicators were estimated using two different periods of analysis: the base scenario of 30-years horizon (considered ideal for the type of investments), and 10-years (to indicate short-term financial feasibility before full revenues are generated).

Under their base scenario all productive models, with one exception, proved to be financially feasible. For these, Net Present Values (NPV) and Internal Rates of Return (IRR) ranged from US \$27.48 NPV per hectare and 10.4% IRR, to US\$1,190.05 NPV per hectare and 20.93% IRR. Climate-smart agriculture (forest and citrus) proved not to be financially viable, with US \$ -267.84 NPV per hectare and 7.4% IRR. Under the reduced 10-year horizon scenario, only two of the six models proved to be financially feasible: (i) multifunctional planted forests with 20% native species with US \$62.64 NPV per hectare and 11.02% IRR; and (ii) climate-smart agroforestry-mate with US \$ 346.66 NPV per hectare and 15.94% IRR. Indicators for all others ranged from US \$ -548.19 to US \$ -110.20 NPV per ha, and IRR -2.36% to 1.40%. Meanwhile, all four models for Component 2 proved to be financially viable under their base scenarios, with the NPVs ranging from US \$526.87per hectare to US \$738.70, and IRRs from 11.77% to 13.40%. Under the reduced 10-year horizon, all 4 models proved financially unfeasible, with NPVs ranging from US \$ -1,875.47 to US \$-405.57 per hectare.

The fact that most models under the 10-year horizon scenario are financially unfeasible supports the need to provide grant financing to beneficiaries from the time when production systems are established to the time when their revenues normalize. As project beneficiaries live in poverty and do not have access to credit financing, much less to credit financing for long-term investments, they cannot afford to forego the opportunity value of their labor without grant-support.

## F.2. Technical Evaluation

Agroforestry, afforestation and landscape restoration: As described in Sections C.3 and E.6.4, PROEZA will build upon best practices that have been developed in Paraguay during the last decade regarding climate-smart agroforestry systems, planted forest and natural forest management at the small scale: a yearlong experience of technical and financial cooperation supported by the FAO, the GIZ, KfW and the WB (PRODERS); and the *Manejo Sostenible de Recursos Naturales* Project (PMRN), which was implemented by MAG with technical and financial support from GIZ/KfW during 2003-2011 in Eastern Paraguay<sup>56</sup>. PMRN proved highly successful in terms of the adoption of effective forest management techniques, increases in annual income, and creating awareness and interest in local farmers to restore and increase forested areas in their farmlands. Only those models with the highest success and adoption prospects have been selected, evaluated and updated as described in PROEZA's Feasibility Report (Annex B). Their adoption by the beneficiaries is expected to increase through the innovative combination of the two incentive schemes: Social Conditional Cash Transfers (CCT) with a top-up by the Environmental Conditional Cash Transfers (E-CCT). This combination is expected to have a strong synergistic effect of adoption of the models and thereby a strong impact on increasing the CC resilience of the extreme poor and vulnerable.

Improved cooking stoves: Locally produced/built improved stoves are available throughout the country and a number of institutions support programs to disseminate them, including MAG and SAS, as well as several NGOs. The improved cooking intervention models are based on the local artisanal construction of *Fogones Paraguayos*, a brick/mud structure with metal griddles and a metal box oven fitted with a chimney. Most government programs provide the materials while the families have to provide the labor to build the *fogones*. Unfortunately, the builders often are not properly trained or certified, thus risking expected efficiency. Furthermore, the variability of performance from stove to stove may collectively complicate estimating results and impact of the intervention. Thus, it will be crucial to partner with NGOs that can support capacity building, help control quality and program monitoring. Training and certification programs for builders to guarantee the quality of stoves, as well as minimal levels of acceptable performance standards, will be needed. Best practices will be incorporated from *La Buena Cocina* program 2012-18, a collaboration between MEDA Paraguay and NatureOffice Germany that aims to reduce emissions through the introduction of efficient *fogones* in the San Pedro Department. Priority to improve cooking stoves will be given to female-headed/widow-headed/adolescent-headed.

## F.3. Environmental, Social Assessment, including Gender Considerations

PROEZA will follow the FAO Environmental and Social Management Framework (ESMF<sup>57</sup>). The Project is consistent with a MODERATE classification in the context of the FAO Environmental and Social Standards. Annex E.2 provides detailed analysis of the Environmental and Social Management Framework, including Gender assessment and Gender action plan.

Positive environmental impacts are expected from the restoration of over 50,000 ha. of Paraguayan Interior Atlantic Forest with high levels of threatened biodiversity. These include increases in carbon stocks, reduced emissions from native forest firewood sources from biomass plantations, and reduced soil erosion among other impacts. Positive socio-economic impacts are expected to reduce poverty through increased incomes and employment from forest and agro-forest plantations, increased resilience to extreme climate events, and reduced household costs for biomass energy from wood and improved stoves.

Negative environmental impacts are expected to be localized, small-scale, and manageable since Component 1 plantations are designed to cover approximately 1 hectare per family with primarily native species appropriate to the ecosystems in

<sup>56</sup> MAG-GIZ-KfW 2011: Forest Management and Conservation Agriculture. Experiences of smallholder farmers in the Eastern Region of Paraguay <http://www.fao.org/publications/card/en/c/79003f0d-836a-532c-8fd6-1448bb9cc6fa/> ).

<sup>57</sup> <http://www.stp.gov.py/v1/marco-ambiental-y-social-del-proyecto-proeza/>

which they are planted. These could include worker health and safety from plantation activities such as pruning of trees and pest-management, thus activities will ensure proper planning and mitigation measures will include training in pest management and worker health & safety.

Component 2 plantations are designed to be medium scale (hundreds of hectares) interspersed in a very extensive landscape (“NGFP”) of Eastern Paraguay with native ecosystem forest buffers to ensure ecosystem connectivity. Exotic plantations will need to comply with Environmental and Social Standards (ESS) 1 and ESS 2 to qualify under the carbon benefits of the project. The biomass plantations would be required to seek certification. These standards would require both social and environmental impacts to follow principles of best management in forestry including compliance with labor law (ESS 7), ensure rights of indigenous people (ESS 9), consideration of community relations and land tenure issues (ESS 6), proper use of chemicals and pesticides (ESS 5) as well as minimize the potential for spreading invasive species, impacting native ecosystems, among others.

