A Guide to Implementing REDD+ in Ghana:

Criteria and modalities for developing a REDD+ project

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Table of Contents

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Executive Summary

There is global consensus that climate change poses a major threat to countries and populations around the world, particularly in Africa. Climate change is being driven by the increasing amount of carbon dioxide (CO_2) and other greenhouse gases (GHG) which are being emitted into the atmosphere as a result of human activities. Agriculture and forestry practices are just one of the types of activities driving global emissions, yet compared to other possible mitigation measures, reducing deforestation is considered to be one of the most cost effective and immediate mitigation strategies at our disposal (IPCC, 2007). REDD is an international initiative aimed at reducing rates of deforestation and forest degradation through the establishment of performance based economic incentives.

Ghana first began to engage in REDD+ in 2008. The concept reflects a vast shift in how forested African countries and donors have traditionally thought about and engaged in forestry and agroforestry projects and programs. In fact, the power of REDD is that it requires that proponents and stakeholders to demonstrate their emissions reductions impacts before they can reasonably hope to receive payments or benefits. Thus, REDD does not follow the more common-place project finance trajectory in which government institutions or NGOs seek funding from donors, receive the funding, implement project activities (to some degree), and then report on their wide range of successes. In contrast, REDD is a performance-based mechanism in which payments are not disbursed until the project can demonstrate its impact.

The acronym REDD refers to Reducing Emissions from Deforestation and Degradation (REDD). As with most new concepts, it has evolved from its core definition to also include carbon stock enhancement (CSE), sustainable forest management (SFM) and conservation. Taken all together, the full concept is captured as REDD+.

Designing a REDD+ project or program is a demanding endeavour that takes time, technical capacity, and usually requires significant financial resources. Section 4 explains the key elements and criteria of REDD+ project design. These 13 key feasibility elements are as follows:

1. Understand the business as usual (BAU) scenario by determining the rate of deforestation and identifying drivers of deforestation and future threats: REDD projects should be conceived in forest landscapes where deforestation or degradation is a problem, or where there is the potential to enhance carbon stocks in the forest landscape. As such, determining the rate of deforestation (or potential for carbon sequestration) is an important step in developing a project. In order to reduce CO_2 emissions from deforestation or forest degradation, one must clearly understand the agents and causes of forest loss. Collectively these are referred to as the drivers of deforestation (and/or degradation), and when this information is projected forward, these drivers are called threats. The BAU refers to the normal and common manner in which the land and forest resources are being used. For a viable REDD+ project, the BAU must represent a case in which the land use practices cause deforestation or degradation. The premise is that if the BAU scenario continues and nothing is done to address the associated threats, then the forest and trees in the landscape will continue to be degraded or deforested at their present

rate. A REDD+ project or program represents a focused intervention to alter the BAU scenario by changing the management or land use practices, and reducing the threat (reducing emissions).

2. Choose activities to change the BAU: Having identified the drivers of deforestation and degradation, the next step is to identify a set of activities which will reduce emissions from the on-going deforestation or degradation. These might include establishment of or support to a CREMA, promotion of recommended farming practices, tree planting, agroforestry, NTFP harvesting and market development, implementation of laws and policies. While it is necessary to focus on the immediate and direct drivers, successful implementation of REDD+ in Ghana will also depend upon a project's ability to understand and address the proximate or indirect causes as well.

3. Establish sustainable project governance structure and review tenure issues: Establishing an appropriate and sustainable governance and management structure for the project, and understanding tenure issues is essential as it will have consequences for how the project is implemented, how decisions about the project are made at the local and project level, and how benefits are shared. The structure should be developed such that it actually leads to the adoption and sustained practice of the project activities. Within the governance and management structure, the roles and relationship between all of the project stakeholders must be clarified, and decisions about who is to be included and who is "left out" will need to be taken. Main stakeholders could include project proponents, government officials, traditional leaders, the primary agents of deforestation (land users /land owners) and other stakeholders living in the project landscape who are not direct agents.

Land tenure, tree tenure and user rights should also be clarified between on-reserve and off-reserve areas (if applicable), as well as on stool land, family land, and leasehold lands (Abunu or Abusa arrangements). With respect to a future carbon transaction, only the land owner has the legal authority to approve the project and the sale of credits.

4. Determine project boundaries: A next step is to outline the project boundaries. While this might seem like a simple task, deciding what is "in" and what is "out" can present challenges and often has implications on the ultimate viability of the project. Boundaries can be drawn according to natural boundaries (rivers), built boundaries (roads) social units (traditional area boundaries) or management units (forest reserve, district boundary). Regardless of the type of boundary, the rationale for where the boundaries are drawn should be clear and consideration should be given to potential tensions or conflicts associated with a boundary, and what falls inside and what is left outside. Depending on the size of the area, a sober assessment as to whether there is sufficient capacity and resources to implement the project activities across the project area (and often times beyond) and within the set time-frame set is also necessary. In addition, the scale or size of the project will have strong economic implications for the viability of the project.

5. Ensure compliance with Ghana's forest definition: Early on, project proponents and stakeholders will need to make sure that the landscape or portions thereof, fit the forest definition and qualify for REDD+. For the purpose of REDD+, and to distinguish "REDD-able" lands from those that are eligible for

CDM forestry projects, Ghana established a forest definition of 15% canopy cover, 5 meter height, 1 hectare area.

6. Demonstrate additionality: One of the key aspects of a REDD+ project is that it must demonstrate that benefits or outcomes of the project are "additional" to the BAU scenario; that is, without the project the emissions reductions and other benefits would not have happened or been realized.

7. Ensure permanence and assess risks: A REDD+ project must be designed to ensure that emissions reductions will persist over the life of the project, and that the associated carbon assets are permanent. Each project must describe how **permanence** of the carbon assets will be achieved. In truth, no project is risk free and there is not an absolute guarantee of permanence. Nonetheless, projects need to honestly assess what they can control and what is beyond the project's control. To do this means conducting a risk assessment and describing the real internal, external, and natural risks, and then outlining how the project plans to mitigate these risks.

8. Reduce leakage: Leakage most typically occurs when a project minimizes the occurrence of negative practices in the project area, but instead of stopping them altogether, the agents simply shift their practices elsewhere. If a project can predict why and where leakage could occur in response to the project, then specific activities can be implemented and benefits allocated to reduce this risk.

9. Determine the project baseline and set a reference scenario: A project **baseline** aims to quantify the deforestation or degradation that the project proponents think the project will be able to avoid (and associated avoided emissions reductions), or, in the case of carbon stock enhancement, the sequestration that the project will facilitate. Baselines can be developed using different methods, but the most common method is to take the historical deforestation rate from the past 10 years and project it forward over the life of the project. Coupled with the average carbon stock per hectare, one can determine the emissions that the project will aim to avoid. This baseline will then be monitored against a designated reference area.

10. Outline viable benefit sharing arrangement: Once all project costs have been met, the remaining revenue can go to "benefit sharing". Each project will have to design a benefit sharing structure that stakeholders feel is fair and transparent. Failure to design a system that is equitable and transparent increases the likelihood of project failure. Many people and institutions will want a share of the benefits, but it is critical to recognize that the entire project rests on a significant change in BAU practices on the ground. Therefore, if the people and institutions that are actually adopting these changes are not adequately compensated based on their own concepts of what is fair and appropriate, then they will be very unlikely to continue to engage in activities promoted by the project, and as a consequence the project will collapse. On the other hand, it is equally important to avoid raising unrealistic expectations about benefits, especially as direct cash payments, because early expectations of what a project can achieve rarely reflect the final project outcome.

11. Measurement, reporting and verification (MRV) plan: MRV is the foundation of any robust, genuine carbon emissions reductions project. The paradox is that in the context of forest activities, such standards pose great challenges. All REDD+ projects are required to establish an MRV plan as part of their feasibility or PDD documents. Once a project has started, and continuing over the life-time of that project (usually on a 3-5 year cycle) the project stakeholders must demonstrate (measure and then report) the degree to which they have been able to achieve the emissions reductions that the project promised in its projected emissions scenario. This is then verified by an independent, third-party auditor before being accepted.

12. Plan to ensure free, prior and informed consent (FPIC): The U.N. Declaration on Rights of Indigenous People's states that indigenous peoples (and local communities) have the right to self-determination and shall not be relocated (or subjected to other types of activities or transactions) without free, prior and informed consent. For a REDD+ project, this means that everyone residing within a project area must have knowledge of the proposed REDD+ project and must give their consent openly and freely. All projects must also conduct a social and environmental safeguards assessment (SESA). The SESA is required by most standards and will likely be required nationally. It is valuable because it helps to inform community members, identify problems ahead of time and ensure that FPIC is met.

13. Estimate and access required funding: REDD+ projects can be financially demanding and securing funds is becoming increasingly challenging. Access to REDD+ funds will likely depend upon partnerships between the government, civil society, communities and the private sector.

Section 5 covers the main steps and decisions along the project development pathway. Largely sequential, the process involves assessing feasibility and drafting the project idea note (PIN), writing the project development document (PDD) while concurrently (in most cases) setting a financial plan and determining an implementation strategy. This is followed by a process of approval, validation and project registration, then by implementation and monitoring, and finally by verification and crediting.

The final sections of the document highlight the importance of co-benefits (Section 6)—biodiversity, gender, and livelihoods—in the success of REDD+, and the evolving REDD+ landscape (Section 7). Ghana is making significant progress on REDD+ and remains a continental leader. Nonetheless, REDD+ is an evolving, complex, and challenging space. As Ghana moves forward with the implementation of its REDD+ strategy, one should expect changes and new thinking to emerge about how best to achieve the country's REDD+ goals. This document presents a solid foundation for learning about REDD+ and offers clear guidance on how to engage in project development, but simply following these guidelines is not enough. Project stakeholders should make an effort to stay abreast of emerging issues and decisions that are likely to affect how REDD+ will work in Ghana. These include, but are not limited to registry development and implementation, reference level development, benefit sharing guidance, and the emergence of jurisdictional and programmatic REDD+.

1. Purpose

This guide aims to broadly describe and explain the concept of REDD+ to anyone who is interested in learning more about the idea or the opportunity in Ghana. It is specifically intended to help project proponents, stakeholders, decision makers, researchers, forest resource users, and members of the NGO community gain a practical understanding of what it means to implement such a REDD+ project or program.

Today, there are many handbooks, manuals and step by step guides on REDD+ available on the internet. The specific purpose of this *Ghana Guide* is to speak to the Ghanaian context and to share experiences and insights that have been learned through the on-going REDD readiness period. While this guide touches on many of the same topics and concepts covered in other publications, it explores these concepts and challenges from the Ghanaian perspective. Thus, the guide retains an intentionally Ghana-centric focus. It was developed based upon first hand experiences, and using documents and resource materials that are relevant and/or available in Ghana.

2. Understanding REDD+

There is global consensus that climate change poses a major threat to myriad countries and populations around the world, including those in Africa. Climate change is being driven by the increasing amount of carbon dioxide (CO_2) and other greenhouse gases (GHG) which are being emitted into the atmosphere as a result of human activities. Deforestation is the third largest contributor to climate change after industry and energy supply, being responsible for approximately 17% of global greenhouse gas (GHG) emissions. When combined with agriculture, the two contribute over 30% of global GHG emissions (IPCC 2007). By reducing global deforestation and increasing reforestation rates, significant GHG savings can be achieved. Both mitigation and adaptation strategies are needed to combat the effects of climate change, and forests play a significant role in mitigation as one of the quickest and most cost-effective methods of reducing atmospheric GHG concentrations.

2.1 What REDD+ is and how it works

During the last ten years or so, countries have debated how forest protection and restoration should be included in global efforts to reduce atmospheric GHG concentrations. Financial mechanisms such as the Clean Development Mechanism (CDM) were developed, and although the CDM included reforestation (e.g. planting trees on deforested lands) and afforestation (planting trees on previously unforested land) it did not include the protection of standing forest. In 2007, the concept of REDD was introduced to the international climate change negotiations and still continues to evolve. In support of this strategy, the international community is in the process of designing a mechanism to incentivize forest-rich countries in the developing world to reduce the amount of deforestation and forest degradation that occurs within their national borders each year.

This initiative is known as REDD+. It stands for Reducing Emissions from Deforestation and Forest Degradation (REDD), with the '+' representing the role of conservation, sustainable forest management and carbon stock enhancement. It represents a type of payment for ecosystem service (PES). REDD+ is a

performance based mechanism that aims to create financial and other types of incentives to reduce the rate at which forests are being converted to other land-use types and in the process causing carbon dioxide emissions. Thus, REDD+ aims to reduce atmospheric GHG concentrations and contribute to climate change mitigation through five main non-exclusive sets of activities:

(i) Reducing emissions from deforestation

(ii) Reducing emissions from degradation

(iii) Reducing emissions through the role of conservation

(iv) Sustainable forest management and

(v) Enhancement of carbon stock.

