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Report No: PAD4263

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED EMISSION REDUCTIONS PAYMENT AGREEMENT (ERPA)

IN THE AMOUNT OF UP TO US\$52.5 MILLION

TO THE

REPUBLIC OF GUATEMALA

FOR A

GUATEMALA EMISSIONS REDUCTION PROGRAM

August 31, 2021

Environment, Natural Resources & The Blue Economy Global Practice  
Latin America And Caribbean Region

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## CURRENCY EQUIVALENTS

Exchange Rate Effective July 24, 2021

Currency Unit = Guatemalan  
Quetzales (GTQ)

GTQ 1 = US\$ 0.12907

US\$ 1 = GTQ 7.74762

FISCAL YEAR  
January 1 - December 31

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## ABBREVIATIONS AND ACRONYMS

B/C	Benefit/Cost
BSP	Benefit Sharing Plan
CO <sub>2</sub> e	Carbon Dioxide equivalent
CONAP	National Council of Protected Areas ( <i>Consejo Nacional de Áreas Protegidas</i> )
COP	Conference of the Parties of the UNFCCC
COVID-19	Coronavirus Disease 2019
CPF	Country Partnership Framework
CSO	Civil Society Organizations
DA	Designated Account
DFIL	Disbursement and Financial Information Letter
DGM	Dedicated Grant Mechanism
E&S	Environmental and Social
ENDDBG	National REDD+ Strategy ( <i>Estrategia Nacional para el Abordaje de la Deforestación y Degrado en los Bosques de Guatemala</i> )
ER	Emission Reductions
ERPA	Emission Reductions Payment Agreement
ERPD	Emissions Reduction Program Document
ESCP	Environmental and Social Commitment Plan
ESMF	Environmental and Social Management Framework
ESS	Environmental and Social Standards
FCPF	Forest Carbon Partnership Facility
FGRM	Feedback Grievance Redress Mechanism
FIP	Forest Investment Program
FM	Financial Management
FREL	Forest Reference Emissions Level
GBV	Gender-Based Violence
GDP	Gross Domestic Product
GHG	Greenhouse Gases
GIMBUT	Inter-institutional Group for Forest and Land-use Monitoring ( <i>Grupo Interinstitucional para el Monitoreo de los Bosques y el Uso de la Tierra</i> )
GoG	Government of Guatemala
GRS	Grievance and Redress System
GTQ	Guatemalan Quetzales
Ha	Hectare
IBRD	International Bank for Reconstruction and Development
IDB	Inter-American Development Bank
IFR	Interim Financial Reports
INAB	National Forest Institute ( <i>Instituto Nacional de Bosques</i> )
IPLC	Indigenous Peoples and Local Communities
IPPF	Indigenous Peoples Participation Framework
LMP	Labor Management Procedures

MAGA	Ministry of Agriculture, Livestock, and Food ( <i>Ministerio de Agricultura, Ganadería, y Alimentación</i> )
MARN	Ministry of Environment and Natural Resources ( <i>Ministerio de Ambiente y Recursos Naturales</i> )
MBR	Mayan Biosphere Reserve
MCEES	Mechanism for the Compensation of Environmental and Ecosystem Services
MINFIN	Ministry of Public Finance ( <i>Ministerio de Finanzas Públicas</i> )
MRV	Monitoring, Reporting and Verification
N/A	Not applicable
NAPCC	National Action Plan for Climate Change
NBSC	National Benefit-Sharing Committee
NDC	Nationally Determined Contribution
NGO	Non-Governmental Organization
NPV	Net Present Value
OM	Operations Manual
PDO	Program Development Objective
PF	Process Framework
PINFOR	Forest Incentive Program ( <i>Programa de Incentivos Forestales</i> )
PINPEP	Forest Incentive Program for Holders of Small Areas of Land Suitable for Forestry or Agroforestry ( <i>Programa de Incentivos Forestales para Poseedores de Pequeñas Extensiones de Tierra con Vocación Forestal y Agroforestal</i> )
PIU	Program Implementing Unit
PROBOSQUE	Forest Incentive Program for the Promotion of the Establishment, Recovery, Restoration, Management, Production and Protection of Forests ( <i>Programa para la Promoción del Establecimiento, Recuperación, Restauración, Manejo, Producción y Protección de Bosques</i> )
REDD+	Reducing Emissions from Deforestation and Forest Degradation sustainable management of forests, and conservation and enhancement of forest carbon stocks
RP	Reporting Period
RPF	Resettlement Policy Framework
SESA	Strategic Environmental and Social Assessment
SEP	Stakeholder Engagement Plan
SICOIN	Integrated Accounting System ( <i>Sistema de Contabilidad Integrada</i> )
SIGAP	Guatemalan Protected Areas System ( <i>Sistema Guatemalteco de Áreas Protegidas</i> )
SNICC	National Information System on Climate Change ( <i>Sistema Nacional de Información sobre Cambio Climático</i> )
SOE	Statement of Expenses
STA	Single Treasury Account
tCO <sub>2</sub> e	tons of Carbon Dioxide equivalent
UNFCCC	United Nations Framework Convention on Climate Change
US\$	United State Dollars
VCS	Voluntary Carbon Standard



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## DATASHEET

## BASIC INFORMATION

Country(ies)	Project Name	
Guatemala	Guatemala Emissions Reduction Program	
Project ID	Financing Instrument	Environmental and Social Risk Classification
P167132	Investment Project Financing	Substantial

## Financing &amp; Implementation Modalities

<input type="checkbox"/> Multiphase Programmatic Approach (MPA)	<input type="checkbox"/> Contingent Emergency Response Component (CERC)
<input type="checkbox"/> Series of Projects (SOP)	<input type="checkbox"/> Fragile State(s)
<input type="checkbox"/> Performance-Based Conditions (PBCs)	<input type="checkbox"/> Small State(s)
<input type="checkbox"/> Financial Intermediaries (FI)	<input type="checkbox"/> Fragile within a non-fragile Country
<input type="checkbox"/> Project-Based Guarantee	<input type="checkbox"/> Conflict
<input type="checkbox"/> Deferred Drawdown	<input type="checkbox"/> Responding to Natural or Man-made Disaster
<input type="checkbox"/> Alternate Procurement Arrangements (APA)	<input type="checkbox"/> Hands-on Enhanced Implementation Support (HEIS)

Expected Approval Date	Expected Closing Date
31-Aug-2021	31-Dec-2025

Bank/IFC Collaboration
No

## Proposed Development Objective(s)

To make payments to the Program Entity for measured, reported and verified Emission Reductions (ER) from reduced deforestation and forest degradation, as well as the enhancement of forest carbon stocks (REDD+) in targeted areas of Guatemala, and to ensure that paid amounts are distributed according to an agreed Benefit Sharing Plan (BSP).

**Components**

Component Name	Cost (US\$, millions)
Payment for Measured, Reported and Verified ERs	52.50
Distribution of ER Payments According to the Benefit Sharing Plan	0.00

**Organizations**

Borrower: Republic of Guatemala  
Implementing Agency: Ministry of Public Finance

**PROJECT FINANCING DATA (US\$, Millions)****SUMMARY**

Total Project Cost	52.50
Total Financing	52.50
of which IBRD/IDA	0.00
Financing Gap	0.00

**DETAILS****Non-World Bank Group Financing**

Trust Funds	52.50
The Forest Carbon Partnership Facility – Carbon Fund	52.50

**Expected Disbursements (in US\$, Millions)**

WB Fiscal Year	2022	2023	2024	2025	2026
Annual	1.84	2.17	6.50	10.50	31.49
Cumulative	1.84	4.01	10.51	21.01	52.50

**INSTITUTIONAL DATA**

**Practice Area (Lead)**

Environment, Natural Resources &amp; the Blue Economy

**Contributing Practice Areas**

Climate Change

**SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)**

Risk Category	Rating
1. Political and Governance	● Moderate
2. Macroeconomic	● Moderate
3. Sector Strategies and Policies	● Moderate
4. Technical Design of Project or Program	● Substantial
5. Institutional Capacity for Implementation and Sustainability	● Substantial
6. Fiduciary	● Moderate
7. Environment and Social	● Substantial
8. Stakeholders	● Substantial
9. Other	● Substantial
10. Overall	● Substantial

**COMPLIANCE****Policy**

Does the project depart from the CPF in content or in other significant respects?

[ ] Yes [✓] No

Does the project require any waivers of Bank policies?

[ ] Yes [✓] No

**Environmental and Social Standards Relevance Given its Context at the Time of Appraisal**

E & S Standards	Relevance
Assessment and Management of Environmental and Social Risks and Impacts	Relevant
Stakeholder Engagement and Information Disclosure	Relevant
Labor and Working Conditions	Relevant
Resource Efficiency and Pollution Prevention and Management	Relevant
Community Health and Safety	Relevant
Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Relevant
Biodiversity Conservation and Sustainable Management of Living Natural Resources	Relevant
Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Relevant
Cultural Heritage	Relevant
Financial Intermediaries	Not Currently Relevant

**NOTE:** For further information regarding the World Bank's due diligence assessment of the Project's potential environmental and social risks and impacts, please refer to the Project's Appraisal Environmental and Social Review Summary (ESRS).

**Legal Covenants**

## Sections and Description

ERPA Article VII, Section 7.01 a: The Program Entity, through the Executing Entity, shall monitor and report to the Trustee on the implementation of the Safeguards Plans and Benefit Sharing Plan during Reporting Periods. The Program Entity, through the Executing Entity, shall monitor and report to the Trustee on the implementation of the Safeguards Plans annually after the date of this Agreement. The Program Entity, through the Executing Entity, shall first monitor and report to the Trustee on the implementation of the Benefit Sharing Plan six (6) months after receipt of the first Periodic Payment and annually thereafter. The Program Entity, through the Executing Entity, may coordinate the annual monitoring and reporting of the Safeguards Plans and the Benefit Sharing Plan, provided that the Program Entity notifies the Trustee and the Trustee accepts such coordinated timelines. The Trustee reserves the right to initiate a separate monitoring of the implementation of the Safeguards Plans and/or the Benefit Sharing Plan annually after the date of this Agreement by an independent Third Party monitor. Sections 9.01(g) and (k) as well as Section 9.05(d) of the General Conditions shall apply to such Third Party monitor mutatis mutandis.



#### Sections and Description

ERPA Article VII, Section 7.01 b: The Seller shall also, as a separate annex to the ER Monitoring Report, provide information on emissions from deforestation in Triángulo de la Candelaria, Laguna del Tigre, outside the ER Program Accounting Area (“Outside Area”) based on the national forest monitoring system. In the event that (i) such emissions from the Outside Area are significantly higher than the baseline emissions for the Outside Area at the time of first Verification, and (ii) the Buyer determines, in its reasonable opinion following consultations with the Seller, that such emissions have occurred as a consequence of land use activities moving from inside the ER Program Accounting Area to the Outside Area (“Displacement”), the Seller shall prepare a mitigation plan to improve the measures described in the ER Program Document that are taken to address the risk of Displacement (“Displacement Mitigation Plan”), reasonably satisfactory to the Buyer, within sixty (60) calendar days following the receipt of the Buyer’s determination and implement the Displacement Mitigation Plan in accordance with its terms. If the Displacement Mitigation Plan is not prepared by that deadline, or not implemented in accordance with its terms, this shall constitute a material breach by the Seller (Event of Default) under Section 16.01(a)(vi) of the General Conditions.

#### Sections and Description

ERPA Article VII, Section 7.01 c: The Program Entity shall carry out the ER Program in compliance with the terms and conditions set out in, respectively, Schedule 7 and Schedule 8 on Environment and Social Standards, of the ERPAs for Tranche A and Tranche B.

#### Conditions

Type Effectiveness	Financing source	Description
	Trust Funds	Schedule 1, paragraph 1 of the ERPAs: Submission of a final Benefit Sharing Plan which, based on the advance draft version of the Benefit Sharing Plan provided by the date of this Agreement, takes into account specific guidance to be provided by the Trustee, following consultations with Tranche A and B Participants, on the outstanding issues that need further clarification in the final version of the Benefit Sharing Plan.
Type Effectiveness	Financing source Trust Funds	Description Schedule 1, paragraph 2 of the ERPAs: Submission of a Benefit Sharing Plan Operations Manual, in form and substance satisfactory to the Trustee and as updated from time to time with written agreement with the Trustee.
Type Effectiveness	Financing source Trust Funds	Description Schedule 1, paragraph 3 of the ERPAs: Submission of evidence demonstrating the Program Entity’s ability to transfer Title to ERs, free of any interest, Encumbrance or claim of a Third Party.



Type	Financing source	Description
Effectiveness	Trust Funds	Schedule 1, paragraph 4 of the ERPAs: Submission of a Subsidiary Agreement between the Program Entity, through the Ministry of Public Finance, and INAB as the Executing Entity, specifying the role of INAB in the implementation of the ER Program on behalf of the Program Entity and subject to the Trustee's prior review of and consent to the draft of such Subsidiary Agreement;
Effectiveness	Trust Funds	Schedule 1, paragraph 5 of the ERPAs: Submission of evidence, in form and substance satisfactory to the Trustee, demonstrating that the ER Program Measures that generated the ERs during the period from January 1, 2020 until the date of this Agreement were implemented in a manner consistent with the Safeguards Plans.



## I. STRATEGIC CONTEXT

### A. Country Context

1. **Despite a stable macroeconomic framework, Guatemala struggles with low rates of economic growth and high poverty compared to its neighbors.** Measured by per capita Gross Domestic Product (GDP), Guatemala is the fifth poorest economy in Latin America and the Caribbean and has among the highest rates of social and economic exclusion in the region. GDP growth averaged 3.3 percent from 2015-2018, with real GDP per capita growth stagnating and falling slightly behind the average for Central America over the same period (3.48)<sup>1</sup>. Low collection of taxes by central government (tax revenues are close to 10 percent of GDP) and highly rigid budgetary expenditures, as well as significantly lower levels of labor productivity (mainly explained by gaps in knowledge and job skills), hamper Guatemala's ability to provide basic public services and respond to changing conditions and demands.
2. **Poverty, inequality, and rurality are high and persistent.** With a total population of 15 million<sup>2</sup>, it was estimated in 2020 that 47 percent lived under the US\$5.5 Purchasing Power Parity poverty line, up from 45.7 percent in 2000.<sup>3</sup> One-fifth of the population lives with incomes between US\$5.5 and US\$13 per day, meaning that 85 percent of the population is poor or vulnerable to falling into poverty in the event of a shock. Vulnerability is particularly high among the Indigenous Peoples.<sup>4,5</sup> Income inequality is high, and the Gini coefficient was 0.48 in 2014. In 2018, it was estimated that 46 percent of the total population lived in rural areas<sup>6</sup>, where poverty is significantly higher (76 percent) than in urban areas (42 percent). Also, Guatemala's Human Development Index in 2019 was 0.663, below the Latin American and Caribbean region average of 0.766 and the country currently ranks 127 of 189 countries and territories in the World.<sup>7</sup>
3. **Guatemala has one of the highest gender inequality indexes and the lowest rates of female labor force participation in the Latin American and the Caribbean Region.** Many indicators of women's social and economic well-being have not improved since 2000 and are worse than the average in the Latin American and Caribbean region and similar countries. Only four out of 10 women are in the labor force, less than half the corresponding rate of men. Guatemala also has one of the highest rates of violent deaths of women from Gender-Based Violence (GBV) in the world: 6.4 in 100,000 in 2018, almost five times the global rate.<sup>8</sup> Lack of education, inclusion, and gender inequality are among the most common triggers of

<sup>1</sup> World Bank. Country Overview: Guatemala. August 2021

<sup>2</sup> Guatemala Population Census, 2018.

<sup>3</sup> World Bank Group, Poverty and Equity Brief, April 2021. Poverty estimates use the upper-middle income international poverty line (US\$5.50-a-day in 2011 Purchase Power Parity) and, unlike the World Bank Macro-Poverty Outlook, are based on microsimulations using the harmonized Socio-Economic Database for Latin America and the Caribbean (SEDLAC). Baseline data for all projections is from 2014. Assessing more recent changes in poverty and inequality is difficult, due to the scarce availability of socio-economic data (since 2000, Guatemala has had the second-lowest number of household surveys available in the region, only after Haiti).

<sup>4</sup> Data from the latest available household survey (ENCOVI).

<sup>5</sup> According to the 2018 census, the Indigenous Peoples of Guatemala (of Mayan, Xinca or Garífuna descent) represent 44 percent of Guatemala's population. Eighty percent live in poverty compared to 47 percent of the non-indigenous population. The Garífuna are a culturally distinct Afro-descendant group recognized as an "ethnic group" and represent about 1 percent of the Guatemalan population.

<sup>6</sup> Guatemala Population Census, 2018.

<sup>7</sup> United Nations Development Program (UNDP). 2020. Human Development Indicators. Guatemala.

<http://hdr.undp.org/en/countries/profiles/GTM>

<sup>8</sup> National Institute of Forensic Sciences (*Instituto Nacional de Ciencias Forenses*, INACIF).



GBV.

4. **On March 11, 2020, the World Health Organization declared the Coronavirus Disease 2019 (COVID-19) outbreak a pandemic.** As of August 23, 2021, COVID-19 has infected 444,924 Guatemalans and killed 11,522, and the number of cases is growing.<sup>9</sup> The Guatemalan authorities declared a state of emergency on March 5, 2020 and implemented strong containment measures such as limitations in mobilization and public transportation and closure of commercial activities and markets. However, these measures have left many without income or food, ending decades of uninterrupted growth and likely pushing almost one million Guatemalans into poverty.<sup>10</sup> Small-scale producers, informal workers, women, and youth have been disproportionately vulnerable to the slowdown in economic activity and the restrictions to local and international mobility imposed in response to the emergency, in addition to facing higher health risks. In September 2020, the Government of Guatemala (GoG) published the Plan for Guatemala's Economic Recovery<sup>11</sup>, which builds on three strategic objectives to be achieved following the cross-cutting principles of health and safety, innovation, and sustainability: build more and better jobs; attract more strategic investment; and stimulate consumption of Guatemalan goods and services at the local, regional, and global level.
5. **The COVID-19 pandemic and the Hurricanes Eta and Iota have exposed and exacerbated Guatemala's underlying and preexisting challenges to inclusive growth.** Guatemala's economy has contracted by 1.5 percent in 2020. Poverty is estimated to have increased from 45.7 percent in 2019 to 47 percent in 2020.<sup>12</sup> However, the country's swift and comprehensive response to the pandemic appears to have cushioned the impact on the poor. As of early October 2020, most sectors had restarted economic activity following the initial lockdowns and were operating at around 80 percent of capacity.<sup>13</sup> In 2021, Guatemala's economy is expected to grow by 4.5 percent, according to the International Monetary Fund<sup>14</sup>, i.e. above the 2019 level of 3.8 percent. Similarly, poverty is expected to decline, down to 46 percent.<sup>15</sup> Finally, the aftermath of Hurricanes Eta and Iota, which hit hard the country in November 2020, left over 2.4 million people affected in 16 of its 22 departments, and thousands of hectares (ha) of damaged or lost crops in a context of fragile food security.<sup>16,17</sup>

## B. Sectoral and Institutional Context

6. **Guatemala, like other Mesoamerican countries, is very vulnerable to climate change.** A historical analysis of climate variability showed changes in the extreme values of variables such as temperature, precipitation, and consecutive dry days. Overall, the trend over the last 40 years suggests heavier rain occurring across shorter periods that produce greater average precipitation per episode. This trend may

<sup>9</sup> Ministry of Public Health and Social Assistance (Ministerio de Salud Pública y Asistencia Social). <https://tablerocovid.mspas.gob.gt/>

<sup>10</sup> World Bank. Country Overview: Guatemala. August 2021.

<sup>11</sup> Gobierno de Guatemala. Ministerio de Economía, MINECO. 2020. Plan para la Recuperación Económica de Guatemala. [http://www.mineco.gob.gt/sites/default/files/Comunicacion%20Social/recuperacion\\_economica\\_sept-.pdf](http://www.mineco.gob.gt/sites/default/files/Comunicacion%20Social/recuperacion_economica_sept-.pdf)

<sup>12</sup> World Bank. Macro Poverty Outlook for Latin America and the Caribbean. [https://www.worldbank.org/en/publication/macro-poverty-outlook/mpo\\_lac](https://www.worldbank.org/en/publication/macro-poverty-outlook/mpo_lac)

<sup>13</sup> Banco de Guatemala. Evaluación de la Política Monetaria, Cambiaria, y Crediticia a Noviembre de 2020, y Perspectivas Económicas para 2021. Diciembre de 2020.

<sup>14</sup> <https://www.imf.org/en/Countries/GTM>

<sup>15</sup> World Bank. Macro Poverty Outlook for Latin America and the Caribbean

<sup>16</sup> WHO. Central America. Situation Report. No. 3. November 16, 2020. <https://reliefweb.int/report/honduras/central-america-2020-hurricane-season-situation-report-no-3-800am-est-16-november>

<sup>17</sup> Naciones Unidas. Guatemala: DT-TT ETA -IOTA. Informe de Situación No. 05 al 15 de enero de 2021.



continue in the future due to climate change, possibly resulting in greater frequency or intensity of floods and droughts. These changes affect agriculture productivity, soil retention, land and forest conservation, water availability, and quality. Pronounced warming from 1 to 4.5 degrees centigrade in the lowlands, which contain most natural forests, may lead to forest degradation by increasing forest fires. Also, with higher temperature averages, the number of dry days may increase and have detrimental impacts on agriculture production, which often leads to increased deforestation and forest degradation.<sup>18</sup>

7. **Guatemala is richly endowed with diverse forests resources, which provide livelihood support to the rural poor.** The country is considered one of the most megadiverse countries in the world, having at least seven distinct biomes<sup>19</sup>, and the highest percentage of endemic species (13 percent) in Central America.<sup>20</sup> Around 3.7 million ha (34 percent of the country's territory) are covered by diverse forest ecosystems, including coniferous, broad-leaved tropical forests, mixed upland forests, dry forests, and mangroves.<sup>21</sup> These forests are part of the *Selva Maya*, the most extensive tropical rainforest of Mesoamerica, which plays an important role in landscape connectivity in the region. On the economic side, forest sector contribution to the GDP ranges from 1 to 2.5 percent, whereas 64 percent of the population, two thirds of which in rural areas, rely on fuelwood for the main source of energy.<sup>22</sup> For the extreme poor, forests are sources of land for subsistence agriculture, medicinal plants, seeds, game, clean water, and are critical safety nets in times of distress.<sup>23,24,25</sup> The State owns most forests, i.e., 42 percent of the forest lands, of which eight percent belong to municipalities. Private companies own 38 percent of the country's forests, communal groups 15 percent, and five percent is owned by others (such as individual property).<sup>26</sup>
8. **The Guatemalan forest sector is administered by two institutions.** The National Council of Protected Areas (*Consejo Nacional de Áreas Protegidas*, CONAP) administers the Guatemala Protected Areas System (*Sistema Guatemalteco de Áreas Protegidas*, SIGAP), which comprises 52 percent of total forests in Guatemala or approximately 1.8 million ha of forests. The SIGAP covers 348 protected areas and 3.4 million ha, including the Mayan Biosphere Reserve (MBR), the largest protected area (2.1 million ha) in Central America. CONAP's Program for the Restoration, Protection, and Conservation of Protected Areas and Biological Diversity of the SIGAP (*Programa para la Restauración, Protección, y Conservación de Áreas Protegidas*, Program 31) promotes collaborative management models of protected areas directly

<sup>18</sup> World Bank, 2011. Vulnerability, Risk Reduction, and Adaptation to Climate Change in Guatemala.

[https://climateknowledgeportal.worldbank.org/sites/default/files/2018-10/wb\\_gfdrr\\_climate\\_change\\_country\\_profile\\_for\\_GTM.pdf](https://climateknowledgeportal.worldbank.org/sites/default/files/2018-10/wb_gfdrr_climate_change_country_profile_for_GTM.pdf)

<sup>19</sup> Guatemala Systematic Country Diagnostic. Washington, DC: World Bank.

<sup>20</sup> Convention on Biological Diversity. Guatemala – Country Profile. Retrieved from <https://www.cbd.int/countries/profile/default.shtml?country=gt>.

<sup>21</sup> CCPF. 28 February 2019. Emissions Reduction Program Document: Guatemala; and INAB-CONAP. 2015. Mapa Forestal por Tipo y Subtipo de Bosque, 2012. GUATEMALA. Technical Report. 26 pp.

<sup>22</sup> Wealth Accounting and Valuation of Ecosystem Services (Waves), 2014. Natural Capital Accounting in Action. [https://www.wavespartnership.org/sites/waves/files/images/NCA%20in%20Action\\_Guatemala%20forests.pdf](https://www.wavespartnership.org/sites/waves/files/images/NCA%20in%20Action_Guatemala%20forests.pdf)

<sup>23</sup> Prado Córdova, J.P., Wunder, S., Smith-Hall, C. et al. (2013). Rural Income and Forest Reliance in Highland Guatemala. Environmental Management (2013) 51: 1034. <https://doi.org/10.1007/s00267-013-0028-6>

<sup>24</sup> Elías, S., Larson, A. M., & Mendoza, J. (January 2009). Tenencia de la tierra, bosques y medios de vida en el altiplano Occidental de Guatemala. <https://www.cifor.org/library/2920/>

<sup>25</sup> Gibson, C., Dodds, D., & Turner, P. (2007). Explaining Community-Level Forest Outcomes: Salience, Scarcity and Rules in Eastern Guatemala. Conservation and Society, 5(3), 361-381. Retrieved from <http://www.jstor.org/stable/26392894>.

<sup>26</sup> GoG, 2019. Emissions Reduction Program Document.

[https://forestcarbonpartnership.org/system/files/documents/Guatemala\\_ERPD\\_11\\_05\\_2019.pdf](https://forestcarbonpartnership.org/system/files/documents/Guatemala_ERPD_11_05_2019.pdf)



involving a variety of stakeholders, with support from national and international organizations.