Activities will include the procedures and institutional arrangements for reviewing investments in biomass plantations and ensure compliance with national legislation on environmental assessment and ESS requirements (1-9 as applicable), especially the need of plantations to acquire third-party certification. This due-diligence will be carried-out under Component 2 for all plantations from parallel financing investments that seek to be included in the project’s GCF carbon accounting. Component 3 includes project management and capacity-building measures to strengthen the capacity for oversight, monitoring, and evaluation of safeguards, as well as support proper implementation through quality technical assistance.

Potential negative social impacts could include a lack of equity in access to project investments and loss of plantations and associated income from fire or disease, among others. Measures will be included to ensure that beneficiaries are selected equitably and ensure participation of women and youth in project activities and investments. Gender sensitive design (ESS 8) of activities will pay special attention to the designated recipient of ECCT, who decides the use of these additional resources, and what implications additional activities may have on time of women and youth. Project design will ensure adequate plantation periods and technical assistance to minimize risk from loss of plantations.

**Tenure Rights:** PROEZA will apply the principles and procedures of FAO’s Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of Food Security<sup>58</sup>. The potential beneficiaries of Component 1 are the 110,678 poor and extremely poor households registered in *Tekoporã*, 67% of which declare to have access to land<sup>59</sup>. These vulnerable households include beneficiaries of the agrarian reform, mostly small-scale farmers with less than 10 ha, which represent 64% of the national population<sup>60</sup> and Indigenous communities (354 communities in the project area represent 71% of total Indigenous communities). INDERT has the mandate to support the beneficiaries of the agrarian reform by providing them with access to land at subsidized prices, for which the beneficiary receives an adjudication of land. INDERT has started an independent and automatized project of massive regularization of the settlements (SIRT). The status of 167 settlements (486,880 ha) in the project area will be reviewed under the SIRT; INDERT expects adjudication of 60% of these by mid-2018 and completion within five years. In the project areas, 260 indigenous communities possess 196,587 ha of titled land of which 103,787 ha have forest cover. However, 94 communities are either without title for the lands they occupy, or do not possess land. PROEZA will provide technical assistance to promote the resolution of their legitimate rights to be acknowledged and recognized in a sustainable manner.

**Social Safeguards:** ESS 9 on Indigenous Peoples (IP) and Cultural Heritage is applicable to the project. A consultation process has been designed to ensure that the sub-projects/investments comply with ESS requirements in regard to ensuring identification, mitigation, and management of any negative impacts as well as generate positive impacts for IP where applicable under ESS 9. This process began with a socialization meeting with key community representatives in which the communities have provided feedback on the roadmap for the consultations process and overall comments about the project design mainly expressing interest on the environmental services to be generated that are important for their livelihoods.

<sup>58</sup> <http://www.fao.org/docrep/016/i2801e/i2801e.pdf>

<sup>59</sup> STP, Ficha Social

<sup>60</sup> MAG Censo Agropecuario 2008

This information and further information about the consultation process could be found in annex E. PROEZA will provide positive benefits for IPs as the design considers them among the primary beneficiaries since they are among the most impoverished groups of inhabitants of Eastern Paraguay. PROEZA seeks to ensure that outreach, timing, and forms of consultations are appropriate and based on positive experiences of other similar programs in regards to their own customs, community need and traditional knowledge (e.g. GEF and PRODERS projects).

FAO has established a Gender Equality Policy (see Annex E.2), as it considers that the promotion of gender equality and women's empowerment are key elements to eradicating hunger and poverty in the world. As such, FAO's actions must: i) Incorporate gender analysis in the formulation of all field programs and projects, ii) All program evaluations and reviews fully incorporate gender analysis, and the areas reviewed report on gender impacts, iii) Ensure that the needs and priorities of rural women are documented, heard, and channeled in all processes that FAO leads and supports, iv) Ensure that none of FAO's efforts perpetuate gender inequalities or aggravate discrimination against women.

Gender action plan: Given that this project has women beneficiaries living in poverty and extreme poverty, PROEZA has developed a gender action plan (Annex E.2) to contribute to equal access and control over jobs and decent income, land and other productive resources, as outlined in the FAO Gender Equality Policy. The Plan is prepared based on the template provided by GCF and focus on the rural women, including indigenous women. It has been considered also the country's legal framework, which makes the State responsible for promoting equality between women and men. Baseline data regarding the influence they have on their economic autonomy and poverty situation show that an average of 42% of the poor and extreme poor households are female headed (see C.2 and maps in Annex F). Based on these realities and differentiated needs, actions will be proposed to the beneficiary women that will contribute to their empowerment and equity between women and men.

#### F.4. Financial Management and Procurement

With regard to Procurement, the primary fiduciary responsibilities will be carried out in an efficient and professional manner by FAO following up its covenants, rules and standards.

As outlined earlier, FAO will act as Accredited Entity and fiduciary agent to the GCF, and as such will be responsible for funds disbursement from the GCF to the project, as well as accountability and reporting on use of financial resources. Following GCF Board approval, the FAO will support GoP efforts to prepare the final PROEZA Project Operations Manual and Procurement Procedures Manual for the Executive Committee's approval, and conduct start-up training events for the project prior to effectiveness. During project implementation, FAO will provide institutional strengthening services, particularly to EC member ministries and public offices, in the areas of strategic planning, technical oversight, financial management and procurement.

Procurement and Financial Management Standards will follow FAO norms and guidelines. To assure quality of project outputs, EC will conduct random sample (10%) monitoring of indicator progress in the field on an annual basis, and take follow-up administrative actions as necessary in coordination with FAO.

Acquisitions for goods or services, including inputs for the implementation of the project, training and consulting, and financial services will be governed by applicable FAO guidelines, in accordance with the procurement plan presented in this proposal, and in accordance with the Procurement Manual to be developed prior to project effectiveness. The PMU will produce quarterly financial and procurement reports and send them to the EC for review and action, as necessary. Monitoring of the successful planning and achievement of project objectives will be done by INFONA and SEAM. PROEZA would support both institutions to strengthen this strategic, non-outsourcable function, aiming to obtain ISO 9001 certification for all the processes related to the Project.