Generally, the amount of emissions reductions or enhancements from the implementation of one or more of the five activities would be quantified based on a globally recognized methodology. That positive quantity would then be valued as credits that could be sold in an international carbon market. Alternatively the crediE could be handed to an international fund set up to provide financial compensation to participating countries that conserve their forest.

Definition of Deforestation: The direct human-induced conversion of forested land to non-forested land, including agriculture, pasture, water reservoirs or urban areas. Deforestation effectively means a reduction in crown cover from above a defined threshold to below this threshold. In Ghana, for the purposes of REDD+, forest is defined as constituting 15% canopy cover, trees able to attain a height of 5 meters, and a minimum area of 1 hectare.

Definition of Degradation: Direct, human induced long term loss of forest carbon stocks caused by a decrease in canopy cover that does not qualify as deforestation.

Definition of Plus: The (+) was added a few years after the original concept was conceived. It expands the scope of REDD to include carbon stock enhancement (CSE) within a forest, conservation of carbon stocks, and sustainable forest management (SFM). CSE is only eligible within a forest or on land that was recently deforested and it is about CO_2 sequestration. This can happen through forest growth or tree planting within the forest landscape. There is significantly less clarity about what conservation of carbon stocks means in practice, and the ability to implement this type of REDD+ activity will depend upon an internationally accepted methodology being developed. SFM allows for the sustainable management and harvesting of timber (e.g. planned logging) as part of a strategy to reduce drivers of deforestation or degradation associated with illegal and unplanned activities.

2.2 What REDD+ is not

Contrary to what many people assume, REDD+ is not a forest conservation project. It is not about community forestry or agroforestry in and of itself. Furthermore, REDD+ does not imply that countries or individual projects will receive upfront money to protect or conserve forest. Rather, it is about creating incentives to reduce the rates at which forests and trees are being lost (deforestation and

degradation) or creating incentives to change the way that forests are managed so that additional CO_2 can be sequestered from the atmosphere (CSE or SFM). However, community-based activities, like increasing agricultural productivity, initiation of agroforestry schemes, or generation of revenue from non-timber forest products (NTFPs) are likely to be key activities in a broader emissions reduction or enhancements strategy.

REDD+ is different from traditional conservation or natural resource management projects in that the bulk payment will not be received until the emissions reduction (or sequestration) is demonstrated. Previous forestry projects and programs were about drawing up a concept, seeking funding to support that concept and its program of action, and then reporting on the outcomes and impacts. **To the contrary, REDD+ is a *performance based mechanism*; payments are not received until a country or project can demonstrate that carbon dioxide emissions from deforestation or degradation have been reduced, or that carbon dioxide in the atmosphere has been sequestered through the growth of forests or trees.**

Since its acceptance in the international climate change negotiations, REDD+ has sparked dramatic and much needed changes in the way that governments, the private sector, civil society and international bodies think about the value of forests and how best to reduce associated threats. In this respect, REDD+ is a real game-changer. The reality, however, is that REDD+ demands a very high level of rigour and meeting the associated standards is likely to presents many challenges in Ghana. In addition, building a national framework or developing a project can be expensive and technically challenging. For these reasons, and others, REDD+ is not an appropriate or realistic strategy for every forest or agroforestry project, or private sector scheme. In truth, many valuable and important conservation projects or sustainable forest management initiatives are not viable for REDD+. Examples include:

- REDD+ cannot be implemented to support forest conservation where there is not a demonstrated rate of deforestation or degradation. For example, environmental stakeholders in Liberia explored whether it would be possible to generate money from a REDD+ project to support conservation of the Wonegizi Mountains. Unfortunately, due to the legacy of the war, the historical deforestation rate was well under 1%, and therefore the project could not realistically expect to generate enough emissions reductions to justify a project.

- REDD+ is not a viable mechanism where the value of the current exploitative land use (like mining) is far higher than the value of the standing forest and potential REDD+ benefits.

- Small-scale community tree planting or agroforestry projects are not appropriate for REDD+ if they do not demonstrate an actual change in the business as usual scenario, and if substantial emissions reductions or removals cannot be demonstrated.

The next section, which outlines the main elements and criteria for a REDD+ project, further clarifies the conditions that either makes REDD+ feasible or unfeasible.

3. Main criteria and tenets of REDD+

This section outlines and explains the main elements of REDD+ project design and the criteria that a project must meet in order to be feasible. Feasibility implies that the project can demonstrate that the rate of deforestation or degradation has been reduced, or carbon stocks in the forest enhanced, and that the activities that result in the emissions reductions (or enhancements) can carry on for the full life time of the project, typically 20-30 years.

As a starting point, projects have to understand the drivers of deforestation in their project landscape, and how it plans to tackle these threats through targeted activities. REDD+ projects are expected to run for at least twenty years, therefore a viable project requires a sustainable governance structure. Projects also have to clearly define their boundaries and ensure that they comply with national rules and definitions. REDD+ also need to show that they represent a change in the business as usual scenario; that is, that the emissions reductions or enhancements would not take place without the REDD+ project. This is the concept of additionality. Ensuring the permanence (that it will still be standing) of the forest and trees is also of concern. Projects therefore have to acknowledge and put in place measures to reduce risks (natural, political, and internal). In line with REDD+ being a performance-based mechanism, projects need to be able to define (and eventually implement) a forest monitoring and emissions measurement plan from which they will report against their projected baseline. Their report will then be verified and validated by an independent auditor. This entire system is generally referred to as MRV. Before a project can move forward, it also has to show that all of the stakeholders (including all communities) are informed and comfortable with the project. This is the free, prior and informed consent (FPIC) process. Finally, but certainly not the final consideration, is the need for a sober reflection on how to access sufficient funding to develop and implement a project.

The below sequence attempts to follow a logical progression in thinking about REDD+ project conceptualization and design, but one should not necessarily feel bound to follow this order. These criteria and elements include:

1. Understand the business as usual (BAU) scenario by determining the rate of deforestation and identifying the drivers of deforestation and future threats.
2. Choose activities to change the BAU.
3. Establish sustainable project governance structure and understand tenure.
4. Determine project boundaries.
5. Ensure compliance with Ghana's forest definition.
6. Prove additionality.
7. Contemplate permanence and assess risks.
8. Set plans to reduce leakage.
9. Determine the project baseline and set a reference scenario.
10. Outline viable benefit sharing arrangement.
11. Monitoring, reporting and verification (MRV) plan.
12. Plan to ensure free, prior and informed consent (FPIC).
13. Estimate and access required funding.

3.1 Assessing the BAU scenario: determine deforestation rate and identify drivers of deforestation and future threats

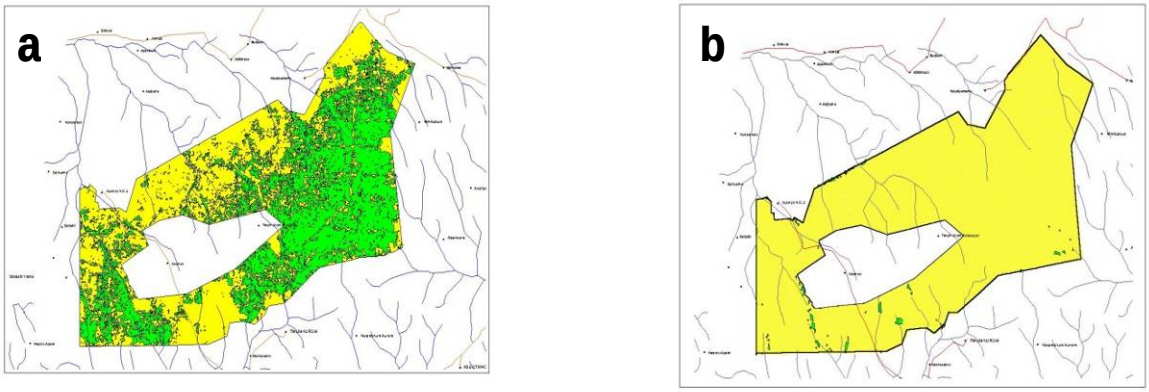
REDD projects should be conceived in forest landscapes where deforestation or degradation is a problem, or where there is the potential to enhance carbon stocks in the forest landscape. As such, determining the rate of deforestation (or potential for carbon sequestration) is an important step in developing a project. Initially, stakeholders can rely upon national deforestation rates or other assessments from the landscape, but as project development advances, the need to determine a deforestation rate for the project area becomes more important.

In order to reduce CO_2 emissions from deforestation or forest degradation, one must clearly understand the agents and causes of forest loss. Collectively these are referred to as the **drivers** of deforestation (and/or degradation). The drivers of deforestation can be categorised into proximate or direct factors and indirect or underlying factors) Early on any project must be able to adequately describe the proximate deforestation and degradation drivers, the underlying drivers and the trends or patterns associated with these drivers. When this information is projected forward, these drivers are called **threats**.

The set of drivers of deforestation or forest degradation should be easily identifiable and one should be able to describe the **business as usual (BAU)** scenario, as well as argue a clear case of future threats. The BAU refers to the normal and common manner in which the land and forest resources are being used. For a viable REDD+ project, the BAU must represent a case in which the land use practices cause deforestation or degradation. The premise is that if the BAU scenario continues and nothing is done to address the associated threats, then the forest and trees in the landscape will continue to be degraded or deforested at their present rate. A REDD+ project or program represents a focused intervention to alter the BAU scenario by changing the management or land use practices, and reducing the threat (reducing emissions).

As an illustration, Pamu Berekum Forest Reserve in the Brong Ahafo Region of Ghana shows the consequences of what can happen when nothing is done to change the BAU scenario. Established as a Forest Reserve in 1932, it covered 189 km² of moist-semi deciduous forest, but it also contained two admitted towns. By 1990, 52% of the forest had been lost. The main drivers of degradation were logging and fire , whilst the main driver of deforestation was farming. The underlying drivers included weak forest law enforcement and forest management, a perverse policy environment, and development objectives (in the admitted towns) that conflicted with the forest management goals. If, at the time, concerted action has been taken to change the BAU scenario by focusing efforts to stop illegal encroachment, curb the spread of fire, and address the policy conflicts and lack of forest governance, then half of the forest could have been saved. This did not occur and as a result, by the year 2000, only 1 km² of forest remained.

Figure 1: Land use maps of Pamu Berekum Forest Reserve in (a) 1990 and (b)2000



Interviews with key informants, focus group discussions, field-based assessments of the landscape, and the use of historic and current land use/land cover maps are the best ways to identify and verify drivers and threats. What can be more challenging, however, is identifying the underlying drivers and threats which are often at the root of the problem. For example, while the expansion of small-holder agriculture is a dominant driver of forest degradation (and over the long-term of deforestation) in Ghana, the story behind this driver is often much more complex. It is therefore crucial to understand who the **agents** of deforestation are (are they local farmers or migrant farmers from other areas of the country), what their motivations might be (seeking land for subsistence crops or economic crops like cocoa or cashew), and who or what lies behind their choices (who is the landowner and what are the sharecropping conditions). For instance, is a person or a policy, even with the best of intentions, creating incentives that cause the activities? Given the complexity of separate legal provisions for tree and land tenure, one must ask what the role of the chief is and the type of support, either formal or informal, that the farmer might be receiving from other agricultural development projects. Understanding the full story is critical to being able to reduce the threat and change the way that the land is being used.

At the national scale, Ghana's REDD readiness preparation proposal (R-PP) cites the main drivers that are responsible for decades of gradual degradation and eventual deforestation; four are direct drivers, while four are underlying drivers.

Ghana- Direct Drivers
Agricultural expansion
Illegal logging
Fuelwood harvesting and charcoal production
Wildfire

Ghana- Indirect Drivers
Low tech farming systems
Forest industry over-capacity
Policy and market failures in the timber sector
Population growth

Kissinger (2012) cites the dominant drivers of deforestation and degradation across sub-saharan Africa (below). With the exception of livestock grazing, all of these drivers apply in Ghana. In designing a REDD+ project, it is crucial to acknowledge those drivers that can realistically be reduced and those that cannot. For example, in many cases, it is unlikely that REDD+ will ever be able to compete with mining.

Africa- Deforestation Drivers	**Africa- Degradation Drivers**
Subsistence agriculture	Fuelwood and charcoal[1]
Commercial agriculture	Timber logging
Mining	Livestock grazing
Infrastructure	Uncontrolled fires
Urban expansion	

Important questions to consider in assessing the BAU scenario include:

- Why are deforestation and degradation taken place in the project area?
- What is the evidence that the identified drivers are actually the driving agents for deforestation and degradation?
- Which of the identified factor (s) is/are dominant? What is the reason?