9. **Forests outside the SIGAP are under the jurisdiction of the National Forest Institute (*Instituto Nacional de Bosques*, INAB), created in 1996 to, among other things, manage the Forest Incentive Program (*Programa de Incentivos Forestales*, PINFOR), which distributed approximately US\$260 million to 4.3 million beneficiaries in the 1998-2016 period.<sup>27</sup> Currently, INAB manages the 2017-2045 Forest Incentive Program for the Promotion of the Establishment, Recovery, Restoration, Management, Production and Protection of Forests (*Programa para la Promoción del Establecimiento, Recuperación, Restauración, Manejo, Producción y Protección de Bosques*, PROBOSQUE) and the Forest Incentive Program for Holders of Small Areas Suitable for Forest and Agroforestry (*Programa de Incentivos Forestales para Poseedores de Pequeñas Extensiones de Tierra con Vocación Forestal y Agroforestal*, PINPEP), which began in 2010.<sup>28</sup> Recently, INAB began the design of Mechanisms for the Compensation of Ecosystem and Environmental Services (MCEES).<sup>29</sup>**
10. **Deforestation and forest degradation threaten to upend decades of gain in forest development.** From 2001 to 2016, forests were lost at an average rate of 34,552 ha (one percent) per year, the annual rate of forest degradation was 15,300 ha, while the reforestation rate was only 2,554 ha/year.<sup>30</sup> A substantial share (31.2 percent) of the forest loss happened inside protected areas.<sup>31</sup> Deforestation and forest degradation are responsible for a large share of the country's Greenhouse Gases (GHG) emissions, with deforestation contributing to 40 percent to the country's total GHG emissions in 2005.<sup>32</sup> The main drivers of deforestation are unsustainable forest use for timber and fuelwood (39 percent of the contribution of deforestation to GHG emissions), followed by livestock (34 percent), and agriculture (24 percent).<sup>33</sup> Commercial agriculture drives deforestation across all regions of the country. Subsistence agriculture is a minor driver of deforestation. Drivers of forest degradation include unsustainable fuelwood harvesting (half of fuelwood is harvested from natural forests<sup>34</sup>), illegal logging, land grabbing in protected areas, and forest fires. The underlying drivers of forest degradation and deforestation include weak forest and land governance; low value of standing forests; and insufficient cross-sectoral policy coordination.
11. **Improving the management of Guatemala's forests is important for increasing the country's resilience to weather-related events and for providing economic opportunities for rural economies.** Healthy forests can offset some of the impacts of climate-related disasters by enhancing the forest ecosystem's resilience to changing weather patterns, providing important safety nets for local communities to cope with climate shocks, enhancing the productivity of farming systems, and reducing damage from flooding and sea level rise, among others. In addition, they provide key ecosystem services such as water filtration

<sup>27</sup> <http://www.sifgua.org.gt/Pinfor.aspx>

<sup>28</sup> ibid. Annex 2 presents additional information on these programs.

<sup>29</sup> Created under Article 19 of the PROBOSQUE Law. MCEES is a mechanism that gives beneficiaries of the forest incentive programs a complementary income from standing forests, and the management models for forest conservation and sustainable use in the SIGAP.

<sup>30</sup> National Forest Reference Level updated to 2016.

<sup>31</sup> GoG, 2019. Emission Reductions Program (p. 13)

[https://www.forestcarbonpartnership.org/system/files/documents/Guatemala\\_ERPD\\_11\\_05\\_2019.pdf](https://www.forestcarbonpartnership.org/system/files/documents/Guatemala_ERPD_11_05_2019.pdf)

<sup>32</sup> Ministerio del Ambiente y Recursos Naturales, 2015. Segunda Comunicación Nacional sobre Cambio Climático.

<sup>33</sup> MARN, 2017. *Análisis de causas de deforestación y degradación de bosques y no aumento de existencias y barreras que limitan el abordaje de las causas*.

<sup>34</sup> Instituto Nacional de Bosques (INAB). 2015. *Estrategia Nacional de Producción Sostenible y Uso Eficiente de Leña 2013 - 2014. Serie Institucional ES-002(2015)*. Guatemala. pp. 43.



and availability, increased food security, biodiversity conservation, soil erosion control, carbon storage, which support the sustainability of key sectors such as agriculture, tourism, and energy. Without the sustainable management of these natural assets, their impacts on rural jobs, sustainable livelihoods, and revenue generation may be high, as forests degrade and the goods and services they provide are lost. These environmental challenges disproportionately affect the poor and vulnerable and impact economic growth. In addition to these documented impacts on forests, the COVID-19 pandemic may further drive deforestation and forest degradation - by August 2020, global deforestation rates had increased by 77 percent during the pandemic.<sup>35</sup>

12. **In its efforts to reduce emissions from deforestation and forest degradation, Guatemala established an enabling environment for REDD+.**<sup>36</sup> In 2014 Guatemala published its K'atun 2032 National Development Plan (*Plan Nacional de Desarrollo: K'atun, Nuestra Guatemala 2032*), which provides guidance on the country's strategic development goals for the given time frame. One of its key priorities is to promote the sustainability and resilience in rural areas through the implementation of a territorial management model that articulates social, economic, and environmental public policies. In 2013, the Framework Law to Regulate Vulnerability Reduction, Compulsory Adaptation to Climate Change Effects and Greenhouse Gas Emission Mitigation<sup>37</sup> kicked off Guatemala's efforts to reduce emissions in a way that is also aligned with the National Action Plan for Climate Change (NAPCC) and the Nationally Determined Contributions (NDC)<sup>38</sup> to the Paris Agreement. The NDCs suggest that GHG emissions could grow at a maximum rate of 0.9 million tons of Carbon Dioxide equivalent (tCO<sub>2</sub>e) per year, reaching a total of 54 million tCO<sub>2</sub>e by 2030. Guatemala committed to reduce this by 11 percent with domestic resources and by 22 percent with international support. This commitment assumes a significant reduction of GHG emissions from deforestation and forest degradation, which alone could grow at the rate of one percent annually in the business-as-usual scenario, considering data from the Forest Reference Emissions Level (FREL).<sup>39</sup> To achieve its NDC goal, Guatemala developed the National Strategy for Low GHG Emission Development<sup>40</sup> and the National REDD+ Strategy (*Estrategia Nacional para el Abordaje de la Deforestación y Degradación de Bosques en Guatemala*, ENDDBG).<sup>41</sup>
13. **Under this context, Guatemala developed an ER Program, which operationalizes the ENDDBG.** The ER Program, which covers 92 percent<sup>42</sup> of the country's territory (see map in Annex 8), is part of the strategic framework to support forest governance at the national level through various policies and strategies aimed at enhancing national efforts to address the drivers of deforestation and forest degradation. The ER Program is in line with the K'atun 2032 National Development Plan, the NAPCC, the National Strategy

<sup>35</sup> Gross, A et al. *Global deforestation accelerates during pandemic*. Financial Times (August 9, 2020).

<https://www.ft.com/content/b72e3969-522c-4e83-b431-c0b498754b2d>

<sup>36</sup> Reducing Emissions from Deforestation and forest Degradation, and foster conservation, sustainable management of forests, and enhancement of forest carbon stocks (REDD+).

<sup>37</sup> Decreto 7-2013 Congreso de la República

<sup>38</sup>Nationally Determined Contribution to the Paris Agreement of the United Nations Framework Convention on Climate Change (UNFCCC). The Paris Agreement is a legally binding international treaty on climate change adopted by 196 Parties at the Conference of Parties (COP) 21 in Paris, on 12 December 2015. GoG, 2015.

<sup>39</sup> FREL of 13.08 million tCO<sub>2</sub>e/year, serves as a benchmark against which the emissions and removals of CO<sub>2</sub> from a results period will be compared. GoG, 2019, Emissions Reduction Program Document.

[https://www.forestcarbonpartnership.org/system/files/documents/Guatemala\\_ERPD\\_11\\_05\\_2019.pdf](https://www.forestcarbonpartnership.org/system/files/documents/Guatemala_ERPD_11_05_2019.pdf)

<sup>40</sup> <https://mem.gob.gt/wp-content/uploads/2020/10/14.-Estrategia-de-Desarrollo-con-Bajas-Emisiones-2018.pdf>

<sup>41</sup> <https://www.marn.gob.gt/Multimedios/10060.pdf>

<sup>42</sup> The excluded areas are the Laguna del Tigre National Park, the *Triangulo de la Candelaria*, and three municipalities of the Zacapa Department (Livingston, Morales, and Puerto Barrios).



for Low GHG Emission Development, and INAB's programs and activities that seek to tackle deforestation, forest degradation, and land restoration. It is also aligned with: (i) CONAP's activities and programs to support forest protection and sustainable management within the SIGAP; (ii) the Ministry of Agriculture and Food's (*Ministerio de Agricultura, Ganadería, y Alimentación*, MAGA) policies to reduce GHG emissions, including the 2018-2022 Climate Change Action Plan and the National Strategy for Low-Emission Sustainable Livestock<sup>43</sup>; and (iii) the Ministry of Environment and Natural Resources' (*Ministerio de Ambiente y Recursos Naturales*, MARN) policies to promote an enabling environment for GHG ERs across sectors, under the 2013 Framework Law to Regulate the Reduction of the Vulnerability, the Mandated Adaptation to the Impacts of Climate Change, and the Mitigation of GHG Emissions.<sup>44</sup>

14. **The ER Program includes 19 priority REDD+ actions that respond to the direct and the underlying drivers of deforestation and forest degradation.** The ER Program stakeholders will generate ERs through the implementation of five strategic options. First, it will strengthen forest governance, seeking to improve inter-institutional and intersectoral coordination mechanisms with forest sector stakeholders, encouraging participation at the local level, transparency, legitimacy in decision-making, and effective enforcement of forest regulations. Second, it will promote forest conservation, protection, and sustainable forest management, through the implementation of sustainable forest management models that support local livelihoods, using different options in accordance with their strategic importance and productive capacity, and focusing on areas with higher levels of deforestation and forest degradation. Third, it will focus on forest landscape restoration, by promoting investment in forest and land-restoration activities to maintain and improve the sustainable provision of goods and services from forest ecosystems, while reducing pressure from agriculture expansion. Fourth, it will seek to reduce unsustainable fuelwood use by promoting the sustainable and efficient use of firewood to reduce the pressure on natural forests. And finally, the ER Program will promote competitiveness and legality of forest products through the integration of different economic agents in forest value chains and the promotion of regulated forestry. The ER Program will be implemented through existing government programs (PROBOSQUE, PINPEP, MCEES, the management models for forest conservation and sustainable use within the SIGAP<sup>45</sup>) which will be enhanced by the Forest Investment Program (FIP)<sup>46</sup>, as well as public-private REDD+ projects<sup>47</sup> certified by the Voluntary Carbon Standards (VCS).<sup>48</sup>
15. **The ER Program has been designed to generate ERs and a wide range of non-carbon benefits** including employment, inclusive benefit sharing, forest governance strengthening, biodiversity conservation, and watersheds protection, among others. It is estimated to cost US\$226 million for a five-year implementation period from 2020 to 2025. Funding will be combined from public resources and international cooperation, with the GoG funding approximately 75 percent of the total investment required by the ER Program, through existing programs (not as counterpart). Private sources and public-

<sup>43</sup> <https://www.maga.gob.gt/download/estrategiaganado.pdf>

<sup>44</sup> Climate Change Law. Decree 7-2013.

<sup>45</sup> See description of management models in the BSP as well as a summary in Annex 2.

<sup>46</sup> FIP is a targeted program of the Strategic Climate Fund within the Climate Investment Fund. The FIP supports developing countries' REDD+ efforts and promotes sustainable forest management. The FIP is active in 23 countries including Guatemala. The FIP program in Guatemala includes four projects currently under development (see Annex 2).

<sup>47</sup> The three early REDD+ projects are the following: (i) the GuateCarbon, jointly implemented by CONAP and the concessionaires of the community forestry concession in the MBR; (ii) the Lacandón Forest for Life (*Lacandón Bosques para la Vida*) managed by the Nature Defenders Foundation (*Fundación Defensores de la Naturaleza*) in collaboration with three cooperatives; and (iii) the Local Networks for Development (*Redes Locales para el Desarrollo*), managed by the Non-Governmental Organization Calmecac, 12 municipalities, and a second-level organization of community organizations.

<sup>48</sup> VCS is a carbon standard created and managed by Verra organization (<https://verra.org/>).



private REDD+ projects are expected to cover the funding gap through their engagement in REDD+ initiatives, while the GoG will continue its efforts to identify other financing sources. The ER Program is built on a broad participatory process that includes diverse stakeholders. Key stakeholders that participated in the design of the ER Program and are expected to contribute to its implementation include relevant national government institutions, municipalities, Non-governmental organizations (NGOs), Indigenous Peoples and Local Communities (IPLC) organizations and groups, private individuals and companies, and Civil Society Organizations (CSO).

16. **The Carbon Fund of the Forest Carbon Partnership Facility (FCPF) accepted Guatemala's ER Program on November 2019.<sup>49</sup>** The FCPF is a global partnership of countries, business, civil society, and Indigenous Peoples with the objective of building the capacity in World Bank member countries for REDD+. REDD+ financing follows a three-phased approach, two of which are financed by the FCPF (see Box 1).

#### **Box 1: Phases of REDD+ Emission Reduction Programs**

Phase I. **Readiness** – countries carry out Readiness preparation activities and develop national strategies or action plans, policies and measures, and other capacity building activities. The Readiness Fund of the FCPF provides grant financing for technical assistance for Phase I of REDD+.

Phase II. **The investment side of the program** – (e.g., through underlying projects) provides upfront support to a range of interventions needed to generate reduced emissions, from policy promotion and institutional capacity building, to field implementation of restoration and sustainable landscape management activities. These investments often not only produce ERs that can then be sold, but, due to their nature (e.g., through improved ecosystems services), provide additional economic and social benefits to the populations, locally and downstream (e.g., improved hydrological regulation and more sustainable farming systems). Countries are typically responsible for providing and leveraging finance for Phase II of REDD+.

Phase III. **Results-based payments mechanism** – organizes the purchase of the reduced emissions from the ER Program's beneficiaries, including from activities supported in Phase II. The land users/holders, other individuals, or institutions that, depending on each country's regulations, own the ER rights locally, must first agree to **transfer their ER titles** to the Government (e.g., through sub-agreements), which, in turn, must agree to transfer the titles to the buyer (here the Word Bank, as it manages the Carbon Fund). Successive payments are made to the Government by the Carbon Fund based on actual ERs as reported under a robust **MRV system**. Payments are then shared with the beneficiaries following a **BSP** through either monetary or non-monetary benefits. The mechanism hence offers a compensation for the transfer of title while acting as incentive for all stakeholders to increase the implementation of sustainable land/landscape management practices and other activities that reduce emissions. It also contributes to the related populations' livelihoods and local institutions' action. The Carbon Fund of the FCPF provides performance-based payments for REDD+ under Phase III of REDD+ though an Emission Crediting Transaction.

17. **After the successful presentation of the country's early idea of the ER Program in 2014, the World Bank and the Ministry of Public Finance (*Ministerio de Finanzas Públicas, MINFIN*) entered a Letter of Intent for the development of the ER Program and the signing of a potential Emission Reductions Payment Agreement (ERPA) for the reduction of 10.5 million tCO<sub>2</sub>e in a five-year timeframe. With financial support from the Carbon Fund, Guatemala developed the ER Program Document (ERPD<sup>50</sup>), the Environmental and Social (E&S) instruments to apply the World Bank's Environmental and Social Standards (ESS), and an**

<sup>49</sup> <https://forestcarbonpartnership.org/system/files/documents/CF20%20Chair%20Summary-FMT.pdf>

<sup>50</sup> [https://forestcarbonpartnership.org/system/files/documents/Guatemala\\_ERPD\\_11\\_05\\_2019.pdf](https://forestcarbonpartnership.org/system/files/documents/Guatemala_ERPD_11_05_2019.pdf)



advanced draft BSP.<sup>51</sup> This work also benefited from support from the FCPF Readiness Fund, including a FREL, a Measurement, Reporting and Verification (MRV) system, benefit-sharing arrangements, a Feedback Grievance Redress Mechanism (FGRM), and Territorial Dialogue Plans.<sup>52</sup> The ER Program represents an opportunity to test the innovative REDD+ financing approach, the management structures and proposed interventions, including on enabling conditions and the abovementioned systems and standards.

18. **The proposed operation is an Emission Crediting Transaction<sup>53</sup> between the Republic of Guatemala (the Program Entity), and the World Bank, as Trustee of the Carbon Fund of the FCPF.** It seeks to pay Guatemala for the reduced deforestation and forest degradation that will be achieved during the first five years of the ER Program implementation. The FCPF Carbon Fund would provide results-based payments to Guatemala in exchange for ER units measured in tCO<sub>2</sub>e by applying internationally agreed methodologies and verified by an independent Third-Party reviewer. These ERPA payments would be conditioned to the transparent and fair distribution of benefits among relevant REDD+ stakeholders as well as the compliance of the ER Program and benefit sharing with World Bank ESS and other applicable requirements. This results-based operation represents the start of the third phase of REDD+ financing in Guatemala, as the ER Program is expected to produce a stream of ERs in the future, beyond the 10.5 million tCO<sub>2</sub>e under this ER Program.

#### C. Relevance to Higher Level Objectives

19. **The proposed Emission Crediting Transaction and underlying ER Program respond directly to the focus areas for development identified in the Country Partnership Framework (CPF) FY17-20** (Report No. 103738-GT), discussed by the Board of Directors of the World Bank on November 17, 2016, and revised in the Performance and Learning Review of the CPF for the Period of FY17-20 on October 23, 2019. The proposed ER Program forms a key part of Pillar #2 of the CPF (Addressing Bottlenecks to Sustainable Growth) that seeks to strengthen the country's institutional capacity to manage and adapt to the impacts of climate change (Objective #5 - Build institutional capacity to manage and adapt to climate change). This engagement area aims to improve and benefit from the management of terrestrial natural assets. The ER Program supports REDD+ approaches that are pro-poor, including engagement of local people in forest management, livelihood development, and equitable benefit-sharing plans.
20. **The ER Program is aligned with the World Bank Group COVID-19 Crisis Response Approach Paper – Saving Lives, Scaling-Up Impact and Getting Back on Track.** By aligning underlying forest-and-climate change public projects to the generation of REDD+ outcomes, the ER would be particularly instrumental in advancing Pillar 3 “Ensuring Sustainable Business Growth and Job Creation” and Pillar 4: “Strengthening Policies, Institutions, and Investments for Rebuilding Better” and will support Guatemala’s COVID-19 recovery through payments for ERs, and more broadly, long-term sustainable growth by building back better while preserving global public goods like climate change adaptation and biodiversity. In general, the COVID-19 pandemic has resulted in a reduction of food demand and agricultural income and may increase pressure on natural ecosystems. The ER Program further creates opportunities for inclusive jobs

<sup>51</sup>[https://www.forestcarbonpartnership.org/sites/fcp/files/2019/Sep/FCPF%20Guidance%20Note%20on%20Benefit%20Sharing%20for%20ER%20Programs\\_2019.pdf](https://www.forestcarbonpartnership.org/sites/fcp/files/2019/Sep/FCPF%20Guidance%20Note%20on%20Benefit%20Sharing%20for%20ER%20Programs_2019.pdf)

<sup>52</sup> The FCPF Readiness Fund provided US\$8.8 million grant support to Guatemala from 2014-2020, delivered by the Inter-American Development Bank.

<sup>53</sup> Formerly known as Carbon Finance Transactions.



and economic growth, for example, through sustainable production of key timber, non-timber forestry products, and agricultural products from agroforestry and silvopastoral systems such as meat, cocoa, cardamom, coffee, ramón flour, honey, among others.

21. **The ER Program is in line with the main features of the K'atun 2032 National Development Plan<sup>54</sup>, the GoG's vision on climate change and World Bank Group goals of ending extreme poverty and boosting shared prosperity sustainably, and corporate commitments on Forests and Climate Change.** The K'atun 2032 National Development Plan places seeks to: (i) address gaps and overlaps in public policy to remove perverse incentives negatively affecting natural resources and the livelihoods of its forest-dependent population; (ii) strengthen forest governance and promote local communities' organization and participation in sustainable forest management, including through community forestry concessions; and (iii) encourage control and surveillance of protected forest areas to reduce illegal logging and forest fires, as well as monitoring of plagues and diseases. Additionally, the implementation of the ER Program will directly support several interventions under the World Bank Group Forest Action Plan FY16-20 Focus Areas (Sustainable Forestry and Forest Smart Interventions), and Cross-Cutting Themes (Climate Change and Resilience, Rights and Participation, Institutions and Governance). The ER Program will help achieve the country's NDC commitments on climate change mitigation, and will operationalize the ENDBDG, including through strengthened local forest and territorial governance, policy harmonization, and capacity building. The ER Program will also support the 2020 Plan for Guatemala's Economic Recovery, particularly regarding the cross-cutting principle of sustainability, by strengthening the economically profitable and social-equitable forest sector development model that the country has been implementing since 1996 through the deployment of forest incentives and a variety of public-private partnerships for forest governance and management.

## II. PROJECT DESCRIPTION

### A. Project Development Objective

#### PDO Statement

22. To make payments to the Program Entity for measured, reported, and verified Emission Reductions (ER) from reduced deforestation and forest degradation, as well as the enhancement of forest carbon stocks (REDD+) in targeted areas of Guatemala, and to ensure that paid amounts are distributed according to an agreed Benefit Sharing Plan (BSP).

#### PDO Level Indicators

23. The achievement of the PDO will be measured through the following indicators:

- a) Volume of CO<sub>2</sub>e Emissions Reductions that have been measured and reported by the Program Entity, verified by a Third Party, and transferred to the FCPF Carbon Fund (Metric ton)
- b) Amount of Payments made by the FCPF Carbon Fund for CO<sub>2</sub>e Emissions Reductions generated by the Program (Amount, US\$)
- c) Emission Reductions payments distributed in accordance with agreed Benefit Sharing

<sup>54</sup> Consejo Nacional de Desarrollo Urbano y Rural. 2014. Plan Nacional de Desarrollo K'atun: Nuestra Guatemala 2032. Guatemala: Conadur/Segeplán. <https://observatorioplanificacion.cepal.org/es/planes/plan-nacional-de-desarrollo-katun-nuestra-guatemala-2032>.



Plan (Yes/ No)

## B. Program Description

24. **The proposed operation consists of an Emission Crediting Transaction through an ERPA for the delivery of, and payment for ERs and subsequent distribution of payments according to a BSP.** The transaction will be between the Republic of Guatemala (represented by MINFIN) and the World Bank as the Trustee and implementing agency of the FCPF Carbon Fund. The World Bank financing for this operation is provided by the FCPF Carbon Fund and will *not* cover the investment costs associated with ER Program implementation (i.e., the underlying activities). The ERs generated will be measured as tCO<sub>2</sub>e against a previously determined baseline (the FREL), and through a monitoring, reporting and verification system involving independent verification of monitoring reports.
25. **To reduce emissions, Guatemala will implement GoG programs and early REDD+ projects.** The GoG programs are the INAB-managed forest incentive programs (i.e., PROBOSQUE and PINPEP), and the management models for forest conservation and sustainable use in the SIGAP enhanced by the FIP. The three early REDD+ projects and the government programs are already implementing one or more of the 19 REDD+ actions identified in the ERPD<sup>55</sup> as essential to address the drivers of deforestation and forest degradation. The basis for payments under the ERPA will be verified ERs reported by the Republic of Guatemala, through the Program's Executing Entity (INAB). Guatemala has agreed with the Carbon Fund on an approach that ensures that future measurement of emissions in the program jurisdiction is consistent with the agreed FREL. Annex 2 presents a detailed description of the underlying programs and projects that would generate the ERs.

### Component 1. Payment for Measured, Reported and Verified ERs (US\$52.5 million).

26. **This component seeks to support the MRV of ERs, and subsequent payment for the ERs.** The basis for payments under the ERPA is the verified ERs reported by INAB. The ER Program is expected to generate up to 10.5 million tCO<sub>2</sub>e, with potential additional ERs during the five-year ERPA term.<sup>56</sup> The expected ER volume from the ER Program is in line with the Maximum Contract Volume indicated in the Letter of Intent between the GoG and the World Bank. According to the ERPD, sale of ER units is expected to be feasible as the country estimates that the implementation of activities envisioned in the ER Program can generate up to 11.74 million tCO<sub>2</sub>e of ERs, assuming conservative performance of the underlying programs and projects, and after deducting a buffer accounting for uncertainty and reversal risks. Per the FCPF Buffer Guidelines,<sup>57</sup> conservative factors of 12 and 15 percent of ERs associated with uncertainty in estimations of deforestation and forest degradation were set aside, respectively, from the total ERs. In addition, a 23 percent buffer was set aside to discount the risk of ERs reversal into the atmosphere.<sup>58</sup> Therefore, the ERPA Maximum Contracted Volume of 10.5 million tCO<sub>2</sub>e represents approximately 90 percent reduction

<sup>55</sup> [https://www.forestcarbonpartnership.org/system/files/documents/Guatemala\\_ERPD\\_11\\_05\\_2019.pdf](https://www.forestcarbonpartnership.org/system/files/documents/Guatemala_ERPD_11_05_2019.pdf)

<sup>56</sup> The ERPA Maximum Contract Value reflect ERs generated in the 2020-2024 period.

<sup>57</sup>

[https://www.forestcarbonpartnership.org/sites/fcp/files/2020/April/FCPF%20Buffer%20Guidelines\\_2020\\_1\\_Final\\_Posted.pdf](https://www.forestcarbonpartnership.org/sites/fcp/files/2020/April/FCPF%20Buffer%20Guidelines_2020_1_Final_Posted.pdf)

<sup>58</sup> According to the ERPD, the following risk categories comprise the reversal risk: a default minimum quantity (10%); a lack of wide and sustainable support from stakeholders (5%); lack of long-term effectiveness to solve underlying drivers (3%); and exposure and vulnerability to natural disturbances (5%). The reversal risks include the lack of renewal of two community-forestry concession contracts, which were scheduled to expire within the ERPA term. The contracts have since been renewed, but the earlier assumption remains in the reversal risk (which will be updated in the first monitoring report).



of the total GHG emissions potential estimated at 11.7 million tCO<sub>2</sub>e; it also represents 12 percent of the the ER Program's full potential, estimated as 17.5 million tCO<sub>2</sub>e/year<sup>59</sup> (see Table 1).

