



**Forest Carbon Partnership Facility (FCPF)
Carbon Fund**

Emission Reductions Program Idea Note (ER-PIN)

Country: GHANA

ER Program Name: Ghana's Emission Reductions Program for the Cocoa Forest Mosaic Landscape (Cocoa Forest REDD+ Program).

Date of Submission or Revision: 7th March, 2014

Disclaimer

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Guidelines:

1. The FCPF Carbon Fund will deliver Emission Reductions (ERs) from activities that reduce emissions from deforestation and forest degradation, conserve forests, promote the sustainable management of forests, and enhance forest carbon stocks in developing countries (REDD+) to the Carbon Fund Participants.
2. A REDD Country Participant interested in proposing an ER Program to the Carbon Fund should refer to the selection criteria included in the Carbon Fund Issues Note available on the FCPF website (www.forestcarbonpartnership.org) and to further guidance that may be communicated by the FCPF Facility Management Team (FMT) over time.
3. ER Programs shall come from FCPF REDD Country Participants that have signed their Readiness Preparation Grant Agreement, using this ER Program Idea Note ('ER-PIN') template.
4. The completed ER-PIN should ideally not exceed 40pages in length (including maps, data tables, etc.). If additional information is required, the FCPF FMT will request it.
5. Please submit the completed ER-PIN to:1) the World Bank Country Director for your country; and 2) the FCPF FMT (fcpfsecretariat@worldbank.org).
6. As per Resolution CFM/4/2012/1 the Carbon Fund Participants' decision whether to include the ER-PIN in the pipeline will be based on the following criteria:
 - i. **Progress towards Readiness:** The Emission Reductions Program (ER Program) must be located in a REDD Country Participant that has signed a Readiness Preparation grant agreement (or the equivalent) with a Delivery Partner under the Readiness Fund, and that has prepared a reasonable and credible timeline to submit a Readiness Package to the Participants Committee;
 - ii. **Political commitment:** The REDD Country Participant demonstrates a high-level and cross-sectoral political commitment to the ER Program, and to implementing REDD+;
 - iii. **Methodological Framework:** The ER Program must be consistent with the emerging Methodological Framework, including the PC's guiding principles on the methodological framework;
 - iv. **Scale:** The ER Program will be implemented either at the national level or at a significant sub-national scale, and generate a large volume of Emission Reductions;
 - v. **Technical soundness:** All the sections of the ER-PIN template are adequately addressed;
 - vi. **Non-carbon benefits:** The ER Program will generate substantial non-carbon benefits; and
 - vii. **Diversity and learning value:** The ER Program contains innovative features, such that its inclusion in the portfolio would add diversity and generate learning value for the Carbon Fund.

1. Entity responsible for the management of the proposed ER Program

1.1 Entity responsible for the management of the proposed ER Program

Please provide the contact information for the institution and individual responsible for proposing and coordinating the proposed ER Program.

Name of managing entity	Forestry Commission of Ghana
Type and description of organization	Forestry Commission (FC) is the government institution responsible for the sustainable management of Ghana's forest and wildlife resources. The Climate Change Unit of the FC was established in 2007 with a mandate to manage forestry-sector initiatives related to climate change mitigation, including REDD+. It hosts the National REDD+ Secretariat and serves as the National REDD+ focal point. The sector ministry for the FC is the Ministry of Lands and Natural Resources (MLNR). In partnership with Ghana's Cocoa Board, the FC will take responsibility for this program, including its design, management, and implementation.
Main contact person	Robert Bamfo
Title	Head, Climate Change Unit
Address	P. O. Box MB 434, Accra, Ghana
Telephone	+233 302-401210/ 401227/ 401216
Email	info.hq@fcghana.org ; bamforobert@yahoo.com
Website	www.fcghana.org

1.2 List of existing partner agencies and organizations involved in the proposed ER Program

Please list existing partner agencies and organizations involved in the development of the proposed ER Program or that have executive functions in financing, implementing, coordinating and controlling activities that are part of the proposed ER Program. Add rows as necessary.

Name of Government Partner	Contact name, telephone and email	Core capacity and role in the proposed ER Program
<i>Ghana Cocoa Board</i>	Mr. Ebenezer Tei Quartey Director, Research, Monitoring and Evaluation Department Tel: +233-243653841 E-mail: ebenezer.quartey@cocobod.gh	Ghana Cocoa Board is a co-proponent of this program with the Forestry Commission and together they will co-lead the program. As the national institution responsible for the regulation and management of the cocoa sector, it has the full authority and capacity to do so. Cocoa Board will serve as a co-chair, with the Forestry Commission, of a coordination and management committee to be constituted to lead in the design and implementation of the program.
<i>Ministry of Lands and Natural Resources</i>	Mr. Musah Abu Juam, Technical Director for Forestry Tel: +233-244362510 E-mail: abujuam@gmail.com	MLNR is the sector Ministry to which the Forestry Commission reports. It is also responsible for Ghana's Forest Investment Program (FIP). MLNR will serve on the program's Coordination and Management Committee to ensure integration with FIP projects and related activities. As such, it will play a major role in coordinating, managing and implementing the program
<i>Ministry of Finance</i>	Franklin Ashiadey	MoF is the sector ministry to which Cocoa Board

(MoF)	Tel: +233-244689819 E-mail: fashiadey@yahoo.com	answers and it is the Chair of the Technical Coordination Committee- Plus (TCC+), which oversees the Natural Resource Environmental Governance (NREG) program that has links to the REDD+. MoF will be responsible for the overall financial administration of the program.
Ministry of Food and Agriculture	Delali Nutsukpo Tel: +233-208383885 E-mail: kofi-nutsukpo@live.com	MoFA will sit on the program's Coordination and Management Committee and will be responsible for ensuring that extension services and interventions related to food and cash crops, as well as cattle breeding align with the goals of Ghana's Cocoa Forest REDD+ Program.
Environmental Protection Agency (EPA)	Daniel Benefoh Tutu Tel: +233-246114652 E-mail: dbenefor2000@yahoo.com	EPA the National Focal Point for Climate Change and is responsible for all national communications to the UNFCCC. EPA will ensure that the program's accounting is reflected in national accounting.
Forestry Research Institute of Ghana (FORIG)	Dr. Ernest Foli Tel: +233-243714148 E-mail: efoli@hotmail.com	FORIG is one of the institutes of the Council for Scientific and Industrial Research (CSIR) specialized in forestry research and is under the Ministry of Environment, Science, Technology and Innovation (MESTI). It will advise the Coordination and Management Committee and provide technical guidance on the implementation of field activities and development of appropriate systems for the success of the program.
Cocoa Research Institute of Ghana (CRIG)	Dr. Anim-Kwapong Tel: +233-244983278 E-mail: gjanimkwapong@yahoo.com	CRIG is a subsidiary of Ghana Cocoa Board responsible for all cocoa research that provides information and advice on matters relating to the production of cocoa and other mandate crops.
Ghana Cocoa Platform	Rita Owusu-Amankwah Tel: +233-244653518 E-mail: rita@ghanacocoaplatform.org	The Ghana Cocoa Platform is joint Cocoa Board and UNDP initiative that seeks to strengthen facilitate dialogue among key actors in the cocoa sector particularly public and private sectors, as well as civil society, towards achieving sustainable cocoa production.
Traditional Leadership	Contact name, telephone and email	Core capacity and role in the proposed ER Program
National House of Chiefs	Nana FrimpongAnokye II Tel: +233-244419905 E-mail: isaacberkoh@yahoo.com	The National House of Chiefs is a body of elected representatives from Ghana's Regional Houses of Chiefs that is recognized by the Constitution. It is charged to advise on issues related to culture and chieftaincy and work towards the codification of customary law. The National House of Chiefs will work with the program to liaise with Paramount Chiefs that have jurisdiction over landscapes within the program area. They are expected to play a critical role in the implementation of a Grievance Redress Mechanism and will also provide guidance on issues related to benefit sharing.
Private Sector & Civil Society Partners	Contact name, telephone and email	Core capacity and role in the proposed ER Program
Olam	Gurinder Goindi	Olam is a licensed buying company (LBC) that purchases

	Tel: +233-544342701 E-mail: gurinder.goindi@olamnet.com	cocoa beans for Ghana Cocoa Board on commission basis. Olam is currently funding and engaged in multiple projects with cocoa farmers including certification, farmer business schools, and farmer data management. The program would build on Olam's initiative.
Touton	Charles Tellier Tel: +233-266255519 E-mail: c.tellier@touton.com	Touton is a cocoa bean trading company that works with the largest LBC in the country, Produce Buying Company (PBC). Touton is supporting certification of cocoa farms to ensure sustainable sourcing. The program would build on Touton's initiative.
Solidaridad West Africa	Isaac Gyamfi Tel: +233-544323960 E-mail: Isaac.Gyamfi@solidaridadnetwork.org	Solidaridad West Africa leads implementation of the UTZ Certification standard for cocoa and is also active in the Roundtable for Sustainable Oil Palm (RSPO) in Ghana. Solidaridad would be a key partner in implementing activities on the ground in the program's target landscapes.
Rainforest Alliance	Christian Mensah Tel: +233-244755277 E-mail: cmensah@ra.org	Rainforest Alliance (RA) implements the Sustainable Agriculture Network's certification standard in Ghana. RA and would be a key partner in implementing activities on the ground in the program's target landscapes.
Nature Conservation Research Centre	John Mason Tel: +233 264697485 Email: jos091963@gmail.com	Nature Conservation Research Centre (NCRC) is a continental leader on REDD+ and Climate-Smart Agriculture, and has played a major role, to date, on both issues in Ghana. It also has extensive expertise and experience implementing Community Resource Management Areas. NCRC would be a key partner in implementing activities on the ground in the program's target landscape.
IUCN-Netherlands	Dr. Jan Willem den Besten Tel: +31 681498173 E-mail: janwillem.denbesten@iucn.nl	IUCN-Netherlands is supporting the implementation of Community Resource Management Areas (CREMAs) in multiple regions of the country, including within the program landscape. IUCN-NL will support the program in linking CREMA establishment with cocoa extension systems like certification. It also intends to provide support in identifying additional finance to support implementation of the program.

2. Authorization by the National REDD+ focal point

Please provide the contact information for the institution and individual who serve as the national REDD+ Focal Point and endorses the proposed ER Program, or with whom discussions are underway

Name of entity	National REDD+ Secretariat
Main contact person	Robert Bamfo
Title	REDD+ Focal Point, Forestry Commission
Address	P. O. Box MB 434, Accra, Ghana
Telephone	+233208237777
Email	bamforobert@yahoo.com
Website	www.fcghana.org

2.1 Endorsement of the proposed ER Program by the national government

Please provide the written approval for the proposed ER Program by the REDD Country Participant's authorized representative (to be attached to this ER-PIN). Please explain if the national procedures for the endorsement of the Program by the national government REDD+ focal point and/or other relevant government agencies have been finalized or are still likely to change, and how this might affect the status of the attached written approval. ER Program) must be located in a REDD Country Participant that has signed a Readiness Preparation grant agreement (or the equivalent) with a Delivery Partner under the Readiness Fund, and that has prepared a reasonable and credible timeline to submit a Readiness Package to the Participants Committee

The Ghana Forestry Commission (FC) and the Ghana Cocoa Board are the principal proponents of Ghana's Emission Reductions Program (ER Program), and both government organizations provide official endorsement and approval. The Climate Change Unit (CCU) of the Forestry Commission houses the National REDD+ Secretariat and serves as the National REDD+ focal point; thus it has a clear mandate and responsibility to endorse the proposed ER Program. It also has the full complement of staff with solid understanding of REDD+ and the necessary capacity for coordinating the program. COCOBOD holds the national mandate to regulate and manage Ghana's cocoa sector. The ability to successfully design and implement this program depends to a significant extent upon Ghana Cocoa Board leadership and expertise. Attached to this program idea note (PIN), is an official communiqué signed by the Chief Executives of the Forestry Commission and the Ghana Cocoa Board and endorsed by representatives from the private sector and civil society. The Minister for Lands and Natural Resources (MLNR) has also formally endorsed this program.

Ghana's mid-term/annual review process is underway and will be completed in April, 2014. Ghana is on-track to submit its Readiness Package (R-Package) to the Participants Committee (PC) by November 2015. This time frame coincides with the anticipated completion of the ER Program's design stage and submission of an Emission Reductions Program Document (ER-PD).

2.2 Political commitment

Please describe the political commitment to the ER Program, including the level of support within the government and whether a cross-sectoral commitment exists to the ER Program and to REDD+ in general.

For nearly a century, degradation and deforestation in Ghana's High Forest Zone (HFZ) have largely been driven by expansive agricultural practices—predominantly cocoa—coupled with the progressive growth of other extractive industries, like timber production¹. For much of this time, conversion of forests was not viewed as a problem, but by the mid-nineties recognition of the degraded state of Ghana's forest reserves² in the HFZ, the growing area under cocoa farming at the expense of forests and trees³, and the increasing threat to biodiversity was becoming increasingly clear. The responses to these problems, however, remained isolated within sectors, producing limited results, if any, and the deforestation continued unabated.

Twenty years later, with a strong commitment to REDD+, Ghana is proposing an innovative and ambitious approach to reduce deforestation and degradation across the HFZ—fostering a performance based, intergovernmental, multi-sector response that includes strong private sector, civil society, and

¹ Amanor, K.S. 1996. *Managing trees in the farming system: The perspective of farmers*. ed. Ghana Forestry Department, Forest Farming Series, Kumasi, Ghana: Forestry Department Planning Branch.

² Hawthorne, W. & Abu-Juam, M. 1995. *Forest protection in Ghana: with particular reference to vegetation and plant species*. Vol. 15. IUCN.

³ NCRC & Forest Trends. 2011. *The Case and Pathway towards a Climate-Smart Cocoa Future for Ghana*. Climate-Smart Cocoa Working Group, Accra.

local engagement. Given the mosaic nature of Ghana's forest-agriculture landscape, it is imperative that the various natural resource and agricultural institutions and organizations that work in the landscape collaborate, coordinate, and collectively monitor their results to be able to reduce emissions. While this might seem like a logical or obvious response, the reality in Ghana is that ushering in changes in institutional cultures and modes of operation, while introducing a results-based payment for ecosystem service (PES) approach represents a significant feat that necessarily requires a high level political commitment to orchestrate.

In the HFZ landscape, Ghana's Cocoa Board and the FC are the two most important institutions affecting forests and driving emissions, both directly and indirectly, and this is why they are the principle government institutions at the center of Ghana's ER Program. They are also two sectors for which their sustainability rides on the successful implementation of this program. As a global commodity that accounts for approximately USD 2 billion in annual investment in Ghana and is one of the country's primary foreign exchange earners, cocoa is highly dependent on the provisioning of ecosystem services from the forests. With respect to the forestry sector, Ghana's forests are under threat from multiple drivers (as this ER PIN shows), including cocoa expansion, and the country has seen timber revenue decline by nearly 30% since 2009.

The proposed Cocoa Forest REDD+ Program represents the first time that the FC and the Cocoa Board have ever agreed to work together, and it is historic that the aim is to reduce degradation and deforestation in a manner that hopes to foster a more sustainable, climate smart cocoa sector and landscape. Maintaining a singular focus on cocoa as a driver, however, is not sufficient. The proposed ER Program will therefore address other key drivers in the program's landscape, which can be tackled and can benefit from the cross-sectoral, public-private engagement that the program will align.

Ghana's Cocoa Forest REDD+ Program is globally unique and highly ambitious in its scope and scale. The program seeks to significantly reduce emissions across the HFZ that are driven by cocoa farming and other key drivers in a manner that will secure the future of Ghana's forests, significantly improve livelihoods opportunities for farmers and forest users, and establish a results-based planning and implementation framework through which the government, the private sector, civil society, and local communities can collaborate.

By necessity, the articulation and formulation of this program requires the highest level of cross-sector political engagement and commitment, as shown by the Ghana Cocoa Board, the FC, and the MLNR, which is responsible for Ghana's FIP. Additional high level political support has been demonstrated by the Ministry of Finance (MoF), the Ministry of Food and Agriculture (MoFA), and the EPA. As a next step, the program proponents will reach out to the Minerals Commission to seek their support. More broadly, commitment to the National Climate Change agenda, which includes REDD+ initiatives, has been shown by the Technical Coordinating Committee-Plus (TCC+) of the Natural Resources and Environmental Governance Program (NREG), the National REDD+ Working Group, the National Climate Change Committee, and the Environmental and Natural Resources Advisory Council (ENRAC), which is chaired by the Vice President and has oversight responsibility for implementation of climate change strategies in Ghana.

A number of private sector companies and civil society organizations that have a track record of environmental leadership in these fields and within the program's landscape, who have also demonstrated their support and commitment, including Olam, Touton, Solidaridad West Africa,

Rainforest Alliance, IUCN-NL, the Ghana Cocoa Platform (GCP), and the Nature Conservation Research Centre (NCRC).

Much of this support for the ER Program can be attributed to the strong synergies and avenues of institutional cooperation that have resulted from the open and inclusive nature of Ghana's REDD+ R-PP implementation process to date. In addition, the commitment demonstrated by the cocoa sector stakeholders, including the private sector, is driven by a recognition that the loss of forest cover represents a serious threat to the long-term sustainability of Ghana's cocoa production systems, with potentially dire consequences for national development goals as cocoa remains a major backbone of the economy and fundamental to the livelihood of most rural communities within the HFZ.

3. STRATEGIC CONTEXT AND RATIONALE FOR THE ER PROGRAM

3.1 Brief summary of major achievements of readiness activities in country thus far

Please briefly provide an update on REDD+ readiness activities, using the component categories of the R-PP as a guide. If public information is available on this progress, please refer to this information and provide a link.

Ghana has been progressing on its REDD+ Readiness process, as evidenced by Ghana's quarterly progress reports which have been submitted to the Forest Carbon Partnership Facility (FCPF) since February, 2011. Ghana's country progress factsheets can be accessed on the FCPF's website.

Of the nine assessment criteria, the country has made significant progress on the assessment of Land Use, Land Use Change drivers, forest law, policy and governance (sub-component 2a) and development of a reference level (component 3). Ghana is also progressing well on the other assessment criteria. The major consultancies including those for the development of frameworks for SESA, REDD+ strategy, benefit sharing, dispute resolution and MRV have been awarded and Ghana will have a complete set of the final reports of all consultants by October, 2014. Ghana's midterm review will be presented to the PC in June, 2014.

The institutional framework for decision making is in place that will enable decisions to be made in an open, transparent and multi-stakeholder process leading directly to implementation of the REDD+ strategy and systems.

Table 1: Progress on REDD+ Readiness Assessment Criteria

COMPONENT	SUB-COMPONENT	PROGRESS
1. Readiness, Organisation and Consultation	1a. National Readiness Management Arrangements	<ul style="list-style-type: none"> From 2012 to date, 5 capacity building/ training programmes have been organised on forest inventory, carbon stock assessment, GIS and remote sensing for 110 staff of the FC and other relevant sectors such as EPA, Civil Society, Survey department and CERSGIS. REDD+ Sensitization was organised for the National House of Chiefs in 2012 Database of REDD+ actors is regularly updated for the purpose of networking and capacity building. The draft communication strategy is under review. The final strategy is due by the end of March, 2014. The REDD+ web page of the FC website (http://www.fcghana.org) is regularly updated. Publication of REDD+ related articles in the FC's quarterly newsletter. The roadmap to the development of Ghana's REDD+ Registry has been completed.
	1b. Consultation and Participation Process	<ul style="list-style-type: none"> Fourteen (14) consultative workshops were held in the selected REDD+ pilot areas from April, 2012 to May, 2013. Ten sensitization workshops have been organised for over 2000 frontline staff of the Forestry Commission in the ten regions of Ghana from April, 2011 to January, 2014.

REVISED TEMPLATE FOR ER-PIN (cont'd)

COMPONENT	SUB-COMPONENT	PROGRESS
2. REDD+ Strategy preparation	2a. Assessment of Land Use, Land Use Change Drivers, Forest Law, Policy and Governance	<ul style="list-style-type: none"> The revised Forest and Wildlife policy has been published. As a result of the input of the REDD+ secretariat and key stakeholders of the REDD+ process in Ghana, the revised policy shifts the focus of forest management from timber extraction to include the non-consumptive values of forests, and recognising climate change and REDD+ as having far reaching implications for forestry and livelihoods. The REDD+ Secretariat is engaged in a national working group process to assess cocoa as a major driver of deforestation and to develop mitigation options. Ongoing analysis of carbon rights in Ghana by FORIG & the REDD+ Secretariat with support from SECO. Assessment of potential for REDD+ in landscapes outside protected forests (off-reserve), including assessment of LULUCF drivers, and carbon-stocks (FORIG & REDD+

		Secretariat with support from SECO).
	2b. REDD+ Strategy options	<ul style="list-style-type: none"> • PricewaterhouseCoopers (PwC) has been engaged to make recommendations for the formulation of the National REDD+ strategy. The consultant's report which will include the strategy options will be ready by the end of September, 2014.
	2c. REDD+ Implementation Framework	<ul style="list-style-type: none"> • Seven (7) REDD+ Pilot projects have been selected. • Two (2) Training/ Capacity building programmes have been organised for the seven REDD+ pilot proponents. • The Swiss Embassy for Economic Cooperation (SECO) has expressed commitment to support five (5) "off-reserve" pilots. • A project implementation committee has been established at the Forestry Commission to oversee and coordinate all projects in the Commission. • A guide to REDD+ in Ghana has been published for potential project proponents with support from SECO. • Y. B. Osafo Legal Services has been engaged to develop modalities for conflict resolution. Report due by April, 2014. • The key stakeholders to REDD+ have drafted a vision for an Emissions Reduction Program for Ghana focused on the HFZ
	2d. Social and Environmental Impacts	<ul style="list-style-type: none"> • SAL Consult has been engaged to conduct a Social and Environmental Safeguards Assessment and Environmental and Social Management Framework (ESMF). Report due by September, 2014.
3. Reference Emission Level/ Reference levels	Develop a reference level	<ul style="list-style-type: none"> • Indufor Oy has been engaged to develop a Reference Level/ Reference Emission Level (RL/ REL) and MRV system. Report due by October, 2014.
4. Monitoring System for Forests and safeguards	4a. National Forest Monitoring System	<ul style="list-style-type: none"> • The National Forest Monitoring System is also being developed by Indufor Oy. • The Forest Preservation Programme (FPP) and GIZ have provided support to improve the country's forest monitoring system.
	4b. Information System for Multiple Benefits, Other Impacts, Governance, and Safeguards	<ul style="list-style-type: none"> • FORIG has been engaged to develop modalities for benefits sharing. Report due by April, 2014. • Ghana is keenly following international discussions on co-benefits. • REDD+ Secretariat has led a multi-year national REDD+ finance tracking initiative with support from NCRC and Forest Trends. Two reports have been published for the period 2009 – 2012 and the process is still ongoing.