3.2 Choosing activities to reduce emissions or enhance stocks in landscape

Having identified the drivers of deforestation and degradation, the next step is to identify a set of activities which will reduce emissions from the on-going deforestation or degradation. In light of the most common drivers in Ghana, Table 1 outlines some possible activities to reduce drivers of deforestation and degradation. While it is necessary to focus on the immediate and direct drivers, successful implementation of REDD+ in Ghana will also depend upon a project's ability to understand and address the proximate or indirect causes as well.

POSSIBLE PROJECT ACTIVITY	DRIVER BEING ADDRESSED	RELATIONSHIP BETWEEN THE DRIVER, INDIRECT DRIVERS, AND THE ACTIVITY
Establishment of a Community Resource Management Area (CREMA)	Agricultural expansion Fuelwood Charcoal Bush fires	Where there is a lack of land use planning and the absence of policies that encourage or incentivize people and leaders to maintain off-reserve forests or respect forest reserve boundaries, then conversion to agriculture, encroachment, illegal extraction of resources, indiscriminate and exploitative charcoal production, and bush fires frequently take place.

[1] Fuelwood refers to the harvesting and collecting of wood that is burned directly as firewood. Charcoal refers to wood (often a whole tree) that is harvested and then fired in a kiln. They are listed separately because the associated management systems, harvesting scenarios, production methods and market chains are often distinctly different, particularly with respect to gender and economics.

		By establishing a CREMA, the associated communities gain the right to benefit economically from their forest resources and go through a participatory process to plan how the land should be used, while setting by-laws which can be enforced locally.
Adoption of recommended farming practices and dissemination of inputs to increase yields	Agricultural expansion	Poor soil fertility and low yields cause farmers to expand their farming onto recently cleared forest soils in order to maintain or increase their yields. Increasing yields *in situ* is therefore fundamental to reducing agricultural expansion, but it must be accompanied by other measures, including land use planning, knowledge of agroforestry practices and soil conditions, and improved access to extension and agricultural inputs.
Tree planting and agroforestry	Lack of incentives to keep trees in the off-reserve landscape	Rehabilitating degraded forests to increase tree cover will enhance carbon stocks. If the benefits accrue to the community then there are strong incentives to engage. Tree planting off-reserve is a clear way to give people rights to the trees, including the right to manage them for carbon or timber.
Sustainable harvesting of Non-Timber Forest Products (NTFP)	Agricultural expansion Illegal logging Bush fires	Create new sources of revenue that can replace livelihood activities which are dependent on forest degradation or deforestation, either directly or indirectly.
Improved stoves	Fuelwood	Reduce the amount of fuelwood need for household cooking so that local demand for wood decreases.
Improved forest law enforcement coupled with community monitoring	Illegal logging	Illegal logging is driven by the national demand for wood products and the rural demand for income and livelihood

Table 1: The relationship between REDD+ activities and drivers

Important questions to consider for project activities are:

- Does the proposed activity target the correct agents, the right people?
- What will the impact or outcome of these activities be?
- At what scale?
- Can one foresee any unintended impacts?

- Can the activity truly change the BAU scenario?
- Will the ensemble of activities actually reduce emissions (deforestation or degradation) and/or enhance carbon stocks through sequestration?

One should also be able to describe the rationale for project action and the activities which will be implemented to achieve the GHG emission reductions in terms of carbon sequestration, risk and leakage mitigation, and optimisation of social and biodiversity benefits.

From a REDD+ standpoint, the project can only work (demonstrated emissions reductions or enhancements) if the **opportunity cost** is not too high. The opportunity cost refers to the cost of giving up or passing up a land use activity (like mining) and the potential value of the next best choice or the choice promoted by the project. Financially speaking, the money that an individual or community might receive through REDD+ benefits is unlikely to equal the money that would be earned through mining. Even outside of REDD+, many community based conservation or forestry projects have failed to properly assess the opportunity costs, and this explains why many of these initiatives fail outright or prove to be unsustainable in the long term.

3.3 Governance & Tenure

Establishing an appropriate and sustainable governance and management structure for the project is essential as it will have consequences for how the project is implemented, how decisions about the project are made at the local and project level, and how benefits are shared. The structure should be developed such that it actually leads to the adoption and sustained practice of the project activities.

Within the governance and management structure, the roles and relationship between all of the project stakeholders must be clarified, and decisions about who is to be included and who is "left out" will need to be taken. Main stakeholders could include project proponents, government officials, traditional leaders, the primary agents of deforestation (land users /land owners) and other stakeholders living in the project landscape who are not direct agents.

The land and tree tenure within the project boundaries must be adequately clarified so that legal ownership, traditional user rights, and *de facto* management practices are understood. If a project intends to sell credits on the voluntary carbon market, for example, then a clear understanding of land tenure is paramount. Potential buyers will likely shy away from complex or unclear tenure arrangements or situations where disputes persist.

Land tenure, tree tenure and user rights should be clarified between on-reserve and off-reserve areas (if applicable), as well as on stool land, family land, and leasehold lands (Abunu or Abusa arrangements). For the purposes of a carbon project, one could potentially argue, based upon Ghana's Constitution (Republic of Ghana, 1992), that the Paramount Chief is the ultimate land owner[2], but measures would need to be put in place to ensure that all of the associated land owners and land users are in agreement

[2] The majority of Private Land in Ghana 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 (Republic of Ghana, 1992).

with the initiative. [See Section 4.12 on FPIC] With respect to the voluntary market, only the landowner or owner of the carbon asset can authorize a carbon transaction. It will also be necessary to define and distinguishing between ownership and management rights to naturally occurring trees, planted trees, and trees in agricultural lands so that all key users are implicated in the governance structure of the project.

The ownership, management rights, and benefit sharing arrangements attached to natural resources in Ghana are not necessarily aligned. Table 5 in Appendix 1 provides a general overview (not exhaustive) of how the governance structure for land, forest, and trees has been dealt with to date.

In Ghana, carbon rights have yet to be clearly defined. The government must decide whether carbon is viewed as an ecosystem service or as a natural resource under the law. In the absence of this understanding, community resource management areas (CREMAs) provide a neat mechanism for solving this problem by allocating all management rights to the communities that make up the CREMA. Ghana's R-PP already cites the CREMA as a preferred mechanism for implementing REDD+ projects.

Important questions related to governance and tenure are:

- Have the roles and responsibilities between/among various agencies been clarified?
- Will the proposed governance/management arrangement create incentives for reducing emissions (deforestation or degradation) and/or enhancing carbon stocks through sequestration?
- How would possible conflicts be resolved within the governance framework?
- Has land and tree tenure within project boundaries been clarified?
- Who has ownership rights of the land and the trees?
- Who has management rights to the land and the trees?

3.4 Boundaries

A next step is to outline the project boundaries. While this might seem like a simple task, deciding what is "in" and what is "out" can present challenges and often has implications on the ultimate viability of the project. Boundaries can be drawn according to natural boundaries (rivers), built boundaries (roads) social units (traditional area boundaries) or management units (forest reserve, district boundary). Regardless of the type of boundary, the rationale for where the boundaries are drawn should be clear and consideration should be given to potential tensions or conflicts associated with a boundary, and what falls inside and what is left outside. Depending on the size of the area, a sober assessment as to whether there is sufficient capacity and resources to implement the project activities across the project area (and often times beyond) and within the set time-frame set is also necessary.

The size or scale of a project is crucial. In Ghana, estimated deforestation rates (approximately 2%/annum) and carbon stocks suggest that a project which falls within the high forest zone should cover at least 35,000-50,000 hectares. From an economic standpoint, based on potential carbon revenue, a

smaller project of 5,000 to even 20,000 ha is simply not viable. Consideration should also be given to the size and rate of change of the population in the project area and outside the project area.

Important questions to consider with respect to project boundaries include:

- What is the rationale for these boundaries?
- Do the selected boundaries reflect the social and institutional boundaries within the landscape?
- How will differences between the project boundaries and other boundaries (traditional area, administrative, management) be dealt with?
- Does the project have sufficient capacity and resource to manage activities within the project area?

3.5 Ghana's forest definition

Early on, project proponents and stakeholders will need to make sure that the landscape or portions thereof, fit the forest definition and qualify for REDD+. For the purpose of REDD+, and to distinguish "REDD-able" lands from those that are eligible for CDM forestry projects, Ghana established its forest definition. After serious debate and discussion amongst stakeholders and experts, the following parameters were adopted:

- 15% canopy cover
- 5 meter height
- 1 hectare area

Any land that has at least 15% canopy cover from trees that are 5 meters tall (or have the ability to attain this height) and cover at least one hectare of land shall be considered a forest. Tree crops like cocoa do not apply, but a cocoa system that has a sufficient number of shade trees could qualify (e.g. the shade trees could constitute the forest). As part of this definition, a REDD+ project can only be implemented in a landscape that fits this forest definition. Unless it is changed, this means that Ghana's High Forest and much of the savannah woodlands are eligible for REDD+, while some of the Northern Region and most of the Upper East and Upper West Regions are ineligible.

3.6 Additionality

One of the key aspects of a REDD+ project is that it must demonstrate that benefits or outcomes of the project are "additional" to the BAU scenario; that is, that without the project the emissions reductions and other benefits would not have happened or been realized. A REDD+ project must bring in funding and activities that are additional to what is already happening in the landscape. A REDD+ project must change the BAU scenario.

A REDD+ project does not meet the **additionality** requirement if the project actions are legally required, represent common management practices, or a plan was already in place to implement the activities or the project. While this may appear to be highly restrictive, there are some relatively straightforward strategies for getting around this requirement. For example, if deforestation has persisted despite

forest protection laws, then it becomes easy to prove additionality. Using this argument, one could say that the project will likely bring in new activities that will enable the law to be enforced or create compliance incentives. Another way to prove additionality is to demonstrate that the available funding is insufficient to carry out planned activities at the necessary scale, and therefore the REDD+ finance is needed in order to realize the goal. Table 3 outlines the conditions for additionality and non additionality.

Additionality	No Additionality
Emissions reductions or enhancements would not have happened without the project	Activities are legally required
REDD+ was part of the original project concept	Main project activities are already being implemented and adopted
Project is changing the BAU scenario	The threat is weak because the area is already well protected and customary norms (that support conservation) or laws are respected
Activities are expected to reduce deforestation	

Table 3: Additionality Requirements

3.7 Permanence

REDD+ projects are designed to last for 20 to 30 years, and implicit in the concept of the project is that the carbon asset—the forest or trees—will remain in the landscape and the deforestation rate will be reduced. This is a much longer time-span than typical conservation or development projects (4 year project cycle) or even government programs (5 years), and as such there are a number of risks to the permanence of the trees, forest, and carbon in the landscape.

A REDD+ project must be designed to ensure that emissions reductions will persist over the life of the project, and that the associated carbon assets are permanent. Important questions include:

- Will the forest or trees be there in 20-30 years' time?
- Will the implemented activities actually reduce the rate of deforestation?
- Will these activities be adopted and maintained over the life of the project?

Each project must describe how **permanence** of the carbon assets will be achieved. In truth, no project is risk free and there is not an absolute guarantee of permanence. Nonetheless, projects need to honestly assess what they can control and what is beyond the project's control. To do this means conducting a risk assessment and describing the real internal, external, and natural risks, and then outlining how the project plans to mitigate these risks.

Internal Risks	External Risks	Natural Risks
Poor project management	Political instability	Fire
Project not financially feasible	Corruption	Drought

Opportunity costs	Changes in the market	Pest & Disease
Social conflicts	Insecure tenure	Seedling mortality
Livelihood constraints		Geologic Events
Loss of personnel or community leaders		Extreme weather

Table 4: Types of Risk

It is essential to understand what level of risk there is so that the carbon benefits of the project can be adjusted accordingly. For the purposes of a feasibility assessment a 20% deduction in carbon benefits should be made for non-permanence risk.