### G.1. Risk Assessment Summary

In general, the project brings positive impacts at social, economic, environmental and institutional level. However the risk has been considered MODERATE due to four main factors: i) buffer zones of national protected areas have been included in the project implementation area and therefore special attention will be put on the agroforestry practices to be promoted, ii) the Project involves planted forest development, iii) the project involves the procurement or provision of pesticides, and iv) indigenous populations are among the direct beneficiaries and therefore some specific considerations for the implementation should be taken and further development during the implementation phase (continuing with the consultation and engagement process). These factors have been extensively approached on Annex E.2, item 8. Risk classification..

### G.2. Risk Factors and Mitigation Measures

#### Selected Risk Factor 1

Description	Risk category	Level of impact	Probability of risk occurring
<b>Political and Governance.</b> Multiple government line agencies fail to coordinate efforts and implement their respective legal mandates.	Other	High (>20% of project value)	Medium

#### Mitigation Measure(s)

- GoP has prioritized the concrete outcomes of this project in the NDP and the NDCs
- Capacity building helps to fill in skill gaps

PROEZA introduces mitigating measures by adoption of an institutional architecture that relies on contracted financial and technical services to deliver benefit packages to rural recipients while government agents focus on policy, legal frameworks, compliance and oversight. This approach helps build both government capacity and inter-ministerial collaboration. The WB and FAO teams have worked closely with the EC representatives to incorporate into the project various benefits from collaboration: sharing knowledge and data to ensure accurate targeting of vulnerable households; focusing EC roles on implementation of their respective legal mandates; supporting capacity building through application of both GCF grant and Accredited Entity fees. In addition, the project design has been agreed on by a broad range of stakeholders, including EC national agency counterparts and CSO participants. The process of consultation with CSOs and Indigenous Communities will continue during the due diligence process following GCF Board approval. The risk is partially mitigated with the proposed design but not eliminated. The risk is lowered from high to medium based on the proposed design.

#### Selected Risk Factor 2

Description	Risk category	Level of impact	Probability of risk occurring
<b>Technical Design of PROEZA.</b> Line agencies working across several sub-national jurisdictions fail to collect and share information required for physical and financial progress in a timely, complete and verifiable manner.	Technical and operational	High (>20% of project value)	Medium

#### Mitigation Measure(s)

- Line agencies focus limited human and financial resources on monitoring and verifying progress reports provided by contracted service providers
- Advisory Councils at national and sub-national levels provide timely and independent feedback on implementation

EC representatives played a central role in project design and will play an equally important role in oversight, monitoring and legal framework compliance during implementation. EC will provide in coordination with FAO, the technical review of TORs for technical, social and financial service providers. The risk is partially mitigated through the proposed technical design but not eliminated. The risk is lowered from high to medium based on the proposed design.

<b>Selected Risk Factor 3</b>			
Description	Risk category	Level of impact	Probability of risk occurring
<b>Institutional Capacity for Implementation.</b> Line agencies with legal mandates lack human and financial resources to complete the tasks required for beneficiaries	Technical and operational	High (>20% of project value)	Medium
<b>Mitigation Measure(s)</b>			
<ul style="list-style-type: none"> <li>Adoption of a public-private partnership approach using contracted financial and technical services to deliver benefit packages to rural recipients</li> <li>Government line agencies focus on policy, legal frameworks, compliance and oversight</li> </ul> <p>This is mitigated via reliance on outsourced technical and procurement support (PMU). The PMU will be contacted to ensure adequate depth and breadth of technical, social and financial skills. EC will be the primary implementation coordination mechanism within the GoP. To avoid delays, EC capacity will be strengthened both before and during project implementation, but there is a risk that a) the appointment of key EC personnel may be delayed; b) limited technical capacity could delay decision making or signoff on progress reports; and c) there could be turnover in EC staff that would limit effectiveness of capacity building efforts. A workplan to ensure readiness requirements for implementation can be met is being prepared, including appointment of key staff prior to project effectiveness. The risk is partially mitigated with the proposed design but not eliminated. The risk is lowered from high to medium based on the proposed design.</p>			
<b>Selected Risk Factor 4</b>			
Description	Risk category	Level of impact	Probability of risk occurring
<b>Fiduciary.</b> Delays in project procurement and CSOs and Private Sector beneficiaries lose patience with slow implementation.	Technical and operational	High (>20% of project value)	Low
<b>Mitigation Measure(s)</b>			
<ul style="list-style-type: none"> <li>Contracting fiduciary services ensures adherence to approved project design and timely delivery of goods and services to beneficiaries</li> <li>Outsourcing financial and technical services increases transparency and accountability</li> </ul> <p>Reliance on outsourced procurement support mitigates these concerns. The contracted staff must demonstrate experience with procurement and financial management requirements. The risk is lowered from high to low based on the proposed design.</p>			
<b>Other Potential Risks in the Horizon</b> <i>Not applicable</i>			

## H.1. Logic Framework.

Please specify the logic framework in accordance with the GCF's [Performance Measurement Framework](#) under the [Results Management Framework](#).