3.2 Current status of the Readiness Package and estimated date of submission to the FCPF Participants Committee (including the REL/FRL, REDD+ Strategy, national REDD+ monitoring system and ESMF).

Ghana is planning to submit its Readiness Package to the PC by November, 2015, based on the FCPF Readiness Assessment Framework.

3.3 Consistency with national REDD+ strategy and other relevant policies

Please describe:

- a) How the planned and ongoing activities in the proposed ER Program relate to the variety of proposed interventions in the (emerging) national REDD+ strategy.*
- b) How the proposed ER Program is strategically relevant for the development and/or implementation of the (emerging) national REDD+ strategy (including policies, national management framework and legislation).*
- c) How the activities in the proposed ER Program are consistent with national laws and development priorities.*

3.3.1 Alignment with the National REDD+ Strategy

Ghana's R-PP identifies the principal drivers of deforestation and degradation, in order of relevance, as including:

- 1) Uncontrolled agricultural expansion at the expense of forests;
- 2) Over-harvesting and illegal harvesting of wood;
- 3) Population and development pressure; and
- 4) Mining and mineral exploitation.

The underlying causes of these drivers being forest industry over-capacity, policy and market failures, population growth, increasing demand for agriculture and wood products, low-tech farming systems that continue to rely on 'slash and burn' farming methods, and a burgeoning mining and (illegal mining) sector. The R-PP further identifies agricultural expansion (50%) as being predominantly attributed to cocoa cultivation systems, and thus distinguishes cocoa farming as one of the most significant drivers of deforestation across the high forest zone of the country⁴.

Ghana's R-PP further identifies 13 priority strategy options to tackle the 4 main drivers of deforestation and degradation in the country. Table 2 lists these 13 strategies (A-M). These strategies are not only focused on reducing deforestation or degradation, but also takes into consideration the "plus" aspect of REDD+, including carbon stock enhancement, sustainable forest management, and conservation.

⁴ Since 2010, it has become increasingly clear in Ghana that the drivers, underlying causes and agents of deforestation and degradation are different depending upon the eco-zone of the country. The above mentioned drivers are highly significant in the high forest zone and associated cocoa farming landscape of the proposed ER Program. However, in Dry Semi-Deciduous Forest and Savannah eco-regions the main drivers include over-harvesting and illegal harvesting of wood, primarily for fuelwood consumption and timber exploitation, followed by agricultural expansion associated with yam cultivation. Mining is also a driver in these areas.

Table 2: National REDD+ Strategy Options

	Strategy Options
A	Improve the Quality of Multi-Stakeholder Dialogue and Decision Making
B	Clarify rights regime
C	Improved FLEGT
D	Address unsustainable timber harvesting
E	Address local market supply
F	Mitigate effects of agricultural expansion (particularly cocoa in the HFZ)
G	Strengthen local decentralized management of natural resources
H	Improve sustainability of fuel wood use
I	Improve the quality of fire-affected forests and rangelands
J	Address local market demand ⁵
K	Expansion of agroforestry, tree crops, biofuels and agro-industries
L	Improve regulation of mining activities; support current initiatives under NREG to better regulate mining
M	Implement actions to address acts of God (wind and natural fire events, floods, pests and diseases)

At the end of 2013, Ghana began work to define its national REDD+ strategy. This work is still underway and the consultants are now engaged in a process to determine which of the various strategy options are most appropriate to address the main drivers of degradation and deforestation. Because Ghana's REDD+ strategy is not complete and has yet to be opened up to a full stakeholder consultation process, the results outlined in this ER PIN are preliminary. However, the critical thinking involved in the development of Ghana's ER Program is feeding back to help inform, in a very practical way, the development of the national REDD+ strategy, and comments that will arise out of the strategy consultation will only serve to further strengthen the development of Ghana's emerging ER Program for the cocoa forest mosaic landscape. Thus, there is a very important and grounded feed-back loop at play that will improve the thinking behind Ghana's national REDD+ strategy.

The REDD+ strategy is attuned to the fact that the strategy options should be logically linked to the key drivers of deforestation and to those areas where the most gains for REDD+ can be made. Further, the strategy should lead to the attainment of four key pillars for REDD+ in Ghana: 1) economic development, 2) environmental sustainability, 3) measurable, and 4) inclusive and marketable.

In order to achieve this, the emerging thinking is that Ghana's REDD+ Strategy Option will in fact present sub-national strategy options linked to sub-national eco-zone(s) and the associated drivers that are relevant in these eco-zones. Taken together, the likely sub-national eco-zone strategies will inform an over-arching national REDD+ strategy. For example, addressing the effects of cocoa in the High Forest Zone, or addressing unsustainable wood harvesting in the Savannah Zone. Given the ecological diversity of Ghana's forest types and the varied drivers, agents, and rates of deforestation and degradation in these different eco-zones, it makes sense for Ghana to design eco-zone strategies that are specific to the dynamics of the particular accounting area. It is expected that the Design of Strategy Options, which will aggregate all of the sub-national strategies, will be completed by September 2014.

Though still in draft form, the proposed interventions in the (emerging) national REDD+ strategy are listed below and are broadly linked to the most relevant drivers, though it is recognized that some interventions are applicable to multiple drivers and not all drivers are relevant in certain contexts/eco-zones.

Table 3: Drivers of Deforestation & Strategy Options

Drivers	Uncontrolled agricultural expansion at the expense of forests	Over-harvesting and illegal harvesting of wood	Population and development pressure	Mining and mineral exploitation
Strategy Options	F. Mitigate effects of agricultural expansion (particularly cocoa in the HFZ)	G. Strengthen local decentralised management of natural resources	M. Implement actions to address acts of God (wind and natural fire events, floods, pests and diseases)	L. Improve regulation of mining activities to reduce forest degradation; support current initiatives under NREG to better regulate mining
	E. Address local market supply	D. Address unsustainable timber harvesting	I. Improve the quality of fire-affected forests and rangelands	
	H. Improve sustainability of fuel wood use	C. Improved FLEGT	A. Improve the Quality of Multi-Stakeholder Dialogue and Decision Making	
	K. Expansion of agroforestry, tree crops, biofuels and agro-industries	B. Clarify rights regime		
		J. Address local market demand		

Of the 13 options, this ERP will pilot activities and interventions that relate to Strategy Options A, B, D, F, G, K, and L in the cocoa forest landscape over a phased 20 year time frame. Early experiences and the lessons learned from reducing emissions during the lifetime of the Carbon Fund’s engagement will influence how the program is scaled up and carried forward over the long-term across the entire cocoa forest landscape. It is also expected that lessons learned from the program can be applied to the implementation of other sub-national strategies in different eco-zone landscapes.

3.3.2 Strategic relevance of the ERP in the context of REDD+ and FIP

Ghana’s R-PP was approved in 2010, and represents the first national initiative to tackle degradation and deforestation in the country. Through the readiness process, which is now in its fourth year, capacity and understanding about REDD+ has expanded significantly amongst key stakeholders, and systems and structures are being put in place to enable the country to fully engage in REDD+ activities, including the

development of a forest monitoring and MRV system, incorporation of social and environmental considerations (SESA), development of benefit sharing guidelines, and a registry that will track REDD+ activities and finance, and ultimately communicate with national emissions accounting. Ghana’s R-PP adopted a “learning by doing” approach and selected seven national REDD+ pilots which were intended to facilitate early ground-up learning. The challenge, however, is that no funding has been made available to date to support Ghana’s REDD+ pilots.

Focusing on pilots, has meant that Ghana’s REDD+ process is less oriented towards addressing forestry and agriculture sector related drivers at a national level. In 2012, Ghana was selected as a pilot country under the Climate Investment Fund (CIF), with the submission of its Forest Investment Plan (FIP). The FIP addresses the institutional and policy context as well as piloting and testing on the ground. The three main projects include: 1) Reducing pressure on natural forests through an integrated landscape approach (IBRD); 2) Engaging local communities in REDD+/ enhancing carbon stocks (African Development Bank); 3) Engaging the private sector in REDD+ (IFC).

There is significant overlap and synergy between the FIP and the ER Program in terms of articulated activities and the target landscapes. The FIP focal area targets the Western Region, located in the HFZ, and the Brong-Ahafo Region, which encompasses part of the HFZ and the transition to the woodland savannah zone. The proponents of the FIP and the ERP see this activity-based and geographic overlap as being strategic and essential for the successful implementation of the ERP, and as adding significant value to the FIP. In fact, alignment of the REDD+ readiness process, the FIP, and the ERP establish an essential pathway for Ghana to be able to comply with a future UNFCCC agreement.

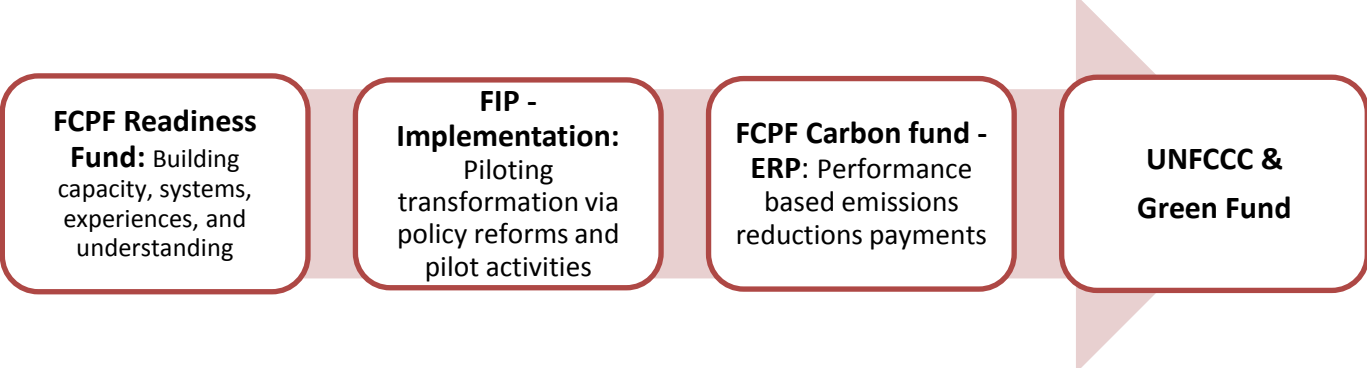


Figure 1: Ghana's REDD+ process to full implementation

The long-term impact of FIP activities is seen to be limited by the relatively short term nature of the funding (4 years) and the absence of any clear funding to carry the activities forward towards realized emission reductions. In this manner, the ERP provides a ready source of funding for performance based activities. On the other hand, the FIP has the potential to initiate work to fill many of the institutional and policy gaps that REDD+ cannot address, but that the ERP will require to be able to go to scale, like focusing on policy reform and development in the areas of tree tenure, carbon rights, and benefit sharing, in addition to piloting policies on the ground.

Therefore, Ghana’s evolving ER Program aligns with the on-going readiness process and development of the FIP in five unique, innovative, and transformative ways, including a decision by the proponents of

the FIP and the ER Program to formally collaborate with implementation of performance based activities in critical landscapes within the program area⁶:

1. **Investment boost:** Given the lack of upfront funding to initiate crucial ERP activities and the slow progress on REDD+ pilots (also due to a lack of funding), the FIP projects provide a critical source of funding to support piloting that is likely to result in emissions reductions.
2. **Nesting:** The ERP facilitates nesting of relevant REDD+ pilots and FIP pilots within the programmatic area, enabling these projects to benefit from the Forest Reference Level (FRL), Forest Monitoring and MRV system, and benefit sharing system. The programmatic approach alleviates the challenge of permanence and leakage in the program area, that would otherwise have been present.
3. **Program integration:** The proponents of the FIP and the ER Program are in agreement to leverage policy work and institutional collaboration at a programmatic, multi-institutional scale. The proponents also agreed to choose at least 2 large landscapes within the program area where they can collaborate towards performance based results. With respect to FIP Project 1, it is agreed that collaboration will focus on Components 1 and 2.
4. **Funds to purchase ERs:** The ERP guarantees that there is a “buyer” in place to purchase emissions reductions that are likely to result from REDD+, FIP, and/or ER Program activities or efforts.
5. **Cross-sector collaboration:** It builds a formal bridge and shared commitment between FC and COCOBOD to address challenges facing the forestry and cocoa sectors, enabling the program to address policy, institutional, financing, and farm-level issues that are crucial to producing emissions reductions from cocoa and agriculture, and to ensuring a sustainable forest estate and industry.

Oversight and coordination of REDD+, FIP and ERP activities align under the Technical Coordinating Committee-Plus (TCC+). Implementation of the FIP AfDB project is expected to begin in the second quarter of 2014, while the World Bank project should move to implementation by the first quarter of 2015, which aligns with the anticipated submission of Ghana’s R-Package in November, 2015. At the time that this project idea note was drafted, no details were available about the IFC component of the FIP.

Other relevant policy initiatives include Ghana's Green Economy agenda, which identified the cocoa and forestry sub-sectors as critical areas that need to be targeted in pursuit of a national green economy and low emissions development trajectory.

⁶ Though some might argue that this raises the question of additionality, Ghana’s ability to produce ERs requires financing to support the implementation of activities on the ground. Therefore, the FIP support is crucial and necessary to be able to access payments from the Carbon Fund.

4. ER Program location and lifetime

4.1 Scale and location of the proposed ER Program

Please present a description and map of the proposed ER Program location and surrounding areas, and its physiographic significance in relation to the country. Indicate location and boundaries of the proposed ER Program area, e.g., administrative jurisdiction(s).

Ghana's total national land area covers 238,500 km², which is made up of a nine different forest type eco-zones, as shown in Figure 2. Five of these forest-types, including the moist semi-deciduous south east sub-type, moist semi-deciduous north-west sub-type, moist evergreen, wet evergreen and upland evergreen forest types together constitute a single area, commonly called the High Forest Zone (HFZ).

Ghana's ER Program will be implemented at a sub-national scale, following the ecological boundaries of the 5 high forest eco-zones that together cover approximately 5.9 million ha.

This eco-zone is significant in terms of its natural and economic resources, its carbon stocks, and its diversity of species and habitat types. Over 1.6 million ha (27%) of the program area is gazetted as forest reserves and national parks, both of which are commonly referred to as the "on-reserve" area. In contrast, the "off-reserve" represents all land outside of protected areas. In the program area, the off-reserve covers approximately 4.3 million ha of land. There is no national information available on the total number of cocoa farms or total area under cocoa in the country, however, it is estimated that cocoa farms cover 1.8 million ha of the off-reserve⁷. Another 1.5 million ha are under food crops, other tree crops (oil palm, rubber, citrus), fallows, and secondary forest. The remaining 1 million ha (approximately) of land is under settlements and urban areas, roads and other infrastructure.

⁷ NCRC & Forest Trends. 2011. The Case and Pathway towards a Climate-Smart Cocoa Future for Ghana. Climate-Smart Cocoa Working Group, Accra.

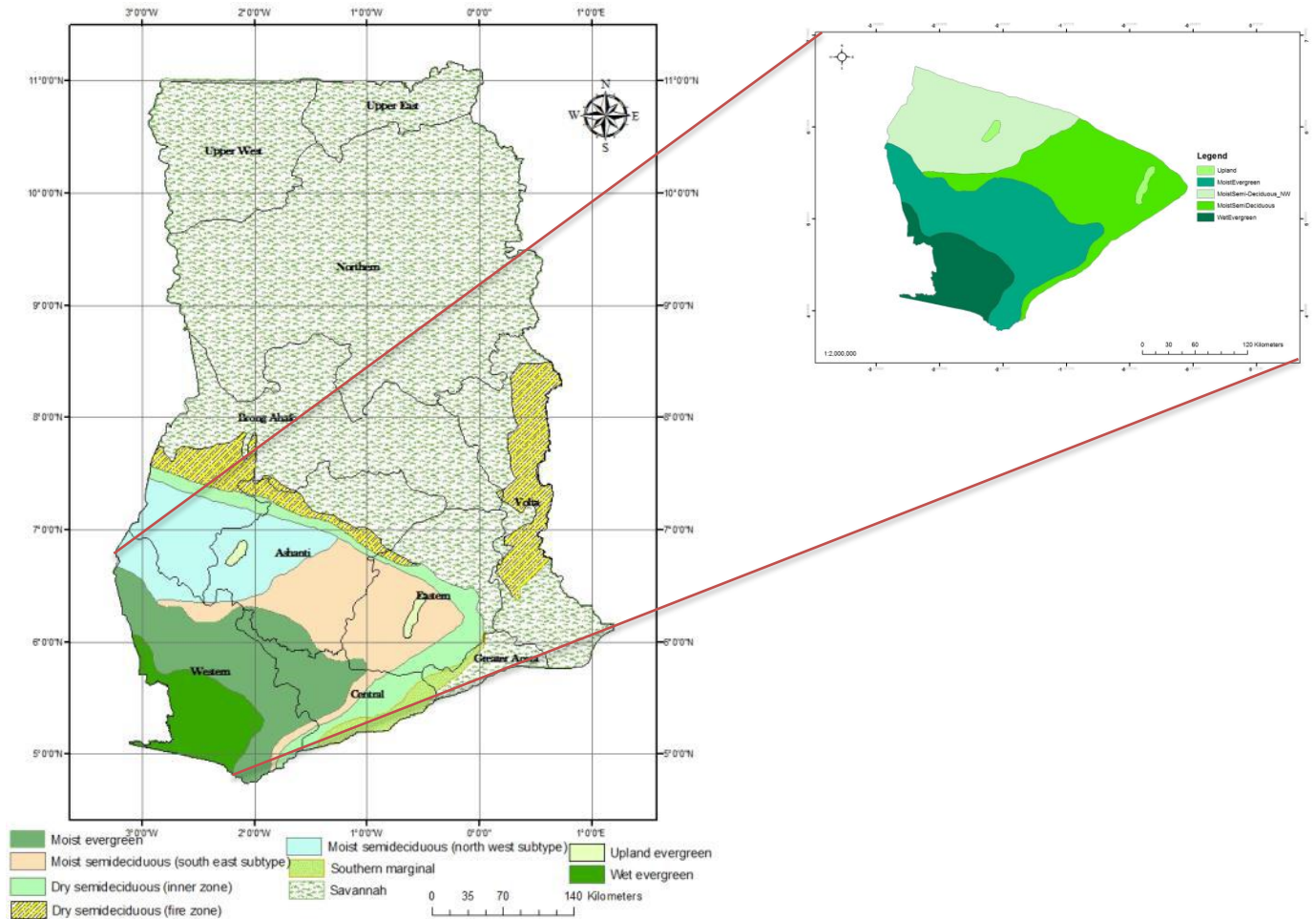


Figure 2: REDD+ Eco-Zones based on Forest Types with ER Program Area Captured

Ghana’s REDD+ forest definition defines forest as having 15% canopy cover, trees of 5 meters height, and covering a minimum area of 1 ha. The Cocoa Forest REDD+ Program is focused on two main forest types, “closed forest” and “open forest”. Closed forest covers just over 1.5 million ha in the program area and constitutes intact forest. Open forest represents degraded forests, secondary forests, and shaded cocoa farms, and covers approximately 3.1 million ha.

Ghana’s state-of-the-art Biomass Map (Figure 3) is a snap-shot estimate of biomass (2008/2009) for the entire country. It shows the variation in biomass across the country, particularly within the program area, and helps to highlight where forest degradation has occurred. The Biomass Map was developed by NASA, Oxford University, FC, and NCRC using a process that combined six layers of remotely sensed data and imagery with ground-level carbon stock data, and was launched in 2011⁸.

⁸ Asare, R.A., Asante, W., Tutu, D.B., Malhi, Y., Saatchi, S., Jengre, N. 2012. The Biomass Map of Ghana: Using Carbon Maps for REDD+. Ghana Carbon Map Project. NCRC & Forest Trends, Washington, D.C.

Biomass Map of Ghana for 2008/2009 (Administrative Boundry)

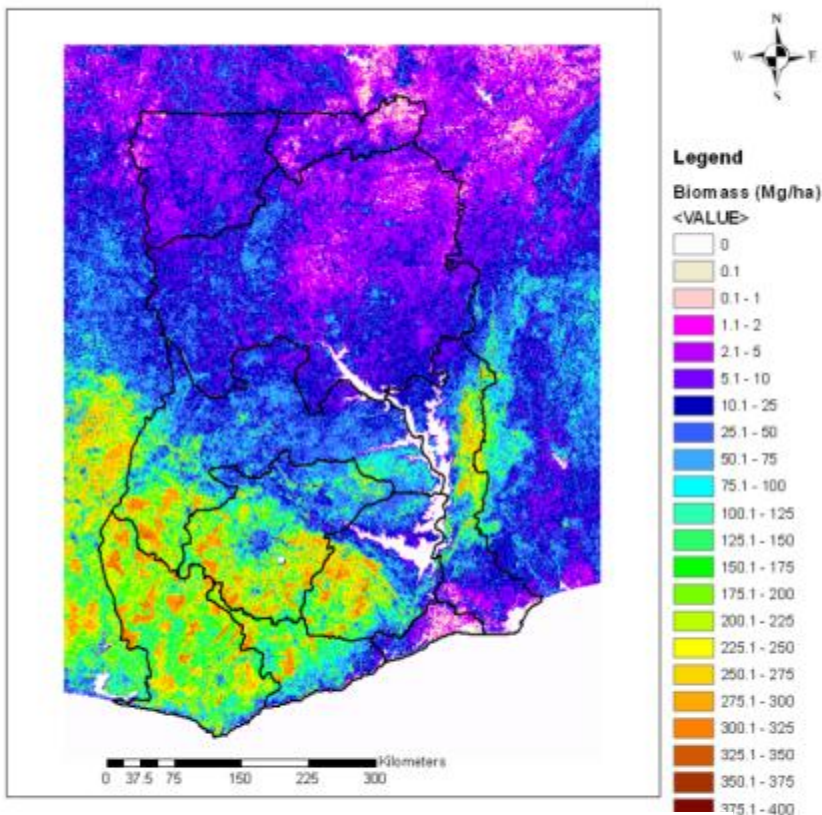


Figure 3: Biomass Map of Ghana

The Cocoa Forest REDD+ Program area overlaps with 5 of Ghana’s administrative regions, including Eastern Region, Central Region, Ashanti Region, Western Region and the Brong-Ahafo Region, but does not encompass the full expanse of these regions, as the Brong-Ahafo and Ashanti regions stretch beyond the boundaries of the HFZ.

Approximately half of the program area overlaps with the FIP area. FIP will be implemented in the Western and Brong-Ahafo regions; taken together the FIP area covers the western part of the HFZ as well as some of the dry semi-deciduous and savannah forest types.