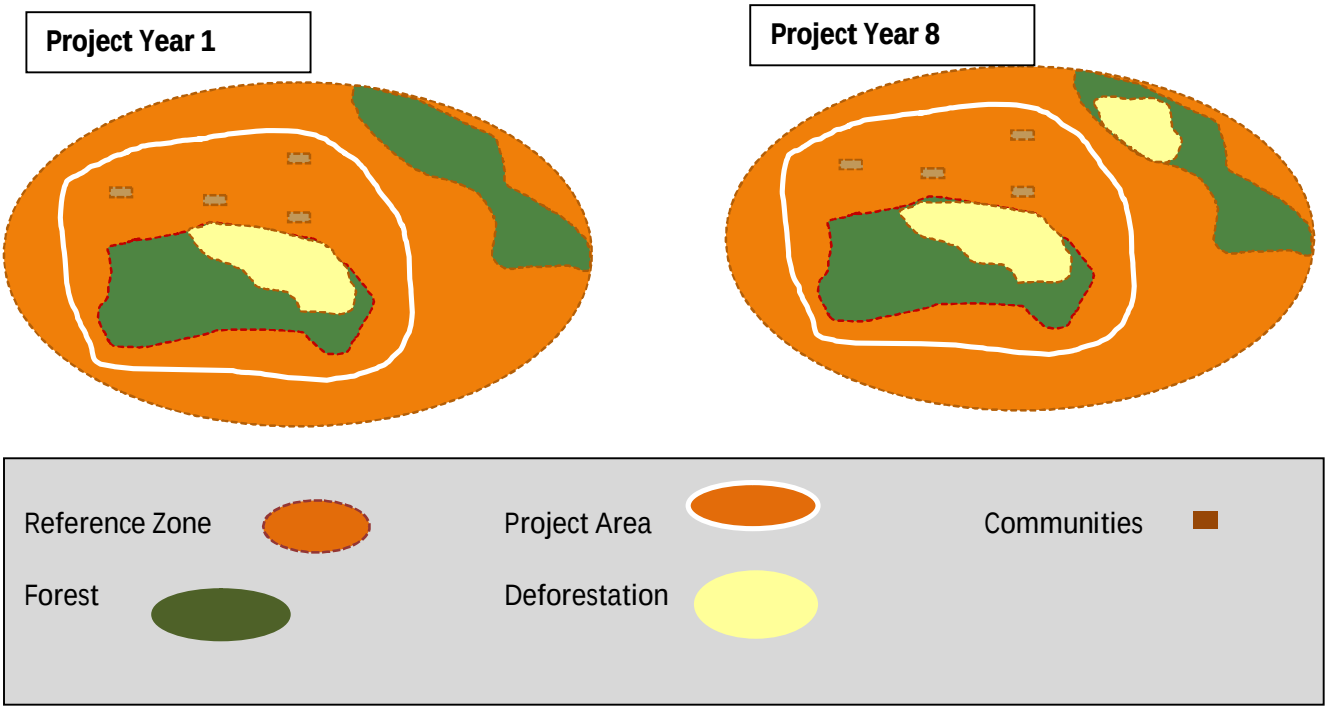
3.8 Leakage

Leakage describes a scenario where the deforestation or degradation that the project is trying to reduce is simply shifted outside of the project boundaries. **Leakage** is defined as the net change in anthropogenic emissions occurring outside the project boundary which is measurable and attributable to the project activity. Leakage most typically occurs when a project minimizes the occurrence of negative practices in the project area, but instead of stopping them altogether, the agents simply shift their practices elsewhere. There are 3 main aspects of leakage:

1. It must be measurable
2. It must be attributable to project implementation
3. It must show an increase in emissions when compared to the project baseline.

Most projects are developed with a core zone or project area, which is surrounded by a reference area that is monitored as a leakage belt. Figure 2 shows a scenario where a project was implemented to slow deforestation, but instead of slowing the rate, it simply pushed the deforestation outside the project boundaries but within the reference zone.

Figure 2: Example of leakage occurring in project reference area between years 1 and 8.



If a project can predict why and where leakage could occur in response to the project, then specific activities can be implemented and benefits allocated to reduce this risk.

3.9 Developing a project baseline and estimating emission reductions

Compared to other more traditional conservation, agroforestry or natural resource management projects, it is the baseline, the projected emissions reductions, and the effort to monitor and report against this baseline that makes a REDD+ project unique. A project **baseline** aims to quantify the deforestation or degradation that the project proponents think the project will be able to avoid, or, in the case of carbon stock enhancement, the sequestration that the project will facilitate. Using the baseline, a project should be able to say:

- How many hectares of forest will avoid deforestation (or avoid degradation) within the specified time frame. One should note that these cannot be lumped together—deforestation and degradation require separate baselines and it is often very difficult to monitor degradation.
- How many hectares will still be deforested, despite the project?

- ❖ The project expects to prevent the emissions of *XXX* million tonnes of CO_2e over the time period[3].
- ❖ For enhancement, the project will produce a carbon benefit of *XXX* million tonnes of CO_2e over the time period.

There are five different types of baselines that are commonly used:

1. Historical baseline: This is usually established based on the average deforestation rate over the preceding 10 years; projecting this average rate forward over the life-time of the project. This is the most straight-forward, least expensive, and most common type of baseline. It is also the recommended baseline for Ghanaian projects.
2. Historical deforestation plus an adjustment factor: An adjustment factor incorporates modelling into the historical baseline and is used in order to include very recent developments of deforestation which are not adequately captured in the historical baseline. It can also be used when the project proponents are able to make the case that the threat will change in some significant way. For example, knowledge of a planned road construction project which will increase access to the forest area and thus could accelerate deforestation.
3. Future projection models: A baseline based purely on modelling can be used when the historical scenario does not reflect what is expected in the future. Baselines that are developed based on modelled scenarios require a significant amount of demographic, economic, development, and ecological data, and are generally more costly to develop than a historical baseline.
4. Carbon stock enhancement: This baseline is used when trees are planted or when a forest is managed for growth and biomass accumulation. A carbon stock enhancement baseline incorporates tree growth curves, like those that are used in plantation projects or afforestation/reforestation (AR) projects under the CDM. Alternately, it may show a baseline of biomass accumulation based on forest growth models.
5. Planned deforestation: This type of baseline is used in projects that aim to reduce emissions by stopping deforestation on forest land that is legally authorized. A planned deforestation baseline shows the emissions that would occur as a result of legal activities (like legal logging in forest reserves).

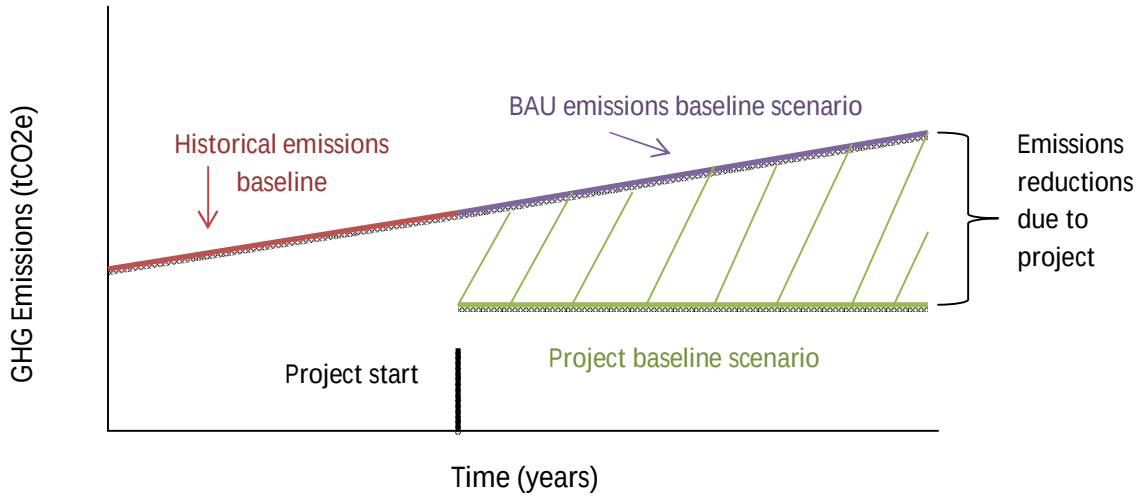
   A historical baseline approach will likely be the most appropriate type of baseline for Ghanaian projects given that Ghana has a well establish historical pattern of development, land use, and land use change (resulting in measurable deforestation and degradation rates) which are unlikely to change significantly in the near future.

   Figure 3 shows an historical baseline (red line) that is projected forward to establish the future BAU scenario (also called without project scenario) of emissions (purple line). The project baseline scenario shows how much the project thinks it will be able to reduce the emissions in the project area (green line). The BAU baseline minus the project baseline shows the project's

[3] The lifespan of forest carbon projects is typically 20-30 years.

projected emissions reductions (area between the purple and green lines). This equates to the amount of CO_2 that will not be emitted as a result of the project. Over the lifetime of the project, the actual emissions reductions are measured and compared to the project scenario; payments are only made based on realized emissions reductions. Proponents should be wary of being overly optimistic in their projections. If a project fails to achieve significant emissions reduction, or if the deforestation rate increases above the BAU, the project could become financially unviable due to lack of payments or could be required to pay back the investor. A highly conservative approach is often the best bet.

Figure 3: Example of a Historical Baseline and Project Emissions Scenarios



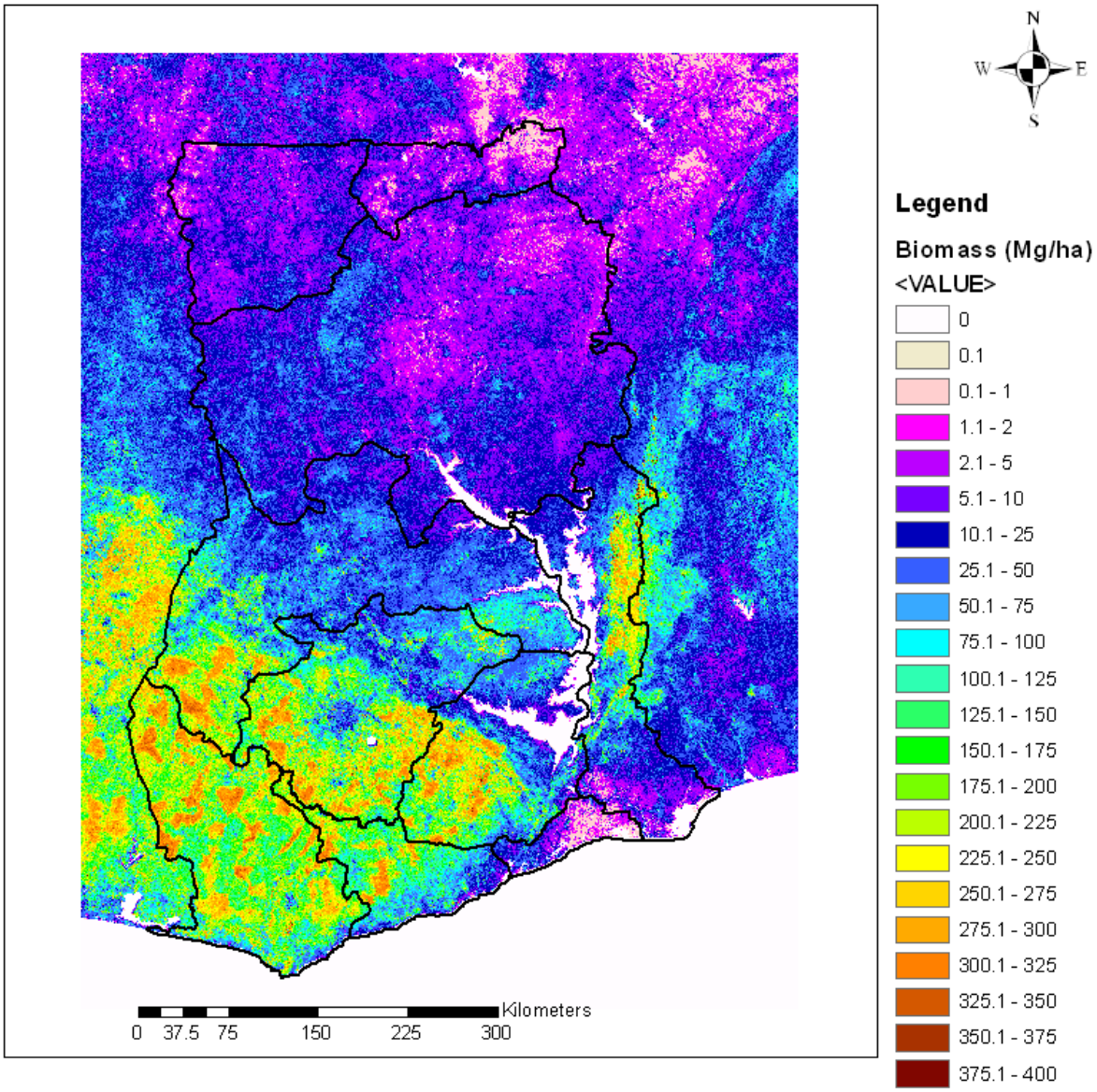
Information that is needed to calculate an avoided deforestation baseline based on historical rates includes:

- The major land use types or vegetation types within the project boundaries and the number of hectares per land use type.
- Average carbon stocks per vegetation / land use type.
  - For the purposes of simplicity, this guide assumes that aboveground biomass will be the basis for a REDD+ project. However, it should be acknowledged that the carbon in forest biomass can be classified into different forest ecosystem pools: aboveground living biomass (AGB), below ground living biomass (BGB), dead wood, non-tree above ground biomass, organic litter, and soil.
  - Systematic biomass sampling across the project landscape provides the most precise estimate of carbon stocks per land use type and is the most accurate, but this can be expensive. Default data, data published from other sources, remote sensing or a combination of these methods provides a range of options for determining carbon stocks.

