

## Highlights of the month



**RED-PD093/12Rev.3(F)**

ADVANCING REDD+ IN GHANA: PREPARATION OF REDD+ PILOT SCHEMES IN OFF-

Approval Level: Project Manager

Title: ADVANCING REDD+ IN GHANA: PREPARATION OF REDD+ PILOT SCHEMES IN OFF-RESERVE FORESTS AND AGRO-FORESTS

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## Highlights of the month

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Version:13.0

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# INTERNATIONAL TROPICAL TIMBER ORGANIZATION

RED-PD093/12Rev.3(F)

ADVANCING REDD+ IN GHANA: PREPARATION OF REDD+ PILOT SCHEMES IN OFF-

## Highlights of the month

Version:13.0

Date:22/04/2014

Approval Level: Project Manager

### Commencement and/or Completion of major activities:

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Activity 2.3 Development of options for incentive mechanisms that reward farmers and rural communities for adopting sustainable land use practices, was completed. The final report is attached.

Work on activities 3.2 and 3.3 is ongoing.

### Summarize major progress and achievements:

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Concerning Activity 2.3, the study was conducted in 2 communities each in the Aowin-Suaman (New Yakasi and Adonikrom), Asikuma-Odobeng Brakwa (Bedum and Brakwa) Districts and Kintampo North Municipal (Dawadawa no.1 &2 and Tahiruu and Attakuraa) in the Western, Central and Brong Ahafo regions respectively. The specific objectives are (i) analyze local communities perception of the potential REDD+ payment distribution using farmers in six communities in three proposed national REDD+ pilot project sites as a case study and (ii) Develop potential REDD + benefit-sharing proposals/guidelines at forest/farm level for local stakeholders/communities from the case study results.

The report shed lights on REDD + intervention and the corresponding benefits distribution at the community and household level in forest and farm level. The main findings are that there is wide range of beneficiaries of REDD+ payment at the community, forest and household level; REDD+ intervention and benefit distribution need to focus more on the household, not overlooking the community since there is potential to shift from the individual to the community as a whole; computation of payment should be based on performance of households in carrying out REDD+ activities; and cash payment is the most preferred options compared to the in-kind payment.

The implications of these findings to REDD + policy makers and potential project developers are as follows:

(1) Although decision to transfer REDD+ benefit at the horizontal/forest and farm level need to be based on the findings of the present study; economic feasibility, local institutional capacity and governance structures, and the effects on the local economy and on the livelihoods of the poor households should be carefully weighed and assessed to assist identification of an all-inclusive REDD benefit distribution option

(2) Community preferences would not be static. They are subject to changes, particularly when activities of the REDD+ interventions begin to roll out. Therefore, these preferences should be periodically assessed and changes in payment type should be made accordingly (Mohammed, 2011).

(3) Payments to participants who engage in conservation, tree planting and knowledge transmission should form the center stage of any REDD benefit distribution scheme.

## Summarize major progress and achievements:

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### List of products/outputs (reports, publications, maps, guidelines etc.):

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Damnyag, L., Oduro, K.A., Foli, E.G. 2014. Analyses of incentive mechanisms to support farming communities to adopt sustainable land use practices under a REDD+ implementation in forest and savanna transitional zones, Ghana. ITTO REDDES Project, Final Project Report. Unpublished. Kumasi, Ghana.

### Difficulties/obstacles encountered:

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There is a need to extend the project implementation period to fully accomplish Activities 3.2 and 3.3.

### Follow-up on PSC/PTC recommendations, ITTO monitoring visits:

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The second PTC, held on February 28, 2014, approved for the EA to write to ITTO for project extension for a period of four (4) months (April July, 2014) without additional funds. This action has been taken and a request has been made to ITTO for the extension of project implementation period for four months.

The second PTC also approved that the EA should write no objection letter to ITTO for the movement of some budget lines to areas where funds are needed for activities. In line with the recommendation, a NOL was sent to ITTO to request that an amount of US\$1,000.00 should be moved from ITTO budget component 44.3 (purchase of GPS) to ITTO budget components 51 (layout and printing of publications) and 52 (dissemination of publications). The movement of funds within the budget components is without additional ITTO funds.

Annexes



**Advancing REDD+ in Ghana: Preparation of REDD+ Pilot Schemes in Off-Reserve Forests and Agro forests**

**ITTO project RED-PD 093/12 Rev. 3 (F)**

Technical report on

**Analyses of incentive mechanisms to support farming communities to adopt sustainable land use practices under a REDD+ implementation in forest and savanna transitional zones, Ghana**

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Schweizerische Eidgenossenschaft  
Confédération suisse  
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State Secretariat for Economic Affairs SECO



## Table of Contents

Table of Contents .....	2
Acknowledgements .....	3
1.0 Introduction .....	4
2.0 Farmers' perceptions of distribution of potential REDD + benefits from agricultural lands in forests and savannah transition zones .....	5
2.1 Background .....	5
2.2 Theoretical Background on benefit-sharing.....	6
2.3 Methodology .....	7
2.3.1 Study area, sampling and data collection.....	7
2.4 Results and discussions.....	9
2.4.1 Socio economic characteristics of respondents .....	9
2.4.2 Main crop cultivated and nature of land ownership .....	10
2.4.3 REDD+ funds beneficiaries and reason.....	11
2.4.4 REDD+ benefit computation and payment basis .....	12
2.4.5 Choice of REDD benefit transfer and reasons for the preferred choice .....	14
2.4.6 Preferred form of REDD benefit-cash or in-kind.....	15
2.4.7 Using REDD+ benefits to minimize deforestation and forest degradation .....	16
3.0 Opportunities and Challenges of REDD+ benefit distribution at the forest and farm level....	17
3.1 Proposal/guidelines for potential REDD+ benefits distribution in the study communities.	18
4.0 Conclusion .....	19
References .....	20
APPENDIX .....	22

## Acknowledgements

This is the report of Activity 2.3: Development of options for incentive mechanisms that reward farmers and rural communities for adopting sustainable land use practices, of the ITTO project on ‘Advancing REDD+ in Ghana: Preparation of REDD+ Pilot Schemes in off-Reserve Forests and Agroforests’. It is implemented in Ghana by CISR-Forestry Research Institute of Ghana, jointly with researchers at the Bern University of Applied Sciences, Switzerland; Kwame University of Science and Technology, Kumasi, Ghana and the Climate Change Unit (CCU) of the Forestry Commission of Ghana.

We would like to thank Oliver Gardi and Angela Deppeler, at the Bern University of Applied Sciences, Switzerland for the valuable comments in improving earlier draft of this report. Emmanuel Asiedu-Opoku, Richard Adjei, Kwaku Asumandu, and Sarfo Mensah at the Forestry Research Institute of Ghana, Kumasi are also thanked for the field assistance with the data collection and entry.