4.2 Expected lifetime of the proposed ER Program

Please describe over how many months/years the proposed ER Program will be:

- a) prepared; and*
- b) implemented (including expected start date of the proposed ER Program).*

The expected start date and signing of the ERPA would be 2016, with a proposed program lifetime of 20 years (2016-2036). This program is truly unique and ambitious in its goal to reduce emissions across the HFZ that are driven by cocoa farming, illegal logging, other agricultural activities, and mining by testing a

series of activities and policy initiatives with a cross-section of governmental institutions and the private sector, in addition to civil society, traditional leaders and communities. However, it acknowledges that motivating large-scale behavior changes and institutional reforms will take time, and therefore Ghana anticipates that the initial volumes will be modest (approximately 18 million tCO₂e) compared to the CF's desired goal of 20 million tCO₂e by 2020.

However, it is expected that the long-term volumes would be significant—255 MtCO₂e. The program proponents are equally confident that there is real value in implementing this program because it links directly to the country's emerging national REDD+ strategy, leverages the FIP investment, would set in motion an innovative platform for reducing emissions driven by agriculture, is scale-able to other eco-zones (nationally) and to countries where globally important commodities are driving deforestation, and would add real diversity and learning value to the FCPF and the Carbon Fund's portfolio.

The overall lifetime is divided into three (3) phases, as described below:

1. *Preparation and Design Phase (2014-2015)*: The program anticipates a preparation and design phase that would last approximately 18 months, during which time more detailed analysis would take place to refine the rates of deforestation and degradation, particular hot-spots of drivers, and to better inform the FRL. This phase would also allow for in-depth stakeholder planning, a thorough consultation process, and the ability to secure program financing and interest in the purchase of E.Rs. During this phase, Ghana would complete its REDD readiness process and submit its R-Package in late 2015 for international approval. The program would then submit its ER-PD at the end of 2015 with the goal of signing an Emission Reductions Program Agreement (ERPA) in early 2016.
2. *Early Implementation, Monitoring, and Payments Phase (2016-2020)*: During the second phase, implementation of field activities in target landscapes within the program area would commence. In order to assess what is working and what needs to be adapted (in addition to generating payments), the first monitoring is proposed for 2018, followed by a second monitoring of ERs against the REL in 2020. Not only does this engender strong learning value for the country in testing out the forest monitoring operation and the functionality of the whole system, but it also creates early learning value for the Carbon Fund. Assuming that the monitoring activities demonstrate strong performance, two payments would be made for emissions reductions generated during the time period from the Carbon Fund.
3. *Performance Based Payments (2020-2036)*: Phase 3 marks the end of the Carbon Fund's investment in the program, but the program will continue to operate from 2020-2036, with emissions reductions payments occurring every 4 years (as Ghana has indicated in its National Communication to the UNFCCC), assuming that fund-based, bilateral or private sector buyers are committed. As the program becomes more efficient at reducing deforestation and degradation and planted trees accumulate more carbon stores, the magnitude of E.Rs is expected to increase.

5. Description of activities and interventions planned under the proposed ER Program

5.1 Analysis of drivers and underlying causes of deforestation and forest degradation, and conservation or enhancement trends

Please present an analysis of the drivers, underlying causes and agents of deforestation and forest degradation. Also describe any policies and trends that could contribute to conservation and enhancement of carbon stocks. Please distinguish between both the drivers and trends within the boundaries of the proposed ER Program, and any drivers or trends that occur outside the boundaries but are affecting land use, land cover and carbon stocks within the proposed ER Program area. Draw on the analysis produced for your country's Readiness Preparation Proposal (R-PP) and/or Readiness Package (R-Package).

The historical pattern of degradation leading to deforestation that occurs across the ER Program area originally began in the early part of the 20th Century with the expansion of cocoa and other tree crops across the Densu River in what is now Ghana's Eastern Region. At the time (1911), Ghana was the global number one producer of cocoa beans. By migrating, farmers were adapting to a series of environmental, economic, and social changes and disturbances, including localized land shortages, cocoa diseases, market fluctuations, declining yields, and an increasing number of cocoa producers⁹.

These elements created an environment that drove farmers to travel to more and more remote forest areas to cultivate cocoa¹⁰ where they also grew food crops and other tree crops. As timber harvesting increased in the later part of the century, many migrant farmers followed the logging roads that were opening up in the Brong-Ahafo and Western regions¹¹ and in other prominent timber areas, to gain access to forest lands that could be converted to cocoa farms or to other agricultural land use types. By the early nineties, agricultural expansion (driven by cocoa farming and expansion of oil palm and rubber), logging, and to a lesser extent mining had resulted in the almost complete conversion or degradation of the off-reserve landscape in the program area.

By the end of the 20th Century, without a new forest frontier in which to expand, pressure on forest reserves and other protected areas began to mount from cocoa, food crop farmers, and illegal loggers, causing moderate to severe degradation of the forest reserves¹² and in some extreme cases total forest loss (e.g. Manzan Forest Reserve).

The contemporary story of what is driving degradation and deforestation in the proposed program area continues along this trajectory, but at an accelerated pace. As economic development increases, so has the demand for land and forest resources within the HFZ. Of particular note is the fact that illegal gold mining activities have increased significantly in the program area over the past two to three years. The domestic demand for timber is also increasing and Hansen and colleagues (2012)¹³ found evidence Ghana exceeded its annual allowable cut by six times in the domestic market alone.

Building off of the main drivers identified in Ghana's R-PP, a high level group of technical experts from the forestry and cocoa sectors conducted a detailed assessment of the main drivers, agents, and causes of deforestation and degradation within the proposed programmatic area. Table 4 presents a description of the relevant drivers, agents, and causes (in the context of policies, productivity, and

⁹ Berry, S. 1992. Hegemony on a Shoestring: Indirect Rule and Access to Resources in Africa. *Africa* 62(3): 327-355.

¹⁰ Okali, C. 1983. *Cocoa and Kinship in Ghana: The Matrilineal Akan of Ghana*. Boston. Kegan Paul International.

¹¹ Berry (1992).

¹² Hawthorne and Abu-Juam (1995)

¹³ Hansen, C.P., Damnyag, L., Obiri, B.D., and Carlsen, K. 2012. Revisiting illegal logging and the size of the domestic timber market: the case of Ghana. *International Forestry Review*, (14(1), 39-49.

demand) that are threatening forests and causing emissions in the on-reserve and off-reserve landscapes of the program area.

Table 4: Drivers, Causes and Agents of Deforestation and Degradation in the Program Area

Drivers of Deforestation & Agents	Underlying Causes, and Barriers
Land Use Type: Protected Forests (e.g. Forest Reserve, National Park, Globally Significant Biodiversity Area)	
<p>Encroachment of low/no shade cocoa systems and associated food crops into protected forests</p> <p>-Farmers</p>	<p>Lack of institutional communication or collaboration between Forestry Commission and Cocobod, and between private sector, civil society, and government initiatives.</p> <ul style="list-style-type: none"> • The culture of government institutions, scope of responsibility, limited resources, and desire to retain control over the institutional “territory” has in many ways prevented government bodies, like the Cocoa Board and the FC, from working together. • The private sector and civil society are investing substantial resources into cocoa projects and programs. The main barrier, which this program will address, is the inward oriented, short term project-driven mentality of these initiatives, and competition between private sector players, which has prevented initiatives from thinking and working at a landscape, sector-wide scale.
	<p>Lack of enforcement</p> <ul style="list-style-type: none"> • Limited government capacity to monitor and enforce boundaries • Communities and Traditional Authorities (TA) have few incentives to protect forests due to limited benefits and minimal accountability.
	<p>Lack of extension:</p> <ul style="list-style-type: none"> • Implementation costs and challenges aligning government and private sector priorities via PPP models.
	<p>Land scarcity in off-reserve lands due to land degradation, immigration, population growth.</p>
	<p>Low cocoa yields and the low opportunity cost of expansion.</p> <ul style="list-style-type: none"> • Cheaper to exploit forest rent than to invest in inputs and other best practices. • Farmers have limited access to key farming inputs and extension on best practices that could otherwise increase yields due to policy decisions about input subsidies and dissemination structures.
<p>Illegal logging in Forest Reserves</p> <p>-Timber companies -Chainsaw operators</p>	<p>Selective logging is practiced inside forest reserves and does not in and of itself result in deforestation. However, when contractors exceed their harvesting limits and/or their operations are followed by illegal chainsaw operators it can result in deforestation.</p> <ul style="list-style-type: none"> • Limited government capacity to monitor and enforce laws • Demand for timber
<p>Legal mining -Mining companies -Small-scale miners</p> <p>Illegal mining -“Galamsey” miners</p>	<p>Mining concessions have been permitted in 2% of production forest reserves. In some localities, illegal activities follow based on the economic incentive for mining.</p> <ul style="list-style-type: none"> • High economic returns from mining • Conflicting messages from the highest level of government • Absence of land-use planning

Land Use Type: Off-Reserve (Forests, Fallows & Trees in Landscape)	
<p>Elimination of non-cocoa trees (shade trees) from the cocoa system</p> <p>-Cocoa farmers -Chainsaw operators -Timber contractors</p>	<p>Perverse policy incentives (Forestry and Agriculture) and lack of formal benefits</p> <ul style="list-style-type: none"> • Farmers have no economic/management rights to economic trees, and receive no benefits when legally harvested. • Timber Utilization Contracts (TUC) or Timber Utilization Permits (TUP) granted in cocoa farms which causes damage to cocoa trees, with little to no compensation for farmers. • Over-emphasis on assessing tree tenure and benefit sharing with no serious efforts to make reforms.
	Demand for domestic timber and poor control and use of chainsaws.
	<p>Farmer misinformation</p> <ul style="list-style-type: none"> • Lack of information about shade regimes • Negative farmer perceptions of relationship between shade trees and yield in cocoa farms
<p>Logging in concessions off-reserve</p> <p>-Logging companies</p>	<p>The award of TUC or TUPs in highly stocked off-reserves landscapes is legal. Logging of these trees leads to conversion from forest to non-forest lands.</p>
<p>Legal mining Small-scale mining</p> <p>-Mining companies -Small-scale miners</p> <p>Illegal mining</p> <p>-Galamsey miners</p>	<p>Mining concessions have been granted in the off-reserve, as have small-scale mining permits.</p> <p>In many places, illegal activities follow based on the economic incentives.</p>
<p>Replanting cocoa in over-aged, high shade cocoa farms</p> <p>-Cocoa farmers</p>	<p>In replanting old cocoa farms, many farmers reduce or eliminate the existing shade trees in an effort to adopt a low/no shade cocoa system.</p>
	Lack of information about recommended shade levels, benefits of shade and management practices
<p>Expansion of cocoa into off-reserve forest or forest fallows</p> <p>-Cocoa farmers</p>	<p>Land tenure arrangements that incentivize land clearing as a means of ownership or claim to the land and planting cocoa as a means to secure the tenure.</p>
	Absence of land use planning
	Poor yields from degraded soils and pests and diseases, etc. causing expansive practices
<p>Expansion of other tree crops and food crops into off-reserve forests or forest fallows</p>	<p>Land tenure arrangements that incentivize land clearing as a means of ownership or claim to the land and planting cocoa as a means to secure the tenure.</p>

-Oil palm, rubber, citrus farmers -Food crop farmers	
	Absence of land use planning
	Poor yields from degraded soils and pests and diseases, etc. causing expansive practices
Drivers of Degradation	
Land Use Type: Protected Forests (e.g. Forest Reserve, National Park, Globally Significant Biodiversity Area)	
Encroachment of cocoa systems into protected forests	Limited FC capacity to monitor and enforce boundaries.
	Inadequate incentives or opportunity for communities and landowners, including Traditional Authorities, to monitor and protect forests
	Traditional Authorities leasing land inside protected forests, giving explicit permission, or turning blind eye to the practice
	Low cocoa yields- farmer income increased through expansion
	“Extensive” practices preferred because of risks associated with adoption of high tech practices
	Lack of land in off-reserve areas for new plantings
	In-migration and population growth
Illegal chainsaw logging in Forest Reserves	High demand for domestic timber.
	Inadequate incentives for communities and landowners to monitor and protect forests
Land Use Type: Off-Reserve (Forests, Fallows & Trees in Landscape)	
Reduction in shade cover on cocoa farms	Negative farmer perceptions of relationship between shade trees and yield in cocoa farms
	Lack of information about recommended shade levels, benefits of shade and management practices

As noted in Ghana’s R-PP, in the emerging Strategy Options, and in Table 4 (above), cocoa represents a major driver of emissions in the ER Program area. Yet the Cocoa Board and the FC have never, in the history of Ghana, come together to fully understand or address this problem. For Ghana’s Cocoa Forest REDD+ Program to succeed, it must therefore adequately understand the trends in the cocoa sector and the main factors underlying its role as a driver of emissions. Section 5.1.1 (below) describes these trends in detail.

Nonetheless, cocoa farming is not the only driver of emissions in the program area, and while the program will put a strong emphasis on the cocoa sector, it aims to address all of the relevant drivers through direct activities on the ground, leveraging and scaling-up of on-going initiatives, a facilitation of a much needed inter-sector dialogue and coordination.

Finally, a number of initiatives that support sustainable forest management, conservation, and carbon stock enhancement are already present across the program area, including Ghana’s VPA-FLEGT process, the promotion of plantation development by the FC, the introduction of cocoa certification standards by the private sector, which in some cases includes tree planting, and Ghana’s FIP. All four of these programs will be important to the ER Program.

5.1.1 Understanding Cocoa as a Driver of Deforestation and Degradation—Trends in the Cocoa Sector

In an effort to clearly understand cocoa’s role in driving degradation and deforestation, and the potential to reduce emissions associated with land use change driven by cocoa farming, a multi-stakeholder working group consisting of government, private sector and civil society came together in 2011 to conduct a more detailed analysis of the cocoa sector and its role as a principal driver of deforestation in the high forest zone.

The results of this analysis determined that despite major gains in national production (cocoa production had increased from a base of 300,000 tons in the late 1980s to an all-time high of 1 million tons in 2011/2012, as shown in Figure 4) extensive (or expansive) cultivation of cocoa in Ghana is still the most widely practiced and ubiquitous land use across the program area¹⁴. What this means on the ground is that in order to maintain or increase yields (and income) farmers establish new farm, at the expense of forests, instead of investing in improved management of existing farms or replanting/rehabilitation of old farms.

In addition, there has also been a rapid transition from shaded cocoa cultivation to progressively low/no shade cocoa cultivation, driven mainly by short-term profits, increasing competition for land, and a rising demand for domestic timber¹⁵ in combination with an absence of information about recommended practices and tree tenure/benefit sharing arrangements that given farmers no economic incentives to maintain trees on-farm.

Overall, the gap between farmers’ average yields (approximately 400 kg/ha) and their potential yield (>800 kg/ha) remains unacceptably large, and the pressure on forests reserves from smallholder cocoa farmers’ expansion and loss of shaded cocoa forests from reductions in shade continues.

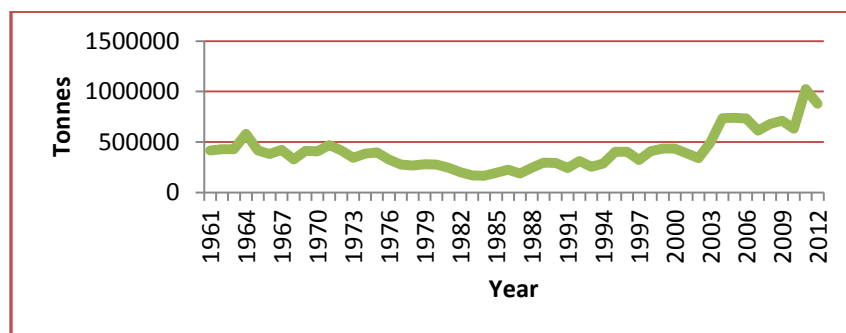


Figure 4: Ghana’s National Cocoa Production (1961-2012)

The prevalence of extensive and expansive farming practices can be attributed to some of the key challenges the sector is facing, including declining soil fertility, low yields, lack of land for new plantings (forest reserves and national parks are now considered the final forest frontier) and poor environmental practices. Figure 5 demonstrates the business-as-usual (BAU) land use change patterns that prevail across the program’s landscape, and the associated losses in carbon stocks that one can attribute to cocoa farming.

¹⁴ Gowkowski, J., 2011. Unpublished data. International Institute of Tropical Agriculture.

¹⁵ Hansen et al. 2012.

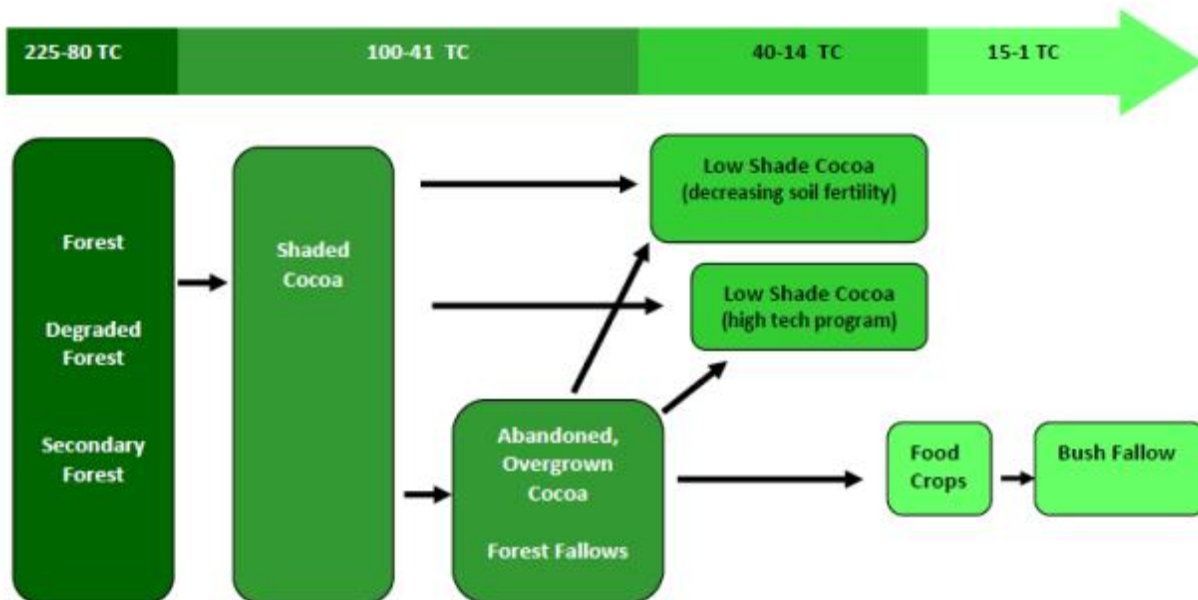


Figure 5: General pattern of land use change and approximate aboveground carbon stock ranges (TC/ha)¹⁶

In 2001, the Ghana Cocoa Board embarked on a set of policy actions designed to improve farmers' yields and generate growth in the cocoa sector. The ensemble of these actions became known as the High Tech and CODAPEC program (HTP) with the established target of 1 million tons of cocoa by the year 2012, and an average on-farm production target of 1,000 kg/ha. In 2011, the 1 million tonnes target was attained, but production dropped again in 2012 (860,000 metric tons) and a wide margin still exists between the on-farm target and the current production reality.

While the technical superiority of this high-tech package has been demonstrated on research stations for over 30 years, adoption of the full package by farmers has been limited and the realization of major yield increases is still a challenge. According to the Sustainable Tree Crops Program (STCP/IITA), evidence of the Ghanaian HTP impacts on productivity is revealed through an analysis of a 2008/09 baseline of output and input data obtained from 4,357 cocoa farmers. Of this study group, only 10% of the cocoa farmers were classified as intensified producers, while 40% were classified as extensive producers. The remaining producers were intermediate between the two. Average production remains at approximately 400 kg/ha¹⁷.

Table 5: Statistics on Input Use and Yield per Region.

	Brong-Ahafo Region	Western Region	Eastern Region	Central Region
Median measured farm area (ha)	2.17	1.23	2.2	2.1
Fertilizer use in past 12 months	21%	39%	9%	22%

¹⁶ NCRC & Forest Trends, 2011.

¹⁷ NCRC & Forest Trends, 2011.

Pesticide use in past 12 months	40%	48%	26%	42%
Median yield (kg/ha)	389	389	374	355
Loss due to pest and disease	37%	37%	32%	28%

The main constraints that make full adoption of these programs difficult include:

1. Withdrawal of national cocoa extension services in the late nineties followed by a public-private partnership revival of cocoa extension services in 2010, but only to a very limited number of farmers;
2. Conflicting and perverse policy incentives and agency messages to farmers,
3. Limited access to requisite farm inputs on appropriate credit terms;
4. Inadequate access to hybrid planting material, and
5. Absence of any risk management package for adverse weather conditions and/or diseases that significantly reduce yields.

Of the main elements of the HTP, it is often only the elimination of shade that is practiced by resource-poor farmers who are either unable to afford, or lack ready access to the fertilizers, insecticides, pesticides and hybrid planting material that are the key factors in the long term sustainability and productivity of this system. For resource-poor farmers, the ability to increase incomes rests on extensive (expansive) practices coupled with a reduction in shade trees, often to a level far lower than the Cocoa Research Institute of Ghana's (CRIG) recommendations.

The main assumption underlying the HTP's efforts was that by increasing yields, farmers would have better incomes and the country would maintain its position as one of the top global producers. It was also assumed that intensification would reduce the pressure from cocoa on Ghana's forests. There is a strong body of work, however, which cites the trade-offs between intensification and reducing deforestation¹⁸, and many in Ghana doubted that without the right measures in place, intensification would halt expansion into Forest Reserves. Evidence on the ground has also shown that the rate of forest loss is increasing since 2000 (Figure 6).

An assessment of land use change by NCRC in a sub-landscape within the program area (made up of five administrative districts; Bia District, Asunafo North District, Asunafo South District, Juabeso District, and Asutifi District) that represent one of the most productive cocoa producing areas in the country shows that conversion of intact forest has been accelerating from a rate of 2.8% per year between 1986 to 2000, to 6.1% from 2000-2011 (Figure 6). Land use types include forest (dark green), secondary forest and shaded cocoa farms (light green), low/no shade cocoa farms and bush fallows (aqua), agriculture (orange), and settlement (brown).

¹⁸ Tomich, T.P., van Noordwijk, M., Budidarsono, S., Gillison, A., Kusumanto, T., Murdiyarso, D., Stolle, F., and Fagi, A. 2001. Agricultural intensification, deforestation, and the environment: assessing tradeoffs in Sumatra, Indonesia. *Tradeoffs or synergies*, 221-224.