- Ghana's Biomass Map (below) provides an estimate of biomass at a 250 m² scale across the entire country. It combined remote sensing with plot sampling. The map can either be used in PDF format to visually ascertain average biomass values or, using the right type of software, proponents can zoom in on their project area and find biomass estimates per pixel. The Biomass Map and information about how the map was made is available at: http://forest-trends.org/publication_details.php?publicationID=2837. It is also available from the Climate Change Unit.

- Deforestation rate (historical- past 10 years) for each major forest type
  - In its R-PP, Ghana declared a national average of 1.9%/year. Until more precise information becomes available this rate can be used, though proponents should think conservatively.
- Average amount of CO_2 being emitted each year from each forest land use type (if any) based on the rate of change (deforestation). Carbon in the forest ecosystem is generally measured in tonnes (tC) and makes up, on average, half of all forest biomass. 1 tonne of forest biomass (t) equals 0.5 tonne carbon (tC). When forest biomass is burnt or decays it releases the stored carbon into the atmosphere where it combines with oxygen to form carbon dioxide at a ratio of 1:3.67. Below are two important conversion factors and an explanation of CO_2 equivalents.
  - 1 t biomass = 0.5 tC
  - 1 tC = 3.67 tCO_2e
  - When discussing the carbon dioxide offset potential of a forest system it is measured in tonnes of carbon dioxide equivalent (tCO_2e). This is where the global warming potential of a mixture of GHGs is converted into a quantity of carbon dioxide with an equivalent climate change impact over a specified timescale. 1 tonne of carbon dioxide (tCO_2) = 1 tonne of carbon dioxide equivalent ($1tCO_2e$).

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



3.10 Benefit sharing

In discussing project benefits, it is important to distinguish between project costs (the cost of implementing and running the project, often including taxation) and project benefits. Financial benefits are those resources that are available to share between the various stakeholders once all project costs have been met.

Each project will have to design a benefit sharing structure that stakeholders feel is fair and transparent. Failure to design a system that is equitable and transparent increases the likelihood of project failure. Many people and institutions will want a share of the benefits, but it is critical to recognize that the entire project rests on a significant change in BAU practices on the ground. Therefore, if the people and institutions that are actually adopting these changes are not adequately compensated based on their own concepts of what is fair and appropriate, then they will be very unlikely to continue to engage in activities promoted by the project, and as a consequence the project will collapse. On the other hand, it is equally important to avoid raising unrealistic expectations about benefits, especially direct cash payments, as early expectations of what a project can achieve rarely reflect the final project outcome.

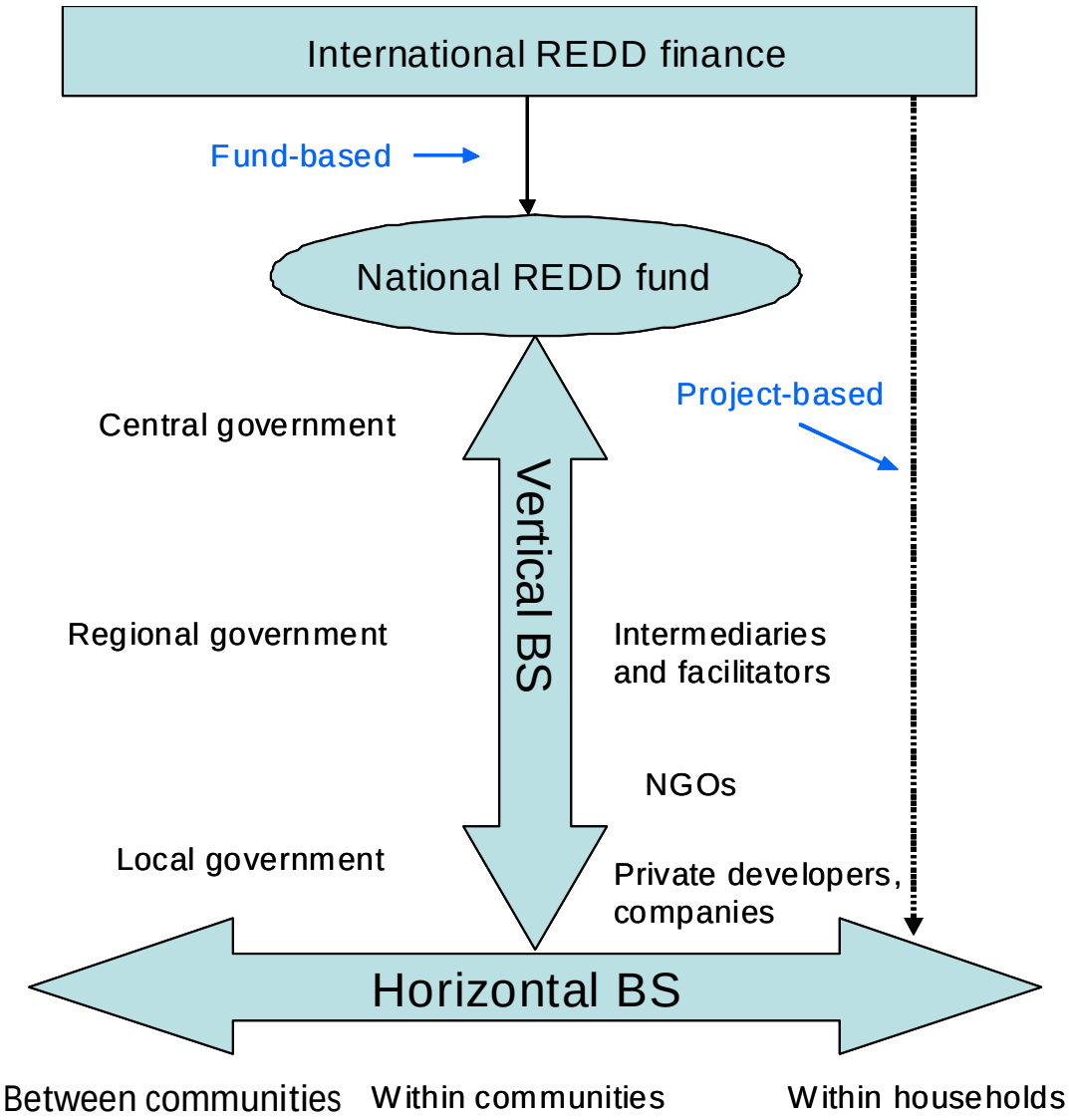
Direct benefits can come as cash or in-kind, and the majority of projects being designed and implemented opt for a combination of the two. Direct benefits might include carbon-based cash payments, employment, training, community development projects, access to information resources (extension, training, mobile tele-fony), access to agronomic resources (inputs, seed, nurseries), or access to economic resources (credit, insurance).

Projects also bring many indirect benefits, including more secure tenure arrangements, institution building, development of social capital, maintenance of cultural values and systems, as well as myriad environmental benefits and services. Figure4 represents the vertical and horizontal division of possible benefit sharing (BS) arrangements.

Benefit Sharing Example

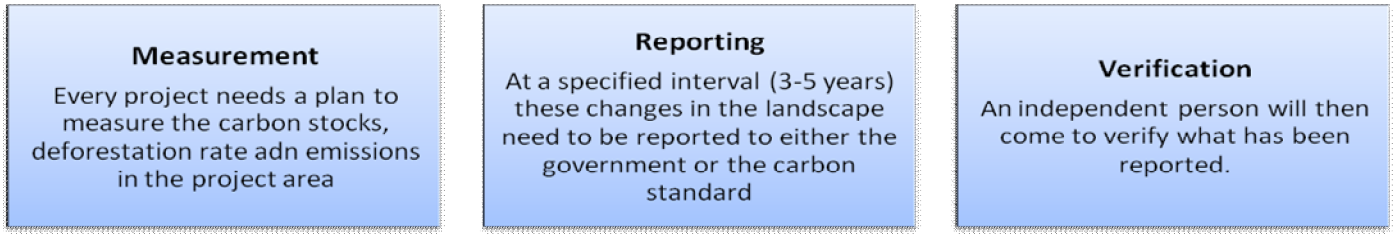
In the Brazilian Amazon, local communities engaged in a REDD project (Avoided Deforestation) on an indigenous community forest designed a benefit sharing system whereby each household received a $25 payment into an individual bank account every month to be used according to the family's discretion. The female head of the household had access to this account with a local ATM card. She could withdraw funds whenever she travelled out of the village to the larger town or city. In addition, each community identified community development projects that they would like to see implemented, including a maternity clinic, schools, and funding to support an annual traditional festival.

Figure 4: Flow and potential distribution of REDD+ benefits (Bobotoya 2012).



3.11 MRV

MRV stands for **Measurement, Reporting & Verification** and is the foundation of any robust, genuine carbon emissions reductions project. The paradox is that in the context of forest activities, such standards pose great challenges. Before an emissions reduction or carbon sequestration activity can deliver credible market credits and payments, the activities generating them must be accurately and transparently measured, reported, and then verified by third parties.



All REDD+ projects are required to establish an MRV plan as part of their feasibility or PDD documents. Once a project has started, and continuing over the life-time of that project (usually on a 3-5 year cycle) the project stakeholders must take measurements (using remote sensing and ground sampling) and then report the degree to which the project has been able to achieve the emissions reductions estimated in the projected emissions scenario.

All projects will be required to establish sample plots that are monitored over time. More generally, remote sensing presents the most efficient and cost effective methods of monitoring change in the landscape, but remote sensing images can be expensive and sometimes hard to come by. Most projects will probably choose a combination of the two. The Government of Ghana has plans to establish a national monitoring system, which when operational, can be a useful tool for project proponents to use to meet the MRV requirements of the projects.

3.12 Free, Prior and Informed Consent

The U.N. Declaration on Rights of Indigenous People's states that indigenous peoples (and local communities) have the right to self-determination and shall not be relocated (or subjected to other types of activities or transactions) without **free, prior and informed consent (FPIC)**.

For a REDD+ project, this means that everyone residing within a project area must have knowledge of the proposed REDD+ project and must give their consent openly and freely. Project validators will check this point extensively—meeting with community leaders and members to check whether they support the project and understand its implications. If even one community fails to give consent, then the project cannot go forward. Practically speaking, project proponents will need to put in place serious

sensitization and consultation processes with all communities and traditional leaders in order to ensure that FPIC standards are met. All projects must conduct a social and environmental safeguards assessment (SESA). The SESA, is required by most standards and will likely be required nationally. It is valuable because it helps to inform community members, identify problems ahead of time and ensure that FPIC is met.

3.13 Funding

REDD+ projects demand upfront funds for project feasibility, design, validation and implementation. Initial assessments (pre-feasibility, PIN) costs could fall in the range of US$ 10,000-20,000. But more comprehensive efforts, like a full feasibility or Project Design Document (PDD) could easily cost US$ 300,000 or more. The two basic financing approaches for this new type of environmental service industry are government funding and voluntary market-based instruments, and it is likely that an NGO, small company, or community association will need to access funds from both.

Start-up funds are available from bilateral and multilateral agencies, international NGOs, and from foundations; however this funding is extremely limited and African entities (e.g. NGOs) may not be aware of how to identify or to access these sources. As a first step, NGOs and other project developers can gain valuable credibility and information by aligning with Ghana's national REDD+ framework. Despite the lack of money to support REDD+ piloting within Ghana, linking to the national REDD+ readiness process is valuable because it can open up avenues to the limited bilateral, multilateral, NGO or foundation support, as many donors have expressed (or demonstrated) interest in supporting REDD+.

The private sector has been slow to support or initiate REDD+ projects in Ghana, largely due to a lack of understanding of the opportunity, concerns about the level of risk involved, the perceived tenure and small-holder challenges (land tenure, tree tenure and aggregating thousands of farmers) and the slow demand for emissions reductions. Nonetheless, if a few projects or programs are able to make progress, then it is likely that the private sector will be more inclined to participate and to make funds available to support emissions reductions or enhancement activities.

4. Modalities: Main steps and decisions in the process

Developing a REDD+ project can be a time consuming and costly venture, though it is anticipated that the cost and complexity will reduce as a national forest monitoring and MRV system becomes operational and the number of projects has increased. The main phases in developing a REDD+ project are as follows:

1. **Project Idea Phase:** The first step is to explain the concept of the project and conduct a preliminary assessment of its feasibility. Some projects have focused on conducting a **pre-feasibility assessment** and then following with a **full feasibility assessment**. Internationally, the initial description of the project and assessment of its viability is referred to as the **project idea note (PIN)**.
2. **Project Design Phase**: This describes a phase in which detailed studies and stakeholder engagement must occur. Field-based sampling, data analysis, assessment of satellite imagery,

stakeholder consultations and in-depth planning are required. All of this information feeds into the **Project Design Document (PDD).** Projects that will target the voluntary market and the Voluntary Carbon Standard (VCS) must complete a PDD. This document is akin to a comprehensive management plan. It describes:

- the specific type of REDD+ play that the project will pursue,
- the carbon accounting methodology that will be used
- the deforestation rate,
- the carbon stocks in all of the main vegetation types in the project landscape,
- the project baseline and the reference scenario against which the project will measure itself in the future,
- details about the activities that will be used to reduce emissions and associated stakeholders,
- the forest monitoring, reporting and verification strategy (MRV),
- and an initial plan for how benefits will be shared amongst stakeholders.