### H.1.1. Paradigm Shift Objectives and Impacts at the Fund level<sup>61</sup>

Paradigm shift objectives						
Expected Result	Indicator	Means of Verification (MoV)	Baseline	Target <sup>62</sup>		Assumptions
				Mid-term (year 3)	Final	
<p><i>Shift to low-emission sustainable development pathways</i></p> <p>PROEZA promote incentives to mitigate climate change through planting fast growing trees in mixtures with valuable native species in an environmental friendly and socially responsible way at the same time that rural poverty and extremely poverty is reduced as a path to increase resilience and adaptation to climate change.</p> <p>On the other hand, PROEZA's adaptation strategy consists of supporting poor and extremely poor rural vulnerable households to increase their resilience to climate change through the diversification of production and options to increase family income through intensive social and technical assistance for the establishment of climate-smart agroforestry production systems and/or multifunctional "Close-to-Nature" planted forests (CTNPF) generating mitigation.</p>						
Fund-level impacts						
<i>M4.0 Reduced emissions from land use, reforestation, reduced deforestation, and through sustainable forest management and conservation and enhancement of forest carbon stocks</i>	M4.1 Tonnes of carbon dioxide equivalent (t CO2eq) emission reduced or avoided and/or GHG removals by sinks from forestry and land use activities.	INFONA/ SEAM /SLMS / NFMS /SAS reports supported by REDD+	0	~ 1.9	~ 4.1 million t CO2eq (4.4 million t CO2eq sequestered in biomass – 0.3 million t CO2eq emitted)	Deforestation and forest degradation rate in Paraguay does not increase due to human and natural impacts.
<i>A1.0 Increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions</i>	A 1.2 Percentage of population (and relative disaggregation of women and men)	Gender sensitive household survey ("Ficha Social" and "Ficha Hogar") carried out by the National Social Protection Program "Planting	0	1,05% (~ 71,000)	2,27% of national total population (~ 153,000 beneficiaries of which	The Government of Paraguay is able to sustain with continuity resources and political priority to poverty and extreme poverty alleviation.

<sup>61</sup> Information on the Fund's expected results and indicators can be found in its Performance Measurement Frameworks available at the following link (Please note that [some indicators are under refinement](#)): [http://www.gcfund.org/fileadmin/00\\_customer/documents/Operations/5.3\\_Initial\\_PMF.pdf](http://www.gcfund.org/fileadmin/00_customer/documents/Operations/5.3_Initial_PMF.pdf)

<sup>62</sup> Further calculation detail see Annex C and G Timetable of Project.

	adopting climate-resilient livelihood practices /options by sector (fisheries, agriculture, tourism, etc.).	Opportunities“(Sembrand o Oportunidades) of the STP/SAS.(number of vulnerable households that improve their livelihood conditions and escape poverty and extreme poverty)  Social, environmental, economic co-benefit index/indicator at impact level			76,000 are women - correspond to 30,000 poor and extremely poor rural households)	
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H.1.2. Outcomes, Outputs, Activities and Inputs at Project/Programme level						
Expected Result	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term (Year 3)	Final	
<b>Project / programme outcomes</b>	<b>Outcomes that contribute to Fund-level impacts</b>					
A 7.0 Strengthened adaptive capacity and reduced exposure to climate risks	A 7.1: Number of vulnerable households, communities, businesses and public-sector services using tools, instruments, strategies and activities to respond to climate change and variability	EC annual reports, midterm evaluation, final evaluation, impact assessment  INFONA /SEAM analysis of land cover changes in project areas.	0	~ 13,900	~ 30,000 vulnerable households establish the PROEZA 's plantation models	No major natural disaster, draught or forest fire occurs in the project area during project execution and for the next five years after project completion.
Cross-cutting	MCrC2 Technologies introduced (including gender –sensitive technologies) to effectively implement mitigation /Adaptation actions	Yearly and Project Georeferenced Completion Report from the Executive Committee to FAO on the successful adoption of CTNPF and NGFP forestry	0	4,500	7,500 household introduce improved cooking stoves (at least 50% for female-headed/wid	Energy availability and cost is stable.

		and agroforestry models  INFONA/ SEAM /SLMS / NFMS /SAS georeferenced reports supported by REDD+			ow-headed/adolescent-headed household)	
M 7.0 Lower energy intensity of buildings, cities, industries, and appliances	M7.1(d) tCO <sub>2</sub> eq emissions reduced or avoided as a result of reduced energy use through appliances	Report of the number of improved cooking stoves adopted by rural households including estimation of reduced fuelwood consumption and INFONA scenario analysis of forest degradation in stove distribution areas.	0	900,000	1.5 million t CO <sub>2</sub> eq reduced	Fuelwood continues to be an economic viable source for the households
M9.0 Improved management of land or forest areas contributing to emissions reductions	M 9.1 Total hectares of land or forests areas and percentage of land in relevant jurisdiction (by type: see below) under improved protection and leading to reduced GHG emissions and / or enhancement of carbon stocks respecting environmental and social safeguards	National Forest Information System (INFONA) based on georeferenced reports from the program	0	~ 22,500	~ 48,460 ha PROEZA's plantation models (24,460 ha of them ha with poor and extremely poor households)	No major natural disaster, draught or forest fire occurs in the project area during project execution and for the next five years after project completion.
	M 9.2 tCO <sub>2</sub> eq emissions reduced or avoided as a result of establishing PROEZA's plantation models		0	~ 2	~ 4.4 million tCO <sub>2</sub> eq emissions reduced and sequestered in biomass	
A5.0 Strengthened institutional and regulatory systems for low-emission and	A 5.1 Degree to which gender-sensitive policies, institutions, coordination	Enacted laws, norms, presidential decrees and ministerial resolutions Public servants from INFONA and SEAM	0	Regulations and instruments that operationalize payment for environmental services and incentives for afforestation, as also to	VMME and SEAM have continued interest to introduce new regulations and instruments  Trained public civil servants continue to work on their duty in the public sector	

climate-responsive planning and development	mechanisms and regulatory frameworks are effective for climate resilience.	trained in auditing, law enforcement and sanctioning Finance for climate smart plantation forestry available  Inter-ministerial Project Executive Committee resolutions		verify sustainable bioenergy consumption in place.  SEAM, INFONA and SAS have been trained and institutional capacity to enforce law has been strengthened, putting in place an ISO 9001 quality management system for processes related to the Project.	Stability and political willingness allow the government to fulfill its development and climate change adaptation/mitigation strategies
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Project / programme outputs	Outputs that contribute to outcomes					
<b>Component I: "Planting for the Future"</b>						
<i>A7.0 Strengthened adaptive capacity and reduced exposure to climate risks</i>						
<i>M9.0 Improved management of land or forest areas contributing to emissions reductions</i>						
1. Climate-smart agroforestry production systems and multifunctional "Close-to-Nature" planted forests (CTNPF) established 30,000 poor and extreme poor households in the project area.	Area (ha) of CTNP established, georeferenced, inventoried and mapped	National Forest Information System (INFONA) analysis based on georeferenced mid-term review and terminal evaluation reports.	0	5,300	At least 11,550 ha CTNPF with 20% native species	<ul style="list-style-type: none"> <li>• No major socioeconomic change that shifts away interest from vulnerable households to conserve and maintain their land</li> <li>• No major crisis in the financial system occurs No major legal and administrative changes occur that impede or hinder land titling</li> </ul>
	Area (ha) of CTNP established, georeferenced, inventoried, mapped		0	3,700	At least 8,000 ha CTNPF with 50% native species	
	Area (ha) of forest restored georeferenced, inventoried and mapped		0	700	At least 1,500 ha of natural forest identified, analyzed and restored.	
	Area (ha) of analog agriculture established georeferenced, inventoried and mapped		0	490	At least 1.050 ha of under canopy agriculture with mate	