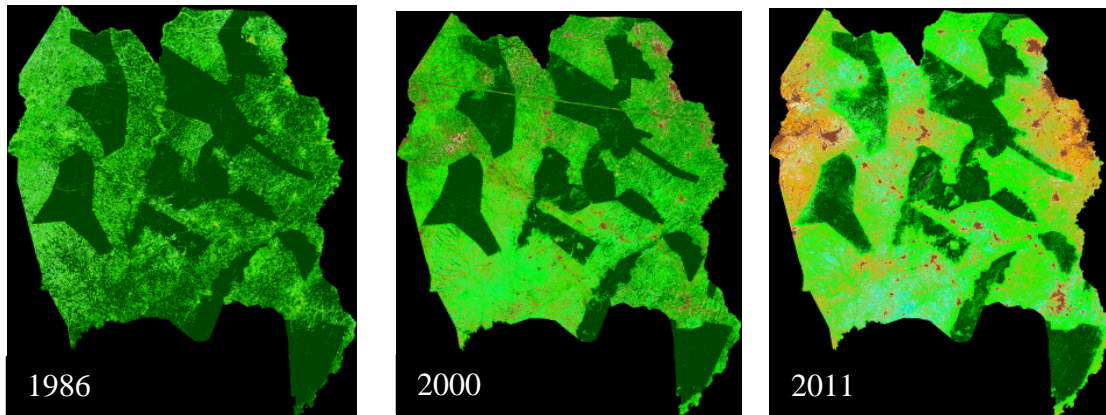


Figure 6: Land Use Change in Dominant Cocoa Cultivation Landscape within Program Area

Overall, recognition is growing amongst cocoa sector stakeholders, including the private sector, that cocoa is a major driver of degradation and deforestation, and as such a source of GHG emissions. Concern is also growing that climate change presents a threat to the future of the sector. In 2012, for example, national yields declined substantially as a result of reduced rainfall during the dry season. However, to a large extent, questions remain amongst private sector player and within the Cocoa Board as to how best to facilitate mitigation and adaptation, while supporting the sustainable production of cocoa beans.

The private sector and civil society are investing substantial resources into cocoa projects and programs. The most common institutional arrangement has been the use of public-private partnership (PPP) models. The introduction of social and environmental standards through certification, and efforts to improve access to education and other social amenities has also been the focus of these projects and social corporate responsibility initiatives. Despite the number of projects and programs in operation, there is no evidence that there has been a positive sector level impact on yields, nor a reduction in deforestation and degradation at the landscape scale.

As a result, the gap between farmers' yields and their potential yield remains unacceptably large and the pressure on forests reserves from smallholder cocoa farmers seeking to profit from the "forest rent" continues. Ghana's Cocoa Forest REDD+ Program aims to enable and facilitate a transition to a climate-smart cocoa production system, while concurrently reducing emissions in the landscape.

5.2 Assessment of the major barriers to REDD+

Please describe the major barriers that are currently preventing the drivers from being addressed, and/or preventing conservation and carbon stock enhancement from occurring.

Table 4 in Section 5.1 already cites the barriers that prevent the major drivers of degradation and deforestation in the ERP area from being addressed or prevented.

The decision to pursue a programmatic, landscape strategy to mitigate these drivers was largely influenced by the recognition that there is a serious lack of coordination and planning amongst implementing agencies, companies, organizations and governance bodies across the landscape. In addition, farmers' and forest users' decision-making is still being driven by economic and policy

constraints, including limited access to resources (information, economic, agronomic) and tree tenure regimes that do not incentivize retention of trees on-farm.

It was recognized that these barriers that cannot be addressed at a project or singular institutional level, which has been the practice to date, but necessitate a large-scale, integrated approach in order to foster the large-scale changes in farming practices and land use decision making required to reduce deforestation and degradation, and to foster the growth of forests and trees in the off-reserve farming landscape. Therefore, the development of the Cocoa Forest REDD+ Program is an effort to overcome these barriers.

5.3 Description and justification of planned and ongoing activities under the proposed ER Program
Please describe the proposed activities and policy interventions under the proposed ER Program, including those related to governance, and justify how these activities will address the drivers and underlying causes of deforestation and forest degradation and/or support carbon stock enhancement trends, to help overcome the barriers identified above (i.e., how will the ER Program contribute to reversing current less sustainable resource use and/or policy patterns?)

Seven strategy options have been identified to tackle the main drivers of degradation and deforestation in the ER Program landscape. These include:

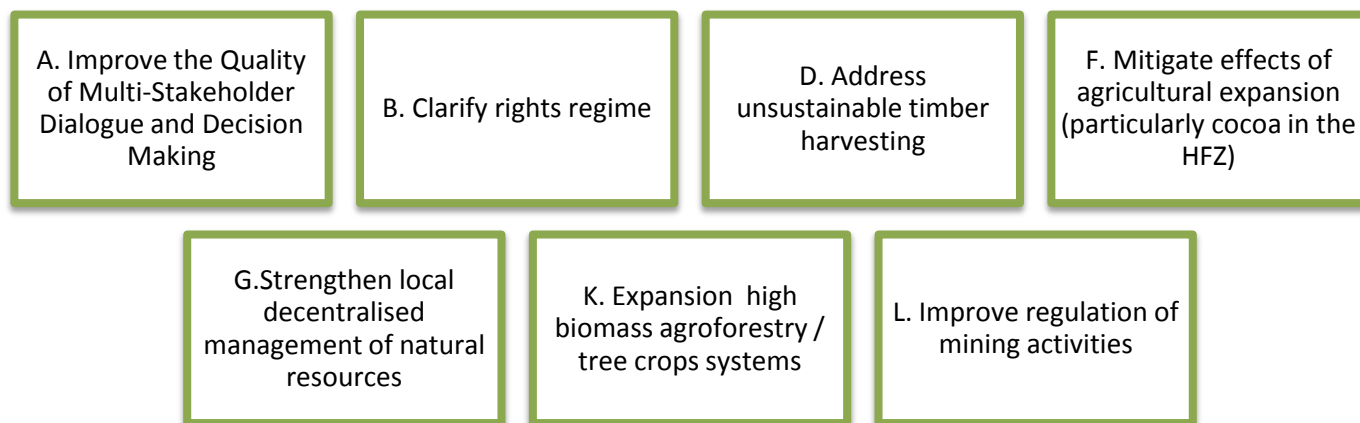


Figure 7: Strategy Options to be Applied to the ER Program

These strategies have been defined into a set of broad activities, interventions and critical measures to reduce deforestation and degradation across the program area. Some of these activities are already being implemented in various ways in the landscape, whereas other activities represent completely new measures. It is widely agreed, amongst all stakeholders who have participated in the visioning and drafting of Ghana’s Cocoa Forest REDD+ Program, that in isolation, no single measure can be effective in reducing emissions from deforestation and forest degradation. Therefore, sector level efforts that integrate multiple activities to address direct and indirect drivers (e.g. Figure 8) are required.

These activities and elements are specific in their focus, but are yet to be defined in terms of who is specifically responsible, how implementation will take place, or what sub-landscapes will be targeted with particular suites of activities. The description of the implementation plan (below) gives more detail

about how the program will be implemented, but it is anticipated that more specific details about these activities will be articulated in the Design Phase.

The Ghana FIP-financed World Bank Project, “Enhancing Carbon Stocks in Forests and Agroforest Landscapes” also aims to reduce forest loss and degradation of the landscape. Therefore, the ER Program will formally align with and leverage activities related to Component 1 (Policy Reforms and Institutional Strengthening) and Component 2 (Pilot Investments for Improved Forest and Landscape Management). These include:

- Promoting trees in key landscapes and corridors
- Enhancing trees and climate-smart practices in cocoa landscapes
- Enhancing carbon stocks through facilitation of plantation investment in degraded Forest Reserves
- Enrichment planting, nurseries, and native species for restoring degraded and agricultural landscapes
- Supporting integrated landscape level planning in support of community-based resource use decisions

5.3.1 Activities to Reduce Emissions from Cocoa and other Agricultural Drivers

Reducing emissions from cocoa farming (and food crops) farming, and other requires the linking of key activities and interventions (Figure 8) and the implementation of farm-to-landscape level results-based monitoring. Many of the program’s cocoa oriented activities are already being implemented on some level in the program area. For example:

- *Rainforest Alliance* and *Solidaridad* are actively implementing the SAN and UTZ cocoa standards in Ghana, with support from the private sector (e.g. Olam, Armajaro) and bilateral donors (Dutch government).
- *Cocoa Abrabopa Association* (a farmer association) has demonstrated that significant yield increments can be achieved on-farm when farmers have access to the appropriate credit, extension, and agronomic resource packages (including fertilizer, spray machines, and agro-chemicals).
- *Cocoa Board* is working in partnership with many of the *licensed buying companies* and *chocolate companies* to expand farmers’ access to extension, business training, and knowledge of best practices, including appropriate shade management (approximately 40% canopy cover).
- *Ghana Cocoa Platform* is a Cocoa Board project, with support from the UNDP, that aims to link sector stakeholders and foster greater sustainability of the sector.
- *Geotrability (Armajaro)* and *CocoaLink (World Cocoa Foundation)* are using technology to foster cocoa bean traceability from the farm to port, and mobile technology to deliver farming and marketing information to farmers.

Two key elements, however, are not. They include land-use planning at a landscape scale and MRV tied to data management. In isolation, no single initiative can hope to reduce emissions at the requisite scale, but when implemented in concert, the opportunity to reduce deforestation and degradation from cocoa farming by fostering a climate-smart cocoa approach is promising. For a detailed definition of climate-smart cocoa see Asare (2013)¹⁹.

¹⁹ Asare, R.A. 2013. Understanding and Defining Climate-Smart Cocoa: Extension, Yields, Inputs and Farming Practices. NCRC & Forest Trends, Washington, D.C.

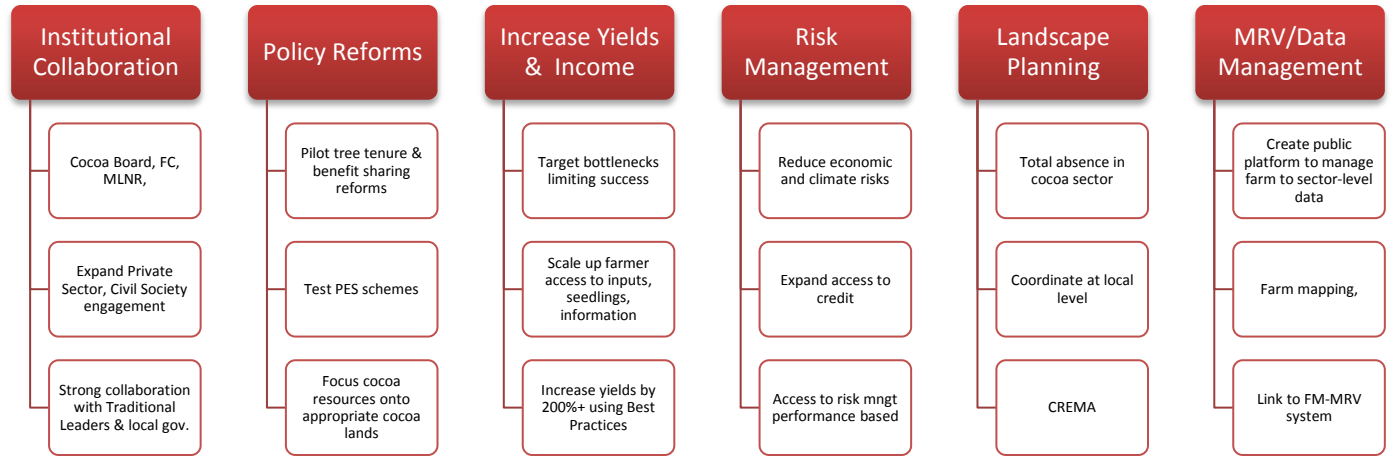


Figure 8: Program interventions and activities to reduce emissions.

Institutional collaboration (Strategy Option A): The program will constitute the first time that serious collaboration and coordination takes place between Ghana’s Cocoa Board and FC, despite the fact that they operate in the same landscape, negatively impact each other’s sectors, and face a set of common threats, including climate change and declining ecosystem services. By establishing an institutional framework (Steering Committee, Technical Coordination Team and Management and Implementation Unit) that is led by the two organizations, the program will create a much needed process and platform to enable collaboration and joint implementation of activities. This process and platform go beyond the cocoa sector, to help reduce drivers associated with illegal logging and mining.

The program will also foster collaboration between government agencies, private sector entities, civil society organizations, and traditional leaders. To date, the majority of projects operate with an inward focus and goals vary widely between initiatives. There is a strong need to align efforts within landscapes towards the common goals of reducing emissions and ensuring sustainability.

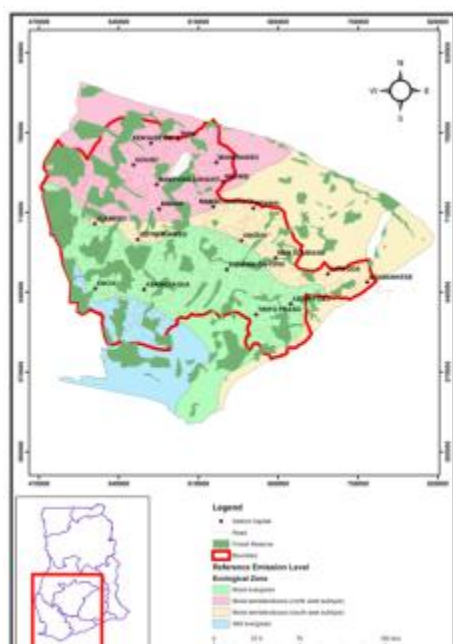
Policy reforms (Strategy Option B): Piloting and testing new policies is a top priority of the program, as well as that of the FIP. Ghana’s R-PP highlights the need for tree tenure and benefit sharing reforms that will incentivize farmers to retain and/or plant trees on-farms or in the wider landscape. NREG is already working on tenure reform and the FIP is expected to pilot new policies within the program area. These efforts will be leverage and likely expanded to other target landscapes within program.

The program will also test results based benefit sharing arrangements (PES schemes) in sub-landscapes based on set of ecosystem services and performance indicators agreed to by all stakeholders, including communities and local leaders. The program will also couple community based monitoring with enhanced law enforcement to reduce the extent of encroachment into forest reserves from cocoa and food crop farming, as well as illegal logging activities.

Finally, the program aims to consolidate cocoa farming resources and interventions onto the most appropriate cocoa farming lands, while promoting other tree crops or agroforestry systems (oil palm, rubber, NTFP agroforests, plantations) on soils and land-use types that are ill-suited to cocoa. The logic

behind this policy shift is simple—a proportion of Ghana’s national production is coming off of lands that are inappropriate and ill-suited for cocoa. For example, cocoa is growing in the wet evergreen forest zone (southwest tip (light blue) of the program area) despite the fact that these soils (forest oxisols) are inappropriate for cocoa cultivation and do not respond well to the available fertilizer. Given the limited extent of resources available to farmers, it is only logical to ensure that technical, agricultural, economic and information resources are applied on lands where cocoa is best suited to grow (and not on lands where investment in rubber or oil palm, for example, would be more appropriate), and is most likely to still be growing in 20 years’ time, in light of predicted changes in rainfall and temperature²⁰.

Figure 9: Proposed Core Cocoa Area



Finally, assuming that the program is able to increase yields on farms through varied “best-practices” options, it will not be necessary to reduce the total area under production, otherwise Ghana risks flooding the market with beans that would not be able to command a decent price. Over production could become a major disincentive for government, cocoa companies and farmers in Ghana.

Analyses of existing soil, climate, agronomic, and cultural parameters indicate that there is an appropriate “core landscape” within the program landscape where cocoa should be grown, as compared to lands outside of this core area, which are ecologically unsuitable, but have nonetheless been farmed under cocoa. The proposed cocoa core zone covers approximately 3.3 million ha (cocoa would only grow on about 1/3 of this land, with food crops, forests, and other land uses occupying the remaining area) and is outlined in red in Figure 9. This area was selected based upon an assessment of soils, current and future

climatic conditions, agronomic patterns and resources, and socio-cultural systems.

Increasing Yields & Income (Strategy Option F & K): Despite efforts over the last decade to enable cocoa intensification, on-farm yields remain low (<400 kg/ha) and the loss of forests and trees in the landscape continues due to the “free” fertility of forest soils and the perception that no/low shade systems optimize yields. The prevalence of these extensive and expansive farming practices can be attributed to some of the key challenges facing the cocoa sector, including declining soil fertility, prevalence of pests and diseases, low incomes, limited land for new plantings, lack of access to extension and farm inputs, lack of access to financial products, and poor farming practices.

Existing initiatives have already shown that it is possible to double and triple yields per hectares and substantially increase income by giving farmers access to: 1) extension services that transmit information on best farming practices, 2) critical farm inputs (fertilizer and agro-chemicals), 3) farm credit, and 4) business training. The program does not intend to introduce new measures within this implementation vein. Rather it aims to link and scale-up on-going interventions by civil society,

²⁰ Laderach, P., Martinez-Valle, A., Schroth, G., and Castro, N. 2013. Predicting the future climate suitability for cocoa farming of the world’s leading producer countries, Ghana and Cote d’Ivoire. *Climate change*, 119(3-4), 841-854.

government and the private sector with land-use planning and MRV / data management system so as to reduce degradation and deforestation while improving farm yield and income. To support scaling up, the ER Program will aim bring on-board new investments from the private sector and from carbon finance.

Risk Management (Strategy Option F & K): Climatic change and extreme weather conditions like drought, excessive rainfall, or even high temperatures continue to pose a threat to agriculture in Ghana and to increase risks for small-scale farmers who depend on subsistence agriculture as their source of livelihood, as well as for commercial farming enterprises. Despite these threats, there is no tradition of agricultural insurance provision in the country, and to date there is no insurance policy for cocoa farmers in Ghana. Through a national feasibility study, which focused on the Ashanti, Brong-Ahafo, Western, and Eastern regions of the country, initial discussions were held with the Cocoa Board to review the possibility of designing coverage against certain diseases. Indemnity based insurance has also been proposed on a yearly basis. This is because cocoa is not only very sensitive to climate change but also to diseases, pests, and fire hazards.

Another option that has been proposed by the private sector is that of a yield-indexed insurance approach that could be linked to participation in ER Program. Details of such a package have yet to be fully articulated, but under this potential scenario, yields on the individual farm basis do not matter; rather, records are kept of community area yields, and if the average yield within a community drops below an established minimum then the insurance kicks in to cover the difference. This structure would help to minimize the opportunity for fraud, but would still compensate farmers for low productivity that might result from multiple factors. Within this program's yield index scenario, the opportunity also exists to use carbon revenues to reduce or eliminate insurance premiums.

In addition, the program would aim to make in kind or financial credit facilities more widely available to farmers so that they are able to invest in improved practices and technologies. There are already discussions being led by the National Insurance Commission to introduce life insurance policies for small-scale cocoa, oil palm and other producers. Such policies could be used as collateral by financial institutions to provide credit to such producers, and/or the producers could also potentially borrow against their life insurance policies to invest in their farming operations.

Landscape Planning (Strategy Option G): Land-use planning at a landscape scale (District or Traditional Authority level) is seen to be a critical intervention to reduce cocoa farm expansion and encroachment into forests and to foster planning of farming activities in the off-reserve landscape. To date in Ghana there is a void in community-based landscape and land-use planning²¹, with one known mechanism at the local level—the Community Resource Management Area (CREMA) mechanism. The CREMA mechanism originated as a community-based wildlife management platform, but has evolved to divest full natural resource management and economic rights to CREMA communities. The CREMA creates critical opportunities for communities to benefit directly from REDD+ and other PES schemes in the absence of clear legislation or reform.

Originating in Ghana, the CREMA process represents an innovative landscape-level planning and management tool for community initiatives on off-reserve. Formation of the CREMA mechanism has taken almost 20 years, moving from an intellectual concept to an approved pilot initiative, and finally to

²¹ The Land Administration Project (LAP), with over USD 20 million in World Bank support was initiated to help implement Ghana's National Land Policy. However, it has not been implemented in most regions and operates at a scale above localized decision making.

an approved mechanism by the FC and MLNR. Today over 30 CREMAs are officially approved or in various stages of the development process, and many of these CREMAs are located within the program area. The average CREMA covers about 25,000 hectares, but CREMAs can range from approximately a few thousand hectares up to a few hundred thousand hectares. (See the Annex for a broader description of the CREMA mechanism.)

CREMAs are given serious consideration as part of Ghana's REDD+ strategy and have much to contribute to this program and to REDD+ in general (Asare et al 2013), including approved constitutions, management boards, community committees, regulations backed by local government by-laws and the power to engage their own staff. CREMAs are able to incorporate under Ghanaian law and control their own revenue. All CREMAs must have defined boundaries agreed to by all stakeholder communities and the traditional leadership, upon which the long-term vision, goals, management plans, and regulations are established. As such CREMAs are an approved institutional structure for landscape planning, democratic decision-making by local leadership and benefit sharing with its stakeholders. A CREMA is officially inaugurated when the Ministry is sufficiently satisfied to issue an official certificate of devolution of rights over NRM to the local CREMA institution. CREMAs also help to facilitate small-holder aggregation, support free, prior and informed consent, ensure permanence, prevent leakage, clarify land and tenure and carbon rights, as well as establish equitable benefit sharing arrangements. In addition to cocoa farming, landscape planning can also be used to facilitate discussions about other driver activities, like the expansion of illegal small-scale mining or illegal chainsaw operations.

Data Management & MRV (Strategy Option A): In order to ensure that the program's desired outcomes are being achieved, to maximize performance against landscape plans, and to provide monitoring, reporting & verification capabilities, it is essential that data from the cocoa farms can be acquired accurately and efficiently, and then processed, managed and distributed in a secure and integrated way. Managing, linking and integrating such data from a wide variety of entry points will be essential for success. This must be a seamless and straight-forward platform that will permit multiple data entry mechanisms including GIS parameters, field data collection, supply chain monitoring, carbon MRV, online reporting applications, and traceability information to be inputted and accessed for a variety of purposes and needs based upon the evolving cocoa sector and climate-smart strategy.

Two private sector companies (Armajaro and Olam) and a cocoa foundation (WCF) are already using data platforms, which could inform Ghana's system. However, the system should be a national asset which Cocoa Board would own, but most likely operated under agreement with a private sector specialist entity. The system should use open source software to avoid licensing issues and ensuring maximum user access.

5.3.2 Activities to Reduce Emissions from Illegal Logging

The Cocoa Forest REDD+ Program will address illegal logging drivers (Strategy Option D) at a program scale, by supporting policy reforms, leveraging existing programs, projects and initiatives, and at a local / community scale by helping to bolster greater accountability through landscape planning, community-based monitoring, and PES schemes/results based payments for emissions reductions from degradation.

Early on, the program will strongly collaborate with key stakeholders, the FIP and the MLNR to test policy reforms (tree tenure and benefit sharing arrangements) that would aim to reduce illegal logging in farms and keep trees growing in the farming system.