The report has been prepared in collaboration with the International Tropical Timber Organization (ITTO) and with the financial support of the Swiss Confederation through the State Secretariat for Economic Affairs (SECO).



## 1.0 Introduction

Climate-smart agriculture has the potential to sustainably increase productivity, reduce greenhouse gas (GHG), and enhance achievement of national food security and development goals (FAO, 2013). Because of these, it has become one important approach to achieving food security and climate change goals. To employ this method in order to realize these dual goals, incentives, subsidies or compensations to farmers are required. The theory of incentives includes specialized tasks and economic activity requires a delegation of some of these tasks. The mode of delegation is done in a form of arrangement in which an agent (termed principal in the theory), delegates a specific task to other economic agents. These later agents are paid for executing the task and it is assumed that their interest may diverge from that of the principal agent (Karsenty and Ongolo, 2011). Following from the theory, Karsenty and Ongolo, (2011) refer to incentive as any action of economic agent (northern country) that leads another agent (southern country) to adopt a given behavior. According to Mayers et al. (1996) incentives are signals that indicate increase in value following a given course of action, while subsidies are instruments that can be used to correct market distortions. On a larger scale, in economic theory, subsidies may not be sustainable while incentives could be sustainable, but would only be effective where the policy and regulatory framework are complementary (Mayers et al. 1996). In the context of Reducing Emission From deforestation and Forest degradation (REDD+), Northern countries are to offer some information rent to southern countries to provide incentives to reduce deforestation. Such incentives are rewards to a country for its performance in reducing deforestation.

In the agriculture and forestry sectors in Ghana, various fiscal and financial incentive schemes (formal and informal) are in place to encourage farmers to sustainably manage forest and agricultural landscapes (Lindhjem 2010). Notable among these incentive schemes in Ghana are the modified taungya system (MTS) (a system of rehabilitation of degraded forest reserves with food and tree crops to improve farmer livelihood and the environment); and timber revenue sharing system (sharing of revenue (stumpage fees) that is generated from the sale of commercial timber species in forest reserves and outside forest reserves. In the agricultural sector, the existing sharecropping systems could be an example for sharing benefits, as crops are shared in agreed parts (1/2 in 'abunu', 1/3-2/3 in 'abusa'.

With the sharing of revenue obtained from the stumpage fees, the Forestry Commission deducts a management fee of 60% in the on-reserves and 40% in the off reserves. An additional deduction of 10% is given to the Administrator of Stool Lands. The remaining is shared between the District Assembly (55%), the stool (25%) and Traditional Council (20%). One other timber revenue source is the Concession Rent (fee paid per hectare of forest for a concession area). Revenue from this source is also shared in the same way, but without the FC deductions (Lindhjem et al. 2010).

All these systems or schemes generate some benefits to individual migrant and tenant farmers. For instance, the MTS and the 'abunu' and 'abusa' make farmlands available to many non-titled land holders (leasehold and share crop farmland holders) for their agricultural purposes (Blay et al 2007). These benefits notwithstanding, the activities of these non-titled/insecure farmland holders contribute to deforestation both in the forest savanna transition and high forest zones of Ghana (Damnyag et al. 2012; Leach and Fairhead 2000). The non-conservation behavior exhibited by some of this category of farmers is attributed largely to the benefit sharing

arrangements and the adverse conditions governing such arrangements. For instance, in Gyasi (1997) study in Ghana on strategies on sustainable farming among insecure farmland holders, he notes an overexploitation of the farmlands arising from the one half to one third (i.e. the ‘abunu’ and ‘abusa’) of the food crops cultivated by these tenant/migrant farmers that are given to the landowners. This is not in isolation; Afikorah-Danquah (1997) study also observed overexploitation of farmlands by tenant farmers in the Wenchi district in the Brong Ahafo region of Ghana. Even farmers who acquire farmlands through outright purchase in the cocoa growing areas are not much better than those who engage in short-term leasehold of farmlands. Because most of those group of farmers are continuously forced to contribute to festive and land litigation activities that their land owners engage in (Benneh 1988). According to Benneh (1988), such farmers consider these as exorbitant demands on them that make it difficult for them to engage in forest conservation activities.

These adverse effects on tenants and migrant land holders arising from the informal farmland benefit sharing arrangements are not in isolation. It appears land owners themselves are not satisfied with the formal/statutory arrangement of sharing of timber revenue generated from trees on their farmlands. This dissatisfaction is partly due to the concession Act, 1962 (124) which does not allow felling of naturally occurring trees outside and inside forest reserves for monetary gains (Hansen et al. 2009). Although the constitutional land owner beneficiaries (stool/chief) complain of marginally benefiting from trees on their farmlands, land users (leasehold and share crop farmland holders) get nothing under the prevailing timber revenue sharing in Ghana (Damnyag et al. 2012). To address this timber benefit sharing challenge under REDD+ policy (an international climate change mitigating effort); Ghana’s Forest and Wildlife Policy is being reformed to clarify land owners and farmer’s rights (FC, 2012). Despite this reform on policy level, a number of problems still remain and need to be resolved. Notable among these is the distributional mechanism and weighting of the REDD plus payment at the farm level among land owners and land users (Damnyag et al. 2012; UNCCD, 2012). It is part of this knowledge gap in the potential REDD plus payment distribution at the farm level that this report tries to fill. It is a report on activity 2.3 of ITTO project RED-PD 093/12 Rev. 3 (F). The specific objectives are (i) analyze local communities perception of the potential REDD+ payment distribution using farmers in six communities in three proposed national REDD+ pilot project sites as a case study and (ii) Develop potential REDD + benefit-sharing proposals/guidelines at forest/farm level for local stakeholders/communities from the case study results.

## **2.0 Farmers’ perceptions of distribution of potential REDD + benefits from agricultural lands in forests and savannah transition zones**

### **2.1 Background**

The objective of REDD+ is to create incentives for the reduction of emissions from deforestation and forest degradation, carbon stock enhancement, conservation and sustainable management of forests in developing countries (UNCCD, 2012; Mwayafu et al. 2011). Although most definitions of benefit in the REDD+ literature refer only to monetary benefits provided for emission reductions and carbon stock enhancement, according to Luttrell et al. (2012),

implementation of REDD+ activities can give rise to a number of potential benefits in addition to the monetary benefits. While employment, livelihood improvement, fuel wood etc. are the direct benefits, the indirect ones can be strengthening of tenure rights and law enforcement, enhanced participation in decision making, soil protection, water quality and climate stabilization (Luttrell et al. 2012). Aside these direct and indirect benefits, it is worthy of note that there are also costs associated with the implementation of REDD+ activities. These costs include opportunity costs - forgone net benefits from non-conversion of forest to other land uses other than for the carbon emission reduction activities (Borner et al. 2010). The others are transaction costs (costs to perform transaction involving REDD+ payment which include costs to external parties e.g. market regulators and system administrators) and implementation costs-costs directly associated with actions that bring about reduced deforestation and reduced emissions (Pagiola and Bosquet, 2009). According to Vhugen et al. (2011), benefit sharing mechanism is made up of different institutional means, governance structures and instruments needed for sharing both finance and net benefits from REDD+ implementation.

