



PROJECT IDENTIFICATION FORM (PIF)¹
PROJECT TYPE: Full-sized Project
TYPE OF TRUST FUND:SCCF

PART I: PROJECT IDENTIFICATION

Project Title:	Promoting a Value Chain Approach to Adaptation in Agriculture		
Country(ies):	Ghana	GEF Project ID: ²	
GEF Agency(ies):	IFAD (select) (select)	GEF Agency Project ID:	
Other Executing Partner(s):	Ministry of Food Security and Agriculture, Environment Protection Agency	Submission Date:	2010-09-22
GEF Focal Area (s):	Climate Change	Project Duration(Months)	30 months
Name of parent program (if applicable): ➤ For SFM/REDD+ <input type="checkbox"/>		Agency Fee:	260,000(*) (*) including PPG's fees

A. FOCAL AREA STRATEGY FRAMEWORK³:

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Indicative Financing from relevant TF (GEF/LDCF/SCCF) (\$)	Indicative Cofinancing (\$)
CCA-1 (select)	Outcome 1.2. Increased adaptive capacity to climate change in development sectors Outcome 1.3. Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	Output 1.2.1. Vulnerable physical, natural and social assets strengthened in response to climate change impacts, including variability Output 1.3.1. Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	875,000	3,510,000
CCA-2 (select)	Outcome 2.1: Increased knowledge and understanding of climate variability and change-induced threats at country	Output 2.1.1: Participatory Risk and vulnerability mapping conducted Output 2.3.1: Targeted population groups	500,000	580,000

¹ It is very important to consult the PIF preparation guidelines when completing this template.

² Project ID number will be assigned by GEFSEC.

³ Refer to the reference attached on the Focal Area Results Framework when filling up the table in item A.

	level and in targeted vulnerable areas Outcome 2.3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	participating in adaptation and risk reduction awareness activities		
CCA-3 (select)	Outcome 3.1: Successful demonstration, deployment, and transfer of relevant adaptation technology in targeted areas	Output 3.1.1: Relevant adaptation technology transferred to targeted groups	875,000	3,510,000
(select) (select)				
(select) (select)				
(select) (select)				
(select) (select)				
(select) (select)				
(select) (select)				
(select) (select)	Others			
Project management cost ⁴			250,000	900,000
Total project costs			2,500,000	8,500,000

⁴ GEF will finance management cost that is solely linked to GEF financing of the project.

B. PROJECT FRAMEWORK

Project Objective: to promote activities that reduce climate-induced risks to the achievement of food security and income generation objectives for the rural communities in Ghana					
Project Component	Grant Type (TA/IN V)	Expected Outcomes	Expected Outputs	Indicative Financing from relevant TF (GEF/LDCF/SCCF) (\$)	Indicative Cofinancing (\$)
1. Awareness raising on climate change and capacity to address its impacts along the value chain	TA	Outcome 1.1. Increased awareness and capacity of small producers, formal/informal organizations of growers, processors, and traders of CC impacts on agricultural value chains and related livelihoods. Outcome 1.2. Climate and meteorological information is made available to inform agricultural investments and planning decisions	Output 1.1.1. Targeted groups participate in CC-related awareness and capacity building activities Output 1.1.2. A CC awareness raising campaign and capacity building programme are designed Output 1.1.3. Participatory CC vulnerability mapping is undertaken Output 1.2.1. Local radio stations are involved in provision of climate and meteorological information Output 1.2.2. Agro-meteorological information integrating climate change aspects is tailored and disseminated to end users	500,000	580,000
2. Support adaptation to climate change of cassava production	Inv	Outcome 2.1. Cassava production is more resilient to climate change impacts and its quality is maintained despite risk of deterioration associated to climate impact. Outcome 2.2. Risks to cassava production	Output 2.1.1. Probability of CC-associated yield losses reduced Output 2.1.2. Adaptive research on drought-resistant and improved variety undertaken Output 2.1.3. Higher level of forecasting, prevention, early warning on CC-	750,000	4,000,000