At a high level, the ER Program will engage with the VPA-FLEGT process to identify policy level and activity-based opportunities to collaborate. Currently, Ghana's wood tracking system is being piloted

with expected roll-out of the system later in the year. This time frame easily bridges with the expected Design Phase of the program.

The program will liaise with the FC's Rapid Response Task Force, which proactively intervenes in illegal logging activities to prevent illegal harvesting on the ground, and is supported by the "prosecution wing" of the FC, which is charged with prosecuting offenders.

At the community level, the ER Program will use the CREMA mechanism and other landscape level planning structures and process to open up dialogue, local decision making, and accountability measures (like by-laws) on the issue of illegal logging. To support and enhance changes in decision making about illegal activities, it will pilot community-based forest monitoring systems and PES / performance based schemes that would "pay" communities and leaders when deforestation and degradation is reduced in their CREMA or landscape area.

5.3.3 Activities to Reduce Emissions from Illegal Mining

Information about the actual extent of illegal gold mining is still very limited in Ghana, and the proponents of this program acknowledge that less time and thought has been focused on how to reduce the threat from illegal mining, locally known as "galamsey", as compared to the other drivers. It is felt that this will be an important aspect of the Design Phase. Nonetheless, two of the major factors that have contributed to the upswing in illegal mining are:

1. The lack of law enforcement and the lack of accountability, at all levels;
2. The economic opportunity from gold mining.

Strategy Option G calls for improved regulation of illegal mining. The proponents feel that the ER Program itself represents a much needed framework for addressing the problem at the appropriate scales as it can facilitate monitoring of land use change (through the forest monitoring and MRV system) in conjunction with inter-sectorial dialogue, and coordination and collaboration on the ground. The ER Program will seek to support the President's Special Task Force on Illegal Mining and engage with the Minerals Commission and the National House of Chiefs to address the challenges on the ground.

The ER Program can also bring the land-use planning process it will implement to bear at the level of the Traditional Authorities, the District Assembly, and communities. In tandem with land-use planning, the program will test PES / results-based mechanisms to create new economic and in-kind incentives to keep conversion of forested lands from illegal mining at bay.

5.3.4 Implementation Plan

It is envisioned that Ghana's Cocoa Forest REDD+ Program will be implemented across the landscape using a phased approach that initially targets sub-landscapes within the program area that offer the best opportunity to tackle drivers and produce emission reductions early on, before activities are scaled out over time into the other sub-landscapes. Success will largely depend upon the capacity to facilitate coordination and collaboration amongst partners at all levels, and the ability to alter land use practices in response to new resources, rights, and processes. During the initial phase, Ghana imagines that it would focus on 3-5 priority sub-landscapes that represent "low hanging fruit" from an emission reductions standpoint. In subsequent phases, it would scale-out into other sub-landscapes to address the relevant drivers and to continue to achieve emission reductions.

A step-wise approach is envisioned to determine and define the first phase of target sub-landscapes. The program will likely target 3-5 sub-landscapes that encompass approximately 50,000-200,000 ha each. These steps are as follows:

1. Identify hotspots of deforestation and significant degradation in the program area using a combination of remote sensing analysis and proxy indicators based on expert knowledge of trends and activities happening on the ground.
2. Verify the principle drivers, underlying causes and agents responsible for the deforestation or degradation in the area.
3. Conduct an institutional mapping exercise to determine where relevant private sector, civil society and government projects, programs, and initiatives are taking place within the program area in order to clearly understand where existing capacity and financial support could be leveraged to generate emissions reductions. At this stage, it is recognized that most compatible projects and programs of the private sector or civil society have complementary activities, but that these initiatives are not specifically focused on reducing deforestation or degradation. Partner organizations would be asked to adapt their mode of operation in order to engender positive emission reductions outcomes. The current response from partners to this idea has been positive to date and is an encouraging sign of the willingness to partner and collaborate at a programmatic level.
4. Designate target landscapes based on areas where there is an overlap of deforestation or degradation taking place at a significant but manageable scale, with areas where there is existing institutional capacity and financial support.

In subsequent phases the program will assess where and what interventions have been successful (and those that have not), adapt the strategy as needed, and then expand into new sub-landscapes with the relevant set of activities to address the drivers of emissions.

5.4 Risk/benefit analysis of the planned actions and interventions under the ER Program

Please explain the choice and prioritization of the planned actions and interventions under the ER Program identified in 5.3 taking into account the implementation risks of the activities and their potential benefits, both in terms of emission reductions and other non-carbon benefits.

The program is cognizant that there is a clear risk/benefit trade-off with respect to certain inherent elements of the program, including its scale and the dominant focus on a primary driver. The scale is risky given the costs and effort required to detect and reduce emissions within the entire area. The proponents are very aware that implementing this program will not be easy and will require a passionate, innovative, and determined commitment from all stakeholders. However, it is the element of scale that creates the platform for collaboration, integration, and economic efficiency which are all needed to change the business-as-usual scenario in terms of how cocoa is produced in Ghana, or other drivers are addressed. Therefore, the potential benefits in terms of emissions reductions, livelihood gains, and security of supply are seen as greatly outweighing the risk attributed to the size of the program area.

The decision to adopt an approach that aligns with a global commodity as the key driver of emissions means that the program is vulnerable to fluctuations in the price of cocoa beans on the international market, or to political or natural risks. While the program cannot entirely obviate these risks, Cocoa Board's ability to stabilize the producer price coupled with the growing global demand for chocolate, particularly in Asia, suggests that market volatility is unlikely to alter cocoa farming decisions considerably over the life-time of the program.

In terms of natural risks, the last major event that significantly affected cocoa production in the country was the bush fires of 1983, following two years of drought. Reducing degradation and deforestation, maintaining shade cover on-farms, and promoting best management practices will help to maintain a micro-climate that generates rainfall and will give the farms enhanced adaptive capacity to deal with dry years. From a political risk standpoint,

Ghana has demonstrated consistently over the past 14 years that it is a democratic country, committed to free and fair elections, stability, economic growth, and transparency. Thus, the risk of political instability is perceived to be minimal.

The program does recognize, however, that even if emissions linked to cocoa are reduced, these gains could be negated if other sectors within the program area increase their emissions. For example, the ER Program is very aware that the prevalence of mining in the HFZ is increasing and that the government is still in the early days of combatting the problem. Though the issue is being addressed at the highest level of government, it would obviously be very difficult for the program to overcome the opportunity cost associated with mining, as compared to other agriculture based land use practices, given the current price of gold. Nonetheless, the proponents of the Ghana Cocoa Forest REDD+ program feel that it is very important to try new types of interventions.

The following is a more concise risk-benefit assessment of the main interventions and activities that the program intends to implement.

- ❖ *Institutional collaboration:* The main risk is that institutional collaboration will be discussed and promoted, but it will not occur in reality. The political will that has been demonstrated and the collaboration that has already occurred in the visioning and preparation of the ER-PIN indicates that there is a meaningful and determined desire to bridge the gap and foster collaboration, which will result in myriad benefits at multiple scales.
- ❖ *Policy reforms:* There is a determined drive to reform tree tenure policies and benefit sharing arrangements in Ghana. The risk is that this process will take longer than expected and will not be implemented in the landscape within the time frame needed for the program to reduce emissions. The Cocoa Forest REDD+ Program is hopeful that the FIP, which aims to pilot policies and to facilitate broader reforms, has the funding and motivation to move reforms forward in an efficient manner.
- ❖ *Increasing Yields and Income:* The main risk from increasing farmer yields and incomes has been that this fuels further expansion and encroachment into forest reserves and a reduction in shade trees on farms. What makes this program unique is its desire to link yield increases to landscape planning and reductions in deforestation and degradation within the landscape. In many ways, linking intensification to emissions reductions brings more benefits to farmers (increased access to resources) and the private sector (increased income, access to cocoa beans, security of supply) than the current system.
- ❖ *Risk Management:* The proponents of the program view risk management as a win-win activity. Currently, farmers face myriad risks from climate, disease, and economic insecurity, and as a result, manage their farms in response to the prevalence of the existing risks. To ask farmers to change their land use and farming practices also necessitates the development and dissemination of risk management/mitigation packages. If properly structured, there would be

few risks to the program or to farmers, but clearly many benefits from an emissions and non-carbon standpoint.

- ❖ *Landscape Planning:* For the proponents of this program, promoting landscape planning presents few risks, but is absolutely essential to being able to generate emissions reductions. One major challenge to this effort arises from the fact that lands are owned by the chiefs and families, while individuals and government has very little control over decisions regarding what use the land is put to. It will therefore be critical to engage with land owners and sensitize them to embrace more sustainable land management approaches, stressing the inter-generational dimension as well since the Ghanaian culture regards land as the most enduring inheritance to bequeath to generations unborn.
- ❖ *MRV/Data Management:* Currently there is a total absence of data on the number of cocoa farmers in Ghana, the total area of land under cocoa farming, the types of practices being applied and the average yield per hectare. Being able to develop a platform to collect and manage data would greatly improve the program's ability to generate emissions reductions and to target activities with drivers in sub-landscapes.
- ❖ *Illegal Logging and Mining:* The program acknowledges that it will be challenging to overcome the opportunity costs of illegal logging and mining activities, in light of the revenue that can be generated, the prevalence of corruption, and the challenge of rural unemployment in Ghana.

6. Stakeholder Information Sharing, Consultation, and Participation

6.1 Stakeholder engagement to date on the proposed ER Program

Please describe how key stakeholder groups have been involved in designing the proposed ER Program, and summarize issues raised by stakeholders, how these issues have been addressed in the ER Program to date, and potential next steps to address them.

The ER-PIN process started in early 2012 when Ghana's REDD Focal Point was invited to participate in the Building Carbon Bridges (BCB) Policy Dialogue involving 6 African REDD+ governments, that spanned a year and a half. By June 2012, the REDD Focal Point had gathered initial ideas to present at the Carbon Fund meeting in Asuncion, Paraguay. Ghana's exploratory presentation generated interest and many questions. In January, 2013 at the fourth Building Carbon Bridges meeting held in Debre Zeit, Ethiopia, which focused on JNR/ER PIN processes, Ghana showed further interest and thinking about the concept and a way forward.

Ghana's REDD Focal Point held JNR/ER PIN strategy session at Aburi, in the Eastern Region on April 10 and 11, 2013 to seek technical input to developing an Emissions Reduction Vision for Ghana. This meeting resulted in a clear mandate, vision, and a draft document. In May 8, 2013 this strategy group was re-assembled to review and fine tune the Vision before the document was circulated to a larger group of REDD stakeholders and finally validated on June 6, 2013 in Kumasi. In late June 2013, Ghana's REDD+ Focal Point presented at the Paris Carbon Fund meeting, requesting approval for a plan to proceed with an ER Program. Additional collaborative sessions have been undertaken to finalise the ER-PIN as outlined in Table 6 below.

Table 6: Consultative Sessions Undertaken During Drafting of ER PIN

MONTH	ACTIVITY/IES	DATE	PARTICIPANTS	MAJOR OUTCOMES
April, 2013	Development of Ghana's Vision for ER program – Initial Discussions/ consultations	10 th – 11 th	CCU/ CRIG/ FORIG/ EPA/ NCRC/ REDD+ Pilot Proponents/ Consultants	Vision document prepared
May – November, 2013	Various meetings and consultations with key stakeholders		World Bank/ OLAM/ COCOBOD/ Cocoa Abrabopa Assoc./ Climate-smart Cocoa Working Group	Buy in of key stakeholders
December, 2013	First technical session of the Ghana Cocoa platform	6 th	Consultant/ Farmer cooperatives/ COCOBOD	Four (4) Thematic Technical Committees set up
January, 2014	Meeting between CCU and Consultant	7 th	CCU/ Consultant	Consultant engaged
	Constitute and write to Drafting Team (DT)	14 th	CCU	Letters issued to DT members
	Meeting with Cocobod Officials	17 th	CCU/ COCOBOD/ Consultant	
	Preliminary briefing meeting for DT	21 st	Consultant/DT	Presentations
February	1st Working Session on ER-PIN Template	4th-7th	CCU/ CRIG/ MLNR/ COCOBOD/ FORIG/ RMSC/ Consultants (ER-PIN, MRV, SESA, Strategy)	Updated ERP vision document/ ER-PIN template
	ERP Multi-Stakeholder Workshop in Accra	14 th	See attached list of participants.	Workshop report/ presentations
	2nd Working Session on ER-PIN Template	17 th - 21st	Consultant/DT	Updated ER-PIN template
	FCPF Mission & ER-PIN Drafting Team Meeting	21st	WB/CCU	Updated ER-PIN template/ presentations
	High Level Meeting on Cocoa REDD Program	26th-27th	CCU/Cocobod/ relevant ministries and government agencies/ civil society/ private sector/ traditional authorities	Workshop report/ Communique/ presentations
March	3rd/Final Working Session on ER-PIN	4th-6th	DT members/ consultants	Final draft of ER-PIN
	Submission of ER-PIN to FCPF	7 th	CCU	ER-PIN submitted

6.2 Planned outreach and consultation process

Please describe how relevant stakeholder groups will participate in further design and implementation of the proposed ER Program and how free, prior and informed consultation leading to broad community support for the ER Program and key associated features, including the benefit-sharing arrangement, will be ensured. Please describe how this process will respect the knowledge and rights of Indigenous Peoples and local communities, by taking into account relevant international obligations, national circumstances and laws.

The outreach and consultation process for the proposed ER Program will be consistent with the REDD+ consultation and participation (C & P) plan developed during Ghana's R-PP implementation. The purpose of the C & P plan is to achieve collective ownership of the process and to ensure that all stakeholder groups have a better understanding of the ER Program. The plan outlines the key stakeholders as government, private sector, civil society, local communities and development partners. The tools and methods to be utilized include information and communication through websites, policy briefs, news bulletin, local FM and community radios and stakeholder group managed information sharing, for example, specific workshops for specific stakeholder and allowing stakeholders to lead deliberations on issues that are relevant to their needs. The purpose of stakeholder group managed information is to ensure that the raising of unnecessarily high expectations are avoided. In addition, the stakeholder consultations will be enhanced to include more private sector actors, civil society as well as farmer based organisations in the future.

There are also existing structures to complement the C & P plan. These structures include the national forest forums, district assemblies, Voluntary Partnership Agreement (VPA) consultation platforms, IUCN pro-poor benefit sharing platforms, NREG, the FAO supported Non-Legally Binding Instrument (NLBI) for sustainable forest management and the consultation processes of the Forest Investment Program (FIP).

The C & P will be integrated with the SESA framework being developed under the R-PP implementation to ensure that the mechanism of obtaining free, prior and informed consent from local communities is upheld at all times to protect the rights of local communities. For the benefit sharing arrangement, refer to section 15.1.

7. Operational and financial planning

7.1 Institutional arrangements

Please describe the governance arrangements anticipated or in place to manage the proposed ER Program (committee, task force), and the institutional arrangements among ER Program stakeholders (i.e., who participates in this ER Program, and how, including the roles of civil society organizations and forest dependent communities).

Three government institutions (Cocoa Board, FC, MLNR) intend to establish a Cocoa Forest REDD+ Program Steering Committee to be co-chaired by the Cocoa Board and FC. The Steering Committee will be responsible to manage the design, investment, and implementation of the Cocoa Forest REDD+ Program. This committee will include individuals from key government institutions involved in the program, in addition to a representative from the National House of Chiefs, the private sector, and civil society, including farmer representatives. The Steering Committee will be advised by the ER Program's Technical Coordination Team made up of key private sector representatives, as well as experts on cocoa agronomy, climate change mitigation, forestry, and other relevant fields who are knowledgeable of, or formally engaged with the program. It will also be informed by the ERP's Management and Implementation Unit, which will sit within the REDD+ Secretariat. The program recognizes that the

Secretariat will require significant strengthening and expansion to be able to adequately manage all aspects of the program, including implementation.

At the national level, these bodies will liaise with the National REDD+ Steering Committee, the Technical Coordinating Committee-Plus (TCC+) of NREG, Cocoa Board’s Ghana Cocoa Platform, and the National Climate Change Coordination Committee. At the highest level, the Environment and Natural Resources Advisory Council (ENRAC) will provide oversight to the Steering Committee. The ENRAC serves as an umbrella body that ensures cross sectorial coordination of all climate change initiatives in Ghana and is chaired by the Vice President.

The program anticipates that proponents and stakeholders of the program will play roles related to financing/investment, management, implementation, and monitoring/accounting. The program is already starting to develop an initial concept of the roles and responsibilities for some institutions; however it is anticipated that one of the central activities of the design phase will be to specifically identify stakeholders and agree upon requisite roles and responsibilities.

Table 7: ER Program Stakeholders and Roles

	Investment	Management	Implementation	Data Mngt /MRV	Payments
Bilaterals / Multilaterals					
FCPF Carbon Fund					X
FIP	X				
FCPF Readiness	X				X
Government					
Cocobod	X	X	X		
FC	X	X	X	X	
MLNR	X	X	X		
MoFA			X	X	
EPA					
Private Sector					
Licensed Buying Companies	X		X		
Traders	X				
Chocolate Companies	X				X
Communities & Farmers					
Farmers			X	X	
CREMAs			X	X	
Communities / Farmers			X	X	
Civil Society					
Certification bodies	X		X		
Env. NGOs	X		X		
Farmer Assoc.	X		X		
Traditional Authorities					
National House of Chiefs		X	X		
Chiefs			X		

7.2 Linking institutional arrangements to national REDD+ implementation framework

Please describe how the institutional arrangements for the proposed ER Program fit within the national REDD+ implementation framework.

The program will be implemented in line with the national REDD+ implementation framework, as shown in Figure 10. This is assured by the fact that the FC, through the REDD+ Secretariat, will co-chair the Cocoa Forest REDD+ Program Steering Committee. Further details are described in the Section 7.1 (above).

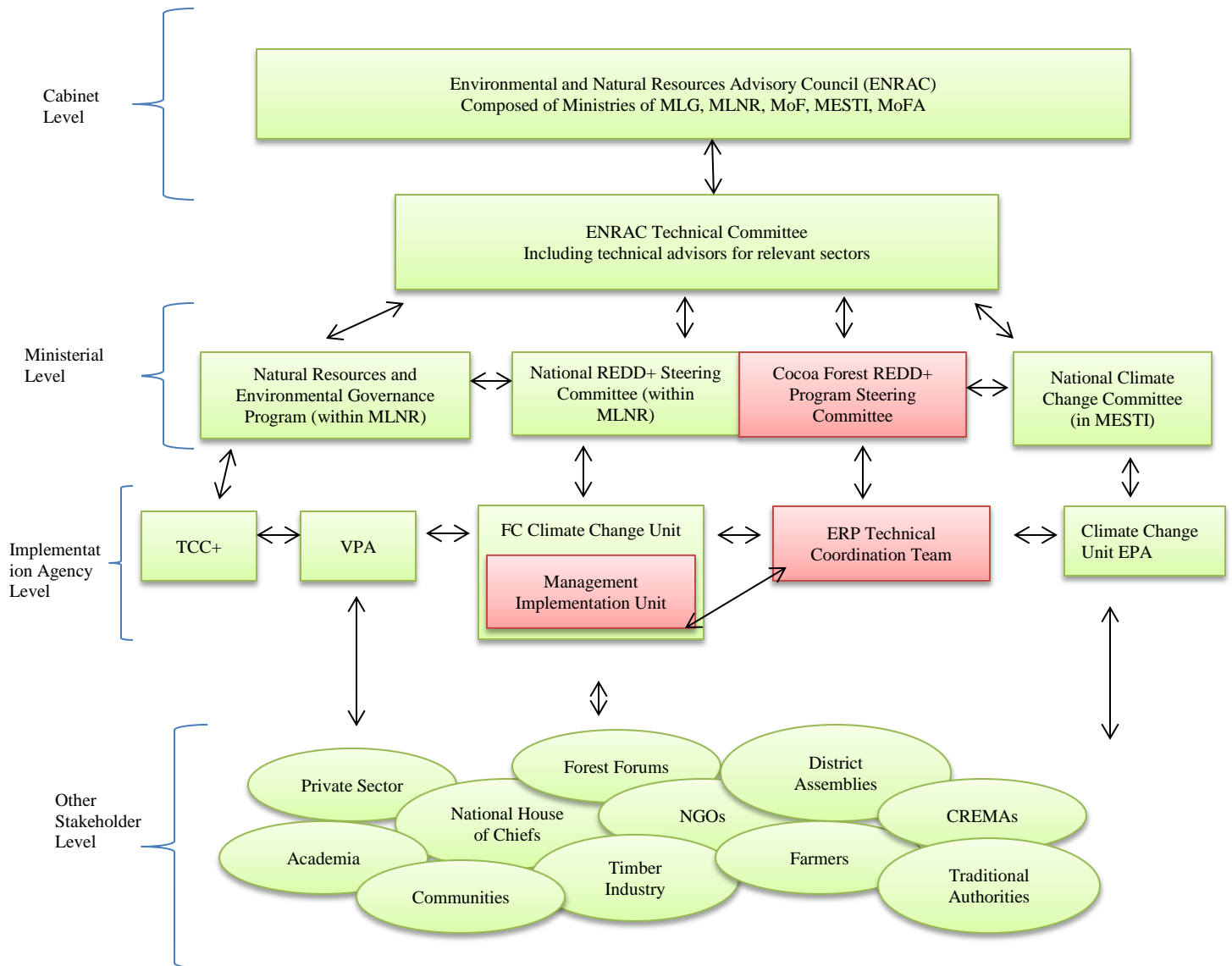


Figure 10: REDD+ Institutional Linkages

7.3 Capacity of the agencies and organizations involved in implementing the proposed ER Program
Please discuss how the partner agencies and organizations identified in section 7.1 have the capacity (both technical and financial) to implement the proposed ER Program

The ER Program has yet to move to a stage where roles and responsibilities have been specifically defined or resources allocated. This will take place during the design of the program. However, the

proponents are confident that the various agencies and organizations involved in this ER Program have the full capacity to implement. In fact, the private sector and civil society partners were specifically invited to participate based on their superior track record, availability of funding, and demonstrated ability to achieve results on the ground with cocoa farmers and farming communities, as well as other key stakeholders.

Please refer to Section 1.2 for a specific list of partners, core capacity, and general role in the program.

7.4 Next steps to finalize the proposed ER Program implementation design (REL/FRL, ER Program monitoring system, financing, governance, etc.). Provide a rough timeline for these steps.

Table 8 lists the various steps that are anticipated in completion of the Design Phase. It is likely that additional steps or details will be added in due course.