In the developing countries, how these benefits and costs should be shared between stakeholders, particularly at the forest and farmland level where emissions reduction activities take place is yet to be fully understood. This is particularly the case in Ghana with no experience with REDD+ pilot project's implementation unlike in other countries like Tanzania, Peru, Brazil and Cameroun (Verchot et al. 2012). For now, emphasis on addressing issues of REDD+ related benefit distribution has been at the international level and to some degree at national level, with very limited analysis at the lowest tier level of the administrative hierarchy, which is usually the village, community or farm level (Mohammed, 2011).

Knowledge on benefit sharing both at the national and local level is very essential in national REDD+ strategy design and implementation (FCPF, 2012). Such benefit sharing system is to aim to provide clear and direct incentives for action and build support and legitimacy for the REDD mechanism (Mohammed, 2011). The aim of this case study is to determine how potential REDD+ benefits could be distributed among beneficiaries at community or forest level to ensure effectiveness, efficiency and equity in the implementation of the proposed national REDD+ pilot projects in the study areas. The specific objectives are (i) determine the opportunities and challenges in design and implementation of future REDD+ benefits distribution at the community, forest and farm gates; (ii) develop models for potential REDD+ benefit distribution at community, forest and farm gates to secure legitimacy and support; and to serve as guidelines for the proposed national REDD+ pilot projects in Ghana.

## **2.2 Theoretical Background on benefit-sharing**

Six themes with lessons of relevance to national implementation of REDD+ and benefit-sharing (BS) have been elaborated in Lindhjem et al. (2010) and Nkata et al. (2012). These themes are; Integrated conservation and development projects (ICDP); Payment for forest environmental services (PES), Clean Development Mechanism (CDM) and voluntary carbon markets; Community forestry management (CFM); Sustainable forest management (SFM). Of these, the ICDP, the CFM and SFM have a longer implementation history in Ghana, than the PES, CDM and the Voluntary Carbon Market programmes. Lessons could be learnt from these in identification of the options on benefit sharing for the potential REDD+ benefits. The ICDP is

largely being implemented in the protected areas. Communities living around these protected areas are organized into associations (community resource management areas-CREMAS) to support the official managers of these areas. In the process, some revenue and benefits accrue to these communities through tourist visits among others. Such benefits are shared among households in these communities. Although, these benefits sharing arrangements are not well developed, the experiences from these could be also be useful for the REDD+ benefit sharing development (Katomba group 2011).

Regarding sharing of revenue from forest management activities involving local communities, a number of policies and guidelines have been developed in different countries including Ghana. These policies to a larger extent provide directions to the sharing of these benefits between the state and communities. There is little information on sharing of such revenues formally among households in the communities According to Lindhjem et al. (2010), sharing of revenue between the state and communities is vertical benefit sharing. The horizontal BS is the situation where communities are left to develop their own internal benefit sharing mechanism. One important characteristic of the two is that the benefits provided for the vertical BS compared to that of the horizontal BS differ from one country to the other (Lindhjem et al. 2010). In Ghana, the stumpage fees sharing between the state and the local communities illustrate the link connecting the vertical BS to the horizontal BS. This type of benefit sharing has been provided for in the Ghana's constitution, but largely excludes the individual in the process (ref). The exclusion makes it difficult for the constitutional benefit sharing formula to be adopted for the REDD+ benefit sharing. Factors that need to be in place to make the horizontal benefit sharing to work well are i) clear rules and guidelines regarding benefit sharing between state and the local communities. These are intended to minimize corruption and rent seeking tendency and improve transparency among the actors. The others are ii) lower government taxes on these benefits and iii) inclusion of community's cost in forest management in their benefit computation. Other important factors required for the effective functioning of the horizontal benefit sharing in the communities are i) management plan, ii) executive group representing community members, etc (Lindhjem et al. 2010).

## 2.3 Methodology

### 2.3.1 Study area, sampling and data collection

#### *Study area*

The study was conducted in 2 communities each in the Aowin-Suaman (New Yakasi and Adonikrom), Asikuma-Odobeng Brakwa (Bedum and Brakwa) Districts and Kintampo North Municipal (Dawadawa no.1 &2 and Tahiruu and Attakuraa) in the Western, Central and Brong Ahafo regions respectively (Table 1 & Figure 1). Kintampo North Municipal is the smallest among the tree study districts in population size (GSS, 2012), and the largest in land size.



Figure 1: Map of Ghana showing the study communities in yellow label (Google earth, 2013)

The main criterion for selecting the districts and the communities was because they belong to the communities of three of the proposed national REDD+ pilot projects in Ghana

Table 1: Socio economic data of the study districts

Characteristics	Aowin-Suaman	Kintampo North Municipal	Asikuma-Odobeng Brakwa
Population	138,415	95,480	112,706
Longitude	2° 30'W and 3° 05'W	1°20'W and 2°1'E	
Latitude	5° 25' N and 6° 14' N	8°45'N and 7°45'N	
Land Area	2,717 Km <sup>2</sup>	5,108 Km <sup>2</sup>	884.84 Km <sup>2</sup>
Mean annual rainfall		1,400mm-1,800mm	
Mean monthly Temperature	27°C	26.5°C - 27.2°C	26° -34°C.
Vegetation	Moist-Semi-Deciduous Forests and rainforests	Interior wooded/tree savannah.	Rainforest with patches of semi-deciduous forest

Source: Kintampo North Municipal Assembly 2006 (<http://kintamponorth.ghanadistricts.gov.gh>)



### *Sampling and data collection*

Each of the study communities was visually divided into four quadrants and the dwelling units systematically selected. The unit of the interview was the household heads in these dwelling units. The study communities were visited on days where they were at home to participate in the interview. The questionnaire designed and pretested in June 2013 was used to collect the data through an individual interview on a face-to-face basis. The local dialect was used in the interview and the answers recorded in English in spaces provided in questionnaire sheets. The information collected included socio economic characteristics of the respondents, their knowledge about the importance of trees on their farmlands, their opinion on stakeholders of potential REDD+ benefits, who the beneficiaries should be, reasons why a particular stakeholder deserve to benefit, preferred form of the benefits and how the potential REDD+ compensation can be used to address the problems of deforestation and forest degradation in the study communities (questionnaire in Appendix).