		associated with water scarcity mitigated Outcome 2.3. Agro-ecosystem resilience to climate change is strengthened.	related pests and diseases promoted Output .2.2.1 Water harvesting promoted successfully Output. 2.3.1 ha of land managed sustainably Output 2.3.2. Agroforestry promoted in selected sites		
3. Promote innovative adaptation solutions along agricultural value chains	Inv	Outcome 3.1. Successful adoption of innovative solutions that contribute to adaptation in the targeted area and sub-sector Outcome 3.2. Diversified livelihoods and socio-economic impacts of climate change mitigated	Output 3.1.1. Environment-friendly technology for energy production and use to support adaptation promoted in 2 sites Output 3.1.2. Exchange visits with Congo and Cameroon undertaken to demonstrate adaptation benefits arising from the proposed approach and to promote scaling-up of the technology Output 3.2.1 Energy operated water pumping systems piloted to increase the efficiency of water use to face climate change impact on water resources Output 3.2.2. Storage facilities for marketable agricultural products improved to maintain agricultural supply stable even in presence of climate-related shocks	1,000,000	3,020,000

			Output 3.2.3 Energy operated technologies for cassava processing promoted to increase cassava products quality and maintain prices stable to offset possible CC-related shocks Output 3.2.4. Climate-resilient income sources created for cassava producing and processing communities		
	(select)				
	(select)				
	(select)				
	(select)				
	(select)				
	(select)				
Project management Cost ⁵				250,000	900,000
Total project costs				2,500,000	8,500,000

C. INDICATIVE CO-FINANCING FOR THE PROJECT BY SOURCE AND BY NAME IF AVAILABLE, (\$)

Sources of Cofinancing for baseline project	Name of Cofinancier	Type of Cofinancing	Amount (\$)
GEF Agency	IFAD	(select)	8,150,000
Others	TBD	Unknown at this stage	350,000
(select)		(select)	
(select)		(select)	
(select)		(select)	
(select)		(select)	
(select)		(select)	
(select)		(select)	
(select)		(select)	
(select)		(select)	
Total Cofinancing			8,500,000

⁵ Same as footnote #3.

D. GEF/LDCF/SCCF RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY¹

GEF Agency	Type of Trust Fund	Focal area	Country name/Global	Project amount (a)	Agency Fee (b)²	Total c=a+b
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
Total Grant Resources				0	0	0

¹ In case of a single focal area, single country, single GEF Agency project, and single trust fund project, no need to provide information for this table

² Please indicate fees related to this project.

PART II: PROJECT JUSTIFICATION

A. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:

A.1.2. FOR PROJECTS FUNDED FROM LDCF/SCCF: THE LDCF/SCCF ELIGIBILITY CRITERIA AND PRIORITIES:

In line with the programming paper to implement the guidance for the SCCF adopted by the UNFCCC COP at its 9th session, the proposed SCCF intervention will seek to finance the additional costs of achieving sustainable development posed by climate change. In particular, the project addresses the risks to the achievement of Ghana's development priority to increase food security and rural poor people income. These risks are high in the country's development agenda and pursued by the ongoing rural development efforts of the local Government. Agriculture and water management are two priority focus areas of the SCCF program for adaptation. Also, the proposed technology-based approach is consistent with the SCCF programming paper and with the criteria used by the Government in the TNA. It has been proposed as a pilot on the basis of country priorities, technical feasibility and affordability for local population. The proposal has been developed in compliance with the principle of country ownership by having taken into account national priorities and having been formulated jointly with national stakeholders. The project aims to ensure cost-effectiveness and sustainability also after the project completion. The project design criteria have been respected and the added value of the SCCF intervention (additionality) is clearly articulated in the project proposal. Co-financing requirements are satisfied and cost-effectiveness aspects have been carefully considered. The proposed interventions take into account the activities supported in the baseline intervention and in other relevant projects in the country, in order to avoid duplications and ensure synergies with other activities undertaken in the same area of the proposed project.

A.2. NATIONAL STRATEGIES AND PLANS OR REPORTS AND ASSESSMENTS UNDER RELEVANT CONVENTIONS, IF APPLICABLE, I.E. NAPAS, NAPS, NBSAPS, NATIONAL COMMUNICATIONS, TNAs, NIPS, PRSPs, NPFE, ETC.:

The proposed project is in line with two major principles of Ghana's long-term goals with regard to sustainable development, namely the:

- 1) establishment and maintenance of a robust built and natural environment that sustains productive economic activities and pleasant living conditions for both present and future generations; and
- 2) establishment of an environmentally conscious society that exercises self-discipline at all times with regard to individual and common behaviour towards the environment.