				grass in natural forest	
Area (ha) of citrus agroforestry established georeferenced, inventoried and mapped		0	490	At least 1,005 ha of agroforestry systems with citrus	
Area (ha) of mate grass agroforestry established georeferenced, inventoried and mapped		0	630	At least 1,350 ha Yerba mate grass in agroforestry systems	
Percentage (%) of vulnerable households that participate in the project obtain legal support and financial assistance for improving land tenure security	Project base line and monitoring through National Social Survey from STP. Annual reports from EC to SC.	0	10%	At least 30% of beneficiaries that have access to the land they occupy obtain legal support and financial assistance for improving land tenure security	<i>Note: Currently 67 % of potential beneficiaries in the project area responded that they have access to the land they occupy</i>
Number of project trained beneficiaries that have improved their income by at least 12 %	Project base line with annual report of PMU to the EC, INFONA reports on forested areas of the Country.	0	2,000	At least 3,000 vulnerable households assisted to access the bioenergy and agroforestry produce markets	<ul style="list-style-type: none"> <li>• No mayor distortion in energy prices and changes in energy supply occur.</li> <li>• Coordination of technical assistance with the social assistance of SAS within the Project works.</li> </ul>
<p><i>Cross-cutting</i> M 7.0 Lower energy intensity of buildings, cities, industries, and appliances</p>					

2. More efficient and sustainable technology for domestic firewood consumption.	Number of vulnerable households that have acquired / build an improved cooking stove with project support	Project base line with annual report of EC to SC	0	4,500	At least 7.500 households	<i>Npte: Currently only 12% of vulnerable households have a cooking stove</i>
<b>Component II: Sustainable Landscapes and Responsible Markets</b>						
<i>M9.0 Improved management of land or forest areas contributing to emissions reductions</i>						
3. Certified “New Generation Forest Plantations” (NGFPs) through which high yield forest plantations will be combined with natural forests in biodiversity reserves and watershed protection strips established by medium sized land owners	Area planted by medium-scale land owners (ha)	National Forest Information System (INFONA) and Reports from the PMU	0	4,100	At least 8,800 ha of NGFP mainly for bioenergy production (includes 20% of restoration area)	<ul style="list-style-type: none"> <li>• Financial instruments and products are attractive for long term investment</li> <li>• Forest and environmental law enforcement and incentives in place</li> <li>• International markets continue to demand sustainably sourced products</li> <li>• Verification and control system for sustainable bioenergy and payment for environmental services scheme continue to have support by political decision makers</li> </ul>
	Area planted by medium-scale land owners (ha)		0	4,100	At least 8,800 ha of NGFP mainly for quality timber production (includes 20% of restoration area)	
	Area planted by medium-scale land owners (ha)		0	2,800	At least 6,200 ha of Silvo-pastoral NGFP production (includes 20% of restoration area)	
	Legal Forestry Reserve Certification from SEAM and INFONA (number of properties certified)	National Forest Information System (INFONA) and SEAM certification	0	20% (~ 2,200)	At least 20% of the target areas are protection forests along watercourses and biological	

					corridors in NGFPs with native species (~4,800 ha)	
<b>Component III: Good Governance and Law Enforcement</b>						
<i>A5.0 Strengthened institutional and regulatory systems for low-emission and climate-responsive planning and development</i>						
4. Normative adjustments and institutional changes needed to improve the business climate for afforestation approved	Percentage of outsourced project field interventions done by technical service providers have a Technical Control Report done by INFONA, SEAM and VMME	Half yearly report on trained public servants, control reports from oversight and control teams from INFONA, SEAM and VMME	0	10%	10% project field interventions control - reported	<ul style="list-style-type: none"> <li>• INFONA, SEAM and VMME have exclusively dedicated staff to control project field activities</li> <li>• Political support and political will to enforce environmental and forest legislation continues</li> </ul>
	Public incentive instruments for reforestation/afforestation, landscape restoration (including payments for environmental services) operative	Enacted laws, instruments and regulations.  Independent evaluation/report prepared for the EC	0	0	Payment for environmental services and incentives for afforestation, in place at the end of PROEZA.	
<b>Activities</b>	<b>Description (refer also to Section C.3)</b>					<b>Input (US \$)<sup>63</sup></b>
1.1. Select, hire and monitor the Project Management Unit (PMU) and the Environmental Cash Transfer Agent (ECTA)	Bidding and selection to identify and contract agencies to act as PMU and ECTA, under the general supervision of the Executive Committee and the oversight of FAO using internal control systems.					2,100,000
1.2. Provide support to improve governance and coordination and support the EC in leading the programme	FAOs support to project governance and interinstitutional coordination through the EC. Knowledge management and external evaluations, studies, consultancies and capacity development of staff, management and EMSS Execution.					2,396,698

<sup>63</sup> Cost for incidentals (5%) are not included as activities, but included separately in the budget in Annex. *Note: All the inputs (extensive list) could be reviewed in Annex B Technical and financial feasibility study and in Annex C integrated financial model.*