## 2.4 Results and discussions

### 2.4.1 Socio economic characteristics of respondents

A total of 236 farmers were interviewed consisting 77, 80 and 79 household heads in the Aowin-Suaman, Asikuma Odobeng Brakwa and Kintampo North Municipal districts respectively (Table 2). In all these communities, males interviewed were more than the females and the average household size was higher in the Kintampo North Municipal district than the remaining districts. The main occupation for almost all these households was farming with a few engaging in trading (Table 2)

Table 2: Socio economic characteristics of respondents

Characteristics	Aowin-Suaman	Asikuma Odobeng Brakwa	Kintampo North Municipal
Communities (No. of people interviewed)	New Yakasi(42) Adonikrom(35)	Bedum(40) Brakwa (40)	Dawadawa No. 1 & 2(41) Tahirukura&Attakura (38)
Number interviewed	77	80	79
Gender of respondents (% of total respondents)	Male 49 (21.0%) Female 26 (11.2%)	Male 73 (31.3%) Female 7 (3.0%)	Male 62 (26.2%) Female 16 (6.9%)
Average number of persons in households	7	7	9
Mean Age (Years)	50	48	49
Level of education ((% of total respondents)	Formal (Primary, JHS, SHS, MSLC, Tertiary) 58 (24%) No Formal 19 (8.1%)	Formal 62 (26.3%) No Formal 18 (7.7%)	Formal 33 (14.1%) No Formal 45 (19.1%)
Main economic activity (% of total respondents)	Farming 74 (31.6%) Trading 2 (0.9%) Tailor 0 (0%) Teacher 1 (0.4%)	Farming 74 (31.6%) Trading 4 (1.7%) Tailor 1 (0.4%) Teacher 1 (0.4%)	Farming 76 (32.5%) Trading 1 (0.4%) Tailor 0 (0%) Teacher 0 (0%)

## 2.4.2 Main crop cultivated and nature of land ownership

The main economic activity in the study communities is farming. In Aowin-Suaman and the Odobeng Brakwa districts, sun-grown cocoa farming is predominant, while in the Kintampo North Municipal district yam farming is the predominant crop (Table 3). In the Odobeng Brakwa districts compared to the Aowin-Sauaman districts, shaded-grown cocoa is more prevalent. In terms of REDD+ interventions of inclusion of trees on farmlands, it may be more readily promoted in this area. In the case of the Kintampo district, retention of trees on yam farms especially Shea trees may be more easily promoted compared to the rice farms. In most rice farms, most trees are removed by farmers in order to prevent and drive away pest including birds that use these trees as habitats to feed on the rice at the times of maturity.

Table 3: Main crop cultivated in the study communities across the study districts

Main farming (cocoa) type	Aowin-Suaman	Asikuma Odobeng Brakwa	Kintampo North	
	% total respondents (N=74)	% total respondents (N=77)	Main farming type	% total respondents (N=59)
Sun-grown-hybrid	80	60	Rice	41
Shaded-old type	10	25	Yam	46
Both sun-grown-hybrid and shaded-old type	11	16	Maize	7
			Beans	7

Crops grown on the farmlands in the three study districts are largely on own lands (Table 4). This has positive implications for REDD+ interventions in these areas in terms of a more likely acceptance of such activities in future and possible lower conflicts regarding benefit sharing. The next important land ownership that could support REDD+ intervention is rented land (Long term). Farmers engaged in farming activities governed by these two land ownership types are more likely to engage in conservation activities aligned to REDD+ interventions compared to the short term and share cropping farmland holders (Damnyag et al. 2012). Although tree crop growers (Cashew and Mango) are fewer in the Kintampo North Municipal compared to the other two districts with high percentages of tree crop (cocoa), these types could be a useful starting point for introducing additional tree crops into such farms in line with REDD+ intervention. One difficulty with REDD+ intervention in the Kintampo North Municipal is the presence of the larger number of rented (short-term) and sharecropping farmlands holders compared to the other two districts. The larger presence of this group of farmers is likely to pose problems in the acceptance of REDD+ interventions and sharing of the benefit that may be generated from such activities.

Table 4: Crops grown on farmlands in the study districts across different land ownership type in percentage of total of respondents

District	Crops cultivated	Nature of land ownership			
		Own land	Rented land(long term)	Rented land (short term)	Share cropping
Aowin-Suaman	% total respondents (N=45)				
	Mixed	35.6	-	-	-
	Cocoa	71	-	-	-
	Cassava	22	-	-	-
	Maize	11	-	-	-
	Vegetables	2	-	-	-
	Sugar cane	2	-	-	-
	Yam	4	-	-	-
Asikuma odobeng Brakwa	% total respondents (N=35)				
	Mixed	20	6	3	-
	Cocoa	40	17	0	-
	Cassava	23	14	3	-
	Maize	17	3	0	-
	Vegetables	0	3	0	-
	Coconut	0	6	0	-
	% total respondents (N=71)				
Kintampo North	Cassava	8.5	2.8	0	0
	Maize	53.5	12.7	14	2.8
	Vegetables	1.4	0	0	0
	Yam	46.5	8.5	5.6	2.8
	Rice	48	13	14	1.4
	Groundnut	18.3	4.2	0	0
	Mango	1.4	0	1.4	1.4
	Beans	17	0	0	0
	Pepper	4.2	1.4	1.4	0
	Cashew	2.8	0	1.4	1.4
Okro	5.6	0	0	0	

### 2.4.3 REDD+ funds beneficiaries and reason

The first four most important beneficiary of REDD + benefits in the Aowin-Suaman and Asikuma Odobeng Brakwa districts (cocoa growing areas) are the community as a whole, the landowner, her family members and the farmer (Table 5). The main reasons for which they are entitled to benefit from such funds are development of the entire community, farmer's well-being and reward for lands owned that are used for the REDD+ interventions or activities. In the Kintampo North Municipal district, the farmer is the most important beneficiary of the REDD+ funds, followed by the traditional ruler, opinion leader and the community. Apart from the landownership including own, long, short and sharecropping, which is the main reason for which beneficiaries should receive REDD+ funds, support of emission reduction activities is also one important reason why an opinion leader in this area should receive such funds (Table 5). In the three districts, the farmer who is on the ground where emission reduction activities take place appears to be most important beneficiary of REDD+ funds. This may be justified on the grounds that he/she is directly engaged in REDD+ activities and owns the land on which such activities take place whether for a long or short term.