*Table 1. Ex-ante GHG Emission Reduction and Removals of the ER Program*

Year	Estimation of the potential for ERs (tCO <sub>2</sub> e/yr) a	Estimation of ERs by implementation of actions (tCO <sub>2</sub> e/yr) b	Estimation of expected buffer set-aside to reflect the level of uncertainty associated with the estimation of ERs during the Term of the ERPA (tCO <sub>2</sub> e/yr) c	Estimation of expected buffer set aside to reflect the risk of reversal during the Term of the ERPA (tCO <sub>2</sub> e/yr) d	Estimated ERs (tCO <sub>2</sub> e/yr) e= b-(c+d)
<b>2020</b>	17,517,033	3,519,316	449,634	706,027	2,363,655
<b>2021</b>	17,517,033	3,483,363	448,000	698,133	2,337,230
<b>2022</b>	17,517,033	3,499,881	450,122	701,444	2,348,315
<b>2023</b>	17,517,033	3,504,601	450,729	702,390	2,351,482
<b>2024</b>	17,517,033	3,490,442	448,909	699,552	2,341,981
<b>Total</b>	<b>87,585,165</b>	<b>17,497,603</b>	<b>2,247,394</b>	<b>3,507,546</b>	<b>11,742,663</b>

**Source:** Based on the nesting tool of the Guatemala Emissions Reduction Program.<sup>60</sup>

27. **ERPA contract value and Reporting Periods (RPs).** INAB will be responsible for administering, coordinating, and supervising the REDD+ initiatives, and coordinating the monitoring and reporting of ERs. INAB will coordinate the MRV system, with technical support from MAGA, MARN, CONAP, and the universities of San Carlos, Rafael Landivar, and the Valley of Guatemala. The ERPA Maximum Contract Value is up to US\$52.5 million during the ERPA Term, from January 1, 2020 to December 31, 2025, unless terminated earlier. The ERPA value considers the Carbon Fund Participants' willingness to pay US\$5 per tCO<sub>2</sub>e.<sup>61</sup> There will be three RPs during the ERPA term: (1) from January 1 until December 31, 2020; (2) from January 1, 2021, to December 31, 2022; and (3) from January 1, 2023, to December 31, 2024. The GoG would sign two ERPAs, one with Carbon Fund Participants in Tranche A (5 percent of the total contract volume) and another one with Tranche B (around 95 percent of the total contract volume), reflecting each Tranche's contribution to the Carbon Fund.
28. **ER Program Performance scenarios.** The ER volume expected to be generated by Guatemala has been estimated based on projections of the ER Program's effectiveness in reducing emissions. Such projections consider that early REDD+ projects may generate the following percentage of the ex-ante ER estimations: (i) GuateCarbon and Lacandón: Forests for Life, 40 and 50 percent, based on the VCS verifications; and (ii) Reddes Locales para el Desarrollo, 20 percent. The GoG programs' performance is based on INAB and CONAP's projections on the ability of the MCEES and the management models for forest conservation and sustainable use in the SIGAP, as described in the BSP, to reduce emissions by 18 and 2 percent relative to their respective business-as-usual scenarios, conditioned to receiving technical and financial support from

<sup>59</sup> GoG, 2019. Emissions Reduction Program Document.

[https://www.forestcarbonpartnership.org/system/files/documents/Guatemala\\_ERPD\\_11\\_05\\_2019.pdf](https://www.forestcarbonpartnership.org/system/files/documents/Guatemala_ERPD_11_05_2019.pdf)

<sup>60</sup> The nesting approach consists of rules to integrate these projects into the ER Program, considering the methodological differences between reference levels to calculate ERs gained

<sup>61</sup>

<https://www.forestcarbonpartnership.org/system/files/documents/CF10%20Chair%27s%20Summary%2006302014%20final.pdf>



the FIP.

29. **Given the uncertainty as to when FIP implementation, which will strengthen the GoG programs to generate ERs, will start, the PAD explores high, medium, and low scenarios for ER delivery.** Under the high scenario (100 percent of ERs delivered), the GoG programs would contribute 45 percent of the total expected ERs in the first RP and 62 percent in each of the subsequent ones, while the early REDD+ projects would contribute the remaining. The low and medium scenarios (50 and 75 percent of ERs delivered respectively) reflect a reduction in the GoG's program effectiveness to deliver ERs, while assume the early REDD+ projects remain unchanged, because their estimations are based on data from actual VCS verifications. In the medium scenario, the effectiveness of the GoG programs are reduced to 24 percent during the first RP and 50 percent the subsequent ones; and, for the low scenario, these figures are 17.5 and 24.2 percent, respectively. Table 2 shows that, under the low and medium scenarios, the ER Program would still be able to generate enough ERs to comply with the ERPA minimum contract values presented in the fifth row, during the first and second RPs. However, it will not reach the Maximum Contract volume nor the threshold above which early REDD+ projects could sell ERs to other carbon buyers (see sixth row) during the first and second RPs. The lowest ERPA total value would be US\$28.9 million.

Table 2. ER Program Forecast Performance Scenarios

Variable	Low scenario 50% of ERs delivered			Medium scenario 75% of ERs delivered			High scenario 100% of ERs delivered		
	RP			RP			RP		
	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
1. Total estimated potential, million tCO <sub>2</sub>	1.7	3.5	3.5	2.6	5.2	5.2	3.5	7.0	7.0
2. Set aside - uncertainty estimations million tCO <sub>2e</sub>	0.2	0.4	0.4	0.3	0.6	0.6	0.4	0.9	0.9
3. Set aside - reversal risks, million tCO <sub>2e</sub>	0.3	0.7	0.7	0.5	1.0	1.0	0.7	1.4	1.4
4. Estimated ERs to be produced by the ER Program, million tCO <sub>2e</sub>	1.1	2.3	2.3	1.7	3.5	3.5	2.3	4.7	4.7
5. Minimum ERs to be contracted under the ERPA, million tCO <sub>2e</sub>	0.3	1.7	8.5	0.3	1.7	8.5	0.3	1.7	8.5
6. Threshold for early REDD+ projects to sell ERs to other carbon buyers, million tCO <sub>2e</sub>	2.0	4.2	-	2.0	4.2	-	2.0	4.2	-
7. ERPA value, US\$ million	1.8	8.6	18.5	1.8	8.6	33.5	1.8	8.6	42.0
<b>Total ERPA value, US\$ million</b>	<b>28.9</b>			<b>43.9</b>			<b>52.5</b>		

30. **ERPA payments schedule.** The GoG has established an ERPA payment schedule that foresees three periodic payments and two interim advance payments (reflected in the Expected Disbursements in the Data Sheet). In the High scenario, the GoG would produce 11.74 million tCO<sub>2e</sub>, of which it would sell 10.5 million tCO<sub>2e</sub> to the Carbon Fund, with approximately 20 percent to be delivered during the first RP, and the remaining 80 percent equally distributed in the second and third RPs. Periodic payments would happen during fiscal years 2022, 2024, and 2026, considering the six-months-to-one-year duration of the results verification and payment disbursement process. To improve the ER Program cashflow, the GoG would request two interim advance payments as illustrated in Table 3.



Table 3. Estimated Disbursement Schedule

RP	Period	ERs (tCO <sub>2</sub> e)	Payment US\$	World Bank Fiscal Year Disbursement
Periodic RP 1	Jan-Dec 2020	367,500	1,837,500	FY22
Interim RP1	Jan-Dec 2021	866,250	2,165,625	FY23
Periodic RP 1	Jan-Dec 2022	1,732,500	6,496,875	FY24
Interim RP1	Jan-Dec 2023	4,200,000	10,500,000	FY25
Periodic RP3	Jan 2023-Dec 2024	8,400,000	31,500,000	FY26
		<b>Total</b>	<b>52,500,000</b>	

#### Component 2: Distribution of ER Payments According to the Benefit Sharing Plan (US\$0 million)<sup>62</sup>.

31. **This component aims to distribute the ERPA payments from verified ERs among participants of the ER Program according to an agreed BSP.** An advanced draft of the BSP was agreed with the FCPF Donors on December 7, 2020.<sup>63</sup> The ERPA payments will be shared according to this agreed BSP developed in line with the Carbon Fund Guidance Note on Benefit Sharing for ER Program and acceptable to the World Bank (see Annex 3). Benefit sharing will be carried out in two parts: (i) Payment for Measured, Reported, and Verified ERs from the Carbon Fund to MINFIN, and (ii) Distribution of ER Payments from MINFIN to beneficiaries, according to the BSP.
32. **Guatemala will deduct US\$1.2 million from the gross ERPA payments made under Component 1 to cover operating costs, for benefit distribution, E&S aspects implementation, MRV, among others.** It will also set aside one percent of the gross payments to a contingent fund (Solidarity Reserve) to compensate REDD+ initiatives affected by natural hazards. MINFIN will, on INAB's request, distribute the ERPA revenues received among proponents of REDD+ initiatives registered in the MARN's Registry of GHG Emission Reductions and Removals Projects (herein after the National GHG Registry) and certified by INAB, in collaboration with CONAP, as applicable. Beneficiaries may re-invest a portion of the ERPA payments in REDD+ initiatives.
33. **Three types of REDD+ initiatives will receive the ERPA payments.** These are (i) early and new REDD+ projects<sup>64</sup>, (ii) MCEES projects, and (iii) the management models for forest conservation and sustainable use inside the SIGAP. The REDD+ initiatives can be led by individual landowners or land possessors or by a proponent who groups several individual landowners or land possessors. The Carbon Fund Methodological Framework requires REDD+ initiatives to be registered in the National GHG Registry. Proponents of grouped REDD+ initiatives (e.g., government institutions, CONAP, non-government entities) will establish a project-level benefit-sharing committee and develop a project-level BSP to distribute monetary and non-monetary benefits to their final beneficiaries. Non-monetary benefits to be distributed to final beneficiaries include equipment for fire control, forest surveillance, and field monitoring; investment in productive projects; research; minor community works such as road maintenance, schools, checkpoints; necessary infrastructure for nature-based tourism, inputs for

<sup>62</sup> The payment from the World Bank for this operation occurs under Component 1. Component 2 specifies the distribution of these payments to beneficiaries. Given this, there is no value assigned to Component 2.

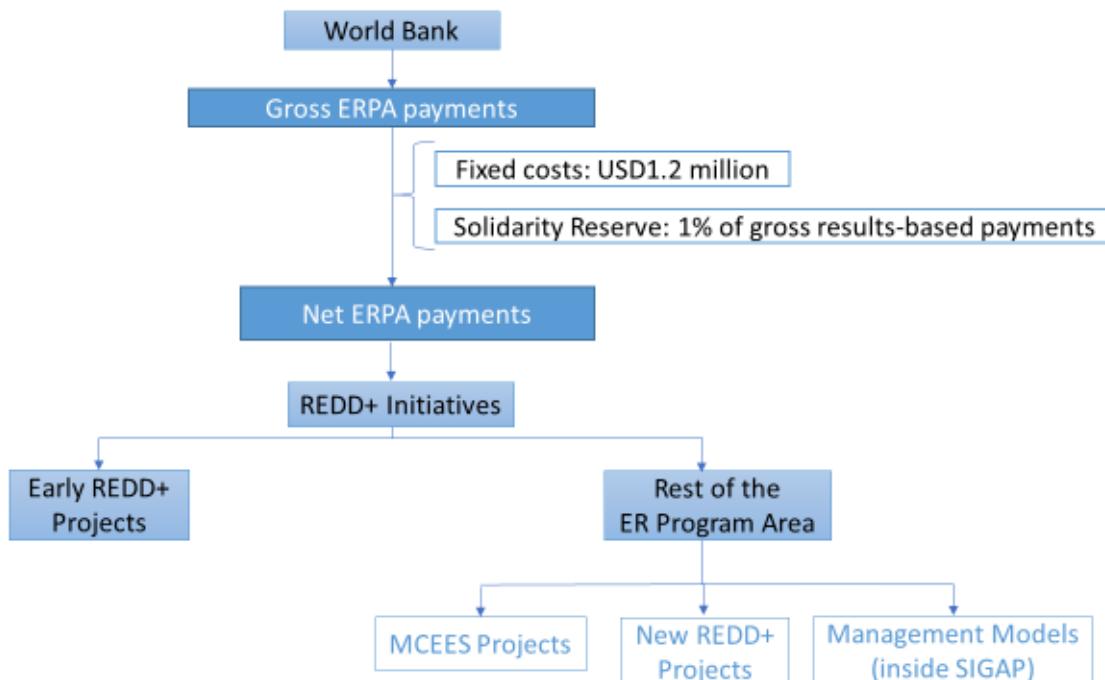
<sup>63</sup> <http://documents1.worldbank.org/curated/en/444191607584521929/pdf/Guatemala-Emissions-Reductions-Program-Benefit-Sharing-Plan.pdf>

<sup>64</sup> Early REDD+ projects are certified by the VCS led by the Verra organization (<https://verra.org/>)



agroforestry, funding for community patrols, capacity building, improvement of small-and-medium community-forestry enterprises, among others. MCEES projects will reinvest 100 percent of carbon payments in an agreed forest management plan. A final BSP, required prior to the first ERPA payment (an effectiveness condition), will include INAB and CONAP's guidelines for MCEES and the management models for forest conservation and sustainable use inside the SIGAP, respectively, as well as an Operations Manual (OM) for the BSP. Annex 3 presents information on the process design, implementation supervision, monitoring, and reporting of REDD+ initiatives.

Figure 1. Benefit Sharing Distribution



34. **Guatemala will calculate benefit distribution following a two-step process, as illustrated in Figure 1.** First, in calculating the gains of early REDD+ projects, individual quotas of the FREL will be used as reference, applying a Nesting Tool (see a summary of the nesting approach in Annex 4). Likewise, any new REDD+ project developed within the ER Program area will receive a quota of the ER Program FREL. On the other hand, gains corresponding to MCEES projects and the management models for forest conservation and sustainable use in the SIGAP within the “Rest of the ER Program Area”, will be calculated on a Ha basis.
35. **Since ERs will be generated from REDD+ initiatives, land users/holders or institutions that own the rights to the land the ER is generated from must first agree to transfer their titles.** Transfer of titles to ERs to the Carbon Fund will be based on existing legal and regulatory frameworks, sub-agreements, and the benefit sharing arrangements in the BSP. Under ERPAs, payments are made against verified and transferred ERs. MINFIN, INAB, and CONAP, on behalf of the Republic of Guatemala, will sign sub-agreements<sup>65</sup> with proponents of REDD+ initiatives to formalize the transfer of all rights and titles over

<sup>65</sup> Contracts and agreements between MINFIN/INAB/CONAP and proponents of REDD+ initiatives.



the contracted ERs under the ERPA.

### C. Project Beneficiaries

36. **The ER Program will reach a wide variety of beneficiaries through ongoing public/private sector projects and GoG programs.** Public agencies such as INAB, CONAP and MARN, will receive additional resources to strengthen their programs for the sustainable management of the country's natural resources. The ER Program will improve beneficiaries' livelihoods by reducing soil erosion, increasing forest products, improving hydrological services, and strengthening adaptation to climate change. The ER Program will also generate benefits for the larger community by enhancing the delivery of global environmental services, such as reversed biodiversity loss, and increased carbon sequestration. Non-carbon benefits (those not funded by ERPA payments) include the conservation of biodiversity, improved management of water resources and the creation of "green jobs" which will also support the country's economic recovery from the COVID-19 pandemic. Additional benefits expected from the ER Program are related to improved rural livelihoods.
37. **In addition to the broad benefits of the ER Program, ERPA payments will be distributed to stakeholders in the form of monetary and non-monetary benefits resulting from ER Program implementation** through any of the REDD+ initiatives. Potential beneficiaries include among others: (i) Individuals and legal persons (landowners or land possessor); (ii) Local communities, associations, cooperatives, and committees duly represented and with adequate organizational structure for decision making, including communities with ancestral rights; (iii) Private companies; (iv) Municipalities; and (v) NGOs. National government institutions like INAB will also benefit from the payments to cover the fixed costs of the program.
38. **The ER Program has the potential to benefit around 250,000 forest dedicated persons, including vulnerable rural communities.** According to the BSP, the REDD+ initiatives shall make sure that at least 35 percent of their beneficiaries are women, youth<sup>66</sup>, and vulnerable groups. To ensure adequate social inclusion, proponents of REDD+ initiatives will apply relevant instruments developed by the GoG during the REDD+ Readiness phase. These instruments are the Territorial Plans for Dialogue and Participation, the Road Map for Gender Inclusion in REDD+, and the Road Map for Cultural Pertinence in REDD+. Also, the guidelines for MCEES and the management models for forest conservation and sustainable use in the SIGAP (to be included in the final BSP) will include social inclusion as one of the eligibility criteria.

### D. Rationale for Bank Involvement and Role of Partners

39. **Public sector provision/financing to the Guatemala's ER Program is justified given that climate change mitigation and biodiversity conservation to which the ER Program will contribute to, are global public goods.** This Emission Crediting Transaction seeks to pay the country for the provision of an environmental service (i.e., climate change mitigation) that is of global relevance, as it directly contributes to the United Nations Framework Convention on Climate Change (UNFCCC's) goals and indirectly to conserve biodiversity. At the national level, public investment is justified as the ER Program builds around a set of strategic options aimed at overcoming the barriers and deficiencies of current forest sector governance framework and on Guatemala's more than 24-year experience implementing inclusive forest investment programs as well as CSOs' experience implementing community-based REDD+ projects.
40. **Value added of World Bank's support consists of its programmatic approach applied to the forest sector**

<sup>66</sup> Youth is defined as people between 14-29 years old in the case of grouped projects and between 18-29 years old in the case of individual REDD+ initiatives.



as laid out in the World Bank Forest Action Plan FY16-20 and the World Bank 2016-2020 Climate Change Action Plan<sup>67</sup>. The World Bank's comparative advantage comes from its past record of engagement, lessons learned, global knowledge and experience acquired over a sustained period of engagement in the forest and agricultural sectors in Guatemala as well as its extensive experience from supporting similar projects in Africa, Asia and Latin America and the Caribbean under the FCPF, Global Environment Facility (GEF), and BioCarbon Fund. This includes the World Bank's unique expertise in providing technical assistance to support the design and implementation of large-scale ER Programs, such as technical aspects related to MRV, carbon accounting, and benefit sharing. This Emission Crediting Transaction will complement public sector investment, including for the generation of enabling conditions for REDD+ implementation, through an ambitious programmatic approach applied to the forest sector, including other World Bank projects under preparation, such as the (US\$11.8 million) Forest Governance and Livelihoods Diversification Project (P167131) and the (US\$4.5 million) Dedicated Grant Mechanism (DGM) for IPLCs (P170391).

41. **Role of Partners.** The programmatic approach underlying the ER Program provides great opportunities for a coordinated engagement of other development partners in the GoG's efforts to implement REDD+ and generate the ERs committed under the ERPA with the Carbon Fund. In addition, the ER Program offers opportunities to achieve multiple environmental and social outcomes simultaneously, including biodiversity conservation, climate change adaptation (i.e., through increased resilience of vulnerable communities and ecosystems), conservation of water sources, and integrated rural development. The following donor agencies have traditionally supported the forest sector of Guatemala: The Inter-American Development Bank (IDB) was the implementing agency of the FCPF US\$8.8 million grant for REDD+ Readiness during the 2014-2020 period; it will also be the implementing agency of two FIP projects currently under development, these are: (i) the Sustainable Forest Management Project (US\$9.7 million), and (ii) the Green Guarantees for Competitive Landscape Project (US\$2.5 million). Other international agencies such as the United States Agency for International Cooperation, the German International Cooperation, the European Union, and the United Kingdom, often provide technical or financial support to forest and agroforest sector initiatives compatible with REDD+. Implementation of the ER Program will continue to be coordinated with these partners to ensure its objective is realized and synergies achieved. At the regional level, there is potential for the Central American Commission on Environment and Development, the entity of the Central American Integration System in charge of the environmental agenda to engage with the GoG in the ER Program.

#### E. Lessons Learned and Reflected in the Project Design

42. **The World Bank has vast experience in designing large-scale forest-landscape ER programs.** In designing these ER Programs, countries are learning from each other and integrating valuable lessons learned from previous or ongoing BioCarbon Fund projects and flagship Payment for Environmental Services in Costa Rica, México, and Ecuador.<sup>68</sup> This operation also integrates valuable lessons from Guatemala's experience

<sup>67</sup> World Bank. 2016. "World Bank Group Forest Action Plan FY16–20." World Bank, Washington DC. License: Creative Commons Attribution CC BY 3.0 IGO; and World Bank; IFC; MIGA. 2016. *World Bank Group Climate Change Action Plan 2016-2020*. World Bank, Washington, DC. © World Bank. <https://openknowledge.worldbank.org/handle/10986/24451> License: CC BY 3.0 IGO.

<sup>68</sup> Fondo Nacional para el Financiamiento Forestal (FONAFIFO), Comisión Nacional Forestal (CONAFOR), and Ministry of Environment. 2012. Lessons learned for REDD+ from PES and Conservation Incentive Programs. Examples from Costa Rica, México, and Ecuador. pp. 164.

<http://documents.worldbank.org/curated/en/279231468233935706/pdf/769340WP0Box0300March0201200PUBLIC0.pdf>



with sharing benefits to forest communities and individuals since 1996 through the forest incentive programs as well as from robust early REDD+ projects certified by recognized international carbon standards.<sup>69</sup> The Guatemala ER Program integrates the following lessons learned:

- i) **Sound technical assessment of the drivers of deforestation and forest degradation and application of a robust methodology are needed to determine the FREL.** The ER Program's strategy options build on a thorough analysis of the drivers of deforestation and forest degradation which was positively assessed by a Carbon Fund's Technical Advisory Panel.
- ii) **Inclusion and fairness considerations need to be integrated into benefit distribution.** Existing REDD+ projects provide valuable lessons for successful integration of forest local communities and individuals in these efforts. For example, in the GuateCarbon early REDD+ project, which encompasses the community forestry concessions model established by the GoG in the MBR since 1996, communities will use their proven participatory mechanisms to distribute benefits from ERPA payments and collectively participate in forest monitoring and sustainable management of forests. Community REDD+ projects are vehicles to reward IPLCs' historic contribution to forest protection, while providing incentives for their participation in integrated land-use planning. By doing this, the ER Program adopts a rights-based approach that respect internationally agreed E&S aspects.
- iii) **Sustainable financing needs and availability must be defined up-front.** Lessons learned indicate that results-based finance REDD+ programs require clarity on up-front financing to generate ERs. Sources of investment financing are clear in the Guatemala ER Program and it builds on domestic investments of around US\$24 million yearly in the forest sector through forest incentives programs, complemented by the US\$24 million FIP Program.
- iv) **Transparency in benefit distribution is key.** The proposed benefit sharing mechanism builds on proven and widely accepted channels. All the resources will be channeled through the account administered by MINFIN directly to the REDD+ initiative proponents and the final beneficiaries. Stakeholders participating in REDD+ initiatives would be able to decide on the channel for monetary benefit distribution (i.e., directly from MINFIN or through the project proponent). INAB will develop a Rule of Procedures for the FGRM, which will be instrumental to ensure transparency of benefit distribution. Also, grouped REDD+ initiatives will have to establish their own governance mechanism to ensure benefits are transparently and fairly distributed among final beneficiaries. Stakeholders' involvement in decision-making, at the political/strategic level and at the operational level will be ensured through inclusive benefit-sharing management structures.

### III. IMPLEMENTATION ARRANGEMENTS

#### A. Institutional and Implementation Arrangements

43. **MINFIN will be the representative of the Program Entity and INAB, the Executing Entity, will be responsible for the overall ER Program management and coordination, through a Program Implementing Unit (PIU) that will be established and operated by INAB.** INAB, jointly with MINFIN, will be responsible for coordinating and overseeing all fiduciary aspects, supporting project implementation, and undertaking basic financial management (FM) functions in terms of budgeting, accounting, and treasury. INAB will also be responsible for administering, coordinating, and supervising the REDD+

<sup>69</sup> <http://www.climate-standards.org/ccb-standards/>



initiatives, and coordinating the monitoring and reporting of carbon, non-carbon benefits, benefit sharing, transfer of ER titles, E&S aspects, and FGRM. INAB and MINFIN will sign a subsidiary agreement specifying INAB's role in implementation. In addition, INAB will sign an inter-institutional agreement with the following relevant institutions – MINFIN, CONAP, MARN, and MAGA - to promote cross-sectoral activities necessary to reduce deforestation and forest degradation and the effective implementation of REDD+ initiatives, the MRV system (for carbon, non-carbon benefits, E&S standards, and benefit-sharing), the FGRM, and the BSP (see Annex 1).