Table 8: Steps and Time Frame to Complete Program Design and Completion of ERPD

Steps to Program Design and ERPD	Q3 2014	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015	Q1 2016
Establish Steering Committee and Tech. Coordination Team							
Establish process, milestones, partners to lead to full design and ERPD							
Continued stakeholder consultation							
Identify program implementation partners							
Design of ER Prog Monitoring System							
Test and Modify Forest Monitoring System							
Identify Deforestation Hotspots and Target Landscapes for Phase I							
Refine Program REL and Expected ERs							
Define Program's Benefit Sharing Plan							
Define Grievance Redress Mech.							
Develop Financing Plan							
Submit R-Package							
Complete ERPD							

7.5 Financing plan (in US\$ million)
Please describe the financial arrangements of the proposed ER program including potential sources of funding. This should include both near-term start-up cost and long-term financing. If the proposed ER program builds on existing projects or programs that are financed through donors or multilateral development banks, provide details of these projects or programs, including their financing timeframe. Use the table in Annex I to provide a summary of the preliminary financial plan

Development of ER Program

The program expects to use funding from two sources (Table 9) to support the development of the program and meet fixed costs, including design and technical consulting, development and operationalization of the forest monitoring and MRV system, stakeholder consultation and engagement, registry development, and development of the benefit sharing and grievance redress mechanism. The total amount of funding available from these sources is **USD 6.65 million**, as described below. The total expected fixed costs up to 2010 are **USD 12.6 million**. While the first 3 years (2014-2016) of financing (USD 6.65 million) are covered by the existing funds, there is a deficit in the ensuing years.

Table 9: Program Development Financing Sources

SOURCE	AMOUNT	CONTEXT	TIME FRAME
FCPF Readiness	USD 5 million	To be released following satisfactory midterm evaluation	To be fully spent by end of 2016
	USD 0.8 million	Contracted to consultant (Indufor) for development of the national Forest Monitoring, RFL, MRV system.	Work to be completed by October, 2014.
	USD 0.2 million	Funding to support development of Grievance Redress Mechanism	To be spent by 2015.
Carbon Fund	USD 0.65 million	To support design of ERPD, released upon acceptance into CF ERP pipeline	To be spent by signing of ERPA (2016)
TOTAL	USD 6.65 million		

Operational and Implementation Costs

The program expects to leverage significant funding from the Government, the private sector and civil society towards implementation; however funds expected to be used towards implementation up to 2023 do not match, on average, the expected annual revenue or sources of finance. Thus, Ghana would likely seek to request pre-financing to be able to support implementation of the program.

Overall, the program could generate significant carbon revenue, in excess of USD 227 million between 2021-2025.

Table 10: Implementation Sources

SOURCE	AMOUNT	CONTEXT	TIME FRAME
FIP	USD 20 million	Program will leverage approximately 68% of FIP funds to Project 1	FIP ends in 2019
Private Sector	270 million	Conservatively estimated investment by private sector in sustainable cocoa production (e.g. certification). Based on USD 200 / MT certified cocoa, assuming that cost efficiency will improve as will private sector investment over time.	Up to 2023
Government of Ghana	10 million	Joint investment by Cocoa Board and FC. Further details to be determined.	Up to 2023
Dutch Government	USD 7 million	Cocoa Rehabilitation and Intensification Programme (CORIP).	2014-2018
Private Sector	USD 14	2:1 investment against Dutch CORIP funds	2014-2018
Carbon Fund	USD 50 million	Payment for ERs	Monitoring expected in 2018 and 2020
Unknown	USD 227	Payment for ERs	ERs generated from 2021-2025

8. Reference Level and Expected Emission Reductions

8.1 Approach for establishing the Reference Emission Level (REL) and/or Forest Reference Level (FRL)

Please briefly describe how the REL/FRL for the proposed ER Program has been or will be established. Describe how the approach for establishing the REL/FRL is consistent with UNFCCC guidance available to date and with the emerging Methodological Framework of the FCPF Carbon Fund, and with the (emerging) national REL/FRL (or with the national approach for establishing the REL/FRL).

Ghana is using the Methods and Guidance Document (MDG) developed by the Global Forest Observation Initiative (GFOI) as a key resource to design and operationalise the national Forest MRV. The MGD contains all the UNFCCC specific requirements and is a relevant reference. It was publicly released in January 2014.

The ER Program MRV system will be based on the framework of the national Forest MRV system. It will therefore integrate the tools and methods of the national system to ensure consistency between the

two. This ER program intends to fit seamlessly with the approach being developed at national level. Current project efforts may be used to test and calibrate the national system, ensuring agreement from bottom to top with the ultimate goal of all ER Program related data integrating into the national system.

The development of the Ghana Forest MRV system is taking the approach of preparing Standard Operating Procedures (SOPs), based on the MGD, for each element and aspect of the Forest MRV. To date a second draft of each SOP has been prepared to describe and set out requirements for:

1. Ghana MRV Design Document – as an overarching document.
2. Stratification of the forest resource
3. Acquisition of Activity Data
4. Analysis of activity data
5. Biomass estimation
6. Litter
7. Soil Organic Carbon
8. Deadwood
9. Fire
10. Harvested Wood Products
11. Identification of drivers of deforestation and forest degradation
12. Setting national reference emission levels
13. Calculation and reporting of uncertainty

The planning schedules to deliver these SOPs in the latter part of 2014, and they will be available to guide the ER Program in its work at that time.

The development by Ghana of a National Forest MRV system includes the development of a National Forest Reference Level (FRL). The National FRL is being developed using a stratified approach to recognize the broad eco-zones in Ghana and enable ER Programs to be 'nested' in the National FRL. The FRLs from the 9 eco-zones will be combined to report the National FRL.

The design of the National MRV system is in its early stages, having only commenced in December 2013. Key design decisions have not yet been agreed; however the main elements of the MRV system are to develop an MRV system consistent with IPCC Tier 2, Approach 3 by:

- Generating activity data from wall-to-wall land cover/land cover change analysis on a regular basis (every 2 – 4 years)
- Developing emissions estimates by combining the activity data with national specific eco-zone stratified ground data related to aboveground biomass and belowground biomass, and
- Where possible, collect reliable information from a range of National data sources as proxies to estimate forest degradation rates

The ER program REL will be based on an accounting area that is significant in scale, covering more than 5 million hectares and including five (5) ecozones within which the main cocoa growing areas of Ghana exist. This encompasses the entire area within which the program activities will take place and monitoring will be conducted as part of the MRV of the ER Program. Figure 11 provides a visual representation of the REL Program Reference Area.

The FRL approach follows the UNFCCC guidance as well as the Methodological Framework of the FCPF. Specifically the ER Program and the National FRL have the following design characteristics consistent with the FCPF Methodological Guidance:

- The reference period start and end dates follow the specifications of the Methodological Framework of the FCPF Carbon Fund, specifically Indicator 11.1. The end-date for the Reference Period is 2010, which is the most recent date prior to 2013 for which forest-cover data is available to enable IPCC Approach 3. The design of the Forest MRV system is recommending that additional, more recent years are included in the wall-to-wall activity data set, however at this stage this data is not available.
- The start-date for the Reference Period is 2000 which is 10 years before the end-date, noting that the end date will change to a more recent date as the data becomes available (Indicator 11.2).
- The Reference Level does not exceed the average annual historical emissions over the Reference Period (Indicator 13.1)
- Other sinks and sources such as degradation are determined using indirect methods such as proxies derived from landscape ecology and statistical data on timber harvesting and regrowth (Indicator 14.2).
- Emission factors or the methods to determine them are the same for Reference Level setting and for Monitoring. IPCC Tier 2 or higher methods are used to establish emission factors, and the uncertainty for each emission factor is documented (Indicator 14.3).
- To arrive at GHG equivalent (tCO₂e) results, the ER Program will use standardised allometric approaches that comply at least with Tier 2 level under the IPCC 2006 guidelines.

8.2 Expected REL/FRL for the ER Program

Please provide an estimate of the REL/FRL for the proposed ER Program area. Even a very preliminary estimate would be helpful.

The Program FRL has been developed in accordance with the National FRL design. As such the projected deforestation and projected reforestation rates for the next 20 years have been modelled using a 10 year historical approach covering 2000-2010. Figure 11 shows the area of the ERP from which the preliminary FRL has been established.

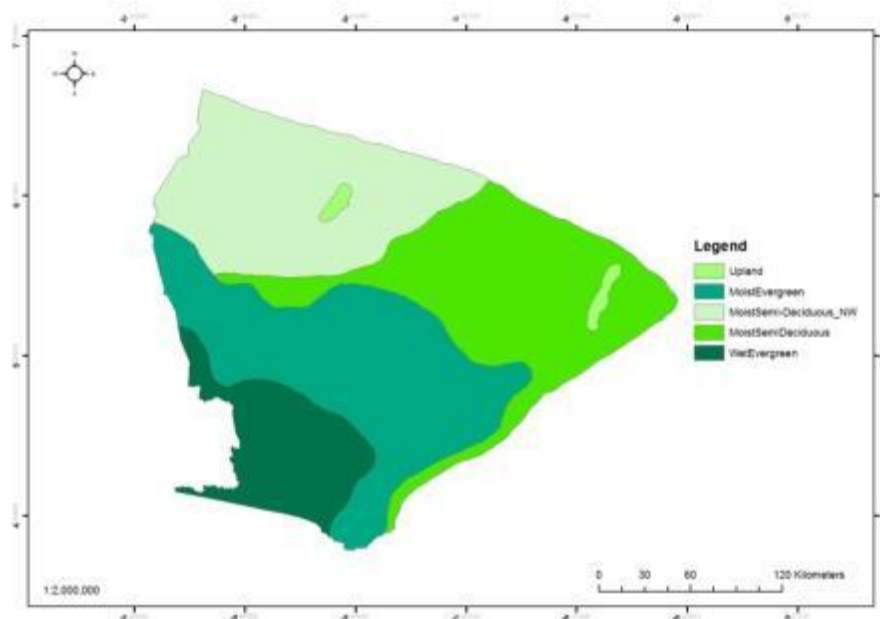


Figure 10: Emissions Reduction Program Reference Area

In the development of this ER-PIN, the FRL has been developed based upon a ten year historical average of deforestation—conversion of forest land to crop land. The historical rates of forest cover change were established from available wall-to-wall classified images for the years 2000 and 2010. Additional data points were not available to inform this preliminary FRL; however it is anticipated that during the Design Phase additional data points will be integrated, including a post-2010 assessment of deforestation.

During this time period land use change classified as deforestation to cropland (the classification of cocoa under low- / no-shade²², as well as other food crops) within the accounting area was determined to be 14%, equivalent to 1.4% per year. A reforestation rate has not been included in this FRL because it was found to be almost negligible, but this decision will be revisited during the Design Phase.

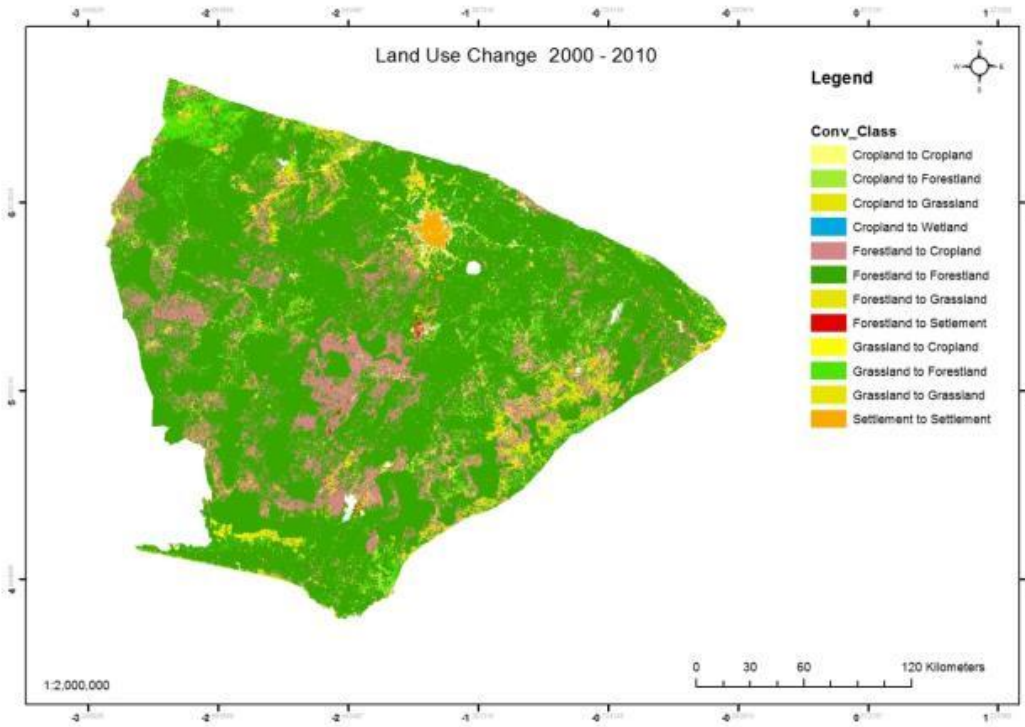


Figure 12: Land Use Change 2000-2010

Emissions from forest degradation have not yet been quantified, although it is estimated from canopy cover analysis in 2010 that activities on approximately 3.1 million hectares or 67% of the forest land within the ER Program area is subject to gradual carbon stock loss (Figure 12). This conforms to what Ghana’s Biomass Map also depicts. It is the objective of the MRV program to develop an approach using proxy data and some direct measurements to estimate emissions related to degradation and to include this in the National MRV system so that the program can also monitor degradation.

²² I.e. where the tree canopy cover is below the threshold of Ghana’s definition of forest

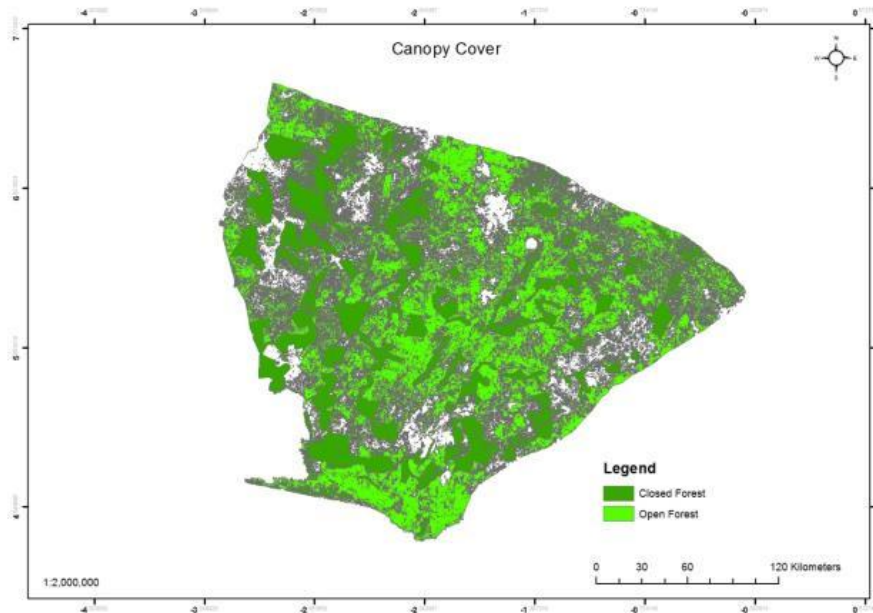


Figure 13: Distribution of Closed and Open Forest in the ERP Area (2010).

The Forest MRV system will include aboveground biomass pools, belowground biomass pools, and may include litter, dead wood and soil organic carbon, but a final decision on carbon pools will be made during the Design Phase. For the purposes of this ER-PIN, Ghana-specific data on aboveground biomass and belowground biomass have been divided into three (3) strata with varying carbon stock in the above ground biomass pool:

- Closed forest (Intact forest) 155 t C/ha (568 tCO₂e)
- Open forest (Degraded forest and shaded cocoa farms) 87 t C/ha (319 tCO₂e)
- Cropland (Deforested landscape containing no-shade cocoa or food crops) is 15 tC/ha (54 tCO₂e)

Below ground biomass was estimated using IPCC default values for tropical dry forest of $R = 0.28$.

For reforestation, national data on above-ground carbon increment have been adjusted to apply to shade cocoa stocking levels and multiplied by a UNFCCC default root-to-shoot ratio to estimate below-ground biomass.

It is possible that the ER program's FRL will change given that the limitations of the available historical land cover data set are only now being identified in the development of the Forest MRV system.

The preliminary estimate of the average deforestation rate (closed and open canopy forest land to cropland in the program area (1.4%/year) is equivalent to the loss of 28.5 MtCO₂e per year. .

The details of the FRL are presented in Table 11. Over the course of the next 20 years the preliminary FRL analysis suggests that the emissions from deforestation within the program area would be more than 541 MtCO₂e due to cocoa farming expansion and practices, as well as other drivers causing conversion of forests.

Due to an inability to account for degradation at this stage in the development of the National and Program FRL and the MRV system, emissions from forest degradation are not included in this

preliminary FRL analysis. However, forest degradation is anticipated to be, and continue to be, a significant source of emissions in the ER Program area. Due to the complexities and current limitations of detecting forest degradation in Ghana, this will be further investigated during the ER Program design stage and as the current National FRL is being developed.

Table 11: Forest Reference Level for Cocoa Forest REDD+ Program

Year	Total Area of Deforestation (ha)	Area of Deforestation in Closed Forest (ha)	Area of Deforestation in Open Forest (ha)	Emissions from Deforestation in Closed Forest (tCO ₂ e)	Emissions from Deforestation in Open Forest (tCO ₂ e)	Emissions from Deforestation in Closed & Open Forest	Residual Carbon Stock (t CO ₂ e)	Total Emissions from Deforestation (t CO ₂ e)
2016	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942
2017	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942
2018	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942
2019	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942
2020	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942
2021	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942
2022	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942
2023	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942
2024	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942
2025	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942
2026	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942
2027	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942
2028	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942
2029	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942
2030	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942
2031	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942
2032	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942
2033	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942
2034	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942
2035	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942
2035	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942
TOTAL EMISSIONS								598,2 MTCO₂e

9. Forest Monitoring System

9.1 Description of approach and capacity for measurement and reporting on ERs

Please describe the proposed approach for monitoring and reporting the emission reductions attributable to the proposed ER Program, including the capacity of the proposed ER Program entities to implement this approach.

The ER Program will monitor emissions by sources and removals by sinks included in the ER Program’s scope using the same methods or demonstrably equivalent methods to those used to set the Forest Reference Level, which are consistent with the National MRV system. The ER Program will not conduct the monitoring separately to the National Monitoring system but rather will work under the umbrella of the National MRV system operation.

It is intended that the ER Program will include the collection of ground data to support the Program as well as contributing to the National Forest MRV system. Specifically:

- The ER Program will assist in the collection of the relevant ground based data such as biomass inventory, management information and any other information necessary for the ground-truthing of remote sensing data within the ER Program Area.
- The design of these data collection programs will be consistent with the methods and procedures documented in the National Forest MRV system.
- This data will then be provided to the relevant organisations responsible for the National REDD+ reporting, National GHG Inventory reporting and reporting on associated policies and programs, of which the ER-Program report will be a subset.

In summary, the ER Program monitoring and reporting will be part of the National MRV system and will draw on the expertise of the institutions involved in the MRV program for capacity.

Ghana's technical and management capacity to implement this approach is being built, but still requires significant development. To date, the Resource Management Support Centre (RMSC) of the FC has received training and capacity building from the Japanese and German governments, and is likely to house the Forest Monitoring and MRV system. However, the program's proponents acknowledge that the CCU and the program's Steering Committee will need to build capacity in-house, so as to fully understand and be able to interface with the system.

9.2 Describe how the proposed ER Program monitoring system is consistent with the (emerging) national REDD+ monitoring system.

A monitoring, reporting and verification (MRV) system will be designed for tracking deforestation, degradation, forestation and enhancement of carbon stocks in the ER Program area. The ER Program MRV system will be a sub-system of the national MRV system as described in section 8.1.

The design of the MRV system builds upon the framework already established for determining the historical emissions in the FRL so the methods for estimating future emissions and removals during the monitoring period will be the same as those used for determining the historical emissions.

The MRV system will:

- Use satellite remote sensing data to provide wall-to-wall activity data, consistent with IPCC Approach 3 for annual to biannual estimates of deforestation, reforestation and forest degradation at the national and eco-zone scale. Estimates of deforestation, reforestation and forest degradation will include ground-truthing to derive statistically valid accuracy estimates;
- Collect ground data such as biomass inventory and management activities to apply to develop emissions and removals factors to apply to the activity data to calculate emissions reductions;
- Document methodologies and procedures used for annual deforestation, forest degradation and reforestation mapping and reporting;
- Report the results of the monitoring system and compare them against the Forest Reference Level to provide annual accounting of the net reduction in emissions from deforestation, reforestation and forest degradation;
- Document all procedures utilized in the monitoring and reporting components of the system, allowing complete transparency so as to be open for verification and peer review;

- Provide estimates of accuracy and uncertainties associated with deforestation, reforestation and forest degradation activities, as well as accuracy and uncertainties in carbon stocks and emission models with an understanding of the propagation of errors/uncertainties.

In addition, the following specific ER Program elements are required by Ghana’s National MRV system:

- An assessment of the anthropogenic and natural risk of reversals that might affect emission reductions during the Term of the Program and the potential risk of Reversals after the end of the Term of the Program

In summary, the ER-Program will enhance the National Forest MRV system through the provision of ground-based data on cocoa boundaries, management activities and biomass inventory. This data is currently not available or collected through any formal process and has been identified as a gap in the Forest MRV design related to a major post deforestation land use in Ghana. This additional ground-based data, which cannot be easily collected by available remote sensing technologies, will significantly enhance the accuracy of the National estimates and accounting given the scale of the proposed ER-Program.

9.3 Describe how the proposed ER Program monitoring system is consistent with UNFCCC guidance available to date and with the emerging Methodological Framework of the FCPF Carbon Fund.

The proposed ER Program monitoring system is consistent with the available guidance in the following aspects:

- Section 9.1 and 9.2 articulates how the Forest Monitoring System fits into the existing or emerging National Forest Monitoring System (FCPF Methodological Guidance Indicator 15.1).
- The ER Program will undertake an assessment of the anthropogenic and natural risk of Reversals that might affect emission reductions during the Term of the Program and will assess, as feasible, the potential risk of Reversals after the end of the Term of the Program (FCPF Methodological Guidance 18.1).
- The FCPF Methodology guidance states (Indicator 18.2) “The ER Program/Project will demonstrate how effective ER Program design and implementation will mitigate significant risks of Reversals identified in the assessment to the extent possible, and will address the sustainability of ERs, both during the Term of the ERPA, and beyond the Term of the ERPA (FCPF Methodological Guidance 18.2)

9.4 Describe any potential role of Indigenous Peoples or local communities in the design or implementation of the proposed ER Program monitoring system.

The ER Program monitoring system will follow the same design as the national forest monitoring system. Through the outreach and consultation process described in Section 6, local communities, represented by tradition leaders, opinion leaders, and representatives have been involved in the design of national forest monitoring system through the process of developing the Terms of Reference for the consulting contract. Through the ongoing outreach and consultation process for the National system as well as the ER Program, it is anticipated that local communities (through their representatives) will help to define opportunities to assist in the implementation of a robust monitoring system within the ER program area. In further development of the ER Program, local community involvement in the monitoring of the

drivers of deforestation and degradation, as well as activities implemented to address them is recognized as critical to the success of the proposed ER Program.