The project proposal responds to the priority identified in the following national plans/strategies:

- the Ghana Poverty Reduction Strategy (GPRS), through which the Government of Ghana identifies the following actions as a way to assure a sustainable use of natural resources: to reduce poverty and stimulate growth by modernizing agriculture and reducing post-harvest losses. In relation to the agriculture sector, the GPRS gives strong emphasis to: a) rural production and employment linked to agribusiness; b) a better access to facilities, support services (including legal ones) by small rural business and c) private-sector development;
- the Initial National Communication (INC) to the UNFCCC, which recognizes that Ghana strongly depends on agriculture for its economic development. As agricultural production is based on rainfall, the overall agricultural output is directly influenced by weather patterns and consequently by climate change. The INC also notes that from the socio-economic point of view, there may be secondary impacts on health, nutrition, migration from water-stressed regions and energy-based activities, if proper adaptation options are not undertaken.
- the Technology Needs Assessment (TNA) identifies energy from biomasses as one of the options to address climate change. Development benefits, market potential and environmental/climate change benefits are recognized as the key elements to assess the potential of a new technology. Efficiency improvements and demand size management are considered key areas of intervention.

The project also takes into account the results of the work undertaken under the Netherlands Climate Assistance Programme (NCAP) through which Ghana is currently assessing the impacts of climate change on human health; agriculture – including fisheries, cocoa and root crops production; land management – including soil degradation and biodiversity loss; climate change and poverty linkages; along with climate change and women’s livelihood. Among the outcomes of this programme, of particular relevance to the project is the Report entitled Climate Change and Root Crop Production in Ghana that provides evidence of climate change impacts on root crop production, analyses the vulnerability of yields and human population to future climate change and identifies solutions analyzing the linkages with other aspects of the economy (root and tuber products prices, post-harvest technology, etc) .

Agricultural production is also a major component of the National Climate Adaptation Strategy (NCCAS) which is currently under preparation and that focuses on adaptation programmes in ten sectors of the Ghanaian economy. As a demonstration of the countries’ engagement and efforts in climate change and rural development, policy briefs have been prepared for ten sectors in Ghana of which the agricultural sector features prominently. The policy briefs serve as advocacy tools to inform national policy makers and other stakeholders about the nexus between climate change and sustainable development.

B. PROJECT OVERVIEW:

B.1. DESCRIBE THE BASELINE PROJECT AND THE PROBLEM THAT IT SEEKS TO ADDRESS:

Located in the West African Coast, Ghana shares borders with the Republic of Togo on the East, Burkina Faso on the North, Ivory Coast on the West and the Gulf of Guinea on the South. Ghana’s economy depends on sectors that are particularly susceptible to climate change, such as water resources and agriculture. Agriculture production is Ghana’s main source of employment with over 70% of the population earning its livelihood from this sector. However, only 12 per cent of the total land area is cultivated and agriculture is almost exclusively rain-fed. The Government’s policy on agriculture aims to strengthen the focus on promoting the private sector as an engine of growth, on helping agro-related producers adapt to rapid structural changes in domestic and world economies, and on fostering more efficient commodity chains by forging linkages between production, storage, preservation and marketing.

Root and tuber crops (mainly cassava, yam and cocoyam) contribute 40% of the country’s agricultural gross domestic product (AGDP). Cassava, yam and cocoyam are important source of energy as they constitute a major part of the rural Ghanaian staple diet (58% of the per capita food consumption). They are mostly grown by smallholders for household food security. Cassava alone accounts for 34% of food crop consumption per annum (MOFA, 2003). Ghana is the third African cassava producer with a yearly production of approximately 22% of AGDP. Women are largely responsible for processing cassava into several, different derivatives - such as gari, fufu, tapioca, four, etc.