3. **Financing & Implementation Strategy:** While the PDD is being developed, the project team should start to consider the project's financing plan, its implementation strategy, and all associated costs. Marketing the project will probably be required and it will be necessary to engage with brokers and registries (like the VCS registry). By and large, the cost of producing forest carbon credits will include:
    - project development and set-up costs
    - implementation costs
    - standard approval
    - market transaction costs
    - risk appraisal and discount rates
    - project validation
4. **Approvals, Validation and Registration:** Technically, a project can start to implement before final approval, validation or registration takes place, if funding is available. But if the project is engaging with the voluntary market, then the PDD will have to be approved by one of the internationally recognized standards. The Verified Carbon Standard (VCS), American Carbon Registry (ACR), Climate Action Reserve (CAR), and Plan Vivo Standards are all options. The PDD will also be validated by an independent auditor. If approved and validated, then it can formally register with the standard.
5. **Project Implementation and Monitoring:** When implementation begins and project activities are underway, a project needs to begin monitoring its impact on deforestation, measuring its performance, and then reporting the actual emissions reductions. Monitoring, measurement and reporting are likely to occur at 3-5 year cycles.
6. **Verification and Issuance of Credits:** The final step is for the project to report on its realized emissions reductions (or removals) as part of the MRV process. This information will be validated by an independent auditor (at the cost of the project), and if accepted, then the project registers its first emissions reductions with the standard and the first credits will be issued. Based on the reporting schedule, reporting, verification and issuance of credits will take

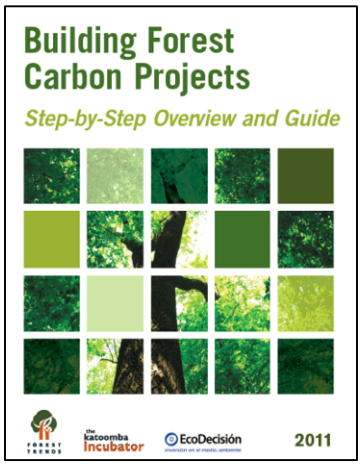
place multiple times over the life of the project assuming there are emissions reductions (or removals) to report.

4.1 Feasibility assessment

The difference between a pre-feasibility and a full feasibility has to do with the sources of carbon data, the amount of consultation, and the amount of site level work. For example, a pre-feasibility may opt for default carbon values and may use the national deforestation rate, whereas a full feasibility will use Ghana specific carbon stocks or even carbon values sampled from within the project area. In addition, a full feasibility will have been discussed with key stakeholders and potential participants, whereas the initial pre-feasibility is more of an exercise in defining what the project could look like and identifying who it would need to include.

At its core, a feasibility study must describe the project and the proposed activities, identifying which parameters will be quantified and providing initial estimates of costs and carbon benefits. It is strongly recommended to set conservative estimates of carbon benefits and full projections of project costs so that even with unforeseen changes, the project will still be viable and attractive to funders. **The appendix includes a feasibility assessment template**.

Depending on the resources available, a full feasibility assessment could easily cost upwards of US$ 20,000. Therefore, taking the time to understand the main elements of REDD+ and determine whether there is a viable REDD+ "play" is crucial. One of the most useful resources for thinking about or developing a REDD+ project is the **Forest Trends Step By Step Guide**[4].



In addition to this guide, Forest Trends also offers guidance on technical project design for REDD and for afforestation reforestation(AR), carbon stock enhancement, community engagement, legal guidance and contractual aspects, business guidance, social impact guidance, and biodiversity impacts guidance.

At the moment, in Ghana, there are very limited resources available to support the first phase of project development , including a feasibility assessment. Therefore, project proponents should be prepared to cover the majority if not all of their costs. Once a project is well conceived, then the opportunities to solicit funding increase. Of the seven national pilot projects, few are moving forward because of the lack of funding. Those that are tend to be private sector companies willing to make the initial investment. Outside of the national pilots, Nature Conservation Research Centre (NCRC), Rainforest

[4] http://www.forest-trends.org/publications/building_forest_carbon_projects

Alliance, and IUCN-Ghana have all received funding from international foundations and bilateral donors to support early activities on REDD+, including project feasibility assessments.

4.2 PDD—the project design document

A PDD touches on many of the same areas as a full feasibility assessment, but the level of rigour is significantly higher. For example, site-level sampling is required, as is the establishment of permanent sampling plots. As noted earlier, the cost of a PDD could exceed US$ 300,000.

There are two defining aspects of a PDD—deciding upon the type of REDD+ activity that will be pursued and choosing an available carbon accounting methodology to use. The term "REDD+ activity" is not about the project level activities, rather, it refers to the type of REDD+ play. Available choices (not necessarily comprehensive given the dynamic nature of this space) are listed below. Depending on the type of REDD+ activity, the project would need to choose a methodology approved by one of the standards, or it would need to develop its own methodology and seek approval. In practice, multiple activities (like AUDD & ARR) can be combined in one project, but this will substantially increase project costs and complicate reporting.

<u>Types of REDD+ Activities and Methodologies</u>

- Reducing emissions from deforestation
    - Avoiding planned deforestation (APD)
    - Avoiding uplanned deforestation and/or degradation (AUDD)
- Reducing emissions from forest degradation
    - Avoiding uplanned deforestation and/or degradation (AUDD)
- Conservation of forest carbon stock
    - *No methodologies available*
- Sustainable Management of Forests
    - Reduced impact logging (RIL)
- Enhancement of carbon stocks
    - Afforestation, Reforestation, Revegetation (ARR)
    - Logged to protect forest (LtPF)
    - Extended rotation age / cutting cyle (ERA)
    - Low-productive to High-productive forest (LtHP)

Methodologies are developed with specific types of projects and landscapes in mind, so while the title might seem appropriate, the details may not easily conform to the ecological, social, or agronomic landscapes of Ghana. Already, early REDD+ piloting efforts have found that few of the available methodologies fit the mosaic nature of Ghana's forest-agricultural landscape. At some point in time, it may be beneficial to develop a Ghana appropriate methodology. Nonetheless, once a methodology is

selected, this will dictate how the PDD should be written, including the carbon accounting (measurement). In many respects, the methodology defines the PDD.

The Forest Trends website provides good technical guidance on the technical development of REDD+ projects. The Voluntary Carbon Standard is another good website to check for PDD and methodological options. (See Section 7.1 Other Resources)

4.3 Finding a buyer

Once the project is underway carbon credits can be sold on the voluntary market. At present, only the voluntary market exists for REDD+, but in the future a REDD+ compliance market is likely to operate through the Forest Carbon Partnership Facility (FCPF) and UN-REDD. The value of a credit on the voluntary market can be volatile and depends on the buyers' willingness to pay as well as supply and demand. This is in turn driven by social responsibility, regulation, and industrial output and has therefore varied significantly over the last few years.

NGOs may find it challenging to identify buyers in the marketplace and negotiate fair credit prices. Some buyers are willing to provide pre-finance if the credit price is fixed, but this may short-change the project if credit values increase dramatically in the future. However, waiting to sell credits on a future market can be equally as risky as a NGO may not be able to identify a willing buyer.

It may be necessary for NGOs to partner with financial institutions during negotiations with a buyer to make sure they get a good deal. This expertise will cost, but it can be well worth it if the resulting project income will be higher. However, NGOs should be cautious in having too much involvement with financial institutes and middlemen such as banks and carbon brokers as they are likely to demand a large cut of the project's profit. NGOs should avoid early involvement and retain full control of projects in the initial development stages as the further developed the project is the better price the credit can command.

Finally, it is important to remember that REDD+ financing involves buyers rather than donors. Bio-carbon projects are contractual with payment generally only received following performance and so there can be financial consequences for under performance.

5. Understanding Co-Benefits

Apart from simply producing emissions reductions and/or sequestration of CO_2, projects are often assessed on their ability to provide co-benefits. The term co-benefits refers to the biodiversity, gender, or livelihood benefits that will come about as a result of the project. If the co-benefits are strong and exciting, then funders or buyers of credits are often willing to pay more for the price of the emissions reductions that will derive from the project. Implementation of REDD+ strategies can offer important synergies for biodiversity. To date, the majority of REDD+ countries in Africa, including Ghana, have medium to high levels of biodiversity, and the majority of these countries are also parties to the Convention on Biological Diversity (CBD); therefore, these countries should ensure policy coherence given their commitments under both conventions and should strive to maximize biodiversity benefits

within their REDD+ strategies. Also, if pursued as a safeguard, countries should ensure that creation of new incentives for REDD+ actions do not harm biodiversity.

The importance of co-benefits is reflected in the emergence of a separate standard within the voluntary market. This standard is pursued in addition to a carbon standard and focuses solely on co-benefits. The Climate Community and Biodiversity Association (CCBA) has established the **Climate Community and Biodiversity (CCB) standard** that awards bronze, silver, or gold status to those projects that comply. The CCB Standard applies the same biodiversity requirements regardless of whether a certified project is a REDD+ project or a tree planting project under the CDM. The CCB standard's central biodiversity criterion is that projects must generate net positive impacts on biodiversity compared with the 'without-project' baseline scenario, but it does not presume any proactive management of biodiversity. As compared to a CDM project, it is almost impossible for a REDD project to fail given that avoided deforestation necessarily means a net positive impact on biodiversity.

Similarly, if well designed, REDD+ actions should enhance the **livelihoods** of local communities and reduce poverty. In Ghana, one could argue that if livelihoods are not properly addressed then there is little likelihood of project success. More broadly, under the UNFCCC, countries have agreed that the needs of local and indigenous communities should be addressed when pursuing REDD+ actions so the rights and needs of rural resource users are not compromised by more powerful government entities or private sector stakeholders.

Gender considerations are essential to REDD+. If REDD+ projects are not designed and implemented with a gender perspective, then they will not be as efficient or effective and, at worse, could contribute to an increase in the gender gap. One resource on gender is the IUCN-Ghana office. In September 2011, a new initiative was embarked upon by the IUCN's Pro-Poor REDD+ project, which aimed to deliver roadmaps to guide the design and implementation of gender-sensitive REDD+ strategies in three African countries, including Ghana. These Gender and REDD+ roadmaps are products of multi-stakeholder workshops that brought together women's organizations, gender experts and national level policy makers. Ghana's roadmap and other relevant documents are available in Section 9.1 (Other resources).

6. The Evolving REDD+ Landscape in Ghana

While yet to be implemented, one should be aware of the evolving REDD+ landscape in Ghana and the mechanisms and measures which are likely to become functional in the short to medium term.

6.1 REDD+ registry

As described in the registry concept note, "Ghana's REDD+ Registry : Pathways to Development", registries for national carbon accounting and associated transactions constitute a crucial part of the infrastructure needed for realizing and consolidating REDD+. If designed in a comprehensive and transparent manner, a registry ensures that all the relevant data and information linked to REDD+ are captured, processed and stored in a centralized repository which is accessible to various categories of

stakeholders and end-users for decision making purposes. This can be done at multiple scales, including national to sub-national and project levels (Asare et al 2012).

A REDD+ registry is a data management platform that integrates technology, policies, and operational procedures to document, approve and track the development, compliance, performance, purchase, and retirement of emissions reductions (or removals) through either national, regulatory, or voluntary markets or systems. REDD+ registries aim to serve as a repository of reliable, easy-access information, to ensure accurate accounting of emissions reductions from projects or programs, and to foster compliance with established regulations and standards. As such, a REDD+ registry enables a country (or jurisdiction) to be fully informed of all REDD+ activities taking place within its boundaries, to vouch for the quality, value, and impact of projected or reported emissions reductions or removals, and to follow the issuance of REDD+ credits/units and the issuance of results based payments, irrespective of where the units are transacting within a market framework (Asare et al 2012).

While Ghana is yet to build or operationalize a registry, in the future, all projects will have to register with the national REDD+ (or similar) registry and comply with all associated rules and regulations.