Examples of potential roles for local communities in the implementation of monitoring systems include: land classification (i.e. ground-truthing); monitoring expansion of cocoa plantations and/or tree planting; implementation of best management practices and/or adoption of certification systems; forest inventory collection. Capacity building needs associated with any of these roles will have to be addressed as part of the ER-Program design and implementation.

9.5 Describe if and how the proposed ER Program monitoring system would include information on multiple benefits like biodiversity conservation or enhanced rural livelihoods, governance indicators, etc.

The process to assess the likely impacts of Ghana’s REDD+ activities is described in the R-PP. The Strategic Environmental Assessment (SEA) procedures of Ghana’s Environmental Protection Agency (EPA) as well as the SESA requirement of the respective MDBs will be applied during the design process for the ER PIN. Importantly, this program will build on the SESA process and ESMF being developed under the FCPF REDD+ readiness process and FIP.

The ER Program development process will identify likely social impacts (land tenure issues, gender inclusion, social protection, community participation, cultural integrity etc.), environmental impacts, and assess co- benefits (poverty reduction, biodiversity conservation, ecosystem services etc.). The ER Program will outline the safeguard measures to be undertaken. Existing monitoring systems and related surveys that capture multiple benefits include: national forest inventory; multiple resource survey (MRS); and biodiversity indicators under the GEF-funded High Forest Biodiversity Conservation Project.

In further design of the ER Program, additional indicators to monitor impacts on livelihoods and governance will be considered.

10. Displacement

10.1 Description of the potential risks of both domestic and international displacement of emissions(leakage)

Please describe the potential risks of both domestic and international displacement of emissions from the proposed ER Program activities. Then also describe how the proposed ER Program activities will minimize the risk of domestic displacement and international displacement (if applicable), via the design of the proposed ER Program and the ER Program activities and the selection of locations. For sub-national programs, pay special attention to identifying domestic risks of displacement of emissions, the proposed ER Program activities to mitigate these risks, which otherwise would contribute to fewer net emission reductions generated by the proposed ER Program, and how these activities are consistent with the design features of the (emerging) national REDD+ strategy to address risks of displacement.

The risk of international displacement of emissions (leakage) is not considered to be a problem for this program given that Ghana does not have jurisdiction over other sovereign states. More practically, however, the boundaries between Ghana and Côte d’Ivoire (the only likely border for international leakage) are monitored closely, making it difficult for people to migrate seamlessly or to transfer products like timber or cocoa beans. Moreover, the factors driving deforestation in Ghana, including agricultural expansion, could not shift onto Ivorian soil without encountering significant barriers or consequences. Finally, Ghana is a member of the UNFCCC, and is closely watching decisions on international leakage and will conform as needed or as necessary.

The risk of domestic displacement of emissions as a result of the ER Program is also considered to be of low risk as the main drivers that the program is addressing, including expansion of cocoa farms, are not relevant outside of the program area, with the exception of mining. For example, the ecological limits of the HFZ and that of the agricultural products grown in the program area, including cocoa, conform with the program’s boundaries, thus expansion of cocoa, food crops, or other tree crops into tropical high forests outside the program area is highly unlikely. In addition, the forest definition limits the extent of REDD-able forest in Ghana such that expansion of mining, potentially driven outside of the program area as a result of the program, would not necessarily fall on “forested” land.

Overall, the selection of the program’s boundaries along the ecological gradient represents a key leakage avoidance strategy.

11. Reversals

11.1 Activities to address risks of reversal of greenhouse gas benefits

Please describe major risks of anthropogenic and non-anthropogenic reversals of greenhouse gas benefits (from e.g., fire, agriculture expansion into forest, changes in commodity prices). Also describe any activities or design features in the proposed ER Program that are incorporated to minimize and/or mitigate the anthropogenic risks or reversals, and how these activities are consistent with the design features of the (emerging) national REDD+ strategy to address risks of reversal.

The ER Program acknowledges that given the size and scale of this program, there are a number of inherent reversal risks at play. The most significant risks include:

- Increasing scale of illegal mining;
- Potential commodity price volatility—price of cocoa, oil palm, rubber, etc.
- Political instability.

In terms of institutional structure, the Minerals Commission will be a key player in this program to help reduce the risk from mining. It is also assumed that landscape planning will address some of the socio-cultural issues driving illegal mining. However, the program doubts whether it can fully compensate the opportunity cost associated with gold mining at current prices.

Ghana’s Cocoa Board regulates the price of cocoa in Ghana, which therefore moderates potential future price volatility affecting farmers’ decision making. However, it will be important to make sure that the appropriate resources are in place to foster long-term tree-crop farming systems in appropriate lands.

In terms of political instability, the proponents believe that the risk is low. Ghana has shown through various elections, and court cases in which the election was contested that its political parties, leaders, and people are committed to democracy and stability.

The program also views the incorporation of the private sector as a key strategy to reduce the risk of reversals.

12. Expected emission reductions

12.1 Expected Emission Reductions (ERs)

Please provide an estimate of the expected impact of the proposed ER Program on the REL/FRL (as percentage of emissions to be reduced). Based on this percentage, also estimate the volume of ERs, as expressed in tonnes of CO₂e, that would be generated by the ER Program:

- a) up to December 31, 2020 (currently the end date of the FCPF)*
- b) for a period of 10 years; and*
- c) the lifetime of the proposed ER Program, if it is proposed to continue longer than 10 years.*

ER Scenario and Estimated ERs

Table 12 presents the anticipated ERs from the Cocoa Forest REDD+ Program. The ERs were calculated as follows:

Anticipatd ERs = [((Area of Deforestation by Forest Type x Emission Factor by Forest Type) – Residual Carbon Stock) x ER Program effectiveness factor]

The ER Program is being designed to cover a period of 20 years, while recognizing the 2020 limitation on the Carbon Fund. The estimate of total expected emissions reductions, based on a conservative estimate of successfully reducing the rate of deforestation by 45% over the lifetime of the program, less a 15% risk buffer, and not including any reduction in forest degradation or increase in reforestation over the 20 year lifetime, is 216,7 MtCO₂e. Over the course of the ER Program design phase, the estimate of total expected emissions reductions will be refined based on more detailed implementation plans including the broadening of the scope of activities.

During the first 5 years of the program (2016-2020), the total estimated emissions reductions would come to an emission reduction of 18,5 MtCO₂e. While this volume of emissions reductions may be less than what the Carbon Fund considers as ‘significant’ relative to national level actions, the Ghana proponents feel that implementing an inter-governmental, public-private sector ER Program is highly ambition and will take some time to operate efficiently. In addition, affecting broad based changes in how people use the land and manage trees is not something that typically happens quickly. Therefore, the program proponents feel strongly that estimates of program effectiveness should be conservative during the initial phase of the program.

Table 12: Anticipated Emission Reductions

Year	Total Area of Deforestation (ha)	Area of Deforestation in Closed Forest (ha)	Area of Deforestation in Open Forest (ha)	Emissions from Deforestation in Closed Forest (tCO2e)	Emissions from Deforestation in Open Forest	Emissions from Deforestation in Closed & Open Forest	Residual Carbon Stock (t CO2e)	Total Emissions from Deforestation (t CO2e)	Program Effectiveness	Anticipated ERs (MtCO2e)
2016	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942	0.1	1,4
2017	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942	0.1	2,8
2018	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942	0.1	2,8
2019	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942	0.2	5,7
2020	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942	0.2	5,7
2021	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942	0.2	5,7
2022	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942	0.3	8,5
2023	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942	0.3	8,5
2024	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942	0.4	11,4
2025	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942	0.4	11,4
2026	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942	0.4	11,4
2027	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942	0.5	14,2
2028	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942	0.5	14,2
2029	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942	0.6	17,1
2030	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942	0.6	17,1
2031	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942	0.6	17,1
2032	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942	0.7	19,9
2033	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942	0.7	19,9
2034	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942	0.7	19,9
2035	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942	0.7	19,10
2036	82,168	26,932	55,236	15,306,408	17,640,520	32,946,928	4,458,986	28,487,942	0.7	19,11
								Average Effectiveness	0.45	255,0
								Buffer Allocation (assuming 15% withheld)		38,2
								Net Emission Reductions		216,7

12.2 Volume proposed for the FCPF Carbon Fund

Please explain the portion of the expected ERs that would be offered to the Carbon Fund, and if other carbon finance providers or buyers have been identified to date, the portions of the expected ERs that would be offered to them.

Due to the slower initial rate of accumulation of ER results, portioning among buyers is expected to occur over the lifetime of the Program, as well as between buyers. As a result, Ghana envisions the Carbon Fund purchasing or holding an option on a large proportion of ERs generated in the 5 years up to 2020, while other buyers will be sought to commit to purchases beyond 2020. Ghana recognizes that the volume of ERs proposed to the Carbon Fund may be smaller than what the Participants are generally seeking. However, an ERPA under the Carbon Fund, with a commitment to purchase a large share of initial ERs, would be expected to catalyze further commitments from other buyers and promote the success and sustainability of Ghana's ER Program.

13. Preliminary assessment of the proposed ER Program in the context of the national Strategic Environmental and Social Assessment (SESA) and the Environmental and Social Management Framework (ESMF)²³

13.1 Progress on SESA/ESMF

Please describe the country's progress in the implementation of SESA and the development of the ESMF, and their contribution or relationship to the proposed ER Program.

The implementation of the SESA framework and the development of the ESMF are integral components of Ghana's FCPF REDD+ readiness process. The ESMF will consequently form a vital component of all REDD+ related activities in the country including the proposed ER program. The following milestones have been attained in the development of SESA/ ESMF during Ghana's REDD+ readiness process.

- i. *Formation of a SESA sub-working group:* A SESA sub-working group has been set up with members drawn from key institutions including the Forestry Commission, Ghana's Environmental Protection Agency (EPA), Minerals Commission, Civil Society and Traditional Authorities. The head of the Strategic Environmental Assessment (SEA) Unit at the EPA chairs the team. The sub-working group has a mandate to ensure the incorporation of SESA process, outputs/outcomes into the proposed ER Program.
- ii. *Selection of SESA Consultant:* The REDD+ Secretariat of Ghana has engaged SAL consult to lead the preparation of the SESA/ESMF for Ghana's REDD+ mechanism. The contract was awarded in October 2013 and Ghana's ESMF is expected to be ready by October, 2014. The SESA/ ESMF consultancy is being undertaken in close collaboration with the SESA sub-working group and other consulting firms who have been engaged under Ghana's REDD+ readiness process to ensure that there is consistency and harmonization of activities in Ghana's REDD+ readiness process. The other relevant REDD+ consultancy assignments are:
 - Development of REDD+ strategy options;
 - Development of measurement, reporting and verification system;

²³ The SESA is the assessment process to be used in FCPF REDD+ countries during R-PP implementation and REDD+ readiness preparation. The ESMF is an output of SESA that provides a framework to examine the issues and impacts associated with projects, activities, and/or policies/regulations that may occur in the future in connection with the implementation of the national REDD+ strategy but that are not known at the present time.

- Benefit sharing; and
 - Dispute resolution mechanism.
- iii. *Update of consultant's work:* The inception report of SAL consult has been submitted and validated by the SESA sub-working group and the REDD+ secretariat. SAL consult has also undertaken a stakeholder gap analysis and has developed an updated list of stakeholders who will be consulted during development of Ghana's ESMF. Presently, the consultants are undertaking SESA on the key REDD+ strategies that were identified in Ghana's R-PP.

Also, Ghana's REDD+ secretariat, in close collaboration, with IUCN, women's organizations, gender experts, national level policy makers and other key stakeholders, has developed a road map to mainstream gender considerations into Ghana's REDD+ process. The road map provides a coherent plan for the active involvement of women and women's groups in the design and implementation of all REDD+ activities in Ghana.

13.2 Incorporation of SESA outputs and/or outcomes into the proposed ER Program

Based on the progress outlined in 13.1, please describe how the proposed ER Program is expected to make use of the outputs and/or outcomes of the SESA process. Provide an analysis of the ways in which activities planned under the proposed ER Program will rely on the measures and procedures included or to be included in the ESMF. Are there likely to be any gaps or issues regarding the compliance of the proposed ER Program activities with applicable safeguard standards, including the UNFCCC safeguards?

Using a participatory approach (local community engagement, meetings with district level institutions, and organizing regional and national stakeholder workshops), the SESA consultant will facilitate the identification and prioritization of key environmental and social issues, and guide the stakeholders to develop risks and opportunities matrices for the REDD+ strategy options.

The envisaged SESA outputs will contribute to the ER Program in two ways. First, it will help to refine the REDD+ strategy options by prioritizing the options in terms of their environmental and social costs and benefits and also by outlining recommendations to enhance socially friendly land use and forest management activities. Second, the process will lead to the development of an Environmental and Social Management Framework that will outline the procedures to be followed for managing potential environmental and social impacts of specific policies, actions and projects during the implementation of the REDD+ strategy options that are finally selected.

The output of the SESA consultancy will be integrated into Ghana's overall national REDD+ framework and will guide the implementation of all REDD+ interventions in the country including the proposed ER program.

Additionally, the ER program will also make use of Ghana's Road Map to mainstreaming gender considerations in the REDD+ process to ensure that issues of gender inequality and lack of inclusion of women are avoided in the planning and implementation of activities under the ER program.

13.3 Feedback and grievance redress mechanisms

Please describe the mechanism(s) that are or will be put in place to resolve any disputes regarding the proposed ER Program.

In line with on-going readiness activities, the REDD+ Secretariat has signed a contract with a prominent Ghanaian lawyer and expert on REDD+ and UNFCCC proceedings to help the country to develop a national mechanism to resolve any disputes arising from REDD+ in Ghana. This work will eventually result in preparation of an options paper on dispute resolution mechanism and social accountability for Ghana taking into consideration legal and policy framework for REDD+. The options analysis will include analysis and recommendations for grievance redress mechanism at various levels for grievances related to rules for benefit sharing, resource and tenure rights, implementation of territorial planning, etc. Scope of work includes the following:

- Review of existing legal and policy framework, formal and informal dispute resolution mechanism and assess their suitability for resolving REDD+ related disputes, keeping in view the nature of issues that are likely to come up in REDD+ context
- Assess the level of organization at all levels particularly at sub-national and local community level in consideration of how dispute resolution schemes would fit into existing institutional structures including the traditional authorities.
- Key governance risks and recommendations for gaps to be addressed for a functional dispute resolution system, including establishing transparent and accountable systems for grievance sorting and processing, acknowledgement and follow-up, grievance verification, investigation and action, grievance monitoring and evaluation and feedback/communication;
- Propose structures such that conflicts related to REDD+ can be addressed at the lowest or most localized level appropriate.
- Use principles of subsidiarity to establish conflict resolution structures.
- Risks of inter- and intra-community conflicts arising from REDD+ activities/implementation.

The stakeholders being consulted as part of this ongoing work include: Forest Watch Ghana, Nature Conservation Research Centre, IUCN, Ministry of Lands and Natural Resources, Forestry Commission, National Coalition on Mining, Ghana Timber and Millers Organisation, Ghana Timber Association, and eminent in-country experts and traditional leaders with experience on governance and land use conflicts.

The draft report is expected to be completed by October, 2014, and will be followed by consultations with key stakeholders groups. It is intended that Ghana's sub-national REDD+ programs, including the Cocoa Forest REDD+ Program will build on the proposed local mechanisms in the options analysis. In the case of this ER-Program the Grievance Redress Mechanism will be adapted to the local context of the HFZ and cocoa landscape platform, and be integrated into the design of the ER-Program to resolve disputes that arise from the program.

In the context of this program, the possibility to strengthen the capacity of CREMAs as the first point of contact for GRM at the local level for farmers and communities will be considered. At the sub national level, and national level, the technical human and financial capacity of institutions/ officials and their means and powers to investigate grievances will be strengthened during the readiness preparation design. It is also anticipated that the Cocoa Forest REDD+ Program will provide the first opportunity to test the grievance redress mechanism.

As co-proponents, the FC and the Cocoa Board acknowledge that they will have to establish a protocol for resolving disputes or policy differences, should they arise.

14. Land and resource tenure

14.1 Rights to territories and land, and mitigation benefits

Please describe the land use and land tenure context of the proposed ER Program, and if and how rights to territories and land and mitigation benefits from REDD+ are reflected in traditional practices and codified in legal and/or regulatory frameworks.

Ghana's land and tree tenure policy framework can be complex, as it incorporates customary and statutory systems, as well as varied management rights regimes. Despite these complexities, land tenure in the program is quite clear. Off-reserve lands are "owned" by the Traditional Authorities while Forest Reserves and other protected areas fall under the jurisdiction of the government. Numerous studies and assessments have been conducted on land and tree tenure in Ghana, including the USAID's assessment of property rights and resource governance. To date, there are no known ongoing conflicts of significant scale in the proposed program area.

Ghana's 1992 Constitution de-coupled land and natural resources in the country, and as a result, the ownership of land and the management or user-rights to the associated resources do not necessarily align. The 1992 Constitution also recognizes traditional titles (allodial title) and tenure systems, and refers to the traditional bodies (Chieftaincies) responsible for the land and resources as either "The Stool" or "The Skin".

Ghana's Constitution makes it clear that there are two types of land in Ghana—Public Land and Private Land. Public Land is vested in the President on behalf of and in trust for the people of Ghana. The Lands Commission is the arm of government that has the management, regulatory and user rights to Public Lands. Public Lands are not common in the program landscape and are not relevant from the standpoint of addressing drivers of deforestation. Private Land does not rest with the government, but belongs to an individual or entity (Stool, Family). The majority of Private Land in the program area is classified as "Stool" or "Skin" Land, and is vested in the Stool (Chieftancy) on behalf of and in trust for the subjects of the Stool and in accordance with customary law and usage. On Stool Lands, a pluralistic legal system is in place in which customary and statutory systems governing land and trees prevails²⁴. Bundles of rights or multiple usufruct arrangements exist, such that within Stool lands there can be lands designated for family groups (Family Land) which is managed and passed down over generations, and the rights to this land is clear.

According to Ghana's Constitution, however, the management rights to many of the most valuable natural resources (e.g. Timber, Minerals) are legally de-coupled from the land in which they are found. According to article 268(1), the Constitution vests in Parliament the responsibility of ratifying any arrangement involving the allocation or exploitation of mineral, water or natural resources. This ratification process can be simplified if Parliament designates a commission to approve resource use or extraction (Article 286 (2)). Timber is one resource based on the Parliamentary exemption that is now

²⁴ USAID, no date. USAID Country Profile. Property Rights and Resource Governance. Ghana. <http://usaidlandtenure.net/ghana>

managed by the Forestry Commission. Consequently, landowners and land users do not have economic rights to naturally regenerated trees, but there is nothing in the law that prohibits them from felling trees for non-economic purposes, like clearing land for agriculture.

In line with the decoupling of land and resources, the Stools and Skins are still recognized as the owners of land designated as Forest Reserves (or other similar designations), but the management rights to the forests within the reserves is held by the State on behalf of the traditional landowners and is therefore managed by the Forestry Commission. This has resulted in the broad classification of two types of land management regimes across the program area—the “on-reserve” and the “off-reserve”. Forests and trees found inside of forest reserves and protected areas are considered the “on-reserve” and the Forestry Commission has the sole authority to manage and authorize exploitation within these areas, and agriculture is prohibited.

Lands located outside of forest reserves and protected areas are called the “off-reserve”. Trees and forests located off-reserve symbolically belong to the land owner (Stool or individual), but exploitation for economic gain requires a permit from the Forestry Commission. Legal logging in the off-reserve is common. Traditionally, multiple management and user arrangements can prevail. For example, under customary tenure arrangements, Stool or Family land can be leased or rented to migrants or fellow community members for specific types of management/use. These contracts are most frequently witness or oral agreements. Under both scenarios, the over-arching land owner (Stool) is entitled to a proportion of the economic benefits that result from harvesting timber, but individual resource users are not part of the benefit sharing arrangement.

Within the Cocoa Forest REDD+ program area, the majority of land is private land that belongs to the various Stools, but approximately a third of the land is classified as a forest reserve (or other type of protected area). Thus, the distinction between management and user rights on-reserve and the off-reserve is important.

In an effort to address the disincentives to sustainable management that result from individuals and communities lacking economic rights to the forest resources in their farms and lands, the Community Resource Management Area (CREMA) was conceived as a tenure mechanism that grants natural resource governance and management rights to communities within the accepted boundaries of the CREMA and in line with each CREMA’s constitution and by-laws.

Tenure with respect to planted trees in Ghana is different from that of naturally occurring trees. The 2002 Timber Resources Management Act (Act 617) gives the individuals or entities responsible for planted trees or trees grown in plantations the legal rights to the trees.

At present, there is no legislation in Ghana which pertains directly to carbon, meaning that ownership rights or exploitation/transaction rights cannot be stated with any level of certainty and this presents a risk for REDD+. The need to address carbon rights has been highlighted in the 2012 Forest and Wildlife Policy and is being formally explored by the MLNR, civil society partners engaged in REDD+ activities, as well as the consultants responsible for helping Ghana to articulate a benefit sharing system as part of the readiness process. As a result, considerable thought and discussion has already gone into this issue. At this stage, of key importance is deciding how carbon will be characterized; either as an ecosystem service of storage or sequestration or as a natural resource, and then outlining the associated ownership and management / user-rights.

Until carbon is fully clarified, the land owners (Stools) must be fully involved in and supportive of REDD+ activities, including free, prior and informed consent (FPIC). Practically, the CREMA mechanism also provides an important way forward until carbon rights are fully clarified. Because the CREMA devolves management authority and economic rights to the CREMA communities (as represented by a Management Board), the carbon rights are, by default, transferred to the CREMA too.

15. Benefit Sharing

15.1 Description of envisioned benefit-sharing arrangement for the proposed ER Program.

Please describe the benefit-sharing arrangements that are envisioned to be used for this proposed ER Program.

In line with the REDD+ readiness process, Ghana is in the process of designing a benefit sharing mechanism that is effective in reducing emissions, efficient in maximizing benefits, and equitable in the sharing benefits that accrue. Today, in Ghana, benefit sharing is one of the major issues in the policy discourse, and there are conflicting views and opinions about who has the right to share in benefits and what constitutes the equitable or fair distribution of benefits. Within the forestry and natural resource management sector, several benefit sharing mechanisms exist, namely, natural resources (timber and mineral resources) revenue sharing as stipulated by the 1992 Constitution, benefit sharing under the Modified Taungya System, benefit sharing in Timber Tree Plantations, Share-Cropping (“*Abunu*” and “*Abusa*”), and benefit sharing under the CREMA mechanism.