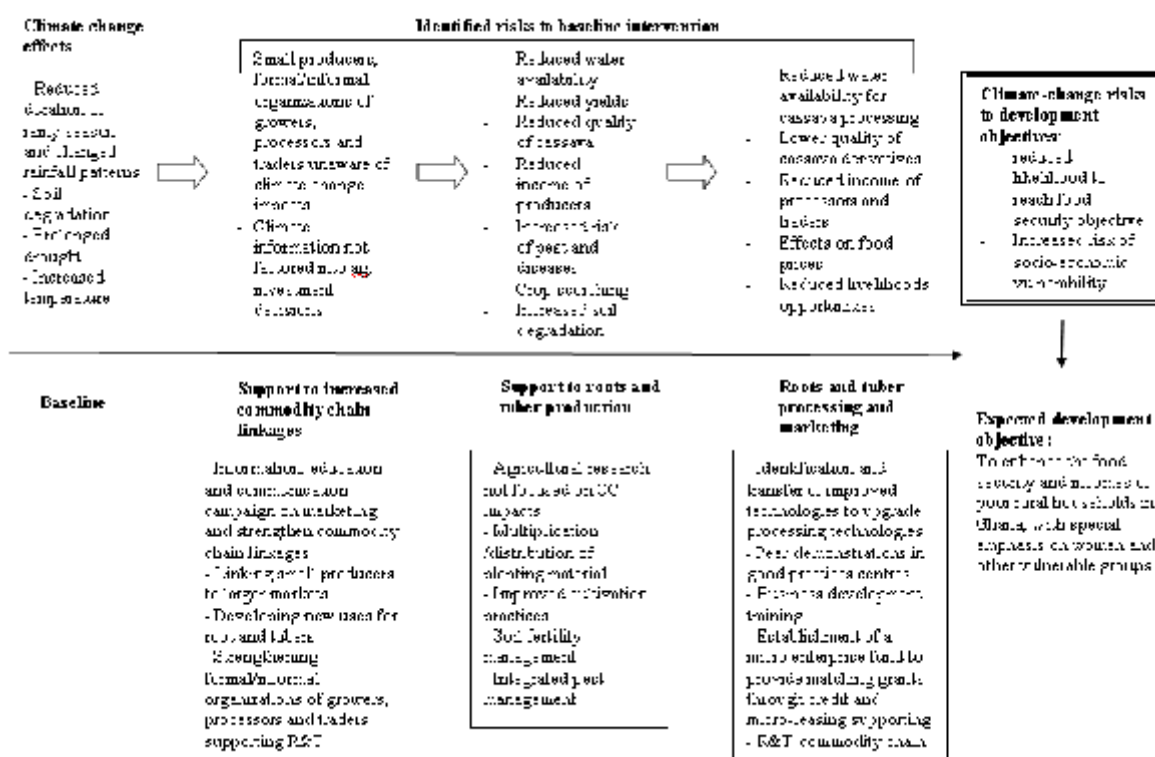
As indicated in the UNFCCC NEEDS report, an assessment of Ghana’s vulnerability to climate change predicted an increase of temperature of about 1 degree C over a 30-year period and reductions in rainfall and run-off by approximately 20-30 per cent, respectively. Being mostly rain-fed, root crop production is highly correlated to changes in rainfall and water availability. Reduced water availability and increased drought are expected to be the most significant effect of climate change on cassava. Cassava productivity or yields are expected to reduce by 3%, 13.5% and 53% in 2020, 2050 and 2080 respectively. Also, experimental research has demonstrated the relevance of climate change impact not only on root crop production, but also on farm incomes and prices. The consequences of climatic changes on this crops are relevant to poor rural people as they are expected not only to affect their food security, but also their socio-economic vulnerability.

Under this scenarios, the achievement of development objectives risks to be undermined. In particular, climate change threatens food security and income generation objectives. This suggests the

relevance of a value chain approach to adaptation in the root and tuber sub-sector to capture the dynamics of climate-induced changes on commodities' demand and supply.