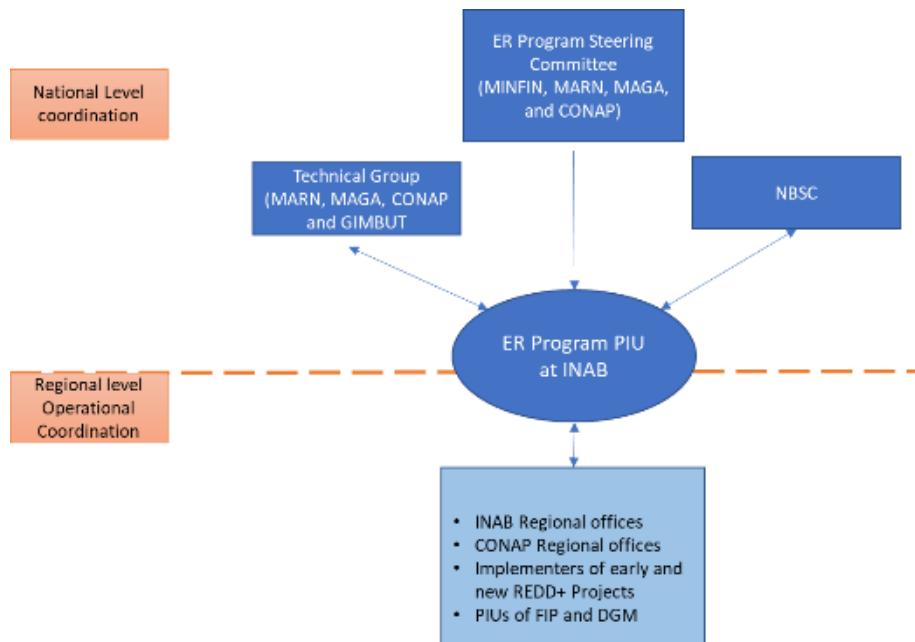
44. **At the national level, the GoG will establish an ER Program Steering Committee composed of authorities of MINFIN, INAB, CONAP, MAGA, and MARN, as well as a Technical Group and a National Benefit-Sharing Committee (NBSC).** The PIU will coordinate with the ER Program Steering Committee, which will oversee the flow and use of funds in accordance with ER Program's objectives and regulations; promote cross-sectoral coordination and budgets for adequate ER Program implementation, including the promotion of private sector investment, among others. INAB will serve as the Technical Secretariat of the Steering Committee.
45. **The Technical Group, composed of technical staff from MARN, MAGA, CONAP, and coordinated by INAB, will be responsible for undertaking relevant activities to support effective implementation of REDD+ initiatives, the FGRM, the MRV system, E&S compliance, and benefit distribution.** The Technical Group will receive specialized support on carbon accounting from the Interinstitutional Group on Forest and Land-Use Monitoring, (*Grupo Interinstitucional para el Monitoreo de los Bosques y el Uso de la Tierra, GIMBUT*),<sup>70,71</sup> responsible for producing official data on forest cover and land-use change.
46. **The GoG will also establish an NBSC composed of representatives from national government institutions and proponents or co-proponents of REDD+ initiatives.** The NBSC's role is to follow up on the benefit distribution reports, which will be prepared and endorsed by INAB. The NBSC has a balanced representation of national government institutions (MINFIN, INAB, CONAP, MAGA, MARN), municipalities, and REDD+ initiatives implementers. The REDD+ initiatives will be represented by four members: one from early REDD+ projects, one from new REDD+ projects, one from MCEES, and one from the management models for forest conservation and sustainable use in the SIGAP. The IPLCs can be represented in the NBSC through any of the REDD+ initiatives. At the regional level, the PIU will coordinate with INAB's regional offices and CONAP's central office who will in turn coordinate with CONAP's regional offices. The PIU will also coordinate with implementers of early REDD+ projects, the FIP and DGM projects (see Figure 2).

<sup>70</sup> Composed of carbon accounting specialists from INAB, CONAP, MAGA, MARN, and Universities of San Carlos, the Valley of Guatemala, and Rafael Landivar.

<sup>71</sup> The GoG is considering replacing GIMBUT, which is a temporary structure, with a new mechanism. GIMBUT is the mechanism proposed in the ERPD. Therefore, once the proposed changes are specified, the World Bank will assess whether they require the FCPF's approval.



Figure 2. Interinstitutional coordination for ER Program Implementation



47. **MINFIN and INAB have in place procedures for processing of ERPA payments**, with clear roles and responsibilities, including recording and approval of payments and specific FM processes, based on the lessons learnt from the forest incentives granted by INAB. These procedures along with the basic staffing structure, and details of the inter-institutional agreements to be signed between INAB and relevant institutions will be detailed in the BSP OM to be adopted by project effectiveness.

## B. Results Monitoring and Evaluation Arrangements

48. **INAB, through the PIU, will be responsible for producing consolidated ER Monitoring Reports on ER Program implementation.** Such reports will include information on implementation of the ER Program, carbon and non-carbon benefits, transfer of ER Titles, benefit distribution, as well as E&S and FGRM compliance. INAB will also report on ER Program, and BSP implementation supervision and evaluation as part of the Interim Progress Reports (at least annual) supervised through regular World Bank supervision missions.

49. **Carbon measurement, monitoring, and reporting.** The measurement, collection, compilation, and recording of all relevant data and parameters necessary for ER estimation will be conducted following a Monitoring Plan in compliance with the Carbon Fund Methodological Framework. The ER Program's FREL, determined at 13.08 million tCO<sub>2</sub>e/year, is the benchmark against which the ER Program results will be measured.<sup>72</sup> The Carbon Fund has approved the FREL, but it may be updated from time to time to improve data and methodological approaches. ER results will be reported in the Monitoring Reports five times during the ERPA term (three periodic and two interim reports). To comply with these requirements,

<sup>72</sup> The FREL was determined as the net annual average of national GHG emissions and removals from deforestation (12.29 million tCO<sub>2</sub>e/year), forest degradation (3 million tCO<sub>2</sub>e/year), and carbon stock enhancement (-1.94 million tCO<sub>2</sub>e/year) during the 2006-2016 period. GoG. Emissions Reduction Program Document. 2019.

[https://forestcarbonpartnership.org/system/files/documents/Guatemala\\_ERPD\\_11\\_05\\_2019.pdf](https://forestcarbonpartnership.org/system/files/documents/Guatemala_ERPD_11_05_2019.pdf)



Guatemala developed an integrated system called REDD+ Information System (*Sistema de Información sobre REDD+*), a submodule of the National Information System on Climate Change (*Sistema Nacional de Información sobre Cambio Climático, SNICC*<sup>73</sup>), which help manage information on REDD+ GHG emissions, multiple benefits, other impacts, management, and E&S compliance. The progress on the operational implementation of the Emission Crediting Transaction, including performance indicators for each mitigation measure, implementation of E&S plans, and implementation of the BSP will be monitored through regular World Bank implementation support missions (at least every semester, including virtual missions) and will be documented in yearly Interim Progress Reports prepared by INAB, in form and substance satisfactory to the World Bank. The proposed Monitoring Plan is described in Annex 2 and RPs are provided in Table 3.

50. **Verification of ER Monitoring Reports.** The GoG's Periodic Monitoring Reports will be subject to verification by an independent Third-Party reviewer commissioned by the World Bank. There will be three Third-Party independent verifications, one per each Periodic Monitoring Report. The World Bank will select the independent Third-Party reviewer on a competitive basis, applying international best practices in the carbon accounting industry and following World Bank procurement policies and processes. Additional elements covered in the Monitoring Report (i.e., implementation progress, ESS compliance, benefit sharing) will be reviewed/verified by the World Bank. ERPA payments will be made following the submission of Monitoring Reports and Third-Party verifications on *not only* ERs generated, but also compliance with ESS requirements and, following the first payment, the BSP.
51. **ER Program implementation and ESS compliance.** INAB, in coordination with MAGA, MARN, and CONAP will develop and make publicly available guidelines for monitoring and reporting on REDD+ activities implementation under the GoG programs and REDD+ projects. Guatemala developed guidelines for ESS compliance and FGRM implementation, as part of the requirements of the Environmental and Social Management Framework (ESMF).
52. **Non-Carbon benefits.** Guatemala prioritized the non-carbon benefits based on existing monitoring systems implemented by MARN, MAGA, CONAP, and INAB. The PIU will coordinate with these institutions to ensure consistent monitoring and reporting of the non-carbon benefits.
53. **Benefit distribution and ER Title Transfer.** The GoG will report on BSP implementation six months after receiving the first ERPA payments and annually thereafter. These reports will include, among other things, specific information on benefit distribution to final beneficiaries. Proponents of grouped REDD+ initiatives will submit benefit-distribution reports to the PIU three months after receiving the first ERPA payment and on an annual basis thereafter. The PIU, with support from CONAP as applicable, will verify such internal benefit distribution reports. Monitoring of benefit distribution will be independently audited on an annual basis, or as needed. The cost of the audit is budgeted under the ER Program operating costs (i.e., US\$300,000 per year for four years<sup>74</sup>) to be financed from ERPA payments.
54. **Registry of REDD+ initiatives and ER Transaction Registry.** MARN, as the institution responsible for developing and implementing the National GHG Registry and the SNICC, will make publicly available information on the REDD+ initiatives carried out in the country's territory. This is a Carbon Fund requirement to ensure appropriate ER Program documentation and transparency. Therefore, all REDD+

<sup>73</sup> [https://snicc.azurewebsites.net/MRV/Monitoreo\\_forestal3](https://snicc.azurewebsites.net/MRV/Monitoreo_forestal3)

<sup>74</sup> In addition to audits, the operating costs will be used to guarantee adequate ER Program implementation, particularly on E&S aspects, MRV, FGRM, evaluation, and communication, among other costs.



initiatives seeking to participate in the ER Program shall be registered. MARN is currently developing the National Registry for REDD+ Initiatives. ER transactions registry, on the other hand, will be made under the Carbon Fund's Carbon Assets Trading System, given the complex nature of the groundwork required to establish a national registry for ER Transactions. The Carbon Assets Trading System seeks to avoid double counting and/or claiming of the transacted ERs. The functions of the Registry will be to document and record, among others, the issuance, serialization, acquisition, retirement, cancellation and/or transfer of ERs generated under the ER Program.

### C. Sustainability

55. **The ER Program's strategic options were agreed between the participating governmental and institutions and non-governmental stakeholders.** They are intended to generate the legal and institutional conditions to meet the established ER goals, as well as actions to be carried out in the field through successful plans, programs, and projects being developed by the country. The combination of enabling conditions and direct actions will contribute to an integrated landscape management approach that harmonizes policies, coordinates institutions, and engages diverse stakeholders to reduce emissions in the land use sector. The strategic actions of the ENDDBG remain priorities for the GoG and will contribute to the long-term goals of the NDC, particularly in terms of reducing vulnerability, adapting to climate change, and helping to mitigate its causes. The preparation of the ER Program depended on a highly participatory process with major stakeholders at the national and regional level involved in land use change, especially from productive agricultural sectors, and this established ownership of the ER Program. Insights from these workshops were critical for the design and implementation of the ER Program, supplementing analytical studies to better understand the underlying causes of deforestation and forest degradation, and what actions to take for the long-term decoupling of economic growth from forest loss.
56. **The ER Program will use revenue from the ERPA payments to reinvest in activities that will contribute to the generation of additional ERs, thus ensuring the sustainability of the ER Program and its gains.** The ER Program presents an opportunity for the sustainable financing of other World Bank financed investments such as the Forest Governance and Livelihoods Diversification Project (P167131) and the DGM for Indigenous Peoples and Local Communities Project (P170391), as well as the infrastructure for the investments to generate additional non-World Bank financed ER payments for climate benefits. The ER Program is considered a key instrument in increasing the flow of funds to the environmental sector, further contributing to the GoG's efforts to build back better from the COVID-19 pandemic. Carbon revenues will be reinvested in activities that promote sustainable forest management as well as the improved livelihoods and the wellbeing of local communities.
57. **The ER Program is based on programs and projects that are currently under implementation or advanced in preparation and being led and financed by the GoG and the private/public sector.** The GoG will facilitate the management of around 75 percent of the total ER Program investment cost resources, which total US\$226 million (see details in table 10 of Annex 7). This contribution includes resources from the underlying GoG programs (i.e., PROBOSQUE, PINPEP, and MCEES), as well as the FIP Program financed by the IDB and the World Bank (see Annex 2: Summary of the ER Program). The early REDD+ projects will contribute to an additional 5 percent of the ER Program investment costs. In terms of ER Program sustainability, it is important to highlight that the underlying GoG programs and the early REDD+ projects will continue well beyond the implementation period of the ER Program as it is envisioned that the GoG



will not introduce any changes to the existing policies. The GoG will mobilize private sector investments in REDD+ initiatives to cover the remaining 20 percent financing gap.

58. **The social sustainability of the ER Program is supported by its emphasis on improving the livelihoods of the local population and enhancing their participation in the overall management of the forest landscape.** By compensating farmers, local rural development associations and GoG agencies that support REDD+ initiatives, the ER Program will promote sustainable agroforestry products such as cocoa, coffee, and cardamom, as well as silvopastoral products as an attractive livelihood option. The cross sectoral incentives created by the ER Program will thus contribute to environmental sustainability by reducing pressures on the remaining forests while benefiting the resilience and competitiveness of the forestry, agriculture, and livestock sectors. These outcomes will provide short-, medium-, and long-term benefits to Guatemala, also enabling the country to build back more sustainably from the COVID-19 pandemic.

#### IV. PROJECT APPRAISAL SUMMARY

##### A. Technical, Economic and Financial Analysis

###### i) Technical Analysis

59. **Guatemala's ER Program complies with the requirements of the Carbon Fund Methodological Framework, as well with the UNFCCC REDD+ rules.<sup>75</sup>** The Carbon Fund Methodological Framework includes a series of 38 technical criteria and 78 indicators around 5 Sections, namely: (i) level of ambition; (ii) carbon accounting; (iii) ESS; (iv) sustainable program design and implementation; and (v) ER Program transactions. As part of the Carbon Fund business process, a Technical Assessment Panel assessed the ER Program compliance with the Carbon Fund Methodological Framework. The assessment process started in January 2019 and included several desk reviews of the ER Program design and its documentation, including a country visit in February 2019. The Technical Advisory Panel assessment process was completed in May the same year, concluding that the ER Program fully met all indicators. Carbon Fund donors also conducted a desk review of the ER Program and provided their comments. In July 2019, the ER Program was conditionally approved by the FCPF Carbon Fund Participants. A revised version of the ERPD was approved on November 12, 2019.

60. **The ER Program design builds on a series of technical studies carried out during the REDD+ Readiness preparation phase.** These studies include a Strategic Environmental and Social Assessment (SESA), an in-depth analysis of the drivers of deforestation and forest degradation, a legal analysis on land tenure and carbon rights, and a broad consultation process for the Readiness phase. The ER Program addresses the drivers of deforestation and forest degradation rooted in weak forest-landscape governance, and promotes REDD+ initiatives, which build on proven forestry programs and projects, as well as relevant laws and policy frameworks regarding land-and-forest-resource tenure rights. The GoG has also secured FIP funding to create and strengthen MCEES and collaborative forest conservation models within the SIGAP. MCEES will be used in priority areas to maximize climate change mitigation. INAB and CONAP are currently developing guidelines for the MCEES and the SIGAP related management models. The transfer of title to ERs builds on a strong legal framework, sub-agreements between proponents of REDD+ initiatives, as well as the BSP.

61. **The ER Program builds on a proven benefit-sharing mechanism and integrates features and lessons**

<sup>75</sup> Also known as the Warsaw Framework, adopted at the UNFCCC's 19th COP in 2013.



**learned from successful early REDD+ projects.** The BSP follows existing arrangements and governance structure to distribute the forest incentives developed more than two decades ago. Since 1998, MINFIN has allocated incentives to the beneficiaries of approximately 142,000 INAB-certified projects. On average, INAB oversees 60,000 projects annually. Criteria for benefit distribution are also robust, reflecting decisions by relevant stakeholders. The GoG and early REDD+ projects implementers jointly prepared a nesting approach and protocol to avoid any risk of double counting and double selling of ERs. The BSP also encompasses a criterion to ensure equity between existing and new REDD+ initiatives.

## ii) Economic and Financial Analysis

62. **The ER Program financing plan estimates, according to a study by Econometría<sup>76</sup>, a budget of US\$226 million for a five-year implementation period from 2020 to 2025.** Potential funding will combine public resources, international cooperation, and private sector contributions. The potential sources of financing already identified, indicated in the ERPD, amount to approximately 75 percent (or US\$169 million) of the total investment required by the ER program. The GoG is expected to facilitate the management of around US\$122.22 million of the total investment required by the ER Program through different programs that exist or are under preparation. This includes US\$105.82 million directed toward the five strategic ER Program action lines, and US\$16.4 million for costs of program administration (US\$5.82 million or 5 percent) and for the MRV system (US\$10.58 million or 10 percent). The World Bank will not cover the cost of implementation of the underlying program activities that will generate ERs. The “FCPF Cost Assessment Tool”, applied in this analysis estimates the opportunity cost of land use at US\$107 million or 47 percent of the total ER Program budget. The major strategic options consist of: (1) Strengthening forest governance (US\$39.1 million, 17 percent of budget); (2) Conservation, protection, and sustainable forest management (US\$48.1 million, 21 percent); (3) Forest Landscape Restoration (US\$14.8 million, 6.5 percent); (4) Reducing unsustainable fuelwood use (US\$0.6 million, 0.3 percent); and promoting competitiveness and legality of forest products (US\$ 3.1 million, 1.4 percent). A detailed table of the costs of all the strategic options is provided in Annex 7.
63. **The financial analysis results in a Net Present Value (NPV) of US\$138.9 million over 10 years and US\$265.4 million over 20 years.** The Internal Rate of Return could not be determined because benefits are positive from the first year onwards and GHG benefits generated from the first year onwards will outweigh the costs. Investments are expected to generate a volume of over 10.5 million tCO<sub>2</sub>e of ERs at a unit price of US\$5 per carbon unit (tCO<sub>2</sub>e). The Maximum Contract Volume of the ERPA is therefore assumed at US\$52.5 million. The projected payments include interim advance payments, which may occur based on reported ERs that have not yet been verified. The expected delivery of ERs and payments, including interim ones, for the verified ERs is summarized in **Error! Reference source not found.**. Projected payments could change based on the negotiation of the commercial terms of the ERPA. Under the high scenario which assumes a high performance, Guatemala will be able to transfer the equivalent of 10.5 million tCO<sub>2</sub>e, equivalent to up to US\$52.5 million or 31.1 percent of the ER Program's funding sources. Achieving the desired or a higher level of payments will depend on Guatemala's ability to further reduce deforestation and secure its ability to transfer ER title over a higher percentage of land. **Error! Reference source not found.** also estimates potential performance and Carbon Fund payments under low, medium, and high-performance scenarios.
64. **ER Program implementation is expected to generate significant environmental benefits**, such as the

<sup>76</sup> World Bank, 2019. Evaluación de los Costos y Beneficios y Preparación de un Plan de Financiación para el Programa de Reducción de Emisiones de Guatemala. Econometría Consultores – Producto 3: Informe final, Julio de 2019.



reduction of GHG emissions and increased benefits from forest ecosystem services (e.g., non-wood forest products, habitat and species protection, water provision, and recreation). An economic analysis of these global environmental goods finds significant net benefits accruing from the Emission Crediting Transaction under many probable scenarios, depending on project performance. Benefits are estimated using three performance scenarios (of 50, 75, and 100 percent achievement of the program's expected ERs), with sensitivities tested for discount rate and the shadow price of carbon. Under the default parameters, the economic analysis demonstrates that, under the high-performance scenario, and under the medium-performance scenario using a high range for the shadow price of carbon, the ER program is expected to generate net positive forest and carbon benefits (that is, the NPVs of the carbon and forest ecosystem benefits are greater than the NPVs of the ER Program investment cost). Benefit/Cost ratios of these probable scenarios range from 0.22 (under a low shadow price and low project performance) to 3.0 (under a high carbon shadow price and high performance). A sensitivity analysis finds that the shadow price of carbon (using World Bank recommended values of low: US\$40-45/tCO<sub>2</sub>e, and high: US\$80-89/tCO<sub>2</sub>e) and overall ER Program performance (volume of ERs generated) are the two factors that most strongly predict whether the Emission Crediting Transaction yields positive net benefits with a Benefit/Cost ratio greater than 1. Lowering the shadow price of carbon by 50-75 percent below World Bank-recommended values leads to negative net benefits under all scenarios. The medium-performance scenario's viability is also overly sensitive to the shadow price of carbon. On the other hand, using high or low estimates for forest ecosystem benefits and changing the discount rate do not significantly influence the viability of the Emission Crediting Transaction under the simulations carried out.

## B. Fiduciary

### i) FM

65. **An FM Assessment was completed on December 14<sup>th</sup>, 2020, to evaluate the adequacy of the FM arrangements for the implementation of the proposed operation.** The scope of the assessment included: (i) an evaluation of existing FM systems to be used for project monitoring, accounting and reporting; (ii) review of the staffing requirements of the Emission Crediting Transaction; (iii) review of the flow of funds arrangements currently in place; (iv) review of the internal control mechanisms in place; (v) review of the systems reports and discussions with regards to the World Bank's reporting requirements, including the format and content of Interim Financial Reports (IFRs) and Statement of Expenses (SOE); and (vi) review of the internal and external audit arrangements. World Bank FM policies for Investment Project Financing do not apply to Emission Crediting Transactions as they do not involve direct World Bank financing of the underlying activities or investments but only payment for ERs generated under such operations (Component 1: Payment for Measured, Reported and Verified ERs). However, the Emission Crediting Transaction also requires the Program Entity to distribute such ER payments (i.e., the ERPA revenue) in accordance with a BSP (Component 2: Distribution of ER Payments According to the Benefit Sharing Plan). The FM assessment reviewed the specific arrangements to ensure proper control, recording, and reporting of project expenditures. Basic staffing structure, financial recording system and financial reporting, cash flow, audit arrangements, internal control system and asset management were discussed with GoG, assessing both MINFIN and INAB. The overall conclusion of the assessment is that the FM arrangements as set out for this Emission Crediting Transaction are considered adequate. Details of the assessment are provided in Annex 1: Implementation Arrangements and Support Plan.

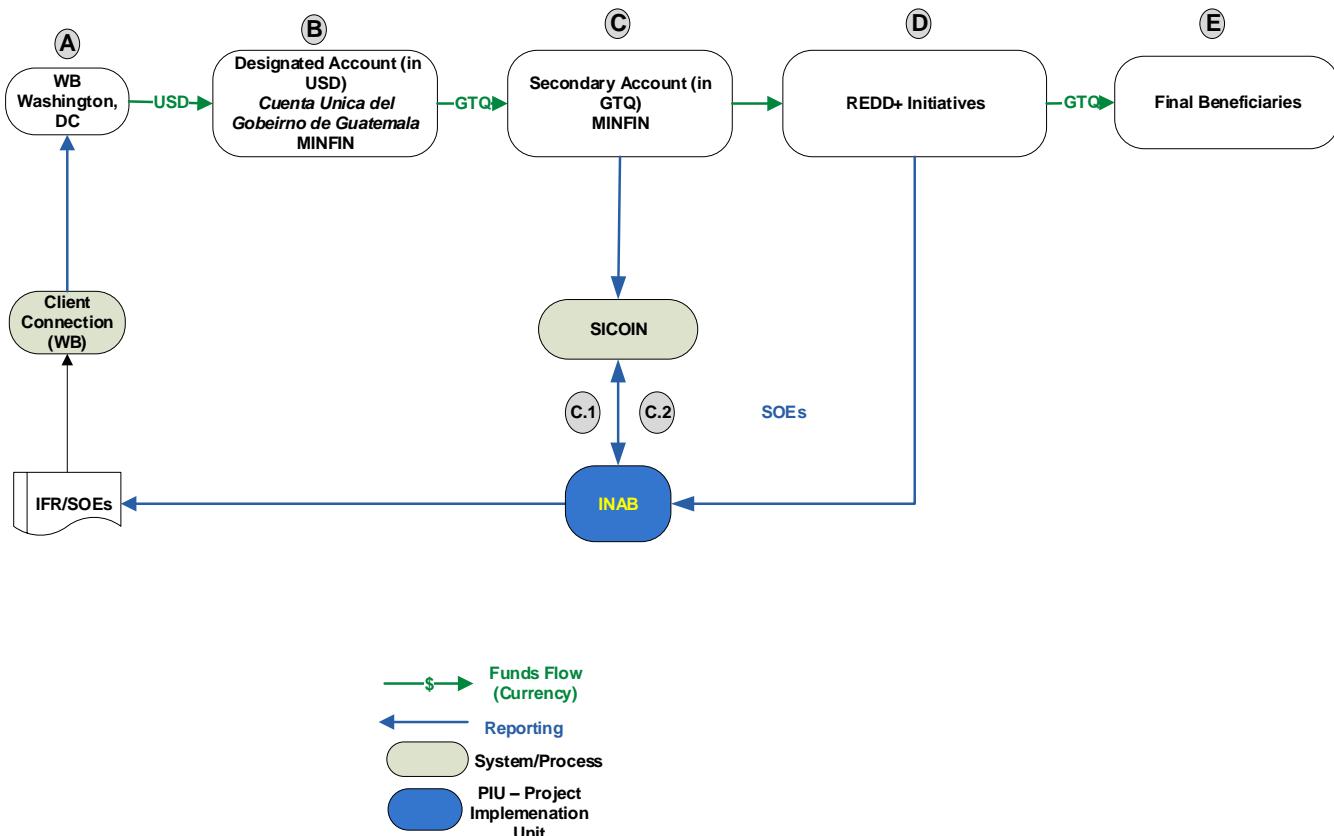
**66. Flow of funds (see Figure 3 and Annex 1 for details):**

- a) The primary World Bank disbursement method will be Advances. World Bank disburses funds in accordance with application received from GoG through INAB (in Client Connection).
- b) Resources would be transferred from the World Bank to the to a Designated Account (DA) under the Single Treasury Account (STA) in Central Bank of Guatemala in US\$.
- c) From the DA, exclusively for the Emission Crediting Transaction, funds would be transferred into a sub account within the Integrated Accounting System (*Sistema de Contabilidad Integrada*, SICOIN) that will serve as an operating account (in GTQ) to manage the Emission Crediting Transaction funds:
  - i) INAB certifies beneficiaries list and send the payroll to MINFIN, and
  - ii) MINFIN registers in the SICOIN.

When both situations are met, the payment of the REDD+ initiatives is ready to be carried out.

- d) ER payments will be deposited upon payment instructions from INAB to MINFIN, and paid via SICOIN, for eligible and duly approved beneficiaries (REDD+ initiatives). Such payments will have to be authorized by INAB.
- e) In accordance with the BSP, REDD+ initiatives distribute monetary and non-monetary benefits to the final beneficiaries. These payments would be used to record transfers from MINFIN, and these records would be subject to audit procedures.