Many of the existing benefit sharing schemes are widely perceived to be inadequate to address the benefit sharing needs for REDD+. For instance the natural resources (timber and mineral resources) revenue sharing is deemed inequitable as it alienates farmers from the benefits shared even though they are *de facto* managers of timber resources outside forest reserves.

Others system, like CREMA, are seen to offer many important elements of what a mechanism would require at the community level. At its core, the CREMA represents a profound policy shift by permitting communities, land owners and land users an opportunity to govern and manage forest and wildlife resources within the boundaries of the CREMA, and to benefit financially or in-kind. With the emergence of REDD+, CREMAs have begun to ask if they could develop future carbon revenues. No CREMA has realized emissions reductions revenue yet, but a number are now exploring this possibility. Thus, the CREMA concept has evolved from a mechanism that was specifically focused on wildlife management and habitat protection to one which is being adapted to manage forest and tree resources for climate mitigation and livelihood objectives. The CREMA is particularly attuned to supporting communities to structure their own localized benefit sharing arrangements, which are then written into each CREMA’s constitution, and supported by local by-laws and a management board. As such, CREMA benefit sharing structures are relevant to local people and reflect their ideas of fairness.

In addition to existing mechanisms for benefit sharing, IUCN-Ghana has also proposed three benefit sharing frameworks after extensive consultation with key stakeholders in their pro-poor REDD+ project landscape in the Western Region. These proposed frameworks include the following:

Individual Payment Scheme: Under the Individual Payment scheme, individuals would be paid for the projects they undertake under the REDD-plus programme based on performance. The arguments for this form of benefit sharing stems from the fact that individuals involved in REDD+ activities will receive direct benefits for the work done.

Community Managed Revolving Credit Scheme: Under the community managed revolving credit scheme, revenues accruing from REDD+ activities will be put in a fund and managed by trustees decided on by the communities themselves. It is argued that the scheme has the potential to ensure the welfare of the wider community, and engender wider support and ownership for projects/activities executed by communities

Hybrid Scheme: Under the hybrid scheme, a higher percentage of revenue generated from REDD+ activities is paid to individuals and a smaller percentage to the revolving fund for the community. It is argued that the scheme takes into consideration the fact that there are different forms of land ownership in Ghana. Lands could be either communally owned, family owned or individually owned. Therefore, the best approach to benefit sharing would be to ensure secured benefits to individuals who contribute to REDD activities, whilst recognizing the role of the wider community. An independent monitoring and auditing committee responsible for monitoring and auditing of management, disbursement and use of the funds should be established to ensure accountability and transparency. While a full benefit sharing architecture and system have yet to be developed and shared with stakeholders for their input, the REDD+ Secretariat is currently working with FORIG to recommend what a benefit sharing mechanism for REDD+ should look like and contain. The steps that will be completed prior to submission of the R-Package include:

Step 1. Conduct an in-depth literature review and assessment of experiences in benefit sharing. In particular this will focus on:

- Mapping the institutional and legal framework for REDD+ implementation and recommendations.
- Exploring the linkages between carbon rights and land and tree tenure, as well as mechanisms that can help to facilitate the allocation of derived rights and sharing benefits with tenant farmers and share croppers.
- Reviewing the current benefit sharing and incentive programs promoting forest management and conservation in Ghana .
- Learning lessons from other sectors, most particularly from the logging sector, the community based-conservation arena (CREMA), the voluntary partnership agreement (VPA) process, and mining sector and/or others.

Step 2. Develop options on REDD+ benefit sharing mechanisms and social accountability structures for Ghana, taking into consideration the analysis conducted under Step 1, and presenting an overall guidance on how to establish such benefit sharing arrangements. These recommendations will consider the following key issues:

- Links to the proposed REDD+ Strategy Options for Ghana;
- Risks of elite capture at the local level;
- The level of organization of communities and the administration at local level, and fit with existing institutional structures, specifically the traditional authorities;
- Risks of inter- and intra-community conflicts arising from REDD+ benefits;
- The experience with local development funds;
- Key governance risks
- Issues of conflict resolution and links to grievance redress mechanism
 - Propose structures, like the CREMA, to enable conflicts related to REDD+ to be addressed at the lowest or most localized level appropriate.
 - Use principle of subsidiarity to establish conflict resolution structures

Step 3: Undertake consultations on potential benefit sharing options with key stakeholders and prepare final report, including an Annex, which presents a proposal for a national benefit sharing architecture for REDD+. The proposal will place emphasis on risks and make suggestions on how the Government can move forward in creating a national framework for sharing benefits from REDD+ regardless of the source of REDD+ financing. It will also suggest locally-appropriate types of payments/compensation for REDD programs and projects.

Overall, the program recognizes that balancing incentives among the land owners and tenant farmers who lease their land (though often over very long time frames) could be challenging and will need practical examination and experimentation.

15.2 Link between the envisioned benefit-sharing arrangement and the activities in the proposed ER Program.

Please explain how these benefit-sharing arrangements would support the activities identified in section 5.3 to address the drivers of deforestation and forest degradation. Identify, if possible at this stage, potential issues or constraints that may emerge in development of the ER Program that could need additional progress in order to effectively implement the benefit-sharing mechanisms.

Given that Ghana has yet to formally articulate a benefit sharing system, it is still premature to explain how elements of the system would link to the activities listed in section 5.3. At this stage, it is thought that stronger recognition of land tenure claims or reforms to tree tenure will be important in enhancing security to natural resources and claims to subsequent benefits. It is also very clear that benefits will need to be shared in a manner which incentivizes new types of land use and tree management decision processes. Obviously, the benefit sharing arrangement must provide incentives to landowners to actively participate in activities that reduce deforestation and forest degradation.

As a mechanism that already has a benefit sharing process and structure in place, the CREMA mechanism clearly links to the key activity of landscape planning. The CREMA facilitates a community-based process of land-use planning and decision-making about how land is used in terms of rights, roles, responsibilities, and benefits. It also enables localized monitoring of performance.

It is still too early to identify constraints or challenges associated with the benefits sharing system as it has yet to be completed. This will be a key consideration in the design phase.

15.3 Progress on benefit-sharing arrangements

Describe the progress made thus far in the discussion and preparation of the benefit-sharing arrangements, and who has been participating in this process.

FORIG has made progress on Step 1, including drafting an institutional framework for benefit sharing implementation, mapping the linkage between carbon rights and land and tree tenure, and identification of potential relevant beneficiaries.

Mapping the legal framework and establishing links to the emerging conflict resolution pathways are yet to be completed. Work is still underway to draft a proposed benefit sharing mechanism. Field work will begin soon to complement these activities. The first draft of the full report is expected to be completed by mid-April.

Participant stakeholders in the process are: FORIG, FC, representatives of traditional authorities, district assemblies, local community members, selected civil society groups, CREMAs, and REDD+ pilots.

16. Non Carbon Benefits

16.1 Expected social and environmental benefits

Please describe the environmental and social benefits, other than emission reductions, that the proposed ER Program is planning to achieve; and any other ways in which the ER Program would contribute to broader sustainable development.

Though this program is driven by a desire to reduce deforestation and degradation in the Cocoa Forest Mosaic Landscape, it equally aims to generate substantial non-carbon benefits. In fact, the long-term success of the program rests upon its ability to catalyze economic, ecological, and socio-political benefits on a scale equal to that of the carbon benefits. sustainability of supply of cocoa beans, and biodiversity.

- **Farmers' livelihood:** One of the main pillars of the program is to substantially increase cocoa farmer incomes by doubling the average yield per ha, and in doing so double income (assuming the global price remain relatively stable). Doubling yield per hectare, assuming an average production of 400 kg/ha, would result in an **additional annual income of \$650/ha**. Over a 10 year time frame, if the program enabled 20,000 farmers per year to double their yields and then maintain the yield increase over time, then it would result in more than **USD 4.3 billion in additional revenue**. It is anticipated that this surpasses any potential individual carbon benefit.
- **Tenure & Rights:** The ER Program, in concert with the FIP, creates the needed momentum and political will to catalyze tree tenure reforms that would give farmers and forest users the right to benefit economically from trees in their farms, whether planted or naturally regenerated (and thus nurtured). It is expected that this will change a key factor driving farmers' management of trees on farm, result in both financial (timber, NTFPs) and non-financial (ecosystem services). It is also anticipated that through mapping of farms and implementation of land-use planning land tenure will be strengthened.
- **Sustainability of Supply:** Cocoa production in Ghana is threatened by climate change (changes in rainfall and temperature), degraded soils, and the loss of critical ecosystem services. The program will facilitate a shift from the unsustainable BAU scenario, to a climate-smart cocoa production system and landscape that will greatly enhance cocoa's resilience and adaptive capacity. If the program is able to achieve its goals, then Ghana could conceivably market cocoa beans produced within the program landscape as a new types of commodity, or a under a new standard—REDD+ Cocoa.
- **Biodiversity:** Ghana sits within the Guinean Forest Biodiversity Hotspot and is home to many globally important threatened and endangered species. In reducing deforestation and degradation, the program will help to maintain and conserve the biodiversity that is found within the cocoa-forest landscape.

16.2 Diversity and learning value

Please describe the innovative features of the proposed ER Program and what learning value the proposed ER Program would bring to the FCPF Carbon Fund.

Ghana's Cocoa Forest REDD+ Program is the first REDD+ program in the world to focus on an ecological landscape that is defined by the production of a globally important agricultural commodity—cocoa—

which is responsible for significant emissions in the landscape. The program is therefore unique and would bring diversity to the portfolio of ER programs under the CF. It would also provide the FCPF with the opportunity to learn from Ghana's experience in trying to establish a multi-institutional, public-private sector, programmatic REDD+ approach to reducing degradation and deforestation from agricultural expansion.

Given that West Africa produces 70% of the world's cocoa beans, this program would also bring tremendous learning value to other FCPF partner countries that produce cocoa, or rely upon tree crop commodities. One example is Côte d'Ivoire, which is the world's number one produce of cocoa beans, has a similar forest agriculture mosaic landscape, and is struggling with some of the same drivers and agents of deforestation. The program is also relevant and would provide learning value with respect to other on-going initiatives like the RT-REDD and RSPO processes.

Nationally, this program provides a crucial opportunity for Ghana to test its REDD+ systems and to learn about how to tackle drivers of deforestation at a sub-national scale, before moving to implement REDD+ across other eco-zones, leading up to national implementation.

17. Progress on registries

17.1 National registry

Please include a short description of the relationship of the proposed ER Program to national REDD+ activity management arrangements, and if the proposed ER Program will be part of any system to track REDD+ or other emissions reduction activities (e.g., a REDD+ registry).

In January 2012, Ghana's National REDD+ Secretariat created a technical working group to advise the development of a REDD+ registry for the country. As part of its deliberative process, the working group delegated a core team to draft a concept note about REDD+ registries and to make a set of recommendations for Ghana which would serve to guide the REDD+ Secretariat and National REDD+ Working Group on the development of such a registry. This process resulted in the publication of the document, "Ghana's REDD+ Registry: Pathways to Development". The document explains the concept of a REDD+ registry and outlines the major decision points in developing a registry. It makes Ghana-specific recommendations based on the country's geographic and political characteristics, capacity, financial resources, and level of REDD+ readiness. These recommendations focus on how Ghana could manage and structure a REDD+ registry, the necessary operational platform and software that would best fit Ghana's conditions, the required scale of the registry and links to other registries and accounting processes, and how to finance the registry.

In the absence of an operational REDD+ registry, the REDD+ Secretariat maintains a list of REDD+ initiatives, projects, and proponents based on a national call to register REDD+ activities with the Secretariat. The Secretariat also hosts and implements an annual national REDD+ finance tracking exercise that provides specific data and information about donors, recipients, financial commitments, financial disbursement, and associated activities linked to REDD+ in the country. This exercise covers information from 2009-2012. Collection of 2013 data is expected to start in the second quarter of 2014.

Ghana plans to establish a national registry that is designed to facilitate nesting and support sub-national accounting. At present, there are no funds to move Ghana's registry forward, but in line with this ER Program, it is anticipated that registry development will begin as part of the design phase.

The REDD+ Secretariat is only aware of one VCS project within the program landscape, a rubber plantation project by Ghana Rubber Estates Limited (GREL) with funding from the French Government that is expected to result in emissions reductions. Should this happen prior to the start of the program, then these emissions reductions would be monitored and removed from the program's accounting of emissions reductions.

18. List of acronyms used in the ER-PIN

Please include an explanation of any institutional or other acronyms used. Add rows as necessary.

Acronym	Meaning
AfDB	African Development Bank
BCB	Building Carbon Bridges
C&P	Consultation and Participation
CCU	Climate Change Unit
CERSGIS	Centre for Remote Sensing and Geographic Information Systems
CF	Carbon Fund
COCOBOD	Ghana Cocoa Board
CODAPEC	Cocoa Disease and Pest Control
CREMAs	Community Resource Management Areas
CRIG	Cocoa Research Institute of Ghana
CSIR	Council for Scientific and Industrial Research
CSSVD	Cocoa Swollen Shoot Virus Disease
DT	Drafting Team
ENRAC	Environment and Natural Resource Advisory Council
EPA	Environmental Protection Agency
ERs	Emission Reductions
ERP	Emission Reductions Program
ERPA	Emission Reductions Payment Agreement
ERPD	Emission Reductions Program Document
ER-PIN	Emission Reductions - Program Idea Note
ESMF	Environmental and Social Management Framework
FAO	Food and Agriculture Organisation
FC	Forestry Commission
FCPF	Forest Carbon Partnership Facility
FIP	Forest Investment Program
ERP	Emission Reductions Program
FLEGT	Forest Law Enforcement, Governance and Trade
FMT	Facility Management Team
FRIG	Forestry Research Institute of Ghana
FPP	Forest Preservation Programme
FRL	Forest Reference Level
GoG	Government of Ghana
GCP	Ghana Cocoa Platform
GEF	Global Environment Facility
GIS	Geographic Information Systems
GIZ	German International Cooperation
GREL	Ghana Rubber Estate Limited
HFZ	High Forest Zone
HTP	High Tech Program
IBRD	International Bank for Reconstruction and Development

IITA	International Institute of Tropical Agriculture
IFC	International Financial Cooperation
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for the Conservation of Nature
IUCN-NL	International Union for the Conservation of Nature - Netherlands
JNR	Jurisdictional Nested REDD+
LBC	Licensed Buying Company
LULUCF	Land Use Land Use Change and Forestry
MDBs	Multilateral Development Banks
MESTI	Ministry of Environment, Science, Technology and Innovation
MLNR	Ministry of Lands and Natural Resources
MoF	Ministry of Finance
MoFA	Ministry of Food and Agriculture
MRS	Multiple Resource Survey
MRV	Measuring Reporting and Verification
NCRC	Nature Conservation Resource Centre
NFRL	National Forest Reference Level
NHC	National House of Chiefs
NIC	National Insurance Commission
NLBI	Non-Legally Binding Instrument
NREG	Natural Resources and Environmental Governance
NRM	Natural Resources Management
PBC	PBC – Produce Buying Company
PC	Participants’ Committee
PIN	Program Idea Note
PPP	Public-Private Partnership
PwC	PricewaterhouseCoopers
RA	Rainforest Alliance
REDD+	Reducing Emission from Deforestation and Forest Degradation, Conservation, Sustainable Management of Forests and Enhancement of Forest Carbon Stocks
RL	Reference Level
REL	Reference Emission Level
RMSC	Resource Management Support Centre
R- Package	Readiness Package
R-PP	Readiness Preparation Proposal
RSPO	Roundtable for Sustainable Oil Palm
RT-REDD+	Roundtable REDD+
SECO	Swiss Embassy for Economic Cooperation
SEA	Strategic Environmental Assessment
SESA	Strategic Environmental and Social Assessment
STCP	Sustainable Tree Crops Program
TA	Traditional Authorities
TCC+	Expanded Technical Coordinating Committee
tCO ₂	tonnes of Carbon Dioxide
TUC	Timber Utilization Contract
TUP	Timber Utilization Permit
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Voluntary Carbon Standard
VPA	Voluntary Partnership Agreement
WB	World Bank

Annex I: Financing plan summary table (USD million)

Expected uses of funds	Description	Breakdown per year									
		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Costs related to developing the ER Program (e.g., monitoring costs)	<i>Design & Technical Consulting</i>	0.25	0.6	0.6							
	<i>Forest Monitoring, RFL, and MRV (Remote sensing and field activities)</i>	0.9	1.0	1.0	0.6	0.6	0.6	0.6	0.6	0.6	0.6
	<i>Stakeholder consultation</i>	0.1	0.5	0.5							
	<i>Registry</i>		0.5	0.5	0.25	0.25	0.25	0.25			
	<i>Benefit Sharing & Grievance Redress</i>	0.2	0.2	0.2							
Annual Fixed Costs		1.45	2.6	2.6	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Total Fixed Costs											12.6
Operational and implementation costs	<i>Management & Financing</i>			1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
	<i>Activities: Institutional Collaboration</i>			0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
	<i>Activities: Policy Reform</i>			0.5	0.5	0.5	0.5	0.5			
	<i>Activities: Increasing Yields</i>			30	30	30	50	50	50	50	50
	<i>Activities: Risk Management</i>			1	1	1	1	1	0.8	0.8	0.8
	<i>Activities: Landscape Planning</i>			5	5	5	5	5	5	5	5
	<i>Activities: Data Mngt</i>			2	1	0.5	0.5	0.5	0.5	0.5	0.5
<i>Financing costs (e.g., interest payments on loans)</i>	<i>(please explain)</i>										
<i>Other costs</i>	<i>(please explain)</i>										
	Total uses			40.25	39.25	38.75	58.75	58.75	58.75	58.75	58.75

Expected sources of funds	Description											
<i>Grants</i>	<i>FIP</i>			5.0	5.0	5.0	5.0					
<i>Loans</i>	<i>(please name sources)</i>											
<i>GoG</i>	<i>Combined Cocoa Board & FC investment (in kind)</i>			1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
<i>Private Sector & Civil Society investment</i>	<i>Investment in sustainable cocoa (certification, etc)</i>	24	24	24	24	24	30	30	30	30	30	30
<i>Private Sector/ Bilateral</i>	<i>Dutch Government Investment into cocoa sector--CORIP</i>	1.4	1.4	1.4	1.4	1.4						
	<i>Private Sector Matching Funds to CORIP (2:1)</i>	2.8	2.8	2.8	2.8	2.8						
<i>Revenue from REDD+ activities (e.g., sale of agricultural products)</i>												
<i>Revenue from sale of Emission Reductions (contracted)</i>	<i>Carbon Fund</i>					30		20				
<i>Revenue from sale of additional Emission Reductions (not yet contracted)</i>												227.5
Total sources (before taxes)		28.2	28.2	34.45	34.45	64.45	36.25	51.25	31.25	31.25	258.75	
Net revenue before taxes (=total sources – total uses)		NA	NA	(5.8)	(4.8)	25.75	(22.45)	(7.5)	(27.5)	(27.5)	200	

Annex 2: CREMA Mechanism

Ghana's Community Resource Management Area (CREMA) Mechanism

The Wildlife Division of the Forestry Commission which resides within the jurisdiction of the Ministry of Lands and Natural Resources, together with its partners, has developed the Community Resource Management Area (CREMA) mechanism. The CREMA mechanism is an innovative landscape-level planning and management tool for community initiatives on off-reserve (un-gazetted) lands. The process has taken almost 20 years of evolution to move from an intellectual concept, to a pilot initiative, and then to a formally approved and implemented CREMA mechanism. Today over 30 CREMAs are officially approved or in various stages of the process of development in the country. The average CREMA covers about 25,000 hectares, but CREMAs can range from approximately a few thousand hectares up to a few hundred thousand hectares. The CREMA concept has been examined by at least 10 other African countries and efforts at replication have been explored and implemented to varying degrees in a number of nearby West African states.

All CREMAs have approved constitutions, management boards, community committees, and regulations backed by local government bye-laws. CREMAs also have the power to engage their own staff, incorporate under Ghanaian law, and control their own revenue. All CREMAs must have defined boundaries agreed by all stakeholder communities and traditional leadership upon which long-term vision, goals, management and regulations are agreed. As such, CREMAs are an approved institutional structure for landscape planning, democratic decision-making by local leadership and benefit sharing with its stakeholders. A CREMA is officially inaugurated when the Ministry is sufficiently satisfied to issue an official certificate of devolution of rights over NRM to the local CREMA institution.

Early CREMAs were all focused on wildlife and habitat protection. Early CREMAs developed revenues from tourism and more recently from sustainable harvesting of NTFPs with premiums for organic and conservation status of the associated NTFPs. More recently existing CREMAs have begun to ask if they could develop future carbon revenues. No CREMA has realized emissions reductions revenue yet but a number are now exploring this possibility. The Forestry Commission has endorsed the principle of exploring the possibility of using CREMA mechanism for managing carbon project landscapes but the modalities have not been determined.

CREMA has the potential to provide a neat solution to a number of challenges for REDD+ carbon projects in Ghana. Some of its strengths include the following:

- Clear project boundaries;
- Constitution that is developed through an extensive participatory process involving all communities and relevant stakeholders thus ensuring free, prior informed consent;
- Approved institutional structures for day-to-day governance of the CREMA resulting in strong social cohesion;
- Legislative backing through District Assembly bye-laws;
- Formal review, approval and oversight by the national government through the Forestry Commission;
- Devolution of authority and ownership over the biomass within the CREMA boundaries;
- Clear pathway to incorporate as legal entity permitted to enter into contracts on behalf of its membership;

- Opportunities and plans for generating revenue and agreeing benefit-sharing formulas responsive to the CREMA stakeholders.

From an emissions reduction, climate-smart agriculture perspective, the role and strengths of the CREMA combine to significantly increase the likelihood of effecting changes in how land is used and managed (resulting in emissions reductions) and sustaining these changes over the long-term, which addresses issues of permanence and leakage. This is because CREMA provides a platform for organizing and implementing land use planning. CREMA is also expected to vest tree and carbon tenure rights to the local CREMA authority, though this needs to be fully clarified with government. Further, CREMA can play a consistent role in negotiations with traditional leaders, farmers, and communities, in implementing REDD and climate-smart processes, in ensuring compliance through the development of by-laws and monitoring activities, and in structuring benefit sharing systems.

Other CREMA resources:

Asare, R.A., Kyei, A., and Mason, J.J. 2013. The community resource management area mechanism: A strategy to manage African forest resources for REDD+. *Philosophical Transactions B of the Royal Society*, 368, 20120311.

Sheppard, D.J., Moehrensclager, A., McPherson, J.M., and Mason, J.J. 2010. Ten years of adaptive community-governed conservation: evaluating biodiversity protection and poverty alleviation in a West African hippopotamus reserve. *Environmental Conservation* 37 (3) 270-282.