Under a business as usual scenario, traditional rural development programmes that target root crops focus on increasing production and improving the value chain development, but they do not take into account the effects of climate change. The baseline for the SCCF intervention is the IFAD-supported Root and Tuber Improvement and Marketing Programme that aims to enhance the food security and incomes of poor rural households in Ghana. The programme is articulated around the following main thrusts: (i) multiplication of planting material, soil fertility and integrated pest management, together with upgrading the cultivation practices of roots and tubers farmers; (ii) enhancing the efficiency and quality of processing and marketing; (iii) creating a "pull" factor for boosting production and promoting a better balance of supply and demand; (iv) creating mechanisms to facilitate access by the asset-poor to investment and working capital; (v) supporting professional organizations to enhance participation in policy dialogue, and empowerment of small-scale root and tuber farmers, processors and traders; (vi) supporting all the above through a strong information, education and communication effort. The total project cost is 27.7 million USD of which 19 million USD are provided by IFAD.

Below is represented the chain of climate change effects expressed in relation to the baseline situation and addressed in the project.



Based on the above, the proposed strategy tackles the climate-associated risks on both food security and rural livelihoods that depend on cassava production, processing and sale. Addressing climate risks that affect the production only is not, in fact, sufficient to ensure food security. Improving efficiency in cassava processing is also important as it would improve the quality of the cassava products despite climate change impacts. It would further contribute to the creation of additional sources of income and allow the project beneficiaries to engage in other income generating activities.

B. 2. INCREMENTAL /ADDITIONAL COST REASONING: DESCRIBE THE INCREMENTAL (GEF TRUST FUND) OR ADDITIONAL (LDCF/SCCF) ACTIVITIES REQUESTED FOR GEF/LDCF/SCCF FINANCING AND THE ASSOCIATED GLOBAL ENVIRONMENTAL BENEFITS (GEF TRUST FUND) OR ASSOCIATED ADAPTATION BENEFITS (LDCF/SCCF) TO BE DELIVERED BY THE PROJECT:

The objective of the proposed SCCF intervention is to promote activities that can help overcoming climate-induced risks to the achievement of food security and income generation objectives for rural communities in Ghana, by minimizing:

- 1) the direct impacts of climate change on root and tuber production and processing, particularly in terms of water use efficiency; and,
- 2) the socio-economic vulnerability to climate change of poorest segment of the population, particularly women, engaged in cassava and other agricultural products and processing as their source of livelihood.

At a time when demand of natural resources is increasing, climate change is posing additional stress on the agriculture and food sector. Increased drought risk is expected to affect productivity, making it more difficult to meet the demand for food and other rural and farm-based goods and services. Unlike other crops, cassava has the advantage to be a crop suitable for production on marginal land and resistant to floods. It is grown and processed by poor people, particularly women, for both food and income generation purposes. All these characteristics make investments in cassava relevant to produce win-win solutions for climate adaptation, food security and poverty reduction.

The proposed strategy entails a combination of activities related to the following: awareness on climate change impacts and capacity building on its responses at the local level; adaptive research and adaptation practices relevant to agriculture; technology use to support adaptation; income diversification opportunities. These areas of intervention are also in line with the axes of the UNFCCC Nairobi Work Programme on impacts, vulnerability and assessment.

The project is articulated around a series of responses to the direct impacts of climate change on cassava production and processing, particularly related to the risk of reduced water availability and increased drought, as well as the direct socio-economic impacts on rural livelihoods.

Component 1. Increased awareness on climate change and capacity to address its impacts in relation to commodity chains. The activities promoted through this component aim at increasing the awareness of cassava producers, formal/informal organizations of growers, processors and traders on climate change impacts along commodities' chain and at supporting their capacity to adapt to these risks. In building capacity on possible response measures, advisory services and training activities will be tailored to the specific risks identified in the proposal and will focus on technical aspects to implement them. Information dissemination and communication will also entail a campaign to disseminate through radio climate/meteorological information. For this purpose, the project will promote ways to tailor and disseminate to end users (extension services, farmers' groups, etc) agro-meteorological information that include climate change considerations. This would allow farmers and producers to make more climate-informed farming decisions. The project will adopt participatory approaches to vulnerability mapping in the project area and will aim to identify with the local communities suitable adaptive responses. In this component particular attention will be given to women and youth.