Figure 3. Flow of Funds





67. **FM risk is Moderate.** INAB has demonstrated experience in managing forest incentives programs that transfer funds to its beneficiaries. However, it hasn't yet implemented projects financed under World Bank's fiduciary procedures, especially when considering the specificities of the Emission Crediting Transaction related to the distribution of ER payments in accordance with agreed BSP. A second element is associated with country risk, including governance-related issues in the time of a pandemic. Mitigation measures to ensure the satisfactory performance of fiduciary functions include: (i) an FM assessment was carried out to ensure proper control, recording, and reporting of expenditures associated with the Emission Crediting Transaction. The assessment confirmed that INAB has a well-established budget and administrative unit whose staff has more than two-decades experience in transferring funds to beneficiaries of forest incentives programs, in coordination with MINFIN. Further clarification of fiduciary roles and specialists with expertise within INAB to manage fiduciary activities and internal control and asset management systems associated with the Emission Crediting Transaction will mitigate residual risks; (ii) use of a BSP OM that will be approved by the World Bank before implementation; (iii) periodic submission of financial reports (IFRs and SOEs); (iv) carrying out periodic training in FM, and disbursement for fiduciary staff; and (v) finally, an external, independent, private audit firm, acceptable to the World Bank will perform an audit of the Budget Execution Report of the payments to ensure this is in accordance to the BSP.

ii) **Procurement**

68. **Purchasing of ERs are not subject to the World Bank Procurement Regulations as it only includes payments to the Program Entity for generated ERs, and thus, there will not be procurable activities.** According to World Bank Guidance for this type of Emission Crediting Transactions, the inputs financed by the World Bank are the purchase of ERs and there is no scope in the procurement policy for further application to second-tier utilization of these funds. Guatemala will have to assure that the revenue, represented by the ER payment to the beneficiaries, are used for intended purposes (e.g., BSP) with due considerations of economy and efficiency.

#### C. Legal Operational Policies

	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

#### D. Environmental and Social

69. **Environment and Social Risk Classification.** The environmental and social risk classification for the Emission Crediting Transaction is Substantial, for both environmental and social aspects, under the World Bank's Environmental and Social Framework. The Emission Crediting Transaction relies on underlying activities that are not likely to generate a wide range of significant adverse E&S risks and impacts. There is a low probability of serious adverse effects on the environment, and the effects of the ER Program on areas of high value or sensitivity are expected to be positive, given the focus on policy changes, small and medium-scale forestry, community-based natural resource projects, among other activities. The ER Program is also expected to have positive impacts on the livelihoods of vulnerable and systematically excluded groups through better forest governance, more inclusive decision making, increase in



employment and business opportunities due to the reduction of illicit forestry activities and the improvement of the livelihoods of people with small land holdings. Impacts on physical, cultural, and/or archeological sites, economic displacement, land acquisition or resettlement are considered minimal. Nevertheless, given the innovative and results-based nature of the instrument, scale of the area of program coverage, and the limited capacity of the Program Entity, there are substantial risks.

70. **The environmental risk classification mainly responds to potential indirect risks stemming from the implementation of the ER Program activities**, including forestry, agroforestry, reforestation, restoration of areas, community management and strengthening of selected natural resource-based value chains, and sustainable production of local communities. These risks can become impacts if not well identified and mitigated, and if the Program Entity is not sufficiently trained in the implementation and supervision of the E&S instruments, or if enough resources are not available to do so. Also, typical impacts related to the implementation of infrastructure are expected, such as the opening of new paths and the establishment of fences. These are expected to be temporary, predictable and/or reversible. Relevant ESSs include ESS1, Assessment and Management of Environmental and Social Risks and Impacts, ESS3, Resource Efficiency and Pollution Prevention and Management, ESS4, Community Health and Safety, ESS6, Biodiversity Conservation and Sustainable Management of Living Natural Resources, and ESS8, Cultural Heritage.
71. **Social risks are related to inclusion and contextual risks** including, Guatemala's history of weak law enforcement related to forest management and challenges of illegal logging; the large scale of the Emission Crediting Transaction; limited experience of involved institutions in social standards supervision; and legacy issues around land tenure, land grabbing and elite capture. The Emission Crediting Transaction also identified risks related to potential reduction or restriction of access to legally designated parks and protected areas or the loss of economic assets from small construction works (mostly temporary in nature); exclusion of Indigenous communities if the Program does not consider issues such as: cultural adequacy of decision-making; respect and consideration for the cultural characteristics of Indigenous Peoples in terms of territory management and use of natural resources; and culturally appropriate technical assistance. Risks related to workers' health, such as labor rights and community workers health and safety, were also identified. Relevant ESSs are Labor and Working Conditions (ESS2), Land Acquisition, Restrictions on Land Use and Involuntary Resettlement (ESS5), Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities (ESS7), and Stakeholder Engagement and Information Disclosure (ESS10).
72. **To adequately address and mitigate the Emission Crediting Transaction's environmental and social risks and impacts, the Program Entity, with the support of qualified E&S specialists, carried out a full-scale Environmental and Social Assessment for the forest sector (2014-2017)**, as well as a SESA and an ESMF for the ENDBG.<sup>77</sup> The E&S strategy for the ER Program is built on this approach and will be managed through the ESMF and its annexes, including: Indigenous Peoples Participation Framework (IPPF), Process Framework (PF), Resettlement Policy Framework (RPF), Labor Management Procedures (LMP), Stakeholder Engagement Plan (SEP) with a robust FGRM, Pest Management Plan, Biodiversity Action Plan,

<sup>77</sup>The environmental and social risk management approach is consistent with the World Bank's FCPF guidance (Supplemental Briefing Note to the Operations Environmental and Social Review Committee: Managing Environmental and Social Risks for the FCPF Emission Reductions Programs from April 22, 2019).



and Cultural Heritage Management Plan<sup>78</sup>. The approach was designed in a way that the REDD+ initiatives would benefit at least 35 percent of women, youth<sup>79</sup>, and vulnerable groups. E&S Subproject level plans will be required for those underlying activities that pose specific risks and impacts related to the provisions of ESS (under the premise that underlying activities not consistent with the ESMF will need to be either retrofitted or excluded from the ER Program). All E&S documents were consulted in the summer of 2019, with extensive discussions on risks and impacts. The documents were adapted based on the feedback received and the final ESMF and its annexes were disclosed on INAB's website<sup>80</sup> in November 2020 and on the World Bank's website in December 2020. Material measures reflected in these instruments have been included in the Emission Crediting Transaction's Environmental and Social Commitment Plan (ESCP), disclosed on both INAB's and the World Bank's websites.<sup>81</sup>

**73. The ESCP foresees the implementation of a series of initiatives to strengthen the capacity of participating agencies** and their professional teams on the actions and procedures contemplated in the E&S instruments. These actions will start from the signing of the ERPA and will be maintained throughout the implementation of the ER Program and are introduced in the ESCP. INAB will take the lead in E&S aspects supervision and ensure the compliance of the underlying activities with the E&S instruments and the ESCP. INAB, in coordination with CONAP, MARN, and MAGA, will report on environmental and social performance to the World Bank and at a national level. Staffing and budgeting needs for a technical E&S team are integrated in the ESMF. The GoG has developed and disclosed the National Safeguards System for managing ESS requirements across the ER Program, at a national level.<sup>82</sup> The focus of the supervision responsibilities of the World Bank, as Trustee of the FCPF, will be on the performance of the agreed E&S systems, and not on supervising the E&S aspects of all individual activities of an ER Program. In addition to self-reporting by the Program Entity and World Bank due diligence, ER Programs are required to have independent Third-Party reviewer monitoring that is paid for by the FCPF Secretariat. The third-party monitoring will be separate from verification of ERs generated from the ER Program, and the World Bank,

<sup>78</sup> These instruments were disclosed on Dec. 17, 2020. The ESMF is accessible at [https://www.inab.gob.gt/images/pif/pre/salvaguardas/MGAS\\_PRE%20de%20Guatemala-vf.pdf](https://www.inab.gob.gt/images/pif/pre/salvaguardas/MGAS_PRE%20de%20Guatemala-vf.pdf), and the respective annexes at: <https://imagebank2.worldbank.org/Search/32683584>; <https://imagebank2.worldbank.org/Search/32683581>; <https://imagebank2.worldbank.org/Search/32683589>; <https://imagebank2.worldbank.org/Search/32683582>; <https://imagebank2.worldbank.org/Search/32683585>; <https://imagebank2.worldbank.org/Search/32683588>; <https://imagebank2.worldbank.org/Search/32683587>; and <https://imagebank2.worldbank.org/Search/32683586>.

<sup>79</sup> Youth is defined as people between 14-29 years old in the case of grouped projects and between 18-29 years old in the case of individual REDD+ Initiatives.

<sup>80</sup> <http://www.portal.inab.gob.gt/index.php/noticias/proceso-nacional-redd/programa-de-reduccion-de-emisiones>

<sup>81</sup>

[https://www.inab.gob.gt/images/pif/pre/salvaguardas/Plan%20de%20Compromiso%20Ambiental%20y%20Social%20\(PCAS\).pdf](https://www.inab.gob.gt/images/pif/pre/salvaguardas/Plan%20de%20Compromiso%20Ambiental%20y%20Social%20(PCAS).pdf) and <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/628561607701434400/environmental-and-social-commitment-plan-escp-fcpf-carbon-fund-guatemala-emissions-reductions-program-p167132>

<sup>82</sup> Accessible on MARN's website at

<http://snicc.marn.gob.gt/Busqueda/Resultado?powerbi=https://app.powerbi.com/view?r=eyJrIjoiOTRkMzI1YTUtYzFlZi00ZjViLTkxOWQtYWJjMTdhNTdiNmRliwidCI6IjhMymFhNWJmLTJlY2MtNGRjOC1INTZiLThmOTJIMzA3ZjA3NilsImMiOjR9>



acting as Trustee, will review the information from the Third-Party reviewer, along with the self-reporting and ER verification report to determine whether to make the ER payments under the ERPA in whole or in part to the Program Entity.

74. **The GoG has opted to include both emissions generated before and after the signing of the ERPA in the Emission Crediting Transaction.** This means that the E&S instruments apply to all activities generating ERs during the defined period prior to ERPA signing as well as during Emission Crediting Transaction implementation. The ERs generated during the defined period prior to ERPA signing will be verified based on the submission of evidence by MINFIN through INAB, in form and substance satisfactory to the World Bank, demonstrating that the ER Program measures that generated the said ERs were implemented in a manner consistent with the E&S instruments. Any potential compliance gap identified in the Program Entity's ESS self-report for the period prior to ERPA signing, or through the due diligence of the World Bank may be corrected through corrective measures to be outlined in E&S compliance action plans in agreement with the World Bank. These corrective measures must be implemented in a defined timeframe and completed prior to carrying out the monitoring and verification by the independent Third-Party reviewer. If any compliance gaps have not been adequately filled at the time of independent monitoring and verification, the ERs corresponding to the activities in question will not be counted.
75. **Gender:** ER Program activities include measures to ensure that women are adequately represented and participate in activities and decision-making processes. All instruments developed for the ER Program are gender-sensitive and mainstream GBV-prevention measures. Also, according to the BSP grouped REDD+ initiatives shall ensure that at least 35 percent of their beneficiaries are women, youth, and vulnerable communities. In designing specific activities for these groups, proponents of REDD+ initiatives could follow the REDD+ Gender Road Map that Guatemala developed during the readiness phase. The road map proposes specific strategic actions to integrate gender in different aspects of REDD+, which can be applied in designing REDD+ initiatives.
76. **Citizen Engagement:** The ER Program was developed through an in-depth stakeholder involvement process which involved nation-wide consultations. The dialogue and participation process with stakeholders involved ten informative dialogues which were held in 2019 in eight cities of the country, complemented by eight workshops that fed into the safeguard's instruments. The E&S instruments were then formally consulted in August 2019. The documents integrated stakeholder feedback mainly on land tenure, the importance to establishing a robust FGRM, an exclusion list to not invest on disputed lands, and respect land or natural resources subject to traditional ownership or customary use and occupation. Guatemala will implement the ER Program through a participatory approach and apply beneficiary feedback mechanisms as defined in the SEP. This will help create timely feedback loops and ensure inclusion and active participation of beneficiaries from vulnerable groups to avoid any kind of discrimination. The risk of elite capture will be mitigated through the BSP, among other things, which requires REDD+ initiatives to develop their own benefit-sharing plans that adhere to the benefit-sharing principles defined under the ER Program. Implementers of REDD+ initiatives will have to make the sub-BSPs publicly available in a manner that is culturally appropriate, and the integration of IPLC is foreseen. Also, beneficiaries of the BSP would be able to use the ER Program FGRM to present grievances.
77. **Feedback Grievance Redress Mechanism:** In the development of the REDD+ Mechanism during the preparation phase, a REDD+ grievance redress mechanism was prepared. The ER Program has developed a FGRM through Readiness, which will be strengthened after ERPA signature. Its design ensures agility, access, prompt response timeframes, and respect for confidentiality. The FGRM, which will also handle



GBV (including special handling procedures) and labor complaints, will be coordinated by INAB in partnership with MARN and the other implementing entities, and will be accessible – in person, anonymously or through a free hotline - through the regional and departmental offices of INAB, MAGA, MARN and CONAP. Grievances, questions, or complaints are expected to be resolved within 30 working days of its receipt.

## V. GRIEVANCE REDRESS SERVICES

78. Communities and individuals who believe that they are adversely affected by a World Bank supported project may submit complaints to existing project-level grievance redress mechanisms or the World Bank's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed to address project-related concerns. Project affected communities and individuals may submit their complaint to the World Bank's independent Inspection Panel which determines whether harm occurred, or could occur, because of World Bank non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and World Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate GRS, please visit <http://www.worldbank.org/GRS>. For information on how to submit complaints to the World Bank Inspection Panel, please visit [www.inspectionpanel.org](http://www.inspectionpanel.org).

## VI. KEY RISKS

79. **The overall Emission Crediting Transaction risk rating is Substantial.** The key risks (i.e. rated Substantial) and mitigation measures are as follows:
80. **Technical design of Program risk is Substantial.** Given the inherent complexity of ER transactions, the first-of-its kind nature of the national REDD+ transaction, the diversity of public and private stakeholder involved, and the nature of a non-grant purchase agreement, some challenges are expected during implementation. Also, the ER Program depends on the FIP Program to generate ERs from enhanced GoG's programs. Possible delays in Congress approval of the FIP Program will significantly affect the achievement of this Emission Crediting Transaction's PDO. As a mitigation measure, the GoG included early REDD+ projects in the ER Program, which are ready to deliver ERs and will make up for the shortfall in ERs if the FIP Program is not yet approved.
81. **Institutional capacity for implementation and ER sustainability risk is Substantial.** The ER Program requires effective coordination of various institutions for the monitoring and reporting of several variables including the generation of carbon and non-carbon benefits, ESS compliance, BSP and FGRM implementation, among other things. While INAB and its REDD+ government institutions partners (MINFIN, MARN, MAGA, and CONAP) gained considerable capacity on ER Program design during the Readiness phase, they still lack capacity and experience for its coordinated implementation. To mitigate these risks, INAB will sign an inter-institutional agreement with MINFIN, CONAP, MARN, and MAGA which will be included in the BSP OM. Also, the PIU, in coordination with MARN, will create opportunities for its partner institutions to participate in capacity-building events organized by the FCPF or the UNFCCC on ER Program and REDD+ implementation, particularly on the nexus between agriculture, forest, land-use change, and NDC compliance. Furthermore, E&S capacity building measures are included in the ESCP.
82. **Environmental and Social risks are Substantial.** While the Emission Crediting Transaction's underlying activities are expected to result in primarily positive effects on the environment as well as on vulnerable



and systematically excluded groups there are potential adverse E&S risks and impacts, even though these are expected to be temporary, predictable and/or reversible. On the social side, risks are related to Guatemala's history of weak law enforcement related to forest management and challenges of illegal logging; the large scale of the Emission Crediting Transaction; the limited experience in E&S management supervision that the institutions involved in the Emission Crediting Transaction have; legacy issues around land tenure and land grabbing and poor social inclusion in benefit distribution. There may also be risks related to potential reduction or restriction of access to legally designated parks and protected areas or the loss of economic assets from small construction works (mostly temporary in nature), and exclusion of Indigenous communities if cultural aspects are not adequately considered in all elements of ER Program implementation.<sup>83</sup> To manage these risks, an ESMF has been developed along with a comprehensive set of annexes including: an IPPF, PF, RPF, LMP, SEP, Pest Management Plan, Biodiversity Action Plan, and Cultural Heritage Management Guidelines. Underlying ER Program activities that are not consistent with the ESMF will need to be either retrofitted or excluded from the ER Program and subproject level plans will be required for activities that pose specific risks and impacts related to the provisions of ESS. As indicated earlier, the GoG has now finalized and disclosed the National Safeguards System for managing ESS requirements across the ER Program at a national level, which will support close E&S oversight.

83. **Stakeholder's risk is Substantial.** While the Guatemalan ER Program builds on existing underlying GoG programs and public-private REDD+ projects, its success hinges upon a concerted effort by several stakeholders to generate ERs from avoided deforestation, forest degradation, and carbon enhancement stocks beyond the achievements made in the past as pictured in the historical baseline. Distribution of benefits should be done proportionally based on the contribution of ERs made by each participant. A limited understanding of this principle could create stakeholders' unrealistic expectations of the ER Program benefits. Also, Guatemala currently does not have the data nor the technical capabilities to estimate in detail the exact ERs per beneficiary. As a mitigation strategy, the GoG developed a robust BSP and nesting protocol and tool and will develop communication activities to ensure the stakeholders have a good common understanding on the ER Program, the BSP, and the nesting approach. Furthermore, the GoG has developed, consulted, and will implement a SEP that will help create timely feedback loops and ensure inclusion and active participation of beneficiaries from vulnerable groups to avoid any kind of discrimination.
84. **Other risk (COVID-19 and climate change) is Substantial.** The unprecedented circumstances posed by COVID-19 represent a risk for achieving the PDO as it can lead to increased deforestation and forest degradation. Also, due to the results-based nature of the operation, there is uncertainty on the scale and timing of benefits. The COVID-19 pandemic could present risks to GoG funding for the ER Program, potentially leading to a reduction on the incremental impacts expected from the ER Program. However, the GoG has maintained its commitment to the ENDDBG and the ER Program and considers it crucial for a sustainable economic recovery. Additionally, COVID-19 presents some implementation challenges due to health requirements, but the GoG has already benefitted from capacity building for remote stakeholder engagement and project management from the World Bank during the pandemic, which will continue during implementation. GoG protocols and World Bank guidance will be followed under strict supervision from INAB and partner ministries supporting the implementation in the context of COVID-19. Also, the

<sup>83</sup> On the other hand, by relying on indigenous peoples' own forms of forest management, the project can mitigate environmental risks through better control, monitoring and fight against illegal logging, while learning from their ancestral knowledge and traditional sustainable management practices.



impacts of climate-related disasters may affect the availability of ERs to report. However, these are already considered in the uncertainty of ERs, and the current estimated ERs to be generated are a conservative projection.

**VII. RESULTS FRAMEWORK AND MONITORING****Results Framework****COUNTRY:** Guatemala

Guatemala Emissions Reduction Program

**Project Development Objectives(s)**

To make payments to the Program Entity for measured, reported and verified Emission Reductions (ER) from reduced deforestation and forest degradation, as well as the enhancement of forest carbon stocks (REDD+) in targeted areas of Guatemala, and to ensure that paid amounts are distributed according to an agreed Benefit Sharing Plan (BSP).

**Project Development Objective Indicators**

Indicator Name	PBC	Baseline	End Target
<b>PDO (To make payments to the Government of Guatemala for MRV ERs...)</b>			
Volume of CO2e Emissions Reductions that have been measured and reported by the Program Entity, verified by a Third Party, and transferred to the FCPF Carbon Fund (Metric ton)	0.00		10,500,000.00
Amount of Payments made by the FCPF Carbon Fund for CO2e Emissions Reductions generated by the Program (Amount(USD))	0.00		52,500,000.00
Emission Reductions payments distributed in accordance with agreed Benefit Sharing Plan (Yes/No)	No		Yes



## Intermediate Results Indicators by Components

Indicator Name	PBC	Baseline	End Target
<b>Not applicable (N/A)</b>			
N/A (Number)		0.00	0.00

## Monitoring &amp; Evaluation Plan: PDO Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Volume of CO2e Emissions Reductions that have been measured and reported by the Program Entity, verified by a Third Party, and transferred to the FCPF Carbon Fund	The indicator measures the Volume (i.e. ERs) aspect of the transaction. It is conditioned on the existence and operation of a National Forest Monitoring system to measure and report the ERs generated by the ER Program. All ERs generated by the ER Program during each Reporting Period are subject to Verification by an Independent Reviewer contracted by the World Bank Group in consultation with the Program Entity.	Annual	MRV System	ER Monitoring Report Third Party Verification	INAB in coordination with GIMBUT World Bank



	The transfer of ERs requires using a Registry capable of receiving, holding and transferring ERs to the Carbon Fund.				
Amount of Payments made by the FCPF Carbon Fund for CO2e Emissions Reductions generated by the Program	The indicator measures the financial value aspect of the transaction based on the pricing approach agreed between the Program Entity and the Carbon Fund. It is conditioned on the establishment of adequate financial management arrangements for the transfer of the funds from the World Bank to the Program Entity.	Annual	Client Connection	Review of Designated Accounts	MINFIN World Bank
Emission Reductions payments distributed in accordance with agreed Benefit Sharing Plan	The indicator seeks to capture the development aspects of the transaction. As per the General Conditions of the ERPA, ERPA payments have to be distributed based on a BSP that has been deemed acceptable to the World Bank Group. ER Monitoring Reports will have to provide evidence satisfactory to the World Bank Group that the Benefits have been shared	Annual	Progress Report	Review of Progress Reports and spotchecks	MINFIN World Bank



	in accordance with the BSP and the nesting approach.					
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**Monitoring & Evaluation Plan: Intermediate Results Indicators**

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
N/A					

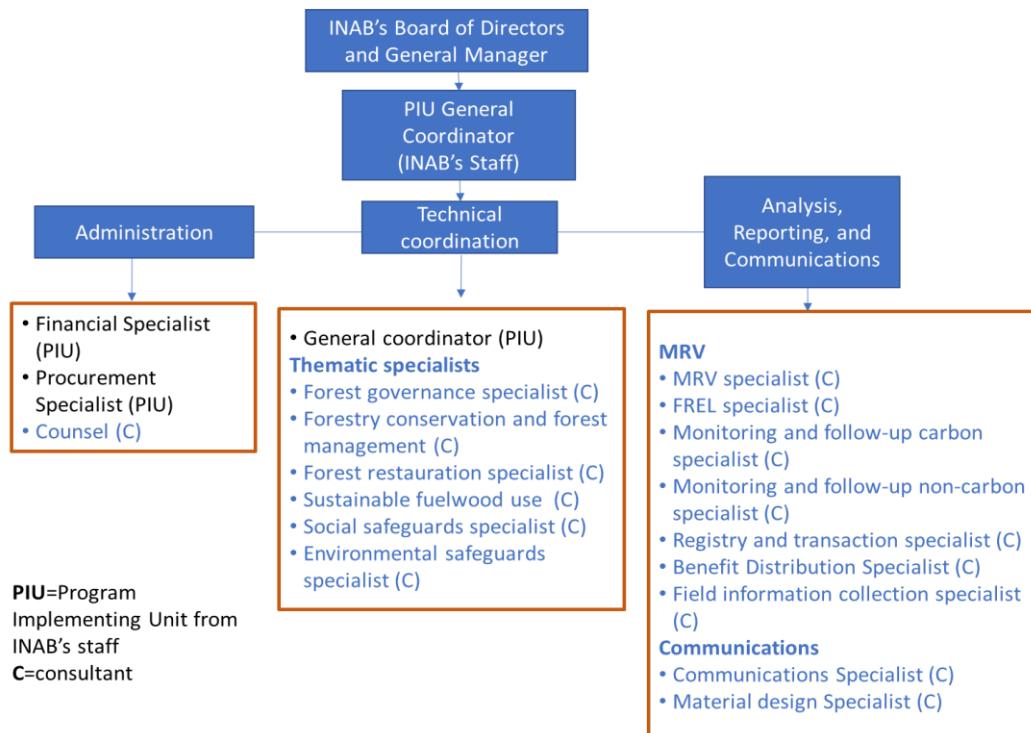
**ANNEX 1: Implementation Arrangements and Support Plan**

**COUNTRY: Republic of Guatemala**  
**Guatemala Emissions Reduction Program**

**Institutional and Implementation Arrangements**

1. **The Executing Entity, INAB, which is administratively ascribed to MAGA, is a decentralized and autonomous institution with legal status, its own resources, and administrative independence.** It currently has more than 600 employees who work in nine regional and 34 sub-regional offices. INAB will be responsible for the overall ER Program management and coordination, through a PIU to be established and operated by INAB.
2. **The PIU will report to INAB's Board of Directors and General Manager.** INAB will assign three staff to coordinate the ER Program and conduct related fiduciary functions. The PIU will also hire several technical consultants (see Figure 4) to support ER Program implementation, ESS compliance, MRV system, BSP implementation, and communications. INAB will cover the PIU operating costs during the first two-three years of ER Program implementation until the first ERPA Payment is received around the end of 2022. According to Decree 20-2020, a budget allocation will be made for the implementation of the Executing Entity. Likewise, the corresponding budgetary procedures will be carried out for the implementation of the Executing Entity.

