Cocoa Carbon Initiative: Site Selection Report

NCRC &

Katoomba Incubator

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Executive Summary

The Cocoa Carbon Initiative (CCI) represents an effort to alter the economics of deforestation and forest degradation from cocoa expansion by providing cocoa farmers and cocoa farming communities the opportunity to benefit from carbon finance. In partnership with key farmer associations, NGOs, and institutions operating within the cocoa and forestry sectors, the CCI aims to Reduce Emissions from Deforestation and Forest Degradation (REDD) and increase carbon stocks on farm within the larger cocoa landscape (REDD+) through tree planting and other activities so as to provide economic, agronomic, and ecological benefits that can help to bolster the sustainability of the cocoa sector while improving livelihoods and conserving the country's forests.

In order to meet these objectives, the CCI aims to establish 2 cocoa carbon pilot projects that will test the feasibility, under different scenarios, and long term sustainability of REDD+ within Ghana's cocoa sector. In an effort to lay a strong foundation for the development of these sites, the Katoomba Incubator and NCRC adopted a stakeholder consultation process in order to identify these project areas.

The site selection process involved 3 main activities:

1. **Potential Site Selection Workshop (November 24th, 2010)**- During this workshop participants from across the cocoa sector were introduced to the potential for Cocoa Carbon and REDD. They also developed important criteria for assessing potential sites, and identified a list of 15 potential project sites.
2. **Site Assessment Field Trips (January 18-24 and February 8-14, 2010)**- All 15 sites, which covered 5 cocoa growing regions, were visited and assessed according to the established criteria. By the end of the assessment field trips, 5 sites were identified as having the most potential for Cocoa Carbon. These included Amansie West, Assin North, Asunafo North/Asutifi, Juabeso, and Wassa Amenfi West.
3. **Site Selection Workshop (February 26th, 2010)**- At the second workshop participants reviewed Cocoa Carbon, REDD+ and the site selection criteria. They discussed the results of the field assessments, and then debated the merits of the 5 strongest sites. The group then selected 3 sites which showed the strongest potential for Cocoa Carbon projects.

The selected Cocoa Carbon sites include:

- **Juabeso (Western Region)**
- **Asunafo North Municipal / Asutifi (Brong Ahafo Region)**
- **Assin North (Central Region)**

The next phase of the CCI will involve:

- Conducting feasibility assessments at each site
- Identifying capacity and interest of site level partner organizations and associations that are working at each site
- Dialoguing with communities and local stakeholders to begin to gage interest and capacity.

Introduction

The Cocoa Carbon Initiative (CCI) represents an effort to alter the economics of deforestation and forest degradation from cocoa expansion by providing cocoa farmers and cocoa farming communities the opportunity to benefit from carbon finance.

In order to meet this objective, CCI aims to establish 2 cocoa carbon pilot projects that will test the feasibility under different scenarios and long term sustainability of REDD+[1] within Ghana's cocoa sector. In an effort to lay a strong foundation for the development of these sites, the Katoomba Incubator and NCRC adopted a stakeholder consultation process in order to identify these project areas. This process involved 2 participatory workshops and 2 site assessment field trips, and culminated in the selection of three areas (1) Juabeso District, 2) Asunafo North/Asutifi District, and 3) Assin North District) where we will engage in detailed feasibility assessments. The overall goal is to move forward with full-scale project development at least two of the sites.

Background

Since the introduction of modern technologies like chainsaws and improved cocoa varieties that are more tolerant to sunlight, cocoa cultivation has played a major role in the conversion of Ghana's forests and the adoption of low to no shade cocoa farming systems. This is in comparison to the more heavily shaded cocoa agroforests that used to be more common in cocoa landscapes. The expansion of cocoa at the expense of the forests has also occurred in an effort to benefit from the fertility of forest soils (forest rent), and to avoid the need for fertilizers in already cultivated areas.

Despite the fact that cocoa plays a major role in the national economy as the leading foreign exchange earner and that over 30% of farmers depend upon its cultivation for their livelihoods, average yields are low due to poor farming practices and continual degradation of the agro-ecosystem. This in turn promotes further cocoa expansion and the cultivation of "larger" farms in order to ensure an adequate harvest.