Table 5: REDD + funds beneficiaries and reason

REDD+ Beneficiary	Aowin-Suaman		Asikuma Odobeng Brakwa		Kintampo North Municipal	
	%total respondents(N) =75	Reason	%total respondents (N) =72	Reason	% total respondents (N) =76	Reason
Landowner	53.3	Owens the land	86.5	Owens the land	9.7	Owens the land
Landowner's family	45.3	Owens the land	-	-	14.5	Basic needs
Community	56.0	Development	1.4	Development	22.4	Support emission reduction activity
Traditional ruler	42.7	Owens the land	25.7	Owens the land	76.3	Owens the land
Opinion Leader	25.3	Take care of community	6.8	Owens the land	40.8	Owens the land
Government	1.3	Development	-	-	5.3	Initiates the project
Hired labour	2.7	Hard work	-	-	-	-
Needy/poor	2.7	Own the land	-	-	-	-
Government representative (Unit Committee)	6.7	Help in decision making	-	-	14.5	Support emission reduction activity
Country	17.3	Development	-	-	-	-
World	9.3	Development	-	-	-	-
Farmer	45.3	Development	87.8	Own the land	82.2	Own the land
Forest guard	-	-	1.4	Tree maintenance reward	-	-

#### 2.4.4 REDD+ benefit computation and payment basis

##### *Basis of REDD+ benefit computation*

The important basis on which REDD+ benefit should be computed in the study communities are payment by performance (per acre of forest conserved for carbon emission reduction activities) and the actual amount of CO<sub>2</sub> that the individual farmer is able to reduce (Table 6). The later appears to be the key factor in the benefit computation in the Kintampo North Municipal and Odobeng Brakwa districts, while a mixed approach of the computation is the most important factor in the Aownin-Suaman district (Table 6).

Table 6: Basis of computation of REDD benefits in the study communities in the three different districts

Basis of computation of REDD benefits	Aowin-suaman		Asikuma Odobeng Brakwa		Kintampo north municipal	
	Frequency	%	Frequency	%	Frequency	%
Per acre of forest conserved (pay per performance)	17	22.08	27	35.06	21	26.58
Per ton of CO <sub>2</sub> reduced	10	12.99	38	48.10	29	36.71
In relation to conservation activities such as tree planting and carbon monitoring	13	16.88	3	3.79	12	15.19
Mixed approach	37	48.05	11	13.92	17	21.52

*Basis of payment/distribution to farmers*

Amount of CO<sub>2</sub> emission reduced in REDD+ activities should be the first basis of the benefit distribution (Table 7). This basis is followed by equity, a payment scenario where the amount one receives is equivalent to his contribution to CO<sub>2</sub> emission reduction activities. Labour inputs and size of land holding for CO<sub>2</sub> emission reduction activities is the third most important basis to consider in the REDD+ benefit distribution. Equal payment where all households receive the same amount irrespective of the contribution to the CO<sub>2</sub> emission reduction is least rank. In all these communities in the three study districts, there is significant difference in the ranking of these basis, except the payment of REDD+ funds on the basis of the needy (which favour the poor and needy in the distribution of REDD+ funds) in the communities.

Table 7: Ranking of the basis of REDD+ benefit distribution on 1 to 5 scale of importance by respondents in the study communities of Aowin-Suaman (AN), Asikuma-Odobeng-Brakwa (AB) and Kintampo North Municipal (KN) districts, Ghana

Priority of REDD Benefit distribution	Number of respondents	Minimum	Maximum	Mean	H test statistics (mean rank, p-values) in AN, AB, KN in WR, CR, BR
Reduced CO <sub>2</sub> emission	234	1	5	1.68	AN, AB,KN 131, 109, 113, H(2) 5.9P=0.053
Equity(payments match contributions)	230	1	5	2.2	AN, AB,KN 142, 102, 104 H(2) 19.6 P<0.001
Labor and size of land holding	233	1	5	2.37	AN, AB,KN 87, 131, 132 H(2) 25 P< 0.001
Need/poverty ( the outcomes satisfy needy)	199	1	5	4.21	AN, AB,KN 103, 102, 95 H(2) 1.01 P=0.603
Equal payments to all households or everybody received the same amount	202	1	5	4.39	AN, AB,KN 91, 110, 95 H(2) 5.03 P=0.081

## 2.4.5 Choice of REDD benefit transfer and reasons for the preferred choice

In all the study communities in the three districts, the preferred choice of REDD+ benefit transfer is largely to the household and least to the community as a whole (Table 8). This perception is mainly the preferences of males surveyed

Table 8: Choice of REDD benefit transfer

Benefit transfer choice	Aowin-Suaman		Asikuma Odobeng Brakwa		Kintampo North Municipal	
	Frequency	%	Frequency	%	Frequency	%
Households	73	96.1	77	97.5	74	94.9
Community	1	1.3	1	1.3	2	2.6
Both community and household	2	2.6	1	1.3	2	2.6

The important reasons for preferring REDD+ benefits transfer to the households instead of the community as a whole are because the household work on the farmland where the CO<sub>2</sub> emission reduction is done; to avoid misappropriation of such funds; to motivate farmers to nurture trees on farmlands and enable them enjoy the fruits of their labour (Table 9). Misappropriation of such public funds is not only common in the public sector, it is also common in the rural areas where literacy rate is particularly low (ref)

Table 9: Reason for preferred choices

Reasons for preferred choice	Aowin-Suaman		Asikuma Odobeng Brakwa		Kintampo North Municipal	
	Frequency	%	Frequency	%	Frequency	%
Household work on the farmland	20	33.3	4	6.9	29	39.7
To avoid misappropriation of funds	14	23.3	10	17.2	20	27.4
To avoid conflict	5	6.5	4	6.9	3	4.1
Improve standard of living	6	7.8	-	-	-	-
To motive farmers to nurture trees	5	6.5	14	24.1	6	8.2
To enjoy fruits of our labour	8	10.4	19	32.8	14	19.2
Own the land	2	2.6	-	-	-	-
Need money	-	-	1	1.7	-	-
To ensure equity	-	-	6	10.3	-	-

The form in which respondents in all the districts preferred REDD+ funds to be allocated to community as a whole is largely for predetermined community development projects, although a good number of respondents in the Kintampo North District prefers that such community funds be given to them to decide on their uses (Table 10).

Table 10: Uses of REDD+ benefit for community as a whole

Uses of REDD benefit for community as a whole	Aowin-suaman		Asikuma Odobeng Brakwa		Kintampo north municipal	
	Frequency	%	Frequency	%	Frequency	%
Pre-determined community development project	16	94.12	23	100	3	60
Give to community and they decide what to do	1	5.88	0		2	40

Preferences of the development projects on which REDD+ benefits allocated to community as a whole should be spent vary significantly among respondents in the study districts (Table 11). While the most required development project in the Aowin-Suaman district is hospital, it is streetlight in the Asikuma Odobeng Brakwa and School in the Kintampo North Municipal.