Figure 4. ER PIU at INAB





3. **INAB will sign a subsidiary agreement with MINFIN (Program Entity representative) specifying INAB's role in implementation.** It will also sign an inter-institutional agreement with the other GoG institutions listed below. The specific roles and responsibilities of the various entities involved in the Emissions Crediting Transaction include<sup>84</sup>:
  - a) **MINFIN:** 1) Maintain communication with the World Bank within the framework of the signed inter-institutional agreement. 2) Receive payments for results from the World Bank and, at INAB's request, proceed to distribute them in accordance with the BSP and the Climate Change Law. 3) Open a bank account in Central Bank of Guatemala to receive payments for results made by the World Bank and transfer payments for results to the proponents and holders of REDD+ initiatives: i) early REDD+ projects, ii) MCEES, iii) management models for forest conservation and sustainable use in the SIGAP, following the provisions of the applicable laws, the BSP and its regulations, the BSP OM and based on the information submitted by the PIU. 4) Appoint its representative to the NBSC. 5) Sign sub agreements with proponents of REDD+ initiatives, as applicable. 6) Coordinate with the PIU, MARN, MAGA, and CONAP the responsibilities assumed by these institutions under the ERPA. And 7) Coordinate calls and requests for information to the executing agency, MARN, MAGA and CONAP within the framework of the execution of the ER Program and the ERPA.
  - b) **INAB:** 1) Establish a PIU in charge of coordinating, executing, and managing the ER Program and BSP. 2) Prepare annual operating plans for the implementation of the ER Program and BSP. 3) Coordinate and schedule procurement of consulting and non-consulting goods and services associated with the implementation of the ER Program and BSP. 4) Recruit or appoint competent personnel responsible for the management and tasks for the implementation of the ER Program. 5) Sign agreements with land possessors/proponents of REDD+ initiatives, and transfer the ERs to the MINFIN, as appropriate. 6) Provide technical assistance to REDD+ initiatives' proponents for the implementation of the corresponding actions to comply with the ESS according to the ER Program E&S instruments. 7) Coordinate the monitoring of E&S aspects and distribution of benefits. 8) Coordinate with GIMBUT on carbon monitoring. 9) Coordinate with MARN, MAGA, and CONAP on the monitoring of non-carbon benefits. (10) Coordinate the compilation of information, preparation and reporting on ESS plans, benefit sharing, carbon and non-carbon variables and others identified in the BSP OM, in coordination with MARN, MAGA, CONAP, MINFIN, GIMBUT, or proponents of REDD+ initiatives, within the corresponding deadlines. 11) Transfer to the World Bank the reports, data, and information required during the ERPA period through the procedures that will be established in the BSP OM. 12) Request the transfer of ERs verified in accordance with the ERPA to the FCPF in one or more registry accounts. 13) Request payments for results from the World Bank to MINFIN and their distribution in accordance with the BSP and the Climate Change Law. 14) Coordinate with the World Bank on the verification dates and respond to the requirements of the independent Third-Party reviewer, such as sending the monitoring reports and coordination of possible corrective actions and required improvements. 15) Transfer the information on E&S aspects by the REDD+ initiatives to MARN

<sup>84</sup> The final institutional roles will be included in the BSP OM.



for its incorporation in the SNICC. 16) Establish the NBSC and the rules necessary for its operation. 17) Appoint INAB representative to the NBSC. 18) Manage and convene the NBSC (act as its technical secretary), and prepare benefit sharing reports. 19) Develop the regulatory framework for MCEES. 20) Monitor and certify compliance with the management plans of REDD+ initiatives in accordance with the procedures established in the BSP OM and current regulations. 21) Guarantee the administrative processes to carry out the entry, registration, and depreciation of assets, from the ER Program when applicable. 22) Communicate and disseminate ER Program and the BSP progress and results. 23) Publish in INAB's website the reports, documents and minutes prepared for the ER Program and the BSP. 24) Coordinate and prepare calls and requests for information to the partner institutions related with ER Program implementation, the ERPA and the BSP. And 25) Transfer the copy of the approval resolution or file, as appropriate, of the REDD+ initiatives to MARN for its registration in the National GHG Registry. 26) Coordinate implementation of the FGRM of the program.

- c) **CONAP:** 1) Develop and implement the regulatory framework for the management models for forest conservation and sustainable use in the SIGAP. 2) Issue an opinion of approval or compliance with management plans or project documents of REDD+ initiatives in protected areas, when appropriate according to the BSP OM. 3) When appropriate, sign sub agreements with landowners / proponents of REDD+ initiatives in protected areas and other entities; the sub agreements will include the transfer of title to ERs and compliance with relevant management plans or project documents according to the BSP OM. 4) Be a proponent, co-proponent, or implementer of REDD+ initiatives within the SIGAP, by presenting a management plan for the REDD+ initiative or a REDD+ project document, according to the BSP OM. 5) When applicable, submit the file to register the REDD+ initiatives in protected areas in the National GHG Registry. 6) When applicable, receive payments for results from MINFIN. 7) Coordinate with GIMBUT support for the monitoring of ERs within the SIGAP. 8) Compile or coordinate the compilation of information, preparation and sending of E&S monitoring reports, benefit sharing, carbon benefits and non-carbon benefits and others that are identified in the BSP OM, in coordination with the PIU or landowners / proponents of REDD+ initiatives in protected areas, in accordance with the BSP OM, within the corresponding deadlines. 9) At the request of MINFIN or the PIU, prepare and transfer technical reports on the progress of ER Program actions, within the scope of its competence. 10) Send the necessary information for the preparation of the monitoring reports to the PIU and implement the possible corrective actions and improvements required by the verifying organization.
- d) **MARN:** 1) Establish and manage the National GHG Registry and the SNICC platform. 2) Coordinate and ensure effective FGRM implementation, within the scope of its competence, in coordination with the PIU. 3) Coordinate with the PIU the FGRM database through the SNICC. 4) Coordinate with the PIU data management on E&S aspects, benefits distribution, non-carbon benefits monitoring, and publish said information in the SNICC Website. 5) Prepare the corresponding reports based on the information provided by the PIU for its presentation before the UNFCCC. 6) Promote favourable conditions for ER generation, within the scope of its



competence, for the ER Program. And 7) Appoint its representative before the NBSC and participate in the NBSC.

- e) **MAGA:** 1) Execute and promote enabling conditions for ER generation in the livestock, agricultural and productive sectors, within the framework of the ER Program. 2) Coordinate with GIMBUT the monitoring of ERs; 3) Coordinate with INAB, MARN, MAGA, and CONAP on non-carbon benefits monitoring, and generation of monitoring information in the agriculture sector, within the framework of its competences, 4) Upon MINFIN or the PIU's request, prepare and transfer technical reports on ER Program progress, within the scope of its competence, and attend to phone calls. 5) Attend to matters related to the FGRM within the framework of the ER Program. 6) Transfer the contribution from the national budget to INAB for PIU implementation and operation until the first ERPA payment is made. And 7) Appoint its representative and participate in the NBSC.

### Implementation Support Plan and Resource Requirements

4. World Bank supervision efforts will be more intense at the onset of ER Program implementation to ensure all conditions of effectiveness are met in a timely manner and that the first Monitoring Report occurs with no delay. Missions will focus on supervising the proper operation of REDD+ initiatives, E&S aspects, FGRM of the Program, benefit sharing, and MRV systems. The Implementation Support Plan will be revisited regularly, considering implementation progress and continuous risk assessment. The Plan and the related skills requirements are respectively presented in Tables 4 and 5.

*Table 4. Implementation Support Plan and Resource Requirements*

Focus	Skills Needed	Resource Estimate (staff weeks)	Role
<b>First twelve months</b>			
Guidance on institutional arrangements, BSP OM development and project supervision	Task Team Leader / Senior Natural Resource Management Specialist	26 (2 x 13)	Technical input and supervision
FM training and supervision	FM Specialist	3	Technical input and supervision
Guidance on BSP, E&S, and FGRM, and quality control.	Social Development Specialist	5	Technical input
	Environmental Specialist	5	Technical input
Technical supervision: Carbon accounting	MRV Specialist	5	Technical input
Technical supervision	Communication	2	Technical input



Focus	Skills Needed	Resource Estimate (staff weeks)	Role
	Specialist		
Technical supervision	Institutional capacity expert	2	Technical input
<b>12-48 months</b>			
FM supervision	FM Specialist	9	Technical input and supervision
BSP and E&S aspects monitoring	E&S Specialists	30 (2 x 15)	Technical input and supervision
Project implementation supervision	Task Team Leader	39	Technical input and supervision
Technical supervision: technical aspects	Natural Resource Management Specialist	39	Technical input
Technical supervision: Carbon accounting	Carbon accounting specialist	15	Technical input
Technical supervision: Legal aspects	Carbon Finance Specialist	15	Technical input

Table 5. Skills Mix Required (World Bank Task Team)

Skills Needed	Number of Staff Weeks	Number of Trips or virtual supervision
FM supervision	2-4 annually	Site visits as needed, or virtual supervision meetings
BSP and E&S aspects monitoring	2-4 annually	Field trips as needed, or virtual supervision meetings
Project implementation supervision	4-6 annually	Field trips as needed, or virtual supervision meetings
Technical supervision: technical aspects	4-6 annually	Field trips as needed, or virtual supervision meetings
Technical supervision: Carbon accounting	12-14 annually	Three missions in year 1, then two missions at least, or virtual supervision meetings
Technical supervision: legal aspects	4-6 annually	Two missions (at least year 1, then as needed)
FM supervision	12-14 annually	Two missions (in presence or virtual)



## Financial management

5. **Implementing Agency (staffing and institutional arrangements):** Following the implementation arrangements for the Emission Crediting Transaction, MINFIN will be the Program Entity representative and INAB the Executing Entity. INAB will undertake the primary fiduciary responsibilities for the Emission Crediting Transaction, including: (i) preparing and obtaining approval of project FM arrangements; (ii) coordinating and supervising ER Program implementation; (iii) submitting disbursement requests and SOEs to the World Bank; (iv) preparing and submitting IFRs to the World Bank; (v) preparing and providing all financial documentation and project reports requested by external auditors and World Bank staff; and (vi) preparing, updating and ensuring that all involved institutions and stakeholders follow the BSP OM. INAB is staffed with experienced professionals who are familiar with local FM and World Bank fiduciary requirements. INAB, jointly with MINFIN, shall be responsible for coordinating and overseeing all fiduciary aspects, supporting project implementation, and undertaking basic FM functions in terms of budgeting, accounting, and treasury. Project design involves several activities that require coordination at the levels of other ministries (MINFIN) as well as communities. Such features call for strong operational arrangements to fully implement the flow of funds (monetary and non-monetary) to the selected beneficiaries. ER Payments will follow the World Bank's disbursement guidelines, as described in the Disbursement and Financial Information Letter (DFIL) referenced in the ERPA. The World Bank will be able to disburse the ERPA proceeds using either the ER Payment or Interim Advance Payment (future ER payments) methods upon submission of an Application for Payment form by INAB. The Carbon Fund will deposit the ERPA payments in the Central Bank of Guatemala. From there, the ERPA payments will be transferred to a segregated account (DA for the ER Program) in MINFIN for their distribution to beneficiaries following INAB's directions.
6. **Staffing:** Although the team has some understanding of World Bank policies and procedures, training will be required. The PIU's FM team should have the education levels, experience, and knowledge of processes to adequately perform these functions. This Emission Crediting Transaction will require nominating a dedicated qualified FM specialist responsible for overseeing all FM-related activities for this operation.
7. **Budgeting, Accounting and FM Systems:** Activities to be financed by the proposed Emission Crediting Transaction will form part of GoG (MINFIN/INAB) budget framework. The ERPA payment should be treated in a consistent manner with the budget policy provided by GoG, be incorporated into SICOIN, and once approved, be reflected in MINFIN/INAB annual budget proposal. This budget will be incorporated by GoG into the general state budget for its approval by Congress.
8. **Project programming and budget will be governed by public sector regulations,** as applicable to government entities, and other specific procedures adopted by INAB. In compliance with those procedures and the roles and responsibilities defined for project implementation, INAB in coordination with MINFIN will prepare the annual program and budget, following Guatemala's program budget and laws, and inserted in their planning and budget tool (i.e., Management System, *Sistema de Gestión, SIGES*), following the budget structure used for the public sector. The budget



for the ER Program will be processed, recorded, and executed through SICOIN, following the established procedures.

9. **INAB will be responsible for maintaining accounting records specific to the Emission Crediting Transaction.** INAB has a well-established budget and administrative unit whose staff, in coordination with MINFIN, has more than two-decades experience in transferring funds to beneficiaries of Forest Incentives Programs (i.e., PINFOR, PINPEP, and PROBOSQUE). It has been verified that the budget classification used by SICOIN would allow incorporation of components/cost categories associated with this Emission Crediting Transaction which would facilitate the preparation of financial reports. However, given the specificities of the Emission Crediting Transaction, there is a need to define and agree on the specific content and format of the financial reports, and the process to be followed by INAB for its preparation using the information available in SICOIN together with the information related to financial contributions to beneficiaries. Therefore, the use of SICOIN will be complemented with Excel spreadsheets to record transactions by component/subcomponent in US\$, associated with this Emission Crediting Transaction. Those auxiliary records will be used for the preparation of financial and disbursement reports. The recording and maintenance of up-to-date Excel records will be one of the responsibilities assigned to INAB. The BSP OM must include the internal controls mechanisms required to ensure integrity of the information, as well as specific content and format of the financial reports.
10. **Internal Controls:** In compliance with local regulations, INAB has in place procedures for processing of payments, with clear roles and responsibilities, including recording and approval of payments, and specific flowcharts for procurement and FM processes, which shall be reflected in the BSP OM. The internal control environment of the Project is adequate. All transaction processing uses INAB's processes and systems that provide for segregation of duties, supervision, quality control reviews, reconciliations, and independent external audits. Process flows appear to be clear and well understood by personnel. All project budgeting and accounting transactions will run through the SICOIN. All payments will follow the official commitment, verification/accrual, and payment routine. All project costs are recorded according to the GoG's Chart of Accounts, which enables a comparison and reconciliation with the Project's own records.
11. **Disbursement Arrangements:** The World Bank will be able to disburse the ERPA proceeds using either the ER Payment or Interim Advance Payment (future ER payments) methods upon submission of an Application for Payment form by MINFIN. Under the advance method, a DA will be opened, under the STA in MINFIN in United States Dollars, to be used exclusively for deposits and withdrawals of ERPA payments. Funds deposited into the DA as advances will follow World Bank's disbursement guidelines, described in the ERPA and DFIL. Following current practices, advances made to the DA will be documented through use of SOEs and supporting documents defined in the DFIL. MINFIN/INAB will manage and distribute and report the ERPA proceeds in 2 : Part 1 - Payments received by the Recipient from the FCPF Carbon Fund for ERs generated by the ER Program and Part 2 - ER payments distributed in accordance with agreed BSP. Documentation of eligible payments to beneficiaries paid out of the DA is expected to be carried out on a quarterly basis.



**12. Flow of funds:** The flow of funds to the GoG would proceed in two parts, i.e. (1) Payment for Measured, Reported, and Verified ERs from the FCPF Carbon to the GoG, and (2) Distribution of ER Payments from the GoG to the beneficiaries (see Figure 3 in earlier Section IV.B.(i), and Figure 5 below):

- a) The primary World Bank disbursement method will be Advances. World Bank disburses funds in accordance with application received from MINFIN/INAB (in Client Connection).
- b) Resources would be transferred from the World Bank to a DA under the STA in the Central Bank of Guatemala's in US\$.
- c) From the DA, exclusively for the Emission Crediting Transaction, funds would be transferred from MINFIN/INAB into a sub account (within SICOIN) that will serve as an operating account (in GTQ)<sup>85</sup> to manage the ER Program funds.
  - i) INAB certifies beneficiaries list and send the payroll to MINFIN.
  - ii) MINFIN registers in the SICOIN.

When both situations are met, the payment of the REDD+ initiatives is ready to be carried out.

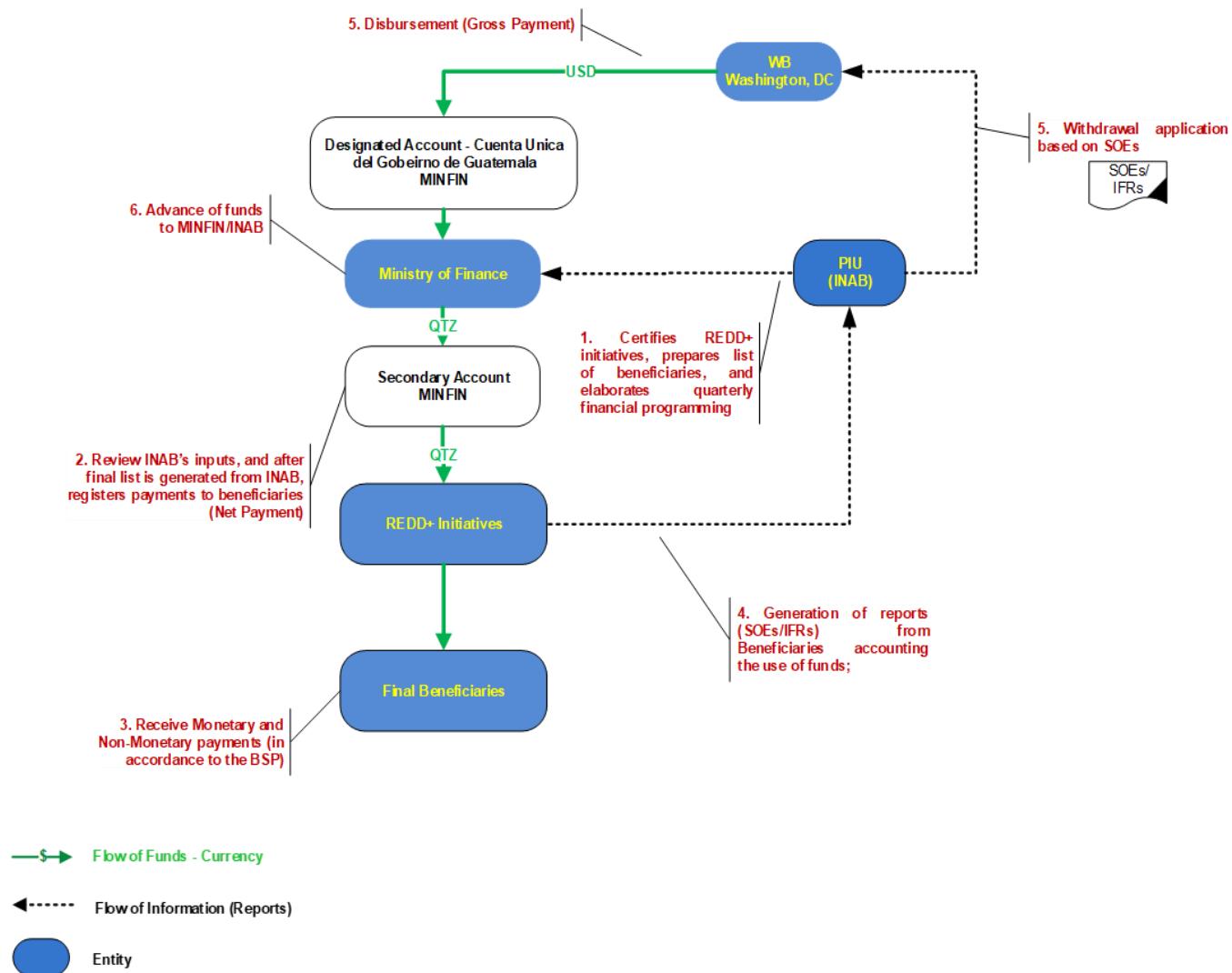
- iii) ER payments will be deposited upon payment instructions from INAB to MINFIN, and paid via SICOIN, for eligible and duly approved beneficiaries (REDD+ initiatives). Such payments will have to be authorized by INAB.
- iv) In accordance with the BSP, REDD+ initiatives distribute monetary and non-monetary benefits to the final beneficiaries. These payments would be used to record transfers from MINFIN, and these records would be subject to project audit procedures.

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<sup>85</sup> GTQ— Guatemalan Quetzal



Figure 5. Detail of Flow of Funds (Part 1 and 2)



**13. Part 1 - Payments for Measured, Reported and Verified ERs received by the Recipient from the FCPF Carbon Fund for ERs generated by the ER Program:** The final ERPA value will depend on the actual volume of ERs generated by the ER Program in each RP. The GoG has established a preliminary ERPA payment schedule including periodic and advanced interim payments (reflected in the Expected Disbursements in the Data Sheet). The GoG will deduct from the gross ERPA payments US\$1.2 million to cover operating costs associated with benefit distribution, and it will set aside one percent under a Solidarity Reserve to address under-performance of the REDD+ initiatives due to natural hazards.

**14. Part 2 – Distribution of ER Payments According to the BSP:** The GoG will distribute 100 percent



of the net ERPA payments among proponents of registered REDD+ initiatives, which can be REDD+ projects, MCEES projects, and management models for forest conservation and sustainable use in the SIGAP. The benefit distribution will be done in two steps. The first step is to reward ERs gained by the early REDD+ projects and the “Rest of ER Program Area” in tCO<sub>2</sub>e units. Second, the GoG will distribute benefits within the Rest of the ER Program Area among new REDD+ projects, and MCEES and the management models for forest conservation and sustainable use in the SIGAP. The carbon benefits will be in the form of monetary and non-monetary benefits, depending on the decision of REDD+ initiatives’ beneficiaries. The BSP establishes that proponents of grouped REDD+ initiatives must develop and implement a project-level BSP to distribute monetary and non-monetary benefits (supplies for fire control, forest control and surveillance, investment in productive projects aligned to the REDD+ initiative management plan, research, minor community works - i.e., road maintenance, schools, basic infrastructure for tourism, check points), wage for firewalls establishment, inputs for agroforestry, field monitoring equipment, funding for community patrols, capacity building, improvement of community-based small-and medium enterprises, purchase of machinery. Both monetary and non-monetary payments must be quantified and reported by REDD+ initiatives, consolidated by MINFIN/INAB and reported to the World Bank.

15. **Financial Reporting:** The PIU will submit bi-annual Interim Unaudited Financial Reports. These will be submitted no later than 45 days after the end of each semester and will contain: (i) the sources and uses of funds, reconciling items, with expenditures classified by component which will be required for this Emission Crediting Transaction; and (ii) a statement of uses of funds reporting the current semester and the accumulated activities against ongoing plans, as well as footnotes explaining the important variances. Since project reports will be prepared using supplementary records (based on the information available in SICOIN), the BSP OM must include the required internal controls to ensure that transactions processed in SICOIN are timely and systematically updated in the supplementary records. On an annual basis, INAB will prepare project financial statements, including cumulative figures, for the year and as of the end of the fiscal year (December 31). All documentation for a consolidated SOEs will be maintained for post review and audit purposes for up to three years after the closing date of the Project, or for 18 months after receipt by the World Bank of an acceptable final financial audit, whichever is the later.
16. **External Auditing:** An external, independent, private audit firm, acceptable to the World Bank, will be contracted by INAB no later than six months after the ERPA’s effectiveness. The audited financial statements shall be furnished to the World Bank not later than six months after the end of every fiscal year. According to the World Bank’s policy on access to information, audited financial statements shall be made public. Specifically, the audit of the Budget Execution Report of the payments will need to verify that the amount shown as paid corresponds to actual payments made to both the REDD+ initiatives and the final beneficiaries in accordance with the BSP. Funds for payments for the external audit will come from program funds.
17. **World Bank Supervision** will review the project's FM arrangements, including but not limited to the proper implementation of BSP. The World Bank will closely supervise REDD+ initiatives



proponent entities' compliance with previously agreed FM standards for benefit distribution from these entities to the final beneficiaries.

18. **Coordination with other REDD+ government institution partners.** Implementation support will include: (i) the proper implementation of all the E&S instruments, and sound implementation of mitigation measures to prevent any social and environmental risks associated with the project, and; (ii) collaboration with INAB to ensure adequate alignment of all the REDD+ initiatives to contribute to ER Program goals, as well as; (iii) close supervision of inter-institutional agreement implementation; (iv) supervision on opportunities to link to the ER Program to GHG reduction initiatives in land-use related sectors.
19. **Legal support:** Implementation support will include verification that legal conditions have been met.
20. **Carbon Accounting and drivers of deforestation:** The World Bank will support the GoG's capacity to monitor, report, and participate in the verification of ERs, as well as the monitoring and reporting of drivers of deforestation in the areas excluded from the ER Program area.
21. **World Bank Team:** The Task Team Leader and the technical team are based in Washington D.C. Formal supervision and field visits will be carried out twice a year (every six months) as much as possible, given the circumstances posed by COVID-19, otherwise virtual missions will be organized.
22. **E&S Aspects:** Due to the nature of this results driven operation, ERPA payments will depend on the proper application of ESS instruments to the underlying activities that will generate the ERs; the project will require close E&S aspects supervision.

**ANNEX 2: Summary of the ER Program**

**COUNTRY: Republic of Guatemala**  
**Guatemala Emissions Reduction Program**

**The ER Program**

1. The ER Program consists of 19 REDD+ Actions that respond to the direct and underlying drivers of deforestation and forest degradation. The GoG programs that will implement these actions are the following:
  - a. **PROBOSQUE Forest Incentive Program:** was created in 2015 to continue actions of the 1996-2016 PINFOR. PROBOSQUE promotes: (i) forest plantation and maintenance for industrial purposes; (ii) forest plantations with energy-production purposes; (iii) agroforestry systems; (iv) productive natural forest management; (v) natural forest management for protection and the provision of environmental services; and (vi) forest and degraded lands restoration. PROBOSQUE also promotes technical assistance, research, and links with the productive sector. For each category, beneficiaries receive specified amounts.<sup>86</sup> Beneficiaries include municipalities, committees, individuals, associations, foundations, NGOs, private enterprises, cooperatives, and communities. In 2019, the GoG granted approximately US\$24 million to 106,021 PROBOSQUE's beneficiaries and generated employment for around 2 million people.<sup>87</sup>
  - b. **PINPEP Forest Incentive Program** was created in 2010, initiated in 2011 without an ending date. PINPEP benefits possessors of land areas of less than 15 ha. It promotes: (i) natural forest management for production purposes; (ii) natural forest management for protection purposes; (iii) plantations and forest maintenance; and (iv) agroforestry systems. PINPEP also promotes the strengthening of the beneficiaries' technical capacity to participate in the program. Beneficiaries receive specific amounts per category. They include both individuals and organized groups of land possessors (i.e., communities and municipality). The maximum area is 15 ha for individual projects, whereas grouped projects can be greater than 15 ha. In 2019, the GoG granted approximately US\$36 million to 60,787 PINPEP's beneficiaries, of which 45 percent were women.<sup>88</sup> During the same year, PINPEP's indirect beneficiaries were estimated at 133,693 (49 percent women) and supported the generation of approximately 3.3 million temporary jobs.
  - c. **The Program for the Restoration, Protection and Conservation of Protected Areas and Biological Diversity of SIGAP,** is CONAP's main planning instrument. It entails activities that promote REDD+ related reduction of emissions from deforestation and avoided degradation. CONAP within its organizational structure works hand in hand with multiple strategic partners and its decision-making is based on the participation of various sectors such as governmental institutions, the

<sup>86</sup> Plantations: US\$2,175/ha for six years; agroforestry systems: US\$684/ha for 6 years; natural forest management: US\$394/ha for the first 15 ha and US\$ 71/ ha as additional resources for 10 years; and restoration of forest degraded lands US\$2,433/ha for 10 years.