From a national perspective, the cocoa system is unsustainable over the long-term given its dependence on the disappearing "forest rent" and changing climate conditions, coupled with the low soil fertility in many of the major cocoa growing areas. From an international standpoint, the deforestation associated with cocoa farming poses a major challenge in terms of climate change. The global community is at a crossroads where it must make every effort to reduce carbon emissions from deforestation and forest degradation (REDD), and provide incentives for forest conservation and carbon stock enhancement (REDD-PLUS). Global carbon markets have developed in response to this demand, and in Ghana REDD+ provides a potential opportunity for cocoa farmer associations, cocoa farming communities, and the over 1.2 million farmers (and farm workers) to benefit from these markets, or alternatively from fund-based mechanisms, if they are willing to alter some of their "business as usual" practices.

[1] REDD (Reducing Emissions from Deforestation and Forest Degradation); REDD-Plus (REDD, plus forest conservation, sustainable management of forests, and enhancement of forest carbon stocks).

In practical terms, cocoa communities could benefit by generating carbon credits if they collectively choose to halt the expansion of new cocoa farms into forested areas, including Forest Reserves (FRs) and unprotected patches of forest. This would constitute a simple REDD play. Farmers could also generate carbon credits through maintenance of carbon stocks and/or carbon sequestration by choosing to integrate more shade trees into their farms (through retention of legacy trees, selection of naturally regenerated seedlings, or tree planting) at levels that are higher than the common practice. This would constitute a REDD+ activity.

Even though carbon benefits are likely to be modest due to the relatively low price of carbon and the need to compensate for project costs, when pursued in conjunction with the adoption of improved farming practices (that enable farmers to significantly increase their yields) and other initiatives that provide benefits like certification or shade tree diversification, the CCI could substantially increase the number of trees in the cocoa landscape and help to conserve the country's remaining forests by reducing a key threat.

Cocoa Carbon Workshop #1 (November 24th, 2009)

As the first step towards the development of Cocoa Carbon pilot sites, a one-day workshop was held in late November, 2009, to begin the process of identifying potential project sites. 20 participants from 16 stakeholder organizations and institutions participated in the event [See the Appendix for a full list of participants]. The overall goals of the workshop were to validate a set of key criteria for assessing potential REDD+ sites and create a short-list of potential sites, which would then be subject to further assessment in the field. [See Figure 1] Participants also received a general introduction to REDD and REDD+, and an overview of the linkages between the current system of farming cocoa, its susceptibility to climate change, and the opportunity to implement REDD+ activities in an effort to avoid further deforestation and improve productivity within the sector.

In identifying potential project areas, participants focused on identifying areas where there are clear opportunities for stakeholder collaboration or other points of synergy. In total, the group brainstormed a list of 15 districts that met some of the criteria and are areas where multiple stakeholders work. In Eastern Region the districts included Fanteakwa, Birim North, Birim Central, and Birim South. In Central Region Assin Fosu was selected, and in Ashanti Region Ahafo Ano North, Amansie West, Atwima Mponua and Atwima Nwabiagya were identified. In Brong-Ahafo the potential sites included Asunafo North Municipal and Asutifi. In Western Region the sites included Bia, Juabeso, Mpohor Wassa East, and Wassa Amenfi West. [See the Appendix-Table 1 for the full list of potential sites]

Figure 1: Main Site Selection Criteria for Cocoa Carbon

Social Criteria
• The nature and clarity of land and tree tenure in the specified area
• The size and strength of farmer associations, training programs, projects, or CREMAs in the area, and their ability to go to the necessary REDD-Plus scale
• Possibilities for co-funding
• Observable social or institutional risk factors (land disputes, Chieftancy disputes, urban development)
Biophysical Criteria
• The dominant land cover or land use types in the area, and land use type for new cocoa farms
• Suitability of soil type and rainfall pattern for cocoa • The existence of protected areas (forest reserves or national parks) in the area, and their condition and extent of encroachment/threat
• The existence of off-reserve forest patches in the area, and their condition and extent of encroachment/threat
• Presence of significant areas of low-shade/no shade cocoa OR areas of degraded land or abandoned farms.
• Observable biophysical risk factors (bushfires, cocoa pests and diseases, flooding, and mining)
REDD-Plus Related Criteria
• Number of potential carbon financing options in the area
• Likely carbon additionality for REDD/REDD-Plus
• Likely permanence for REDD/REDD-Plus
• Risk of leakage for REDD-Plus