Table 11: Preferred development projects to use REDD+ funds for community as a whole

Preferred development projects to use REDD+ funds for community as a whole	Aowin-Suaman		Asikuma Odobeng Brakwa		Kintampo North Municipal	
	Frequency	%	Frequency	%	Frequency	%
Hospital	8	29.63	0	0	2	28.57
School	9	33.33	0	0	3	42.86
Streetlight	2	7.41	1	100	0	0
Teacher's apartment	1	3.70	0	0	0	0
Roads	1	3.70	0	0	1	14.29
Pipe	2	7.41	0	0	0	0
KVIP (Toilet facility)	4	14.81	0	0	1	14.29

#### 2.4.6 Preferred form of REDD benefit-cash or in-kind

In all the study districts, cash is the most preferred form for the household's REDD+ funds allocation (Table 12). The most important preferred form is both cash and in-kind, that is dominant in Asikuma Odobeng Brakwa district, compared to the remaining two districts

Table 12: Preferred form of REDD+ benefit allocation to households

Preferred form of REDD+ benefit allocation to households	Aowin-Suaman		Asikuma Odobeng Brakwa		Kintampo North Municipal	
	Frequency	%	Frequency	%	Frequency	%
Cash	62	81.58	38	49.35	48	64.86
In-Kind (tangible and intangible)	3	3.95	8	3.89	14	18.92
Both cash and in-kind	11	14.47	31	40.26	12	16.22

Although the in-kind form is the least among the three forms proposed that households prefer that REDD+ funds is allocated to them, different forms of these in-kinds preferences vary widely among respondents (Table 13). While car/motorbike and farm inputs are the most preferred form of these in-kind payment in the Aowin-Suaman district, farm inputs are the most important in the Odobeng Brakwa and Kintampo North Municipal districts (Table 13).

Table 13: Types of in-kind preferences by the household respondents

In-kind preferences	Aowin-Suaman		Asikuma Odobeng Brakwa		Kintampo North Municipal	
	Frequency	%	Frequency	%	Frequency	%
House	11	20.37	2	11.11	5	15.15
Car/motorbike	13	24.07	0	0	7	21.21
Scholarship	1	1.85	1	5.56	2	6.06
Corn milling machine	5	9.26	0	0	0	0
Building materials	8	14.81	0	0	9	27.27
Saw mill machine	1	1.85	0	0	0	0
Farm inputs	13	24.07	15	83.33	10	30.30
TV	2	3.70	0	0	0	0

#### 2.4.7 Using REDD+ benefits to minimize deforestation and forest degradation

Activities that community members carry out that enhance forest conservation in the study districts vary widely. However, the important ones in the Aowin-Suaman district are forest plantation establishment on farmlands and agroforestry, nurturing of trees on farmlands in the Odobeng Brakwa and Afforestation in the Kintampo North Municipal districts. These are useful information for REDD+ intervention in these districts possibly for REDD+ project developers. Additional baseline information on the categories of REDD+ intervention that could be implemented in these areas can also be inferred from this. For instance, avoiding bush burning and cutting of trees could work for avoided deforestation programme in addition to the afforestation projects in the Kintampo North district. Another important implication of this result is that the basis of distribution of REDD+ compensation could also target farmers who engage in these conservation activities in the study communities.

Table 14: Activity that enhance forest conservation in the study communities in the three districts

Activity that enhance forest conservation	Aowin-Suama	Asikuma Odobeng Brakwa	Kintampo North Municipal
	% of respondents (N=69)	% of respondents (N=72)	% of respondents (N=68)
Security/protection of chainsaw activities	13	6.9	19.1
Avoid bush burning	13	-	30.9
Afforestation	10.1	2.8	48.5
Plantation	30.4	8.3	2.9
No clearing of weeds/forest/mulching	4.3	4.2	1.5
Avoid cutting trees	14.5	9.7	16.2
Avoid harvesting of NTFPs	1.4	-	-
Agroforestry	29.0	8.3	2.9
Avoid bad hunting practices	4.3	-	-
Organic farming	15.9	6.9	-
Nurturing of trees on farmland	27.5	68.1	19.1
Law enforcement	4.3	19.4	-
Allowing the field to fallow	-	-	4.4
Creating sacred grove	-	12.5	-

On activities that cause deforestation and forest degradation (DFD) in the landscapes in the study area (Table 15), bush fire and charcoal production are the predominant problems in the Kintampo North Districts, while illegal chainsaw operation is the most serious concern in the Asikuma Odobeng Brakwa and the Aowin-Suaman districts. Aside these different causes of DFD in the study area, farming activities are one cause of DFD that is prevalent in all the communities in the study districts. Although these causes are potential constraint to any REDD+ intervention, and for such a project developer, they are important baseline information for the REDD+ benefit distribution. It implies that stakeholders that engage in these activities that destroy the environment do not deserve enough for any compensation from the REDD+ funds.

Table: 15: Activities that cause deforestation and forest degradation in the study communities in the three districts

Activity that destroy forest	Aowin-Suaman	Asikuma Odobeng Brakwa	Kintampo North Municipal
	% of respondents (N=75)	% of respondents (N=79)	% of respondents (N=79)
Bush fires	37.3	6.3	45.6
Application of herbicides	2.7	5.1	1.3
Chainsaw activities	70.7	84.8	34.3
Wind	1.3	1.3	-
Sand winning	-	1.3	-
Clearing of forest for building purposes	-	1.3	-
Farming	24.0	55.7	36.7
Disposal of waste on land	2.7	-	-
Bad hunting practices	8.0	-	1.3
Charcoal production	1.3	-	58.2
Illegal mining	14.7	-	-
Fertilizer application	1.3	-	-
Shifting cultivation	1.3	-	-
Use of machines on farmlands	-	-	1.3

### 3.0 Opportunities and Challenges of REDD+ benefit distribution at the forest and farm level

The opportunities available in the study communities that favour REDD+ interventions and subsequently the smooth benefit distribution are: i) the prevalence of growing of crops largely on own lands; ii) Prevalence of shaded cocoa farm in one study area compared to non-shaded cocoa farms; iii) dominance of yam growing compared to rice in the Kintampo North study communities; The other opportunities are i) Basis of REDD+ computation and payment should be per ton of CO<sub>2</sub> reduced; ii) the practice of conservation enhancing activities being undertaken in the study communities e.g. forest plantation establishment on farmlands and agroforestry, nurturing of trees on farmlands and afforestation in Aowin, Odobeng and Kintampo districts respectively