<sup>87</sup> Guatemala Forest Information System (SIFGUA).

<sup>88</sup> Guatemala Forest Information System (SIFGUA): <http://www.sifgua.org.gt/Pinpep.aspx>.



private sector, NGOs, municipalities, and the academia. The activities being promoted include: (i) joint administration of protected areas; (ii) co-administration agreements for protected areas conservation; (iii) shared management of protected areas; (iv) regional municipal parks; (v) concessions for the sustainable use of protected areas; and (vi) natural private reserves.<sup>89</sup>

- d. The underlying GoG Programs will be strengthened by the FIP Program, currently under advanced development. FIP will be implemented in 47 priority municipalities, as briefly described below:
  - i. **The Forest Governance and Livelihoods Diversification Project P167131** (US\$11.8 million) under preparation seeks to streamline and enhance coordinated implementation of priority sector strategies; improve a wide-range of stakeholders' participation in forest governance including through strengthened collaborative forest management models in protected areas; and create municipal and community-based forest monitoring systems. The project will create (MCEES) and facilitate the integration of non-timber forestry products into value chains.
  - ii. **The Sustainable Forest Management Project** (US\$9.7 million). This Project, to be delivered by the IDB from 2022-2027, seeks to increase INAB and CONAP's institutional capacity to improve efficiency in the implementation of their respective forestry programs, and increase the inclusion of vulnerable people.
  - iii. **The Green Guarantee for Competitive Landscapes Project** (US\$2.5 million), being implemented by IDB-Lab (2021-2026), seeks to promote financial inclusion in forest landscape restoration, involving public-private partnerships.
  - iv. **The Dedicated Grant Mechanism for Indigenous Peoples and Local Communities Project P170391** (US\$4.5 million) approved in May 2021, seeks to enhance the IPLCs' capacity to design and implement culturally based sustainable forest landscape management, and to participate in forest-and-climate change dialogue.
2. Three early REDD+ projects have decided to participate in the ER Program, two of which are certified by the Verra VCS and Climate, Community, and Biodiversity Standards.
  - a. **GuateCarbon:** This 30-year project is certified also by the Forest Stewardship Council. The project started in 2016 and builds on the work done since 1998 by the community forestry and the industrial concessions, with financial (around US\$150 million) and technical support from national and international cooperation and development agencies, as well as CONAP. The GuateCarbon project seeks to implement and strengthen conservation and community development actions reward the community forestry concessionaires for their significant contribution to climate change mitigation in the MBR. These benefits would complement the actions of the community

<sup>89</sup> The list of eligible actions of the current BSP includes a seventh action (public service concessions), which is not indicated here as the fifth already covers this option in protected areas.



forestry concessionary model which it has promoted with CONAP, and directed to 15,000 direct beneficiaries.

- b. **Lacandón Forest for Life:** This 30-year project covers 0.04 million Has of the Sierra Lacandón National Park buffer zone, within the MBR. The project started on February 1, 2012 and has a duration of 30 years. The project directly benefits more than 179 families, members of La Lucha, the Unión Maya Itzá, and la Técnica Agropecuaria cooperatives, whose livelihoods mostly depend on agriculture. The project delivers an exceptional number of community benefits that impact some 3,000 people, including improving access electricity, schools, skill training, safe water and create enhanced opportunities for women. This project has been reducing the deforestation and forest degradation in its area of influence.
- c. **Reddes Locales para el Desarrollo:** This 30-year project covers 0.74 million ha in 12 municipalities outside the SIGAP. With some 24,000 beneficiaries, the project seeks to integrate forest incentives provided by PINPEP and PROBOSQUE and payments for environmental services into the family economy. This project is still undergoing the process of getting VERRA-VCS certification, but its baseline is already aligned with the ER Program.

### Carbon Accounting

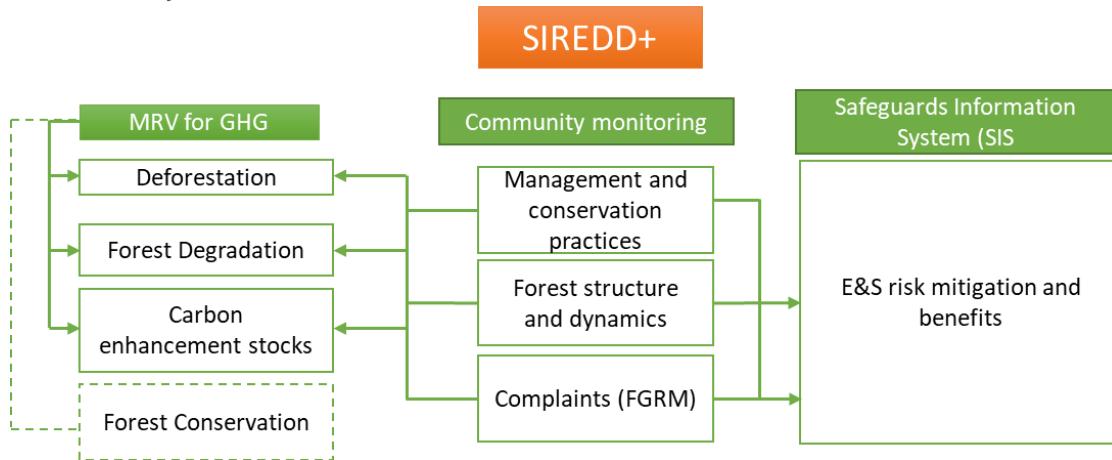
- 3. The ER Program's reference level (i.e., FREL), determined at 13.08 million tCO<sub>2</sub>e/year, is the benchmark against which the ER Program results will be measured. The FREL was determined as the net annual average of national GHG emissions and removals from deforestation (12.29 million tCO<sub>2</sub>e/year), forest degradation (3 million tCO<sub>2</sub>e/year), and carbon stock enhancement (-1.94 million tCO<sub>2</sub>e/year) during the 2006-2016 period.<sup>90</sup> The Carbon Fund has approved the FREL, but it may be updated from time to time to improve data and methodological approaches. Guatemala will report the ER results in the Monitoring Reports. To comply with Carbon Fund requirements, Guatemala developed an integrated system to monitor REDD+ GHG emissions, multiple benefits, other impacts, management, and E&S aspects. This system is called SIREDD+ and is a module of SNICC (see Figure 6).

<sup>90</sup> GoG. Emissions Reduction Program Document. 2019.

[https://forestcarbonpartnership.org/system/files/documents/Guatemala\\_ERPD\\_11\\_05\\_2019.pdf](https://forestcarbonpartnership.org/system/files/documents/Guatemala_ERPD_11_05_2019.pdf)

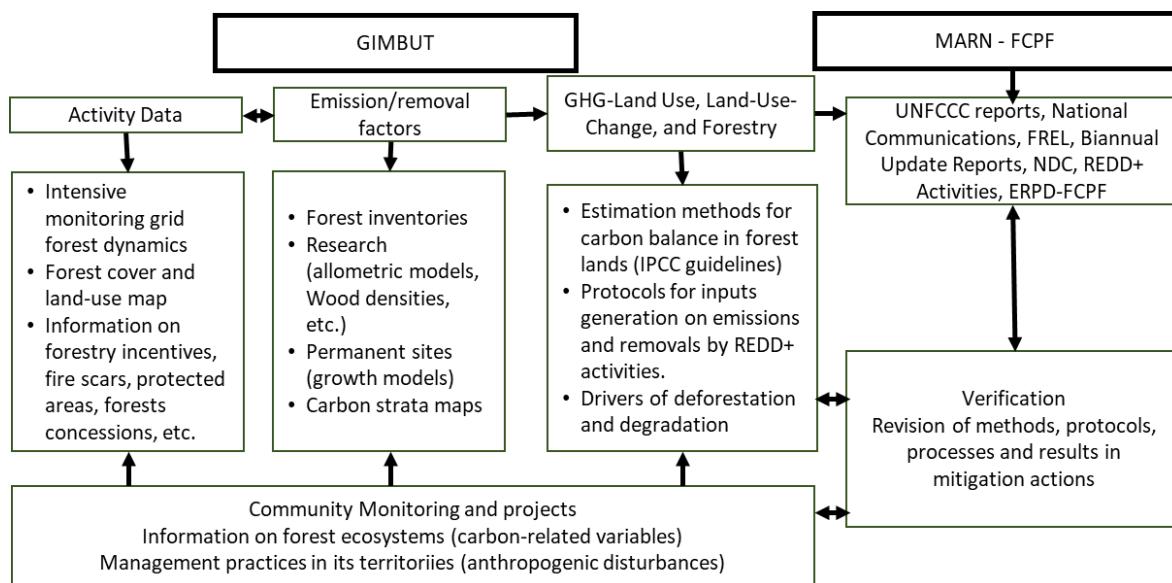


Figure 6. SIREDD+ system



4. The MRV for carbon will be carried out by the INAB with technical support of GIMBUT. The MRV system relies on the combination of satellite imagery to identify land-use changes and the National Forest Inventory for the calculation of emission factors of the different land uses. The system will be responsible for the generation of activity data, emission factors, emissions estimation, reporting and technical support for verification, with inputs and robust methodological protocols well defined and documented and based on the national reality and capacities. These methods have also been used for the preparation of the FREL, with the purpose of ensuring transparency, coherence, consistency in methods and, when possible, reduce the uncertainty of the estimates. (see Figure 7)

Figure 7. Components of the MRV System for GHG inventories.





5. A summary of the FCPF Monitoring Report is presented below. The full template can be found on the FCPF website.<sup>91</sup>
  - a. Implementation and operation of the ER Program and changes compared to the ERPD.
  - b. System for measurement, monitoring, and reporting emissions and removals occurring within the monitoring period.
  - c. Data and parameters
  - d. Quantification of ERs
  - e. Uncertainty of the estimate of ERs
  - f. Transfer to ER Titles
  - g. Reversals
  - h. ERs available for transfer to the Carbon Fund
  - i. Annex 1: Information on the implementation of the E&S plans
  - j. Annex 2: Information on the implementation of the BSP
  - k. Annex 3: Information on the generation and/or enhancement of priority non-carbon benefits
  - l. Annex 4: Carbon accounting – addendum to the ERPD

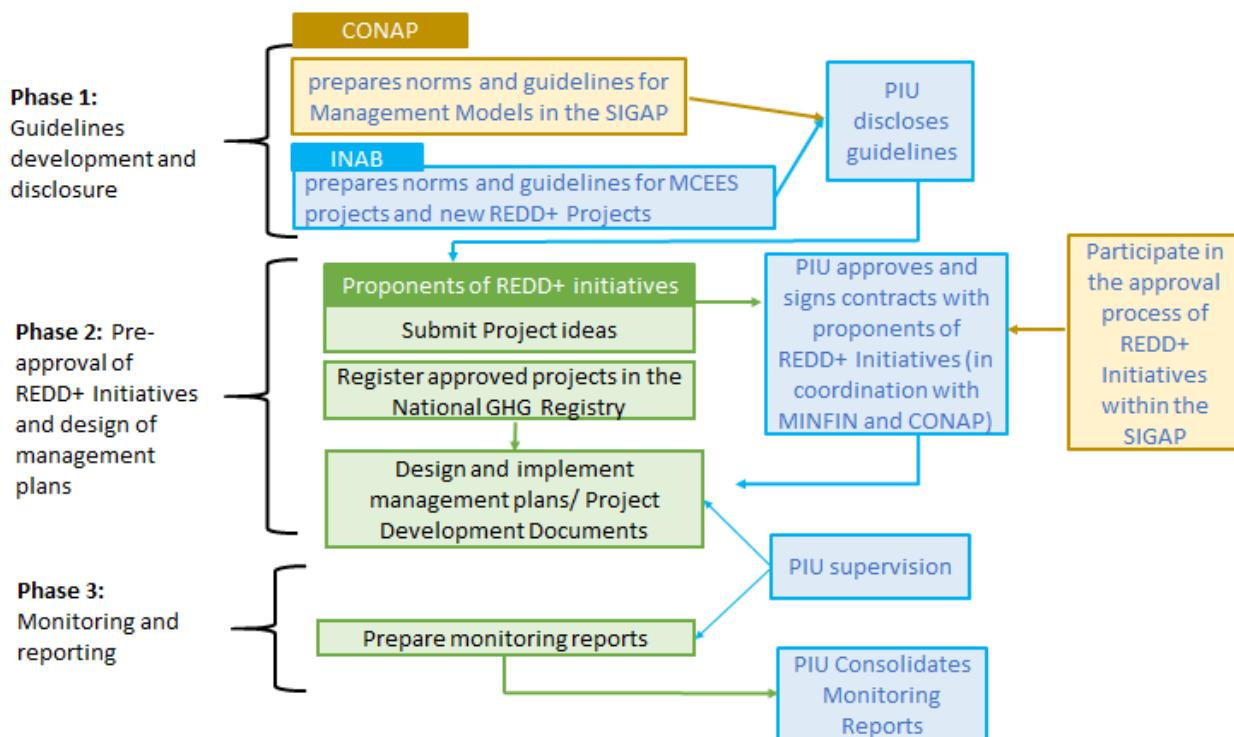
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<sup>91</sup> <https://www.forestcarbonpartnership.org/requirements-and-templates>

**ANNEX 3: Features of the Benefit Sharing Plan**COUNTRY: Republic of Guatemala  
Guatemala Emissions Reduction Program

1. **REDD+ initiatives design, implementation, and monitoring process.** The process to develop, implement, monitor, and report REDD+ initiatives has three phases: (i) guidelines development and approval; (ii) pre-approval of REDD+ initiatives and design of project management plans; and (iii) supervision, monitoring, and reporting. Figure 8 illustrates the institutions involved in each phase and their roles. More details on these processes will be provided in the BSP OM.

Figure 8. Process for the development, implementation, monitoring, and reporting of REDD+ initiatives.

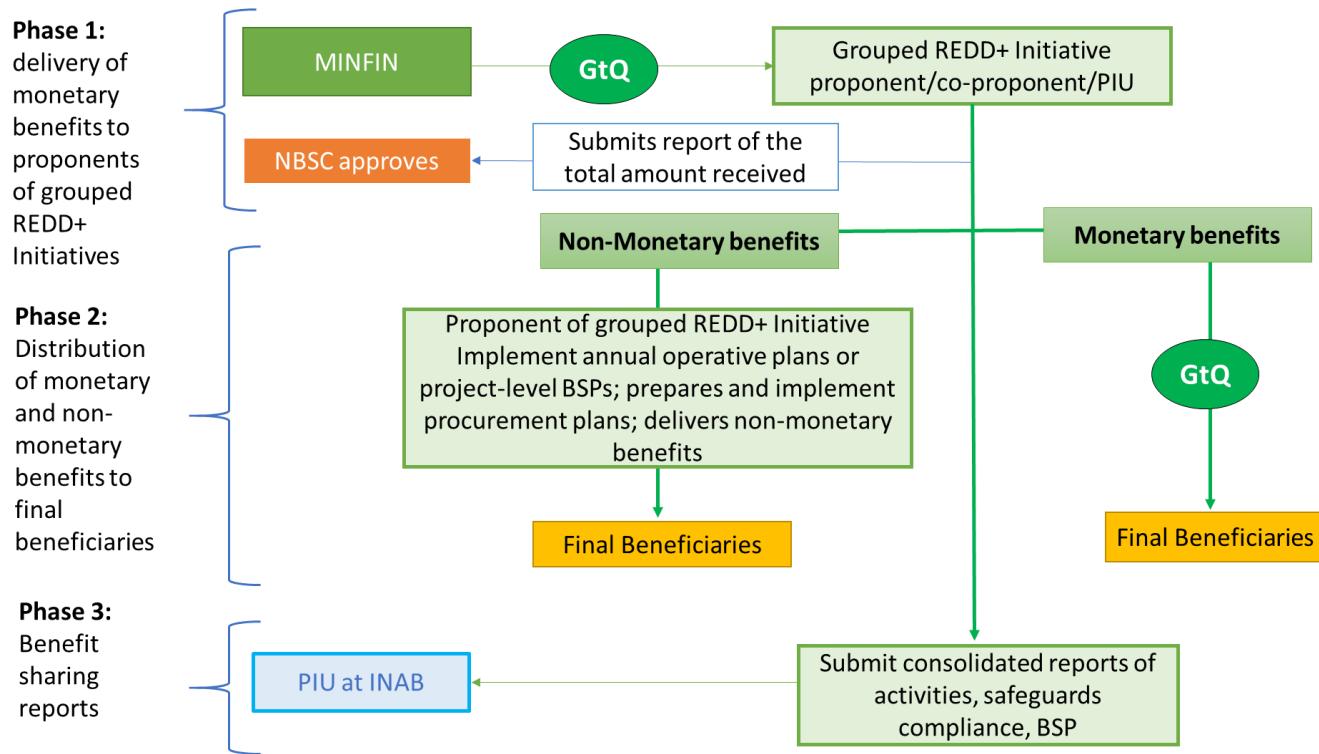


Source: Adapted from MINFIN and INAB, October 2020. Work document. Benefit distribution procedures.

2. **Benefit distribution within grouped REDD+ initiatives.** The distribution of monetary and nonmonetary benefits in grouped REDD+ initiatives have three phases, as shown in the following figure.



Figure 9. Distribution of Monetary and Non-monetary Benefits in Grouped REDD+ Initiatives



Source: Adapted from MINFIN and INAB, October 2020. Work document. Benefit distribution procedures.

3. **Final version of the BSP.** A final BSP is required no later than prior to the first ERPA payment. In addition, INAB's and CONAP's guidelines for MCEES and management models for forest conservation and sustainable use in the SIGAP, as well as the BSP OM, will be annexed to the final BSP.

**ANNEX 4: Summary of the Nesting Approach**

COUNTRY: Republic of Guatemala  
Guatemala Emissions Reduction Program

1. **Guatemala developed a nesting approach, protocol, and tool to “nest” the early REDD+ projects into the ER Program.** The approach bases on a comprehensive, transparent, and robust national carbon accounting system, including the ER Program FREL and the national MRV system. The nesting protocol was developed in a participatory manner with MINFIN, INAB, CONAP, MARN, MAGA, GIMBUT, and early REDD+ projects implementers. Methodologically, the approach is based on the determination and allocation of quotas of the ER Program FREL assigned to each early REDD+ projects. The quotas were calculated based on the current forest area within the early REDD+ Project and the current deforestation/degradation rates (in ha), using activity data (i.e., land-use change) from the two years prior to quota allocation. The Reddes Locales para el Desarrollo is still in the process of getting the Verra VCS certification. Other variables used to determine the quotas were: (i) inclusion in the SIGAP, (ii) presence of water recharge areas or strategic ecosystems prioritized by INAB in the early REDD+ project; (iii) areas with potential for forest landscape restoration; and (iv) the REDD+ subregion in which the early REDD+ project is located. As a result, the quotas, and the percentages of the FREL were allocated to each area (see Table 6). The Reddes Locales para el Desarrollo project (Calmecac Foundation) is still in the process of getting the Verra VCS certification. A quota will be assigned to this project once registered in the country’s registry of REDD+ initiatives at MARN in accordance with the requirements established in Annex XI of the ERPD and the Regulation on the Registry of Projects for the Removal or Reduction of Greenhouse Gas Emissions (Ministerial Agreement No. 284-2020).

Table 6. Quotas Allocated to the Early REDD+ Projects and the Rest of the ER Program Area

Area	Quotas (tCO <sub>2</sub> e)		Percentage of the FREL	
	Emissions	Removals	Emissions	Removals
Lacandón Forest for Life	595,160.43	-63,486.36	4	3
GuateCarbon	1,530,652.10	-197,837.34	10	9
Rest of the ER Program area	13,175,427.00	-1,954,470.30	86	88
Total	15,301,239.53	-2,215,793.99	100	100

2. The quotas were disaggregated by REDD+ activity, as shown in Table 7.

Table 7. Quotas Disaggregated by REDD+ activity.

Area	Emissions (tCO <sub>2</sub> e)		Removals (tCO <sub>2</sub> e)	
	Deforestation	Degradation	Restoration	Reforestation
Lacandón Forest for Life	490,155.17	105,005.26	-63,486.36	-
GuateCarbon	1,217,409.78	313,242.32	-197,837.34	-
Rest of the ER Program area	10,583,199.13	2,592,227.87	-1,683,039.16	-271,431.14
Total	12,290,764.08	3,010,475.45	-1,944,362.85	-271,431.14



3. **Links between the Nesting Approach and the BSP.** Early REDD+ project implementers can market the ERs units in the voluntary carbon market under certain conditions. Guatemala determined thresholds (also called Sweep Cap) applicable to the first and second RP, above which the early REDD+ projects can consider selling the excess of ERs to other carbon buyers (e.g., from voluntary carbon market) or to the Carbon Fund. No threshold has been defined to the third RP, as Guatemala shall prioritize compliance with the Maximum Contract Volume under the ERPA with the World Bank. See additional Information in Annex XI of the ERPD.<sup>92</sup>

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<sup>92</sup> [https://www.forestcarbonpartnership.org/system/files/documents/Guatemala\\_ERPD\\_11\\_05\\_2019.pdf](https://www.forestcarbonpartnership.org/system/files/documents/Guatemala_ERPD_11_05_2019.pdf)

**ANNEX 5: Feedback Grievance Redress Mechanism**

COUNTRY: Republic of Guatemala  
Guatemala Emissions Reduction Program

1. **The PIU will implement an FGRM, which will have the following functions:** The FGRM seeks to create an institutional culture of attention to citizen's concerns about the ER Program and help identify and address issues before they become problems, avoiding costly time-consuming disputes (see Table 8). The FGRM is not intended to replace the judiciary or other forms of legal and / or traditional action existing in the country, but to complement them. Therefore, the aggrieved parties may address their complaints and use the typology of existing and relevant mechanisms in accordance with their powers. The PIU and its REDD+ institution partners will address legal complaints to the relevant institution, i.e., Public Ministry or Judge of Municipal Affairs.

*Table 8. Key features of the Feedback Grievance Redress Mechanism*

Type of Complaints	Description
Participation and dialogue	<ul style="list-style-type: none"><li>• Grievances linked with discrepancies and disputes that can arise in relation to participation of relevant actors in implementation, and evaluation of implementation of REDD+ Strategy Options.</li><li>• Exchange of information on REDD+</li><li>• Application of procedures on participation and Free, Prior, and Informed Consent</li></ul>
Land tenure and forest resources	<ul style="list-style-type: none"><li>• Processes to acquire land rights (including lack of legal certain, regularization of tenure, and restrictions on access to women and vulnerable groups</li><li>• Making use of forest resources</li><li>• Access and implementation of forest incentive programs</li><li>• Reinforcing forest protection and control measures to prevent illegal logging activities and overuse of fuelwood</li></ul>
Rights of IPLCs	<ul style="list-style-type: none"><li>• Lack of recognition and respect for rights of IPLCs, particularly with respect to customary rights (including rights to tenure, land use, and natural resources)</li><li>• Lack of recognition and respect for traditional and ancestral knowledge and practices.</li></ul>
Benefit Sharing	<ul style="list-style-type: none"><li>• Situations of inadequate recognition and economic valuation of goods and services associated with forests (rights to carbon)</li><li>• Lack of recognition of rights holders (i.e., communities) that were found in the zone prior to the declaration of protected areas.</li></ul>
Others	<ul style="list-style-type: none"><li>• Others linked to the implementation of REDD+ Strategy Options.</li></ul>

**ANNEX 6: Non-carbon Benefits**

COUNTRY: Republic of Guatemala  
Guatemala Emissions Reduction Program

1. **Guatemala's ERPD presents 10 priority non-carbon benefits (Table 9) that the GoG's institutions will monitor and report to FCPF as part of the Monitoring Reports.** The Non-Carbon Benefit Monitoring System within the SIREDD+ include the same approach defined for MRV for data compilation, integration, analysis, and reporting. INAB, CONAP, MAGA, and MARN will be responsible for monitoring non-carbon benefits.

Table 9. Priority Non-carbon Benefits

Type of Benefits	Category of Benefits
1. Environmental benefits	1. Conservation and sustainable use of biological diversity
	2. Water resource improvement
	3. Soil resource improvement
2. Socio-economic benefits	4. Provision of timber and non-timber products
	5. Improvement in livelihoods (environmental, cultural, social, and economic)
	6. Strengthening capacity of stakeholders to participate in REDD+ (education and training)
	7. Inclusion of vulnerable populations (indigenous peoples, local communities, women, and youth)
	8. Strengthening forest landscape governance.
	9. Contribution to food and nutrition security
3. Cultural and traditional benefits	10. Respect and recognition of ancient and traditional knowledge



## ANNEX 7: Economic and Financial Analysis

COUNTRY: Republic of Guatemala

Guatemala Emissions Reduction Program

- This Annex presents an ex-ante benefit-cost analysis of the estimated economic benefits generated by the proposed ER Program.** The analysis takes the perspective of the GoG and compares the investment costs of the ER Program to the social and environmental benefits that are expected to be generated. The ER Program costs (see Table 10) are represented by the sum of the total investment costs into the ER Program (including public funds, lending instruments, and private sources). The benefits estimated are the forest ecosystem and carbon benefits that would be generated based on the total estimated Emissions Reductions that the ER Program is expected to generate, using three potential performance scenarios. The estimate of benefits considers all the ERs the ER Program will generate—not just the ERs that the Carbon Fund will pay for—because the total estimates for Guatemala's ER program costs are comprehensive and detailed, and this prevents underestimating the production of ERs and associated forest and carbon benefits.