Site Assessment Field Trips

Two site assessment field-trips were conducted to make an initial assessment of project feasibility in the 15 potential areas. The first field trip (January 18-24, 2010) covered the sites in Eastern Region, Central Region, and southern Western Region. The second field trip (February 8-14, 2010) visited the sites in Ashanti Region, Brong-Ahafo Region, and northern Western Region. In each location, a three-person team gathered information from various sources and using multiple methods, including: key informant interviews with officials from government institutions, farmer associations, and NGOs; focus group discussions with members of farmer groups, individual farm and nursery visits, and collection of data from projects, institutions, and other sources.

Cocoa Carbon Workshop # 2 (February 26th, 2010)

As the final step in the site selection process, the second workshop sought to select 3 out of the 5 sites that were highly recommended as a result of the site assessment field trips. 13 people from 10 different stakeholder institutions, agencies, organizations and companies attended the workshop. [See Table X for a full list of participants] All of the participants received a detailed presentation on REDD, REDD+ and climate change issues. The group also reviewed the selection criteria, and discussed those criteria that had been the most relevant in the field, namely land and tree tenure, social and biophysical risk factors, current land-use and cocoa farming practices, and the REDD-based criteria. Specifically, discussions highlighted the fact that the concept of additionality is critical in the site selection process, as one needs to be able to show what the REDD+ project would actually be "adding" that is not already there or planned for by another project. The importance of land tenure, tree tenure, and risk factors were also crucial due to their potential influence on the "permanence" of the existing or potential carbon biomass that is the focus of the project.

Finally, the field assessment results were shared with the whole group. The Katoomba Incubator team explained the potential challenges that emerged at 10 of the sites, which could potentially inhibit the establishment of a successful REDD or REDD+ project. The top 5 sites were then reviewed in detail, with a thorough discussion of their strengths, opportunities, and challenges. The 5 sites with the strongest potential included: Amansie West, Assin North, Asunafo North/Asutifi, Juabeso, and Wassa Amenfi West.

At the end of the workshop participants ranked their top 3 sites, and Juaboso District (Juaboso), Asunafo North/ Asutifi (Goaso area), and Assin North District (Assin Fosu) emerged as having the highest potential for project success. All three of these sites fulfilled most of the criteria and created higher opportunities for additionality and permanence.

Selected Sites

By the end of the second workshop, 3 sites were selected at which the CCI will move forward with Cocoa Carbon feasibility studies. [See the Appendix- Map 1 for the locations of the sites]

1.1 Juabeso

Juabeso (Western Region) presents an excellent opportunity for cocoa carbon as it is located within a landscape that contains a national park (Bia National Park) and multiple forest reserves of high biodiversity value that are under significant threat from logging and cocoa expansion. Juabeso is also an area that is completely dominated by cocoa production, and cocoa farms tend to be large and contain little to no shade. Abandoned farms are quite common, so the potential to focus on replanting in "old" cocoa farms, instead of encroaching into protected or unprotected forested areas is a strong possibility.

Within this context, there are 3 potential carbon financing options in the area; a REDD play to reduce cocoa farm expansion into the FRs (a situation that has already "eliminated" some FRs in the area); a potential REDD play to protected off-reserve forest patches that are quickly being converted to

new cocoa farms; and a strong REDD+ play to significantly increase on-farm shade tree densities through tree planting and/or natural regeneration—potentially establishing cocoa carbon agroforest corridors and protected area buffer zones that could receive premiums from certification and higher carbon prices due to the added biodiversity value.

From the perspective of social capital, there are 2 young Community Resource Management Areas (CREMAs) in proximity of the Kokrosua FR and 2 more in the vicinity of Bia National Park, which offer platforms upon which to build cocoa carbon activities, benefit sharing mechanisms, and ensure more secure tree tenure for farmers and communities within the CREMA areas. There are also a number of key stakeholders working in the area that could add important value to the project, including the Sustainable Tree Crops Program (STCP), Kuapa Kokoo, Cocoa Abrabopa, and the Wildlife Division, amongst others. Perhaps the most significant challenges at this site involve addressing the opportunity costs of significantly increasing shade tree densities on-farms, and mediating the complexities of illegal logging and cocoa expansion into FRs.