6.2 Reference levels

REDD+ countries have to designate a national or sub-national reference level. A national **reference level** quantifies a country's total carbon stocks and emissions. Ghana's thinking on this issue during the REDD+ readiness process suggests that it will select **sub-national reference levels** that will be differentiated according to ecological zones due to the variant carbon stocks, deforestation rates, and drivers operating in the different ecological areas. A reference level is like a project baseline, only it covers a much larger area. The benefit of having an established reference level is that it takes out much of the technical work of project development because the baseline carbon values, deforestation rate and emissions reduction potential have already been determined. With an established reference level, projects simply have to adopt the associated values at their project scale. By coordinating with the national secretariat, a "cookie-cutter" approach is used to determine the total potential emissions reductions that a project can adopt. The key point here is that the total emissions reductions of all projects or programs operating within the reference level area cannot exceed the total potential emissions reductions of the zone.

6.3 Jurisdictional and programmatic REDD+

As a republic, Ghana does not have to resolve the challenge of implementing REDD+ in a federal system that has sub-national jurisdictions, like in Brazil, Nigeria and Ethiopia. But Ghana is divided into ten administrative regions, which cut across at least four different types of ecosystems that harbour significant carbon stocks in the forests, coastal mangroves, and soils. This ecological, cultural and political diversity creates additional challenges to developing successful REDD+ projects as each project scenario is likely to present different variables and land use patterns when studied at the project scale. In fact, there is a growing recognition amongst many proponents of REDD+ that implementing at the project scale is exceedingly complex and costly, and is unlikely to furnish significant mitigation benefits in the short to medium term. This is largely because money to support early actions like piloting is very

limited, is difficult for many local proponents to access, and is rarely made available in a timely manner. In addition, the necessary in-country capacity and technical resources are still quite limited.

Amongst the thought-leaders in the REDD+ space, discussions around jurisdictional, nested REDD+ programs and programmatic approaches to REDD+ are starting to gain ground. While the terms to describe it vary depending on the arena or source, the basic premise of interest behind the larger scale approach is the same—pursuing REDD+ at a landscape, jurisdictional, or commodity-based scale provides an **efficiency of scale** that is highly attractive from financial, policy, technical and legal standpoints.

According to the VCS, a jurisdictional, nested framework offers many important benefits for participants (VCS 2013), including the abilities to:

- Monitor, quantify and reward emissions reductions across an entire jurisdiction, maintaining environmental integrity;
- Increase the potential for emission reduction as a result of working at a larger scale;
- Provide incentives to drive REDD+ through government policies and programs as well as projects;
- Build on project experience and provide a pathway for recognition of "early action" projects and programs;
- Create potential for harmonizing market and public REDD+ funding streams by serving voluntary, bilateral, multilateral, pre-compliance and potentially compliance markets through use of a consistent, independent framework;
- Increase funding available for REDD+ implementation.

The World Bank Forest Carbon Partnership Facility (FCPF) is also opening up new avenues to support Emissions Reductions Programs , which will eventually lead to Emissions Reductions Purchase Agreements (ERPAs) with those countries that successfully develop and begin to implement an ER PIN.

Whether via the FCPF or VCS (or entity yet to be determined), pursuing REDD+ at a programmatic or jurisdictional scale does not eliminate the need or opportunity for pilot projects—piloting is highly compatible with these larger scale programmes. What it does do is reduce the technical requirements for individual projects by eliminating the need to establish baselines or reference scenarios—these can be picked out of the program—and monitoring systems. It also reduces the problems of leakage and permanence. Any project nested inside of a program will simply have to develop a framework that complies with the goals of the program and reflects the program's carbon accounting strategy.

7. Conclusion

Engaging in REDD+ is technically, financially, and institutionally demanding. Yet it offers the chance to address one of the most pressing environmental issues of our time using a new type of forest governance and financing mechanisms that increases the value of forests and offers long-term solutions.

This guide aims to help Ghanaians better understand the concept of REDD+ and the opportunity that it presents. It also strives to provide guidance, within the Ghanaian context, on how to develop a REDD+ project. Much of the confusion surrounding REDD+ stems from the fact that there is not a clear

understanding of what REDD+ is, and what it is not. REDD+ stands for Reducing Emissions from Deforestation and Forest Degradation (REDD), with the '+' representing the role of conservation, sustainable forest management and carbon stock enhancement. Broadly speaking, it qualifies as a type of payment for ecosystem service (PES). More specifically, REDD+ is a performance based mechanism that aims to create financial and other types of incentives to reduce the rate at which forests are being converted to other land-use types and in the process causing carbon dioxide emissions.

However, contrary to what many people assume, REDD+ is not like a traditional forest conservation or natural resource management project. It is not about community forestry or agroforestry in and of itself. However, community-based activities, like increasing agricultural productivity, initiation of agroforestry schemes, or generation of revenue from non-timber forest products (NTFPs) are likely to be key activities in a broader emissions reduction or enhancements strategy.

Furthermore, REDD+ does not imply that countries or individual projects will receive upfront money to protect or conserve forest. Rather, it is about creating incentives to reduce the rates at which forests and trees are being lost (deforestation and degradation) or creating incentives to change the way that forests are managed so that additional CO_2 can be sequestered from the atmosphere (CSE or SFM). Under REDD+, the bulk of any payment will not be received until emissions reductions (or sequestration) are demonstrated. Therefore, it is imperative that the real agents driving deforestation are rewarded (benefits shared) for the changes that they make in terms of their land use practices. Experts agree that failure to bring real benefits to the actual agents of deforestation will mean that the project is likely to fail because it will not be able to achieve results.

Since its acceptance in the international climate change negotiations, REDD+ has sparked dramatic and much needed changes in the way that governments, the private sector, civil society and international bodies think about the value of forests and how best to reduce associated threats. In this respect, REDD+ is a real game-changer. But implementing REDD+ will not be easy, whether at a project or jurisdictional level.

As a starting point, this guide explains the main criteria and tenets of a REDD+ project. These include understanding the BAU scenario and rate of deforestation, identifying the drivers of deforestation, agents and the future threats, and determining activities that can realistically mitigate the threat. Any project must also outline a sustainable project governance structure, clarify tenure issues, determine project boundaries, ensure that the project falls within Ghana's REDD+ forest definition, prove additionality, assess permanence, make a leakage reduction plan, set a project baseline and reference scenario, outline a benefit sharing arrangement, create an MRV plan, conduct FPIC, and estimate and raise future funds.

Following on the initial project idea phase, which includes assessing the project's feasibility and completing a PIN document, a successful project will move into the project design phase, then the financing and implementation planning phase. Once all planning is completed, a project will then seek approval, validation and registration from either the government or a standard, and will then move into implementation, monitoring, and finally verification and issuance of credits. All of these steps can take

the proponent and stakeholders at least three years, and will cost well over half a million dollars. Therefore, finding financial support is imperative.

For many stakeholders, REDD+ is as much about the co-benefits of biodiversity conservation, gender and livelihoods as it is about reducing deforestation. This is evidenced by the emergence of the climate, community and biodiversity standard (CCB), as well as the pro-poor REDD agenda, and the growing body of work highlighting the gender aspects and potential impacts (both positive and negative) of REDD+.

In trying to understand REDD+, stakeholders are faced with many questions. Perhaps the only certainty that this guide can offer is that the REDD+ landscape is likely to evolve and adapt before Ghana settles upon a clear architecture and process. As such, proponents and stakeholders should engage as much as possible in REDD+ debates and discussion so as to ensure that their concerns and particular context influence the decision-making process. For example, REDD+ registries, reference levels, and jurisdictional or programmatic REDD are three of the main issues on Ghana's REDD+ horizon and represent issues worth following and understanding.

Some people have argued that stakeholders should wait to engage in REDD+ until many of the key issues have been worked out. The paradox, however, is that waiting will neither advance our understanding nor the aims of REDD+. Ghana's R-PP outlines a "learning by doing" process—this requires both courage and initiatives. Therefore, stakeholders, including government, communities, traditional leaders, civil society organisations, and the private sector are encouraged to engage collaboratively, positively, and with an aim to delivering beneficial and tangible outcomes. Good luck!

8. References

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Kissinger, G., Herold, M., and De Sy, V., 2012. Drivers of Deforestation and Forest Degradation: A Synthesis Report for REDD+ Policymakers. Lexeme Consulting, Vancouver, Canada.

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8.1 Other resources

Biomass Map of Ghana: http://forest-trends.org/publication_details.php?publicationID=2837

Climate Community and Biodiversity Alliance: www.climate-standards.org

Forest Trends Step By Step Guides: www.forest-trends.org

Gender equity resources: http://cmsdata.iucn.org/downloads/ghana_case_study.pdf; www.iucn.org/redd

GOFC-Gold Source Book: http://unfccc.int/files/methods_science/redd/methodologies/other/application/pdf/gofc-gold_redd_sourcebook_version_july_2009_cop14_2.pdf

PDD Methodologies : _http://www.carbonmcgroup.com/templates.html

Plan Vivo: www.planvivo.org

Verified Carbon Standard: www.v-c-s.org

American Carbon Registry: www.americancarbonregistry.org

9. Glossary of Technical REDD+ Terms

Additionality: The requirement by which carbon credits will be awarded only to project activities where emissions reductions are "additional to those that otherwise would occur", i.e. additional reductions compared to the "baseline scenario".

AFOLU, Agriculture, Forestry and Other Land Use: The category of greenhouse gas emissions reduction and carbon sequestration activity involving land-based projects and programmes, as opposed to that of the industrial and energy sectors.

Anthropogenic: Refers to land use impacts originating from the activity of humans.

Afforestation: The direct human-induced conversion of land that has not been forested for a period of at least 50 years to forested land through planting, seeding and/or the human-induced promotion of natural seed sources.

ALM: Agricultural Land Management

A/R, Afforestation and Reforestation: Term given to the class of projects devoted to the planting of trees on unforested land for carbon emissions reduction and other environmental benefits. Under the Kyoto Protocol and the CDM afforestation and reforestation activities are defined by strict definitions and rules.

ARR: Afforestation, Reforestation and Revegetation

Assisted Natural Regeneration: Management actions taken to enhance the natural processes of forest restoration, focusing on encouraging the natural establishment and subsequent growth of indigenous forest trees, whilst preventing any factors that might harm them.

Baseline and Baseline Scenario: The baseline represents forecasted emissions under a business-as-usual (BAU) scenario, often referred to as the 'baseline scenario,' i.e. expected emissions if the emission reduction activities were not implemented.

Bio-carbon: Carbon stored in ecosystems **-** includes renewable energy derived from biomass and organic wastes as well as the carbon sinks (trees, vegetation, soil and peat) found in agricultural, forest and other terrestrial ecosystems.

Carbon Dioxide Equivalent (CO_2e): This is a measurement unit used to indicate the global warming potential (GWP) of greenhouse gases. Carbon dioxide is the reference gas against which other greenhouse gases are measured.

Carbon market: Emissions trading (also known as cap and trade) is a market-based approach used to control pollution by providing economic incentives for achieving reductions in the emissions of pollutants.

Carbon offset: A carbon offset is a reduction in emissions of carbon dioxide and other greenhouse gases which compensates for an equivalent emission made elsewhere. Offsets can be bought by GHG emitters, whether countries, businesses or individuals, to help reduce their carbon footprint. One offset is equivalent to $1tCO_2e$.

Carbon sequestration:Process by which carbon sinks remove carbon dioxide from the atmosphere.

Clean Development Mechanism (CDM): A Kyoto Protocol initiative under which projects set up in developing countries to reduce greenhouse gas emissions generate tradable credits called CERs, the first step towards a global carbon market. These credits can be used by industrialised nations to offset carbon emissions at home and meet their Kyoto Protocol reduction targets. The projects include renewable energy generation, reforestation and clean fuels switching.

Certified Emission Reduction (CER): A CER is the equivalent of 1 metric tonne of carbon dioxide. It indicates that the emissions reduction has been approved under a compliance mechanism such as the CDM. CERs can be traded on the compliance market.

Compliance market: The market for carbon credits used to reach emissions targets under government-related regulatory regimes.

COP: Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC - the parent treaty to the Kyoto Protocol).

Credit: The market term for an offset. One credit is equivalent to $1tCO_2e$.

Corporate Social Responsibility (CSR): How companies manage their business processes to produce an overall positive impact on society, for example by offsetting their business operations by providing funds for tree planting projects.

Double counting: Errors in carbon accounting which mean an offset is counted or sold more than once, resulting in more emissions reductions being claimed than have actually occurred.

FCPF, The Forest Carbon Partnership Facility: FCPF assists tropical and subtropical forest countries develop the systems and policies for REDD+ and provides them with performance-based payments for emission reductions. The FCPF complements the UNFCCC negotiations on REDD+ by demonstrating how REDD+ can be applied at the country level.

Financial Additionality: All projects have to be financially additional, which means that the projects that Annex I countries support within the framework of the CDM or REDD+ should not be financed by official development aid, but that additional funding is to be made available for such projects.