Despite these opportunities, there are also challenges that need to be addressed. These include i) difficulty in undertaking REDD+ intervention on sun-grown cocoa and rice growing farmlands in the forest and forest savanna transition zones study sites respectively, ii) The wide range of REDD+ beneficiaries listed; iii) Prevalence of illegal mining and chainsaw operations in the two cocoa growing areas and charcoal production in the non-cocoa growing study area. Most of these problems have also been identified as challenges to the REDD+ implementation in Ghana (MLNR-FIP, 2012). As indicated in the present study, the shift from shaded to open cocoa farming, is one key challenge to REDD + implementation and the payment distribution. In addition to this is the issue of insufficient incentives to conserve or plant trees on farmlands outside forest reserves. The wide range of beneficiaries identified attest to this. The implication for this wide range is whether payment to be allocated to individuals in this range would be sufficient to encourage adoption of conservation agricultural practices (MLNR-FIP, 2012). Alongside this challenge, is when benefits obtain from illegal logging, mining and charcoal productions outweigh the benefits accruing to farmers from participation in REDD+ activities. Should this happens community members are unlikely to participate in the REDD + activities (Lindhjem et al. 2010)

### **3.1 Proposal/guidelines for potential REDD+ benefits distribution in the study communities**

The analysis in this report provides a number of guidelines to shape decision making related to aspects of successful REDD+ implementation and benefit sharing mechanism at the forest and farm level. These include guidelines on i) who should be the actors/beneficiary; ii) what are the existing processes for allocating REDD+ benefits; iii) how and in what form are they to be delivered.

The identification of the beneficiaries as done in this report should be of interest to benefit sharing schemes. The importance for this is to secure inclusiveness of all social groups including men and women, and other identifiable groups like land owners, and land users in the communities that have a stake in both REDD+ benefits and co-benefits. The wide range of beneficiaries identified also implies that there may be the need to continuously put in measures to mitigate potential effects on the losers like migrant farmers (for example in the decisions taken), rather than ignoring them altogether.

Regarding processes for allocating REDD+ benefits, household is the most preferred choice. This implies REDD+ interventions in the communities need to center more on understanding the composition of the households. Maximum results could be achieved with the implementation of such activities if they are done on household basis instead of communal. In this way, benefits would accrue to the participating households. This finding conforms to the origin of Payment of Environmental Services (PES) as agreements contracted between several single landholders (FAO, 2011). There is however the potential to shift these contractual agreements from the individual to the community due to the disadvantages associated with the individual PES schemes and the corresponding advantages associated with the collective/whole-community PES schemes (FAO, 2011).

Weighting of these benefits need to also be done based on the performance of the households who undertake the activities of the REDD + intervention, since this is the most important basis on computation of REDD+ benefit shown in the results of the present study (Mwayafu et al. 2011).

Cash payment is the most preferred form of REDD+ benefit distribution in the study communities. This may have to be taken into account in future in the distribution of REDD+ benefits in the study area.

## 4.0 Conclusion

The report shed lights on REDD + intervention and the corresponding benefits distribution at the community and household level in forest and farm level. The main findings are that there is wide range of beneficiaries of REDD+ payment at the community, forest and household level; REDD+ intervention and benefit distribution need to focus more on the household, not overlooking the community since there is potential to shift from the individual to the community as a whole; computation of payment should be based on performance of households in carrying out REDD+ activities; and cash payment is the most preferred options compared to the in-kind payment.

The implications of these findings to REDD + policy makers and potential project developers are as follows

- ❖ Although decision to transfer REDD+ benefit at the horizontal/forest and farm level need to be based on the findings of the present study; economic feasibility, local institutional capacity and governance structures, and the effects on the local economy and on the livelihoods of the poor households should be carefully weighed and assessed to assist identification of an all-inclusive REDD benefit distribution option
- ❖ Community preferences would not be static. They are subject to changes, particularly when activities of the REDD+ interventions begin to roll out. Therefore, these preferences should be periodically assessed and changes in payment type should be made accordingly (Mohammed, 2011).
- ❖ Payments to participants who engage in conservation, tree planting and knowledge transmission should form the center stage of any REDD benefit distribution scheme.



## References

- Afikorah-Danquah, S., 1997. Local resources management in forest-savanna transition zone: the case of Wenchi District, Ghana. *IDS Bulletin* 28(4), 36-46
- Benneh, G., 1988. The land tenure and agrarian system in the new cocoa frontier of Ghana: Wassa Akropong case study. In: Manshard, W., Morgan, W.B (Eds.) *Agricultural expansion and pioneer settlements in the Humid Tropics*. Selected papers presented at a workshop held in Kuala Lumpur, 17-21 September 1985
- Blay, D., Appiah, M., Damnyag, L. Dwomoh, F. K., Luukkanen, O., & Pappinen, A. 2007. Involving local farmers in rehabilitation of degraded tropical forests: Some lessons from Ghana. *Environment, Development and Sustainability*, Springer. doi:[10.1007/s10668-006-9077-9](https://doi.org/10.1007/s10668-006-9077-9).
- Borner, J., Wunder, S., Wertz-Kanounnikoff, S., Tito, M.R., Pereira, L., Nascimento, N., 2010. Direct conservation payments in the Amazon: Scope and equity implications. *Ecological Economics* 69, 1272-1282.
- Damnyag, L., Saastamoinen, O., Appiah, M., Pappinen, A., 2012. Role of tenure insecurity in deforestation in Ghana's high forest zone. *Forest Policy and Economics* 14(1):90-98.
- FAO, 2011. *Payment for Ecosystem System Services and food security*; (editors); Daniela Ottaviani and Nadia El-Hage Scialabba
- FAO, 2013. *Climate-smart agriculture*. Source book [www.climatesmartagriculture.org/72611/en](http://www.climatesmartagriculture.org/72611/en)
- FCPF, 2012. *Linking local REDD experiences to national REDD+ strategies*. Perspectives of REDD countries in Africa. South-South Exchange in Hawasa, Ethiopia.
- Ghana Statistical Service (GSS), 2012. 2010 Population and Housing Census (PHC) [http://ghanadistricts.com/pdfs/2010\\_pop\\_census\\_districts.pdf](http://ghanadistricts.com/pdfs/2010_pop_census_districts.pdf)
- Hansen, C.P., Lund, J.F., Treue, T., 2009. Neither Fast, nor easy. The prospect of reducing emissions from degradation and deforestation (REDD) in Ghana. *International Forestry Review* 11(4), 439-455.
- Katoomba Group website, available at <http://www.katoombagroup.org/>, last accessed 20 October 2013
- Karsenty, A., Ongolo, S. 2011. Can “fragile states” decide to reduce their deforestation? The inappropriate use of the theory of incentives with respect to the REDD mechanism. *Forest Policy and Economics*
- Leach, M., Fairhead, J., 2000. Challenging Neo-Malthusian deforestation analyses in West Africa's dynamic forest landscape. *Population and Development Review* 26(1), 17-43.

Lindhjem, H., Aronsen, I., Braten, K. G., Gleinsvik, A., 2010. Experiences with benefit sharing issues and options for REDD-PLUS. Oslo, Norway.