Table 10. Disaggregated ER Program Costs and Financing

Type of Activity	Name of Activity	2020	2021	2022	2023	2024	Total
<b>Strategic Option 1. Strengthening of forest governance</b>							
Enabling	1.1. Review and update regulatory framework for sustainable use and harvest of natural resources	0.0	0.0	0.0	0.0	0.0	0.1
Enabling	1.2. Strengthen Access to institutional services of forestry administration inside and outside of protected areas	3.6	2.5	2.5	2.5	2.5	13.6
Enabling	1.3. Enhance the coordination and effective participation of stakeholders to reduce illegal logging	0.3	0.3	0.3	0.3	0.3	1.7
Enabling	1.4. Strengthen Information systems and forest monitoring	1.2	1.2	1.2	1.2	1.2	5.9
Direct	1.5. Prevention and control of illegal forest activities	3.0	3.0	3.0	3.0	3.0	15.2
Enabling	1.6. Strengthen municipal and communal forests	0.3	0.3	0.3	0.3	0.3	1.7
Enabling	1.7. Institutional strengthening	0.3	0.1	0.1	0.1	0.1	0.9
	Subtotal	8.9	7.5	7.6	7.5	7.5	39.1
<b>Strategic Option 2. Conservation, protection, and sustainable management of forests</b>							
Direct	2.1. Implement mechanism of compensation for environmental services	0.7	0.7	0.7	0.7	0.7	3.4
Enabling/ direct	2.2. Strengthen the conservation, valuation, use, and improvement of biological diversity.	0.3	0.3	0.3	0.3	0.3	1.5
Direct	2.3. Protection and conservation of protected areas and biological diversity	2.4	2.4	2.4	2.4	2.4	12.1
Enabling	2.4. Effective management and administration of protected areas	0.3	0.3	0.3	0.3	0.3	1.4
Enabling/ Direct	2.5. Prevention and control of forest fires	5.9	5.9	5.9	5.9	5.9	29.5
Enabling	2.6. Protection against forest pests and diseases	0.1	0.0	0.0	0.0	0.0	0.2
	Subtotal	9.6	9.6	9.6	9.6	9.6	48.1
<b>Strategic option 3. Forest landscape restoration and forest recuperation in forestry and agroforestry lands</b>							
Direct	3.1. Forest landscape restoration	1.4	1.4	1.4	1.4	1.4	7.0
Enabling	3.2. Promotion of sustainable livestock ranching	2.1	1.4	1.4	1.4	1.4	7.8
	Subtotal	3.5	2.8	2.8	2.8	2.8	14.8
<b>Strategic option 4. Reducing unsustainable harvest of fuelwood</b>							
Enabling/ Direct	4.1. Promote sustainable and efficient use of fuelwood	0.2	0.1	0.1	0.1	0.1	0.6
	Subtotal	0.2	0.1	0.1	0.1	0.1	0.6



<b>Strategic option 5. Promoting competitiveness and legality in the value chain for forest products and derivatives/by-products<sup>93</sup></b>						
Enabling/ Direct	5.1. Development of value chains for forest products and derivatives/by-products	0.7	0.4	0.4	0.4	0.4
Enabling/ Direct	5.2. Promote the establishment of agroforestry systems and forest plantations	0.1	0.1	0.1	0.1	0.1
Direct	5.3. Promote sustainable forest management in natural forest areas	0.0	0.0	0.0	0.0	0.0
	<b>Subtotal</b>	<b>0.9</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>3.1</b>
<b>Measurement, Report and Verification System</b>						
Enabling	6.1. Measurement, Report and Verification System	2.3	2.1	2.1	2.1	10.6
	<b>Subtotal</b>	<b>2.3</b>	<b>2.1</b>	<b>2.1</b>	<b>2.1</b>	<b>10.6</b>
<b>Program administration and supervision costs (5% of the total cost of REDD+ activities)</b>						
Enabling	7.1. Administration and supervision costs of the REDD + Program (5% of the total cost of REDD + activities)	1.3	1.1	1.1	1.1	5.8
	<b>Subtotal</b>	<b>1.3</b>	<b>1.1</b>	<b>1.1</b>	<b>1.1</b>	<b>5.8</b>
<b>Total: REDD+ action cost</b>		26.6	23.9	23.9	23.9	122.2
<b>Total: Incentives*</b>		11.2	16.4	21.1	25.5	104.0
<b>Total: ER Program Costs</b>		37.8	40.3	45.0	49.4	226.1
<b>Total: ER Program Accumulated Costs</b>		37.8	78.0	123.1	172.4	226.1

2. **The benefits estimated for the ER Program are the sum of two forest-related benefits, calculated based on the number of ERs generated:** (1) carbon benefits based on the shadow price of carbon per ton; and (2) forest ecosystem service benefits. The shadow price of carbon estimates the value of externalities caused by carbon emissions, using the World Bank's recommended guidance on carbon prices consistent with limiting global temperature rise to 2°C or less<sup>94</sup> (from 2020-2025, the World Bank recommends a low range of US\$40-45/tCO<sub>2</sub>e and a high range of US\$ 80-89/tCO<sub>2</sub>e). Forest ecosystem services estimate the benefits from non-wood forest products, hydrological services, recreation, and natural habitat/biodiversity, which would be protected or generated from successful reductions in deforestation and forest degradation. Values for forest ecosystem benefits are taken from Siikamäki et al. (2015)<sup>95</sup> for a low/conservative estimate of US\$150 per Ha for Guatemala, and a higher-end global estimate of US\$1,312 per Ha based on the study by Carrasco et al. (2014).<sup>96</sup> The monetary value of the Carbon Fund payments (up to US\$52.5 million paid to the GoG in the most optimistic scenario) is not included in the estimate of benefits to avoid double counting of the value of the benefits generated.
3. **The analysis assumes that program costs and associated ER payments will occur over a five-year period from 2020 to 2025.** The three ER performance scenarios are shown in Section B (iii), and

<sup>93</sup> For programmatic purposes, incentives form part of the activities of strategic option 5 for the promotion of competitiveness and legality in the value chain of forest products and by-products.

<sup>94</sup> Values are taken for the specific years from: World Bank. Nov 12, 2017. Shadow price of carbon in economic analysis.

<http://pubdocs.worldbank.org/en/911381516303509498/2017-Shadow-Price-of-Carbon-Guidance-Note-FINAL-CLEARED.pdf>

<sup>95</sup> Siikamäki, J., F. J. Santiago-Ávila, and P. Vail. 2015. "Global Assessment of Non-wood Forest Ecosystem Services. Spatially explicit meta-analysis and benefit transfer to improve the World Bank's forest wealth database." Working Paper. World Bank-PROFOR.

<sup>96</sup> Carrasco, L.R., T.P.L. Nghiem, T. Sunderland, and L.P. Koh. 2014. "Economic valuation of ecosystem services fails to capture biodiversity value of tropical forests." *Biological Conservation* 178 (2014): 163–170.



performance of 50 percent, 75 percent, and 100 percent of potential Emissions Reductions. Table 11 provides the timing and volume of the total ERs expected to be generated by the project under the three performance scenarios and used for the analysis. ER Program costs are assumed to be the same under all scenarios (Table 12). Under all scenarios, benefits are calculated using a simple cash flow model to estimate NPV and Benefit/Cost (B/C) ratio. In addition to the three performance scenarios, two other key variables are adjusted for the sensitivity analysis (see Table 13): lowering the shadow price of carbon (by 50 percent and 75 percent) and adjusting the discount rate (to 3 percent, 6 percent, and 12 percent).

*Table 11. ER performance scenarios used for economic analysis.*

Low scenario (50% performance)		Medium scenario (75% performance)	High Scenario (100% performance)
Year	Volume (tCO <sub>2</sub> e)	Volume (tCO <sub>2</sub> e)	Volume (tCO <sub>2</sub> e)
2020	417,067	625,600	834,134
2021	834,134	1,251,200	1,668,267
2022	1,251,200	1,876,801	2,502,401
2023	1,668,267	2,502,401	3,336,534
2024	2,085,334	3,128,001	4,170,668
Total	<b>6,256,002</b>	<b>9,384,003</b>	<b>12,512,003</b>

*Table 12. Expected ER Program investment costs (US\$) used for economic analysis.*

Type of expense	2020	2021	2022	2023	2024	Total
Enabling conditions actions	11,953,000	9,897,000	9,931,000	9,897,000	9,897,000	51,576,000
Direct Actions	22,214,000	27,141,000	31,875,000	36,291,000	40,668,000	158,189,000
MRV	2,303,000	2,069,000	2,072,000	2,069,000	2,069,000	10,582,000
Administration	1,267,000	1,138,000	1,140,000	1,138,000	1,138,000	5,820,000
<b>Total</b>	<b>37,737,000</b>	<b>40,245,000</b>	<b>45,018,000</b>	<b>49,395,000</b>	<b>53,772,000</b>	<b>226,167,000</b>

*Table 13. Key variables and constants for performance scenarios and sensitivity analysis.*

Variables	Default values	Sensitivity analysis values	Source
<b>Performance scenario input variables</b>			
Timing and amount of investment costs	See Table 12		
Timing and number of expected emissions reductions during the life of the ER Program (tCO <sub>2</sub> e/year)	See Table 1	n/a	Guatemala ERPD and draft ERPA term sheet
Timing and number of expected payments from the Carbon Fund in response to tCO <sub>2</sub> e achieved (in US\$/year)	See Table 3	n/a	Guatemala ERPD and draft ERPA term sheet
Estimated quantity and timing of Hectares of reduced deforestation and reduced forest degradation (Ha)	Calculated from ERs divided by average country emissions factor	N/a	Guatemala ERPD
<b>Constants</b>			
Average deforestation emission factor (tCO <sub>2</sub> e/Ha) –	378.1	n/a	Guatemala ERPD



<b>constant</b>			
Forest ecosystem benefits per Ha of forest protected or restored (US\$/ha); includes non-timber forest products, hydrological services, recreation, etc.	Low: \$150 High: \$1,312	n/a	Low: Siikamaki et al. 2015 High: Carrasco et al. 2014.
<b>Variables adjusted for sensitivity analysis</b>			
Shadow price of carbon (US\$/tCO <sub>2</sub> e) that accounts for environmental externalities and co-benefits (2020-25)	Low: \$40-45 High: \$80-89	\$10-15 and \$20-25	World Bank. 2017. Guidance note on shadow price of carbon.
Discount rate	6%	3% and 12%	6% is World Bank-suggested default discount rate

### **Default analysis parameters and scenarios**

4. **The default parameters use a 6 percent discount rate, three performance scenarios (50, 75, and 100 percent),** as well as the combinations of low vs. high estimates for the carbon shadow price (2 values) and forest ecosystem benefits (2 values), yielding 12 estimates for net benefits and benefit cost ratios (see Table 14).

Table 14. Default parameter settings for initial 12 analyses.

<b>Default parameters:</b>		
<ul style="list-style-type: none"> <li>• <b>3 performance scenarios:</b> 50%, 75%, and 100%</li> <li>• 6% discount rate</li> <li>• 378.1 tCO<sub>2</sub>e/ha deforestation emissions factor</li> </ul>		
<b>Forest ecosystem benefits (4 scenarios)</b>		
Low estimate for forest ecosystem benefits (Siikamaki et al 2015) ( <b>fb1</b> )	Low shadow price of carbon ( <b>sp1</b> )	High shadow price of carbon ( <b>sp2</b> )
High estimate for forest ecosystem benefits (Carrasco et al 2014) ( <b>fb2</b> )	<b>sp1*fb1</b>	<b>sp2*fb1</b>
<b>Resulting calculations (3 x 4 = 12 scenarios)</b>		
<ul style="list-style-type: none"> <li>• <math>NPV \text{ of Net benefits} = NPV \text{ of total forest benefits (shadow price of carbon + forest ecosystem benefits)} - NPV \text{ of ER Program investment costs}</math></li> <li>• <math>B/C \text{ ratio} = (NPV \text{ of total forest benefits}) / (NPV \text{ of ER Program investment costs})</math></li> </ul>		

5. **Table 15 presents the results of the 12 default scenarios described above, with key results for NPV and B/C ratios in bold (blue for positive net benefit, red for negative net benefit).** All B/C ratios are calculated using the NPVs of benefits and costs. Most scenarios yield positive net benefits, with B/C ratios ranging from 1.1 (under medium performance scenario, low carbon shadow price, and low forest ecosystem values) up to a high of 2.96 (under high estimates for carbon shadow price, forest ecosystem services, and high performance). Two of the low performance scenarios result in a net negative benefit with a low carbon shadow price (displayed in red text). Using the low or high estimates for forest ecosystem benefits does not significantly change the results, as the estimated carbon benefits are much larger than estimated forest ecosystem services benefits. Except for the two low performance scenarios mentioned, the low carbon shadow price contributes enough value to yield positive net benefits under the medium and high-performance scenarios. In the table, key results are shown in blue and red.

Table 13. Net benefits estimated for ERs based on the shadow price (low or high shadow price) of carbon<sup>97</sup>.

Summary of estimated net benefits (default 6 percent discount rate)		Performance Scenario		
		Low (50%)	Medium (75%)	High (100%)
Expected Emissions Reductions - (tCO <sub>2</sub> e)		6,256,002	9,384,003	12,512,003
NPVs of costs and benefits	ER Program Costs (NPV) - (US\$)	\$188,524,041	\$188,524,041	\$188,524,041
	Low Forest Ecosystem Benefits (Siikamaki) - (US\$)	\$1,236,260	\$1,854,391	\$2,472,521
	High Forest Ecosystem Benefits (Carrasco) - (US\$)	\$10,806,673	\$16,210,010	\$32,427,771
	Carbon Benefits (Low Shadow Price) - (US\$)	\$139,263,835	\$208,895,752	\$262,761,953
	Carbon Benefits (High Shadow Price) - (US\$)	\$278,527,670	\$417,791,505	\$525,523,905
Key results: Net Benefits (US\$) and B/C ratios				
Low Forest Ecosystem Benefits (Siikamaki)	Net benefit (low Forest Ecosystem Benefits/low Shadow Price) - (US\$)	\$(48,023,946)	\$22,226,101	\$76,710,432
	Net benefit (low Forest Ecosystem Benefits/high Shadow Price) - (US\$)	\$91,239,889	\$ 231,121,854	\$339,472,385
	Benefit/cost ratio (low Forest Ecosystem Benefits/low Shadow Price)	0.75	1.12	1.41
	Benefit/cost ratio (low Forest Ecosystem Benefits/high Shadow Price)	1.48	2.23	2.80
High Forest Ecosystem Benefits (Carrasco)	Net benefit (high Forest Ecosystem Benefits/low Shadow Price) - (US\$)	\$(38,453,533)	\$36,581,721	\$106,665,682
	Net benefit (high Forest Ecosystem Benefits/high Shadow Price) - (US\$)	\$100,810,301	\$245,477,473	\$369,427,635
	Benefit/cost ratio (high Forest Ecosystem Benefits/low Shadow Price)	0.80	1.19	1.57
	Benefit/cost ratio (high Forest Ecosystem Benefits/high Shadow Price)	1.53	2.30	2.96

6. **Sensitivity analyses were carried out to test the elasticity of these calculations by varying certain parameters that might result in less favorable estimates.** Sensitivity analyses were carried out by: (1) Using a discount rate of 3 percent and 12 percent and (2) lowering the shadow price of carbon by 50-75 percent. These variables were adjusted to provide comparisons to the 12 baseline scenarios and better understand the impact of each variable on the overall ER Program viability. Graphs are provided to display the results more clearly from these analyses.

#### **Variations in discount rate and lowered shadow price of carbon**

7. **Adjustments in the discount rate and the shadow price of carbon were tested together,** with results shown for each of the performance scenarios in **Figure 10** (low performance), **Figure 11** (medium performance), and **Figure 12** (high performance). Changes in the discount rate do not result in large changes in the estimated B/C ratios, although two patterns are visible. Under the low and medium performance scenarios, the NPVs of the ER Program costs decrease more rapidly than the NPVs of the benefits as the discount rate increases, resulting in slightly higher B/C ratios with increasing discount rate. In the high-performance scenario, the B/C ratio behaves more predictably, as the discounting of

<sup>97</sup> Low Forest Ecosystem Benefits are based on Siikamaki, and High Forest Ecosystem Benefits on Carrasco.



the exceptionally large, predicted benefits causes the B/C ratio to decrease as the discount rate increases.

8. **Notably, the shadow price of carbon has a large impact on whether the net benefits of the ER Program are positive.** Under the World Bank recommended low and high ranges of the shadow price, nearly all scenarios result in positive net benefits, except under the low performance scenario and low shadow price. Using the low or high estimates for forest ecosystem services does not significantly alter the results of the analysis. However, lowering the shadow price by 50 percent and 75 percent results in negative net benefits ( $B/C < 1$ ) under all the performance scenarios, indicating the outsize contribution of the shadow price to the estimation of benefits. This sensitivity analysis shows that the shadow price of carbon and the overall project performance are two of the strongest factors in determining whether the ER Program is viable in terms of producing net benefits. On the other hand, the discount rate and the value of forest ecosystem services benefits are not strong predictors of ER Program viability.

Figure 4. Benefit/cost sensitivity analysis under the Low Performance scenario.

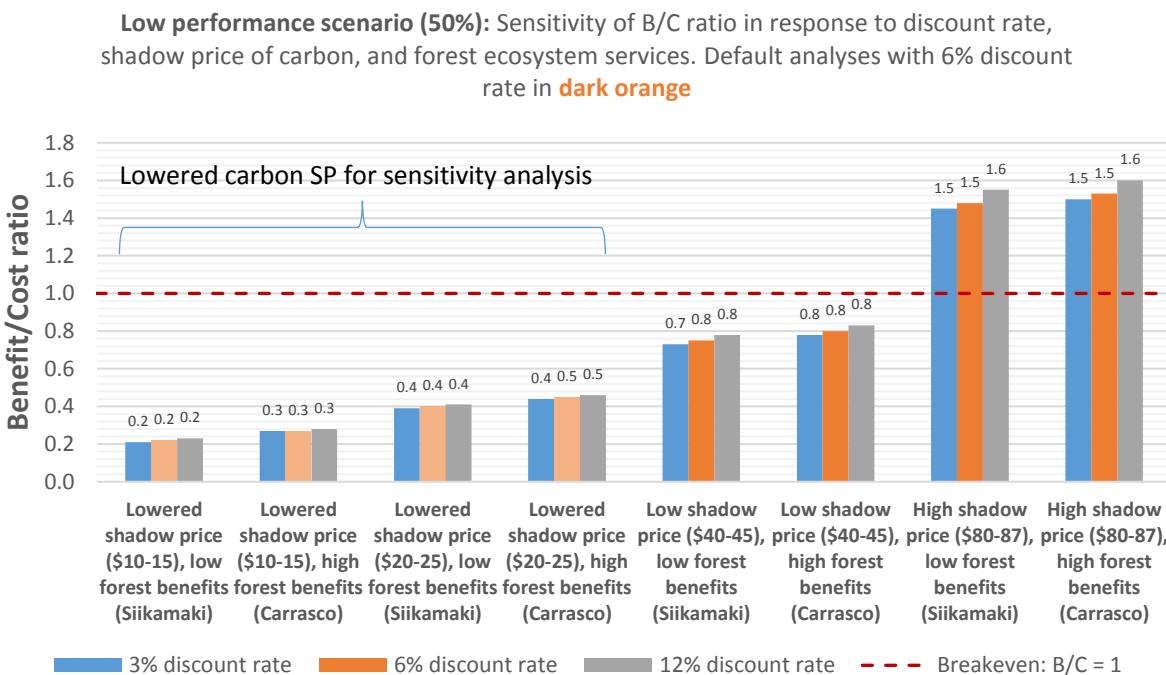




Figure 11. Benefit/cost sensitivity analysis under the Medium Performance scenario

**Medium performance scenario (75%):** Sensitivity of B/C ratio in response to discount rate, shadow price of carbon, and forest ecosystem services. Default analyses with 6% discount rate in **dark orange**

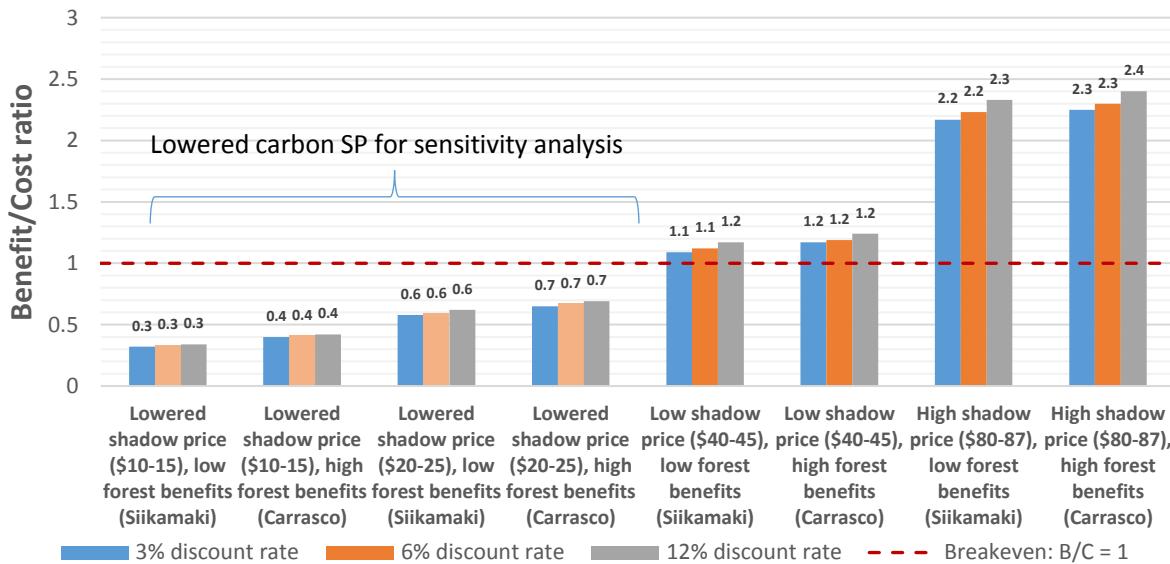
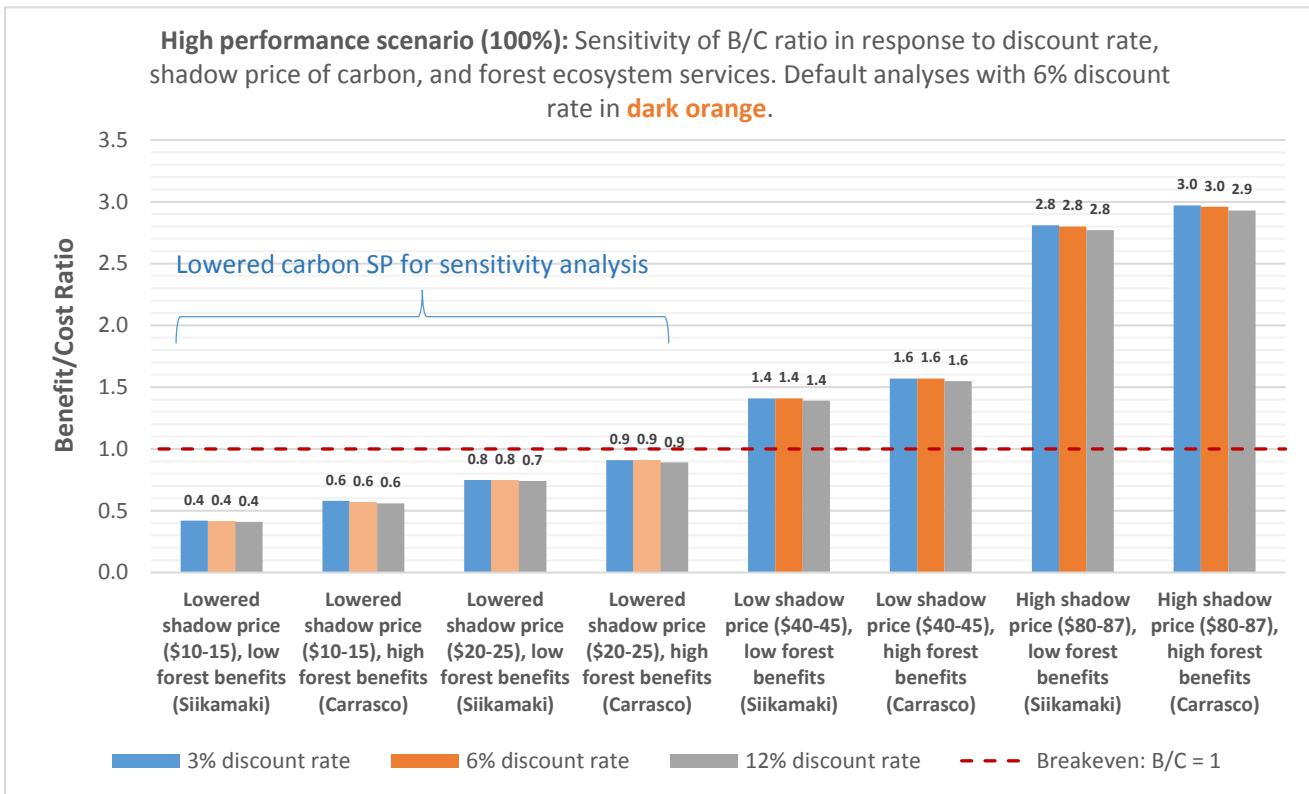




Figure 5. Benefit/cost sensitivity analysis under the High-Performance scenario.





## ANNEX 8: Map of ER Program Interventions and Carbon Accounting Area

COUNTRY: Republic of Guatemala  
Guatemala Emissions Reduction Program