1.3. Provide assistance to vulnerable households through the Social Protection Programme	Social assistance and support provided by SAS to the vulnerable households through social workers deployed in the field in the project area.	6,218,182
1.4. Make social conditional cash transfer(CCT) Tekoporā / SAS	Operate cash transfer payments to support poor and extreme poor vulnerable households conditioned to social indicators within the social protection program Tekoporā	18,316,364
1.5. Provide technical assistance to beneficiaries	Provision of technical assistance to establish the chosen CTNPF/agroforestry plantation models, and provision of administrative and legal assistance to beneficiaries without land titles. Secure and enhance access to market of bioenergy and agroforestry products, to beneficiaries.	4,418,421
1.6. Make investments and wage payments to beneficiaries for the establishment of CTNPF, agroforestry and restoration models	Provision of inputs like seeds, tree saplings, fertilizers, etc. and payment for wages to vulnerable households for days worked in establishment of the plantation models according to established criteria.	23,423,503
1.7. Make environmental conditional cash transfer (E - CCTs) to beneficiaries	Delivery of E-CCT payments to beneficiaries upon successful implementation of the CTNPF/agroforestry plantation model(s) chosen by vulnerable households. Disbursement criteria linked to performances and survival rate will apply.	4,202,041
1.8. Operate forest administration, supervision and control in the project area INFONA)	Forest law and land use regulation enforcement in the project area and specifically on project beneficiaries to make sure afforested areas are kept with forest cover and well maintained.	199,091
2.1. Introduce improved cooking stoves	Provide technical support and advice to households to build or buy improved cooking stoves.	1,125,000
3.1 Offer incentives, credit and promote establishment of NGFPs to the private sector	Operate incentive payments and concessional credit lines for afforestation to small and medium land owners through AFD.	49,332,332
3.2. Make environmental controls (INFONA/SEAM)	Enforcement of forestry, land use environmental and sustainable bioenergy use regulations to NGPFs.	70,364
4.1. Support institutional capacity of INFONA, SEAM, SAS and VMME.	Provide vehicles, equipment and training in GIS software, forest monitoring and verification systems, financial administration systems for international cooperation funds; management, incentives and development of forest resources'	3,362,853
4.2 Review and strengthening the legal framework and promote certification systems.	Undertake legal review of forest incentive and payment for environmental services regulations, simplification of regulations and procedures. Support transparent institutional management systems with international certification Support studies, policies and regulation development for sustainable bioenergy production and consumption.	

*Note: All the inputs (extensive list) could be reviewed in Annex B Technical and financial feasibility study and in Annex C integrated financial model.*

## H.2. Arrangements for Monitoring, Reporting and Evaluation

PROEZA will apply FAO's standard M&E procedures and will be compliant with the GCF performance measurement framework. FAO will manage and coordinate reporting to the GCF according to its standards and procedures. PROEZA M&E comprises 3 key steps:

**Execution level:** M&E at the execution level is coordinated by the Executive Committee. The PMU. Data will be stored in a database accessible to the EC as well as to FAO. Georeferencing will enhance EC and FAO monitoring and evaluation potential and will allow national services INFONA/SEAM/SMLS/NSPP/GBEP (REF: Section H) to closely monitor outcomes' development and assess impacts and contribution to approved targets at midterm and completion. Additionally, it will enhance the capacity of the program to provide technical assistance to beneficiaries and monitor advancements and impacts. Georeferenced activities and resulting intervention areas will be also analyzed via remote sensing and photointerpretation techniques so to ensure Result Based M&E and support Result Based Management of the project. Results of the different analysis will be presented annually via a dedicated "Project's Implementation Atlas". Data, supervision reports and conclusions obtained by the above-mentioned process will be presented annually to the Green Climate Fund as well as to the other stakeholders.

**Supervision, Support and Evaluation level:** FAO will support the EC in reviewing and analyzing progress reports and to assess performances against baseline and targets. FAO will as well secure, according to its rules and regulations, financial control and midterm evaluation (year 3) and final evaluation phases via an independent and external evaluation expert.

**Strategic level:** Annual results and related analysis, jointly prepared by FAO and the EC, will form the base for each annual planning exercise via the AWPB. These will be presented to the EC in order to support its strategic role and to secure transparency and result based strategy development.

Additionally, in support of the above described steps, the project will ensure a constant monitoring of the following:

**Forest cover and carbon monitoring:** The National Forest Monitoring System (NFMS) of Paraguay has been developed under Paraguay's UN REDD National Joint Programme and is administered by INFONA and SEAM. INFONA is mainly responsible for the implementation of the National Forest Inventory (NFI) and the Satellite Land Monitoring System (SLMS) in collaboration with SEAM. SEAM is the main responsible party for the GHG Inventory with INFONA being the main generator of information for the LULUCF sector. The NFMS has generated information for Paraguay's Biennial Updated Report (2015), the Forest Reference Emission Level for REDD (2015) and the Third National Communication. The NFMS' main objective is to monitor deforestation by generating activity data (SLMS) and emissions factor (NFI) for the GHG Inventory. The NFI is operational and gathers information from forested land in 6 forest strata across the country under a common methodology developed following IPCC guidelines<sup>64</sup>. One of the strata is Forest Plantations and the methodology developed can be applied to measure forests targeted by Components 1 and 2 of PROEZA. Additionally, INFONA collects information on forest plantations' parcels using remote sensing and field surveys as means of verification. The information gathered through the implementation and monitoring of field activities under PROEZA will be included in the National Forest Monitoring System to generate future country reports. Also, all the information gathered by the project will be available in the NFMS' Web Portal<sup>65</sup> as a way of promoting transparency to access information and activities carried out by PROEZA.

**Social and environmental vulnerability monitoring** Monitoring of social and environmental vulnerability indicators will be done through the National Social Survey, which is the household survey instrument used by STP (i) to assess and monitor vulnerability, and then (ii) to focus social protection interventions of the social protection program "*Sembrando Oportunidades*" on the most vulnerable households living in poverty and extreme poverty. There are various dimensions covered by this survey relative to population, education, housing, health, employment and agricultural activities. To

<sup>64</sup> GPG 2003 and AFOLU 2006

<sup>65</sup> <http://snmf.infona.gov.py:8091/portal/>

monitor and evaluate the project impact on poverty alleviation and vulnerability, the following indicators from the National Social Survey will be used: Household head (men, women) and family members; (8) Source of water that the household uses; (10) What fuel does the household use for cooking; (15) Does the household have different assets, which includes a cooking stove; (30-33, 42) Agricultural labor; (43,44) Land tenure and area; (46-49) Agricultural production and self-consumption. To measure impact on income and poverty alleviation, STP uses the Proxy Means Test. The same methodology will be used by PROEZA for impact evaluation.