1.2 Asunafo North Municipality (Goaso) & Asutifi

The adjoining districts of Asunafo North and Asutifi in Brong-Ahafo Region offer a number of exciting opportunities for cocoa carbon. There are eight FRs within the area, three of which have been identified to contain an endangered bird species that requires immediate protection, as well as other rare animals. There are also significant patches of off-reserve forest and secondary forest which are rapidly being converted to cocoa, and cocoa farms tend to contain very little shade. However, desiccation during the dry season is becoming a serious problem, which suggests that increasing shade-tree densities and improving farming practices could significantly improve conditions on farms and improve the sustainability of the cocoa system in the area.

Other opportunities include large cocoa land-holdings, which would enable the project to “go to scale” with potentially fewer farmers and/or bring significantly more carbon to market. Interviews and discussions indicated that there are clear land tenure arrangements with no obvious complicating factors, and in terms of land-use types, there is a large opportunity to re-plant in old, unproductive cocoa farms. There are many opportunities for partnering within the two-district area. Cocoa Abrabopa, Kuapa Kokoo, STCP, Cadbury Cocoa Partnership (CCP), government institutions all operate in the area, and a CREMA is being developed with fringe communities that will focus on conserving the White Breasted Rock Fowl.

Given these strengths, there are 3 potential carbon financing options in the area: an on –reserve REDD play to reduce cocoa expansion into FRs and potentially reduce the financial necessity of issuing new concessions in these reserves; an off-reserve REDD play to avoid deforestation and degradation of off-reserve forest patches in the farming landscape that are under considerable threat from cocoa expansion, possibly using the CREMA model; and a REDD+ effort to enhance carbon stocks in the cocoa system through tree planting and/or natural regeneration.

Potential site-level challenges that may require further investigation or consideration include an assessment of the risk of bushfires in certain areas within the two districts and avoiding communities that that tend to be cut off from the main roads during floods. Off-reserve logging is also a serious activity in the region, but there was a strong indication that some individuals and communities are well aware of their rights, which could provide a strong platform for addressing issues of tree tenure.

1.3 Assin North (Assin Fosu)

Cocoa farming in Assin North (Central Region) is the dominant land-use activity and it offers some particularly unique opportunities and REDD-based strengths that provide a strong prospect for cocoa carbon. The area falls within the larger landscape of Kakum National Park and within the district 5 communities gazetted a Dedicated Forest (DF) to ensure its protection and sustainable management. However, the DF is highly degraded and to date it has offered few financial benefits to these communities, which means that they now considering logging as an option. The area is also appropriate for some very high value medicinal species that could be integrated as shade trees, thus increasing carbon stocks and providing farmers with additional sources of revenue.

Additionally, there are strong opportunities to scale-up existing shade tree diversification and certification efforts; both of which use tree planting to increase shade densities above normal practice, and improved farming practices to significantly increase yields. There are also many old and abandoned cocoa farms which could be rehabilitated, thus enabling fallow lands and young secondary forests the chance to regenerate. Key partners working in the area include: Cocoa Abrabopa, Kuapa Kokoo, STCP, and the Mars iMPACT Project, as well as government agencies.

In Assin North there are 3 potential carbon financing options: a REDD+ play that focuses on carbon stock enhancement (tree planting and natural regeneration) in the cocoa system coupled with a strong focus on increasing yields and income through improved farming practices, shade tree diversification (potentially NTFPs or Timber), and/or certification; a REDD+ play that could take a “CREMA” landscape approach to include the above activities, but also focus on carbon stock enhancement within the Dedicated Forest (either through enrichment planting or natural regeneration) and within off-reserve fallows; and an on-reserve REDD play to reduce encroachment and illegal chainsaw operations, while providing the cocoa farming communities with other benefits.