Luttrell, C., Loft, L., Gebara, M., Fernanda, K.D., 2012. Who should benefit and why? Discourse on REDD+ Beneficiary; Analysing REDD+: Challenges and choices (Chapter 8). CIFOR, Bogor, Indonesia.

Mayers, J., Howard, C., Kotey, A.N.E., Prah, E., Richards, M., 1996. Incentives for sustainable forest management: A study in Ghana. IIED Forestry and Land Use Series No: 6

MLNR-FIP 2012

Mohammed, E.Y., 2011. Pro-poor benefit distribution in REDD+: Who gets what and why does it matter? REDD Working Paper. IIED. London.

Mwayafu, D. M., Kimbowa, R., Graham, K., 2011. A toolkit to assess proposed benefit sharing and revenue distribution schemes of community REDD + projects. Published by the REDDnet programme, supported by the Norwegian Agency for Development Cooperation (NORAD)

Nkhata, B. A., A. Mosimane, L. Downsborough, C. Breen, and D. J. Roux. 2012. A typology of benefitsharing arrangements for the governance of social-ecological systems in developing countries. *Ecology and Society*17 (1): 17.

Norton Rose LLP, 2010. Forest carbon rights in REDD+ countries: A snapshot of Africa. Edition No. NR9190

Pagiola, S., Bosquet, B., 2009. Estimating the costs of REDD at country level. World Bank. <http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/REDD-Costs-22.pdf> (21 May 2012), Washington, DC. 22p.

United Nations Convention to Combat Desertification (UNCCD), 2012. REDD+ Reducing Emissions from Deforestation and Forest Degradation. An introduction. The Global Mechanism

United Nations Convention to Combat Desertification (UNCCD), 2012. REDD+ Reducing Emissions from Deforestation and Forest Degradation. An introduction. The Global Mechanism Verchet et al. 2012

Vhugen, D., Aguilar, S., Milner, J., 2011. REDD+ and carbon rights: lessons from the field. U.S Agency for International Development Working Paper. United States Agency for International Development, Seattle, WA. 36p.

## APPENDIX

### Appendix A: Survey questionnaire

#### Survey of local communities on

Development of options for incentive mechanisms from potential REDD + benefits in farmlands in forests and savannah transition zones, Ghana [11 June 2013], FORIG

#### Introduction

Payment for Environmental Services (PES) is based on the idea that, to ensure continuous supply of environmental goods and services, immediate incentives are needed to induce people to forgo the more destructive land-use and resource-use practices. Carbon offset credits are units that can be bought and sold in the carbon market. They can be bought by individuals, organizations and government from schemes that reduce greenhouse gas (e.g. carbon) concentrations.

We are hoping that one day; one of these schemes will be established in your area here, where you will participate in carrying out conservation activities on your farmlands. The carbon offset credits that will be generated in the form of money from such a scheme is what I want us to talk about. This is notwithstanding the fact that in reality and in the future, more concrete plan for the revenue distribution will require broad consensus among the different stakeholders and by higher level of government. I want us to discuss how the potential revenue that may be realized from such a scheme (i.e. the portion meant for you here in this community) should be shared among our people here to minimize conflicts and to ensure that you undertake conservation activities on your farmlands to ensure the success of the process.

#### Questions

1. Name of community/no. of persons in household, (a). Community.....(b). # of persons in household<sup>1</sup>  
(c). Name of district (Administrative).....
2. Indicate the main activity you engage in for a living (specify type of activity)<sup>2</sup>.....
3. If cocoa farming in q2, mention the main type (in terms of land size) (a). Sun-grown-hybrid, (b). shaded-old type, (c) both
4. Indicate the size(s)( in acres) of your cocoa farm (s).....
5. What is the total land size for your agricultural purposes
6. Mention the size of land for each of the different crops that you grow; a)....., b).....,c).....d).....
7. Status of landownership for agricultural and forestry purposes,( a). Own land (purchased or inherited),(b) rented land (long, e.g....), (c) rented land (short e.g.....), (d). others (specify
8. Mention the benefits you get from forests.....
9. Do get any benefits from the trees on your farmlands a) Yes, b) No
10. Do you know if trees on your farm have carbon stock and contribute to conservation of biodiversity (a). yes, (b). no
11. Will you be willing to include farming practices like retention and planting of bigger trees on your farmland to increase carbon stocks and conserve biodiversity for you to be paid for this service? a. yes, b. no.

---

<sup>1</sup> Find out total number of households in the community\_\_\_\_\_

<sup>2</sup> Indicate number of cocoa farmers in this community (find out from op. leader).....

12. If yes in q11, how much money (GH¢) will you be willing to accept for an acre of such a cocoa farm that you keep.....
13. Who do you think are the stakeholders of REDD+ in your area here
- landowner -cash crop (cocoa) farmer,
  - landowner-food crop farmer,
  - sharecrop cocoa farmer,
  - sharecrop food crop farmer,
  - traditional ruler,
  - opinion leader (assembly man/woman),
  - other (specify).....
14. Identify 5 beneficiaries of potential REDD benefits in your district/traditional area and give one reason why each should benefit

Beneficiary	Rank;1=largest share share, 2...	Reason
a		
b		
c		
d		
e		

15. The potential REDD benefits calculation should be based on what, a. per acre of forest conserved (pay per performance), b. per ton of CO<sub>2</sub> reduced, c. In relation to conservation activities such as tree planting and carbon monitoring, e. mixed approach.
16. Arrange the following in order of importance to you (use, 1 to 5 against the options, 1=most important, 2= important, etc)
- Basis of payment is inputs (labor and size of land holding),
  - Need/Poverty (whether the needy are favored or the outcome satisfy needs),
  - Basis of payment is on output (reduced CO<sub>2</sub> emission),
  - Equity (payments match contributions),
  - Equal payments to all households or communities, or everybody receive the same amount),
17. Assume the REDD+ benefit (money) is allocated to your community now, what is your choice; transfer potential REDD benefit to (a). Households (b). Community, (c). Both (a). and (b).
18. Give **ONE** reason for your choice in q17 .....
19. If community in q17 indicate how benefit should be shared or used, (a). Pre-determined community development project, (b). give to community and they decide what to do

20. If your answer to Q17 is (b) community. Specify TWO types of projects.....
21. If your answer to Q17 is (a) households, should it be (i).cash,( ii). In-kind (tangible and intangible), (iii). both cash and in-kind
22. If your answer to Q21 is (ii)in-kind, mention the two preferences of your in-kind (i.e. specify the types) payment.....  
.....  
.....
23. Mention two activities that enhance the conservation of forest resources in your area.....  
..
24. Mention two activities in your area that are disruptive land-use practices that destroy trees on farmlands and forests.....  
.
25. Age of respondent.....
26. Gender of respondent a. male, b. female
27. Highest educational level attained.....

Thank you