As reported above, the project will adopt a precise georeferencing approach that will build upon the methodology already developed by INFONA and STP to support implementation and M&E. Georeferencing of activities will be embedded since inception into the Project Management Manual and will be part of the M&E plan.

The project will provide precise GPS coordinates and KMZ files of each intervention funded by PROEZA. Each acquired coordinate and KMZ file will be duly archived by the M&E unit. Maps should clearly include the areas of intervention as well as the cadaster maps (if available) and will be provided in the form of annexes to the AWPB and reports. The Project will ensure that each “no objection request” related to expenditures contains clear and official maps in the form of KMZ files.

For each activity related to afforestation and reforestation, the project will include, as part of the required documentation, KMZ and, if available, georeferenced blue prints in the following formats (AUTOCAD compatible):

- All data and information will be georeferenced and provided in shapefile format if vectorial, and in ArcGIS compatible format if raster.
- All geographic coordinates will be taken in a known projection with preference for WGS84 and in decimal degrees.

The full data set of coordinates and KMZ files will represent the geographical distribution and relevance of the Project’s intervention in the project areas and will form the “Project’s Implementation Atlas”. The database will be managed by the M&E unit and made available to the Executive Committee and FAO at any given moment. Training will be provided by FAO to PMU staff if needed. All produced maps will be provided in digital format (ArcGIS or equivalent) with all the metadata and sources of information. All maps shall be reported precisely on Google Earth and delivered as well as KML/KMZ files format.

In terms of reporting, the project will ensure annual reporting to the GCF according to FAO covenants, rules and standards. Reporting will consist of four phases:

- 1) **Technical Reports (TRs) prepared by Service Providers.** TRs will describe implemented activities and involved beneficiaries according to M&E needs as reported in PROEZA’s logical framework. Service providers will ensure Georeferencing of each executed activity and will present TRs on a quarterly basis to the PMU.
- 2) **Quarterly reports (QRs) prepared by the PMU** QR will present the work and achievements of the involved service providers and will cover the activities presented in the annual working plan and budget. It will include data, comments and information from the beneficiaries and other involved stakeholders. QR are prepared by the PMU and transmitted to the Executive Committee for use in the annual report.
- 3) **Annual reports (ARs) prepared by the Executive Committee and FAO.** ARs will present the work and achievements reported by the PMU via the QRs and will include implementation and fiduciary chapters originating from the two supervision reports (SRs) prepared by FAO as part of their commitment to the project. ARs will also include the “Project’s Implementation Atlas <sup>66</sup>” presenting the maps and charts obtained thanks to the georeferentiation of project activities. Both will be presented as annexes of the AR. ARs are prepared by the Executive Committee and FAO and are transmitted to the GCF by FAO. The annual report presented to GCF by FAO will also contain a clear and articulated replenishment plan.

<sup>66</sup> The project implementation atlas will be available as well via Google Earth so to appreciate in real time changes induced by the project. Its preparation will start with the baseline and will evolve with the project.

- 4) **Evaluation Reports are commissioned by FAO to an external and independent entity according to FAO covenants, rules and standards.** ERs are shared with the Executive Committee, the Steering Committee and the PMU for comments and sent to the Green Climate Fund at midterm (MTE) and within six (6) months from project's closure (FE).

	<b>Report Type</b>	<b>Prepared By:</b>	<b>Received by:</b>	<b>Proposed Timeframe</b>
<b>Project Reporting Framework</b>	Quarterly Report	FAO (PMU)	EC	4 reports per year
	Supervision Report / Aide Memoire	FAO (PMU)	SC/EC	Twice per Year
	Annual Report	FAO (PMU)	GCF	At the end of each fiscal Year
	Mid Term Review	External Evaluator	GCF	At the end of the third year of implementation
	Completion Report / Final Evaluation	External Evaluator	GCF	6 months after completion of the project

**PROEZA M&E Reporting Framework**

The M&E and reporting process will also form the foundation of PROEZA's communication and knowledge sharing strategy. Data collected and analyzed during the whole project will enable stakeholders and the general public to be constantly exposed to best practices and lessons learned so as to capitalize on PROEZA experience and to magnify impacts in target areas as well as in others not directly involved in the project. Through the implementation of a strong communication strategy and key formal events at Start-up, Mid Term and Completion, PROEZA will ensure a constant flow of knowledge that will increase stakeholder ownership and enhance its capacity to support an effective and efficient change in the policy making environment of Paraguay. The Figure below depicts the combined flow of reporting and knowledge sharing.



## I. Supporting Documents for Funding Proposal

- NDA No-objection Letter
- Feasibility Study
- Integrated Financial Model that provides sensitivity analysis of critical elements (xls format, if applicable)
- Confirmation letter or letter of commitment for co-financing commitment
- Project/Programme Confirmation/Term Sheet (including cost/budget breakdown, disbursement schedule, etc.) – see the Accreditation Master Agreement, Annex I
- Environmental and Social Impact Assessment (ESIA) or Environmental and Social Management Plan
- Appraisal Report or Due Diligence Report with recommendations (NOT APPLICABLE)
- Evaluation Report of the baseline project (NOT APPLICABLE)
- Maps ( No 1 – 9 ) indicating the location of the project/programme
- Timetable of project/programme implementation

\* Please note that a funding proposal will be considered complete only upon receipt of all the applicable supporting documents.