Forest management: System of practices for stewardship and use of forest land aimed at fulfilling relevant ecological (including biological diversity), economic and social functions of the forest in a sustainable manner.

Global warming potential (GWP): A measure of how much a given mass of a greenhouse gas is estimated to contribute to global warming. It is a relative scale which compares the abilities of different greenhouse gases to trap heat in the atmosphere to that of the same mass of carbon dioxide (whose GWP is by convention equal to 1).

Greenhouse gases (GHGs): Gases in an atmosphere that absorb and emit radiation within the thermal infrared range. This process is the fundamental cause of the greenhouse effect. The main greenhouse gases in the Earth's atmosphere are water vapor, carbon dioxide, methane, nitrous oxide, and ozone.

IFM: Improved forestry management

IPCC: Intergovernmental Panel on Climate Change.

Opportunity cost: In financial/economic terms, 'opportunity cost' is normally taken to refer to the benefit forgone as a result of taking a particular course of action, as compared with the most profitable (most advantageous) alternative. In the case of REDD+, the opportunity cost of preserving an area of standing forest is the value of the income lost by switching away from economic activities associated with deforestation e.g. alternative crops or livestock for example.

Land-use, land-use change and forestry (LULUCF): The term given to the sector covering reforestation & afforestation, land clearing and agriculture. Each of these activities can make significant contributions to atmospheric carbon emissions and/or removals.

Millennium Development Goals (MDGs): The Millenium Development Goals are eight time-bound globally agreed goals adopted in 2000 and set to be achieved by 2015, providing benchmarks for tackling extreme poverty in its many dimensions. They include goals and targets on income poverty, hunger, maternal and child mortality, disease, inadequate shelter, gender inequality, environmental degradation and the Global Partnership for Development.

Monitoring, Reporting & Verification (MRV): The underpinnings of robust, genuine carbon emissions reductions. Particularly used in the context of forest carbon activities where such standards pose great challenges. Before an emissions reduction or carbon sequestration activity can deliver credible market credits, activities generating them must be accurately measured, reported transparently, and verified by third parties.

Project Design Document (PDD): The official application drawn up by an entity applying for project approval or a verification standard in the voluntary carbon market. PDDs must be validated by an independent third party, then approved and registered by the voluntary standard provider before a project qualifies as a CER or VER carbon credit earner.

Reduced Emissions from Deforestation and Degradation (REDD): An initiative to cut greenhouse gas emissions associated with forest clearing by the inclusion of "avoided deforestation" in carbon market mechanisms. More simply, payment in return for the active preservation of existing forests against a baseline which shows forests being cut down or degraded.

Reduced Emissions from Deforestation and Degradation-Plus (REDD+): The extra consideration in reducing greenhouse emissions beyond deforestation and forest degradation (REDD) being given to conservation, sustainable forestry management and enhancement of carbon stocks in developing countries.

REDD++: This is the possible next evolution of REDD+ being discussed which looks set to be adopted in the future. It allows the same actions as under REDD+, but with the additional plus referring to the inclusion of Agriculture, Forestry and Other Land Uses (AFOLU) such as agroforestry, peat lands and soils.

Reforestation: The direct human-induced conversion of non-forested land to forested land through planting, seeding and/or the human-induced promotion of natural seed sources, on land that was forested but that has been converted to non-forested land.

SFM: Sustainable Forestry Management

United Nations Framework Convention on Climate Change (UNFCCC): The UNFCCC was established 1992 at the Rio Earth Summit. It is the overall framework guiding the international climate

negotiations. Its main objective is "stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic (man-made) interference with the climate system.

UN-REDD Programme: The United Nations Collaborative initiative REDD (launched 2008) to assist developing countries prepare and implement national REDD+ strategies, and builds on the convening power and expertise of the Food and Agriculture Organization of the United Nations (FAO), the United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP).

Voluntary market: The segment of the carbon market for carbon offset transactions outside of government-related regulatory schemes ie offsets purchased by organisations wishing to offset their carbon on a voluntary basis.

Verified Emission Reduction (VER)

A VER is the equivalent of 1 metric tonne of carbon dioxide. It indicates that the emissions reduction has been verified under a voluntary standard such as VCS (Verified Carbon Standards). VERs can be traded on the voluntary market only.

Appendix 1

Table 5 (below) provides a general summary of Ghana's existing governance structure for land, forest, and trees to date.

Land
Ownership **Legally, there are two types of land in Ghana—Public Land and Private Land. According to the Constitution (Republic of Ghana, 1992). Public Land is vested in the President on behalf of and in trust for the people of Ghana. The majority of Private Land 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 (Republic of Ghana, 1992). On Stool Lands, bundles of rights or multiple usufruct arrangements prevail, such that within Stool lands there can be Family Land which is managed and passed down over generations (Asare 2010).**
Management / User Rights **With respect to Public Lands, the GoG, through the Lands Commission, has management, regulatory, and user rights.** **Stool lands (Private Land), on the other hand, are managed by the traditional authority who owns them. They are traditionally managed such that 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.** **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 managed by the Forestry Commission. Along a similar vein, water resource are managed and regulated by the Water Resources Commission and gold and other minerals are managed by the Minerals Commission.**
Benefit Sharing **In the event that natural resources are exploited from Private Land, the government shares a proportion of the revenue with the land owner under a legally backed benefit sharing arrangement.** **For example, in the case of timber harvesting on Stool Lands in the Off-Reserve area (which comprise roughly two-thirds of the land in Ghana), the FC takes 50% of stumpage fees for the management of this resource, while the remaining revenue is divided according to a Constitutionally-agreed formula**

between the Office of the Administrator of Stool Lands (OASL), the Stool, the local Traditional Authority, and the District Assembly (See Figure 1) (Asare, 2010). When timber is harvested from On-Reserve, the FC takes 60%, the OASL takes 10% and the remaining 30% is divided amongst the District Assembly (16.5%), Traditional Council (6%) and Landowner/Stool (7.5%).

Naturally Regenerated Trees, Forests, and Timber

Ownership

Naturally occurring trees are symbolically owned by the traditional authorities on behalf of the people.

Forest Reserves are fully vested in the State through the Forest Ordinance of 1927, and all forest and timber resources are held in trust by the government on behalf of the stool landowners.

Management / User Rights

All rights to economic trees are vested in the President in trust for the Stools concerned (1962 Concessions Act (Act 124:16(4)).

Through an act of Parliament, the Forestry Commission has been designated as the forest management and regulatory body. These rights extend beyond forests to include wildlife and wetlands (Forestry Commission Act (Act 571) 1999).

It is illegal for any person to harvest timber without a timber utilization contract for off-reserve areas and allocation of a concession on-reserve. [Timber Resources Management Act (Act 547) 1997]

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 in off-reserve areas for non-economic purposes, like clearing land for agriculture (Asare 2010).

Benefit Sharing

On Stool Lands where resources are managed and extracted by the requisite commission (e.g. Forestry Commission, Minerals Commission) benefit sharing arrangements have been put in place between the GoG and the land owner (Stool). Figure 1 and Figure 2 shows the benefit sharing arrangements for Timber.

According to customary tenure arrangements on Stool and Family land, lease-hold or caretaker arrangements are negotiated between the resource user and the land owner.

Commercial Plantations & Planted Trees

Ownership

Timber rights cannot be granted on land with a private forest plantation or on land with timber grown or owned by an individual or group of individuals (TRMA (Act 617) 2002). This means that when trees are planted, the person or entity responsible has the legal rights to the planted trees (Asare 2010).

Management / User Rights

The management rights to commercial plantations or planted trees rest with the tree owner.

Benefit Sharing

Under a Modified Taungya System arrangement, 40% of harvesting revenues goes to the farmers and farmer groups that planted and managed these trees. These farmers also receive additional social and economic benefits from their participation. The other 40% goes to the FC, while 20% goes to the Traditional Authority, and 5% to the local community. [See Figure 3]

With commercial plantations established in degraded reserves, the private sector is asked to bear the cost of replanting the degraded areas; therefore, FC allows the company to retain 90% of the revenue, while the Stool receives 6%, communities 2%, and the FC 2%. [See Figure 4]

CREMA

Ownership

The Community Resource Management Area (CREMA) does not alter or address ownership of natural resources. It is a tenure mechanism that grants natural resource governance and management rights to communities.

Management/User Rights

The CREMA mechanism gives communities the right to manage and benefit economically from their natural resources (within the accepted CREMA boundaries) and in line with the CREMA's constitution and associated by-laws.

Benefit Sharing

CREMA communities determine their own benefit-sharing arrangements that are responsive to the CREMA stakeholders' values, perceptions of equity and needs. In the future, however, national benefit sharing legislation or tax laws may have implications for the CREMA benefit-sharing formula (Asare et al. 2013).

Appendix 2

The following **Pre-Feasibility Study** template highlights the essential information needed to check project viability and attract potential funders. It was developed by NCRC and Forest Trends, and has been adopted by the Climate Change Unit of the Forestry Commission for use with national REDD+ pilots.

Project Title

Pre-Feasibility Study

Date

(Draft No. X)

Prepared by: "Project Name" / Main Proponent

The title is extremely important in identifying the project and attracting a funder. It should include references to the project location making sure this is understandable out of the country context.

Country/Location

Many significant forest tracts often occur across international borders, however it is not technically possible at present to initiate trans-boundary REDD+ projects as countries are developing REDD+ frameworks based on countrywide carbon accountancy and national quota systems. It may be possible in the future, but it is not recommended as an approach at this time.

Lead organisations

This should be the project developer and the owner of the carbon rights.

Main contact name & details

Partner institutions

It is important to identify the key stakeholders who must be engaged in the consultation process. The key stakeholder is the owner of the carbon rights, who must be clearly identified. Other stakeholders have no stake in the financial benefits of the project, but their involvement is needed for a successful project.

It is also important to identify the appropriate in-country authority on REDD+ issues and this is likely to be the Designated National Authority (DNA), who is the national authority for the CDM, or the REDD+ Focal Point, which in Ghana is the REDD+ Secretariat (Climate Change Unit, Forestry Commission). A project must obtain approval at the national level to prevent double counting once the REDD+

mechanism becomes regulated. Double counting should not be a problem in Africa as long as the project is acknowledged by the REDD+ authority and developed alongside the national framework.

A NGO should consider whether it is likely that all stakeholders will be willing to engage in REDD+. Potential stakeholders to consider are:

- National and State Governments;
- Ministry of Lands & Natural Resources; Ministry of the Environment, Science & Technology; Ministry of Food & Agriculture; etc.;
- Traditional Authorities;
- District Assemblies;
- Local communities and Indigenous Peoples;
- Foundation and/or carbon buyer;
- Universities and international research institutes;
- Local conservation and social NGOs;
- Private sector.

Type of Project

Describe the type of bio-carbon project, e.g. REDD+ or CDM, and detail the forestry strategies to be used which are permissible under this mechanism. For REDD+ this can include reduced deforestation, reduced forest degradation, conservation, sustainable forest management and enhancement of carbon stocks through afforestation and reforestation. Other carbon sequestration strategies may indeed also be appropriate within the same project area –e.g. agricultural and agro-forestry approaches – as components within the same overall activity. It should, however, be noted that each strategy will require distinct carbon accounting methodologies, adding complexity to project design.

Expected Schedule

The crediting period of most carbon projects is 20 or 30 years. The Voluntary Carbon Standard Crediting Period is a maximum of ten years, with the possibility to renew twice, therefore 30 years maximum. Note however, that forestry projects can have much longer lives, sometimes up to 100 years.

Anticipated Standard(s) to be used

Explain under which standard(s) validation and verification will be sought. When choosing the carbon standards consider if they have approved methodologies available for the type of project in question and be aware that if not, the NGO may have to develop their own and have these approved by the chosen standard which can be a lengthy process. If seeking accreditation from two different standards detail the reasoning. For example:

The project will be developed to VCS and CCBA gold standard.

Verified Carbon Standard (VCS) will be used to ensure emissions reductions are of the highest quality and to independently validate and verify that reductions have taken place - www.v-c-s.org

Climate, Community and Biodiversity Alliance (CCBA) will be used to independently validate that the project delivers social, biodiversity conservation and other environmental benefits and that the climate mitigation benefits are sustainable - www.climate-standards.org

Project Summary

Summarise the key points of the project as a quick reference tool for potential funders (200 words max).

- Project objective;
- Habitat type and biodiversity characteristics;
- Business as usual scenario;
- Project activities;
- Estimated emissions reductions and cost per verified emissions reduction (VER) (highlight prices and volumes in bold text).
- Detail any secured counterpart co-financing and the kind of support being sought.

Key point: As one fills in the template it is important to clearly highlight any significant outstanding issues. These are issues that do not necessarily need to be rectified in the Project Idea Phase, but must be addressed if the project progresses to the Project Design Phase and creation of the PDD.