In terms of challenges, land-holdings in the area tend to be smaller than in the west of the country, which may necessitate engaging larger number of farmers. The Dedicated Forest is quite small (less than 150 ha of forest, with a total land area of 250 ha), which is why it would need to be part of a larger landscape approach. As the capital town, Assin Fosu, continues to grow the project would also likely need to pay attention to where development and urban expansion is likely to take place.

The Way Forward

Over the next quarter the CCI aims to:

- Begin feasibility assessments at each site, including socio-economic analysis of project area, community level stakeholder meetings to introduce project ideas, identify possible stakeholders, and understand land-use practices
- Identify capacity and interest of site level partner organizations, associations that are working at each site
- Dialogue with communities and local stakeholders to begin to gauge interest and capacity.
- Initiate discussion with the funding partners about appropriate time and place for a roundtable discussion of the project.

Over the medium to long-term the project will engage in:

- Assessing carbon stocks and creating maps of each site
- Conducting baseline fieldwork and baseline calculations
- Finalizing the technical/feasibility assessment
- Begin site-level design of project activities
- Conduct trainings with farmer organizations and other partners
- Conduct economic modeling of different cocoa carbon scenarios to assess the opportunity costs and potential benefits

Appendix

Table 1: List of Potential Project Sites and Field Assessment Results

Region	District	Selected Sites	Challenges at un-selected sites
Eastern	Fanteakwa		The small land holdings were less desirable. Uncertainties around land and tree tenure presented challenges to permanence
	Birim North		
	Birim Central		
	Birim South		
Central	Assin North	***	
Ashanti	Ahafo Ano North		Risk from bush fires threatened permanence
	Amansie West		Smaller land holdings and less additionality from on-farm shade density
	Atwima Mponua		Little room for additionality with RA/Organic Cocoa Certification
	Atwima Nwabiagya		Close proximity to Kumasi and associated development pressures.
Brong Ahafo	Asunafo North Municipal	***	
	Asutifi	***	
Western	Bia		Land and tree tenure challenges, and questions of carbon "ownership" due to many caretakers
	Jomoro		Unsuitable cocoa soils
	Juabeso	***	
	Mpohor Wassa East		Black pod is serious problem, borderline unsuitable cocoa soils
	Wassa Amenfi West		Strong potential but already a lot of activity in the region on tree planting, and movements on REDD.

Table 2: Workshops 1 & 2 Participants

Participant	Org/Inst.	Workshop #1	Workshop #2
Willem-Albert Toose	Agro-Eco	✓	
Kwame Osei	Agro-Eco	✓	✓
Vince Mcaleer	Armajaro	✓	
Roger Akpabonle	Armajaro		✓
Michael Tenkorang	Cocoa Abrabopa		✓
Bhat Roopak	Cadbury	✓	
Theo Nkansah	Cadbury Cocoa Partnership	✓	✓
Yaa Amekudzi	Cadbury Cocoa Partnership	✓	
K. Abaka-Ewusi	COCOBOD- CSSVD	✓	
Eugene Ofori-Gyemfi	COCOBOD- CSSVD	✓	✓
Alex Asare	FC- RMSC		✓
Mercy Owusu Ansah	FC- RMSC	✓	
Sam Adimado	GOAN	✓	
Winston Asante	KNUST / Katoomba Incubator	✓	✓
Nicholas Agyei-Gyan	Kuapa Kokoo	✓	
Paul Buah	Kuapa Kokoo	✓	
Elvis Kuudaar	Rainforest Alliance	✓	
Atsu Titiati	Rainforest Alliance	✓	
Victor Afari-Sefa	STCP	✓	✓
Seth Gogoe	Twin Trading/Divine Chocolate	✓	✓
Richard Perrin	WAFF/ UTZ	✓	
Johanna Bollhorst	WAFF consultant	✓	
Andrew Agyare	Wildlife Division	✓	
Ana Rodriguez-Seco	Guelph University	✓	✓
Rebecca Asare	Katoomba Incubator	✓	✓
James Ohemeng	Katoomba Incubator	✓	✓
Victor Mombu	NCRC	✓	
Mathilda Sakyi	NCRC	✓	
Dora Abaah	NCRC		✓

Figure 1: Map of Selected Areas