\* All supporting documentation can be found at the following link:

[https://1drv.ms/f/s!AnDentiIzX4usXwUggxGpADlCa\\_3](https://1drv.ms/f/s!AnDentiIzX4usXwUggxGpADlCa_3)

Annex A	NDA No-objection letter	A.1 NDA original no-objection letter (26-01-2017) A.2 NDA confirming interest (10-05-2017) A.3 NDA FAO as executing entity (29-08-2017)
Annex B	Feasibility study	B.1 Part A. Summary technical feasibility (English) B.2 Part A. Technical feasibility study (English) B.3 Part A. Baseline land use forms in footprint area (English) B.4 Part A. Profile firewood use for cooking (Spanish) B.5 Part B. Institutional feasibility study (Spanish) B.6 Part B. Institutional architecture proposal (English) B.7 Part B. Institutional legal mandates and roles (Spanish) B.8 Part B. Institutional and stakeholders analysis (Spanish)
Annex C	Integrated financial model	C.1 Integrated financial model
Annex D	Confirmation letter and letter of commitment for co-financing	D.1 Letter of co-financing SAS (24-08-2017) D.2 Letter of co-financing AFD (24-08-2017) D.3 Letter of co-financing INFONA (24-08-2017) D.4 Support letter SAS (17-01-2017) D.5 Support letter AFD (13-01-2017) D.6 Support letter INFONA (17-01-2017) D.7 Support letter BNF (11-01-2017) D.8 Support letter SEAM (10-01-2017) D.9 Support letter World Bank (10-01-2017) D.10 Support letter World Bank (28-04-2017)
Annex E	Environment and social management framework	E.1 Disclosure template E.2 Environmental and social management framework E.3 Stakeholder consultation E.4 Stakeholder engagement plan E.5 Gender assessment and gender action plan E.6 Indigenous people consultation framework E.7 Minutes of third level indigenous organizations (31-05-2017) E.8 Minutes of second level indigenous organizations (26-07-2017) E.9 Indigenous peoples planning framework E.10 Biodiversity management plan
Annex F	Maps	F.1 Environmental vulnerability and women headed livelihoods F.2 Poverty incidence and women headed households F.3 Forest cover 2015 and loss 2000 - 2015 F.4 Poor and extremely poor F.5 Potential forest plantations F.6 Forest plantations F.7 Deforestation risk
Annex G	Timetable of project	G.1 Timetable of project
Annex H	Carbon calculation	H.1 Summary of carbo estimates H.2 ExACT FAO system data H.3 Component 1 ExACT H.4 Component 2 ExACT H.5 Above ground biomas estimates H.6 Below ground biomas estimates



January 26, 2017

STP/S.E./N° 049 /2017

**Mr. Howard Bamsey**  
Executive Director  
Green Climate Fund  
Songdo International Business District  
175, Art Center-daero  
Yeonsu-gu, Incheon 406-840  
Republic of Korea

RE: Funding Proposal for the GCF by the Ministry of Planning for Economic and Social Development of Paraguay regarding PROEZA (Poverty, Reforestation, Energy and Climate Change)

Dear Sir,

We refer to the PROEZA (Poverty, Reforestation, Energy and Climate Change) Project in Paraguay, as included in the proposal submitted jointly to us on January 25, 2017 by the FAO (acting as Accredited Entity) and the World Bank (providing Technical Assistance).

The undersigned is the duly authorized representative of the Ministry of Planning for Economic and Social Development, the National Designated Authority/Focal point of Paraguay.

Pursuant to GCF decision B.08/10, the content of which we acknowledge to have reviewed, we hereby communicate our no-objection to the Project as included in the funding proposal.

By communicating our no-objection, it is implied that:

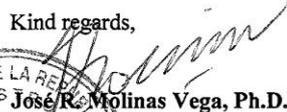
- (a) The government of Paraguay has no-objection to the Project as included in the funding proposal;
- (b) The Project as included in the funding proposal is in conformity with Paraguay's national priorities, strategies and plans;
- (c) In accordance with GCF's environmental and social safeguards, the Project as included in the funding proposal is in conformity with relevant national laws and regulations.

We also confirm that our national process for ascertaining no-objection to the Project as included in the funding proposal has been duly followed.

We also confirm that our no-objection applies to all activities to be implemented within the scope of the Project.

We acknowledge that this letter will be made publicly available on the GCF website.

Kind regards,

  
**José R. Molinas Vega, Ph.D.**  
Minister, Executive Secretary  
Ministry of Planning for Economic and Social Development  
GCF National Designated Authority



## Environmental and social report(s) disclosure

Basic project/programme information	
Project/programme title	PROEZA - Poverty, Reforestation, Energy and Climate Change
Accredited entity	FAO
Environmental and social safeguards (ESS) category	Category B

Environmental and Social Impact Assessment (ESIA) (if applicable)	
Date of disclosure on accredited entity's website	2017-09-01
Language(s) of disclosure	English; Spanish
Link to disclosure	<a href="http://www.fao.org/environmental-social-standards/disclosure-portal/en/">http://www.fao.org/environmental-social-standards/disclosure-portal/en/</a> A simplified impact assessment (ESIA) consistent with the requirements for a category B project is contained in the Environmental and Social Management Framework (ESMF).
Other link(s)	<a href="http://www.stp.gov.py/v1/marco-ambiental-y-social-del-proyecto-proeza/">http://www.stp.gov.py/v1/marco-ambiental-y-social-del-proyecto-proeza/</a>

Environmental and Social Management Plan (ESMP) (if applicable)	
Date of disclosure on accredited entity's website	2017-09-01
Language(s) of disclosure	English; Spanish
Link to disclosure	<a href="http://www.fao.org/environmental-social-standards/disclosure-portal/en/">http://www.fao.org/environmental-social-standards/disclosure-portal/en/</a> A management plan (ESMP) consistent with the requirements for a category B project is contained in the Environmental and Social Management Framework (ESMF).
Other link(s)	<a href="http://www.stp.gov.py/v1/marco-ambiental-y-social-del-proyecto-proeza/">http://www.stp.gov.py/v1/marco-ambiental-y-social-del-proyecto-proeza/</a>

Resettlement Action Plan (RAP) (if applicable)	
Link to disclosure	Not applicable

Any other relevant ESS reports and/or disclosures (if applicable)	
Description of report/disclosure	Stakeholders action plan; Indigenous peoples planning framework; Gender action plan; Biodiversity management plan
Date of disclosure on accredited entity's website	2017-09-01
Language(s) of disclosure	English
Link to disclosure	<a href="http://www.fao.org/environmental-social-standards/disclosure-portal/en/">http://www.fao.org/environmental-social-standards/disclosure-portal/en/</a> (included as annex to the ESMF)
Other link(s)	<a href="http://www.stp.gov.py/v1/marco-ambiental-y-social-del-proyecto-proeza/">http://www.stp.gov.py/v1/marco-ambiental-y-social-del-proyecto-proeza/</a>