The expected adaptation benefits arising from this component are therefore associated with a better understanding by small producers, formal/informal organizations of growers, processors and traders of the expected impacts of climate change on the resources and the activities on which

they depend. Climate and meteorological information will be made available to project beneficiaries and hotspot of vulnerability will be identified through participatory climate change vulnerability mapping.

Component 2. Support adaptation of cassava production. This component will target specifically the impacts of climate change on the root and tuber production. It will focus on the direct physical impacts of climate change on production, but indirectly will address its effects on farmers' income and livelihoods. As a response to the risk of reduced water availability, the project will support improved water management, including through: (i) alternative ways to increase water supply, and (ii) a more efficient use of irrigation water. As both the yields of root and tuber and their quality may be affected by increasing temperature and changed rainfall patterns, the project will promote also adaptive research on drought-resistant and improved varieties that best respond to specific climatic risks. In selected sites, relevant soil management practices and/or agroforestry will be promoted to boost soil fertility and decrease climate-induced soil degradation, but also to provide alternative source of livelihoods to farmers. In the same way, higher levels of forecasting, prevention, early warning and early reaction to the risk of new or increased climate change-related pests and diseases will be promoted. The largest portion of SCCF financing will focus on water management aspects, given the particular relevance of climate change impact on water resources, and on the testing of drought-resistant and improved varieties. IFAD's co-financing will also focus on this last activity, but also on on-farm testing of nutrient management techniques, composting and setting up of demonstration fields. The SCCF intervention will cover the costs associated to the introduction of innovative approaches to sustainable land management that sustain adaptation at the community level in hotspots of vulnerability identified on the basis of vulnerability participatory mapping exercises. In particular the potential to introduce agroforestry, where possible, will be examined as these systems can generate benefits such as enhanced nutrient cycling, increased soil fertility and reduced erosion rates, which would additionally increase resilience of farming systems while allowing for a greater diversity in food production.

The expected adaptation benefits arising from this component are associated to: (i) increased resilience of root and tuber production to climate change impacts through adaptive research and improved varieties; (ii) improved management of water resources as a way to reduce the vulnerability to the increased likelihood of water scarcity and variable rainfall patterns and (iii) reduction in potential losses of farmers' income.

Component 3. Promote innovative adaptation solutions along agricultural value chains. This component aims to reduce the economic vulnerability of agricultural producers and processors associated to the impacts of climate change on agricultural productivity. The rationale for this component is that the increased uncertainties associated to climate change around water availability, yields, quality of the production, etc. will ultimately affect their income generating opportunities. Therefore, through this component the project aims to: (i) create new income generating opportunities for cassava based production systems; (ii) offset the likelihood of lower yields' quality as a consequence of climate change by increasing the efficiency of cassava processing to improve the quality of cassava derivatives; (iii) support more efficient water use for both irrigation and cassava processing; (iv) improve post-harvest technologies, mostly storage of marketable agricultural outputs, as a buffer against climate-induced local supply changes. This component differs from business as usual interventions that aim to maximize the production and the return on labour of existing processing activities in the cassava sub-sector. Baseline interventions support mostly the transfer of small-scale processing equipment, improved fryers for gari, support for making, importing and testing prototypes. The proposed SCCF intervention will primarily reduce the dependance of the targeted rural livelihoods from one single income source. Also, through this component the project seeks to minimize the risk of price volatility induced by climate change promoting post-harvest technologies that would help maintaining

stable agricultural produce and prices. In this perspective, the SCCF intervention concentrates on the quality of the products and their nutritional value that can be affected by climate change impacts rather than on maximizing the output.

As a way to respond simultaneously to the above multiple objectives, the project proposes as a pilot the introduction of a technology-based solution that takes into account the underlying resources/inputs endowment, the socio-economic setting and the market conditions in the targeted sub-sector. More specifically, the activities promoted through this component rely on the use of energy obtained from cassava processing by-products along with other biomasses. As also acknowledged by the IPCC AR4, energy supply offers many opportunities for synergies between adaptation, mitigation and other benefits, particularly for rural populations. Cassava peels and processing water resulting from the cassava operations is either abandoned nearby processing places or used as land fill or burnt. This means that they are largely available inputs at virtually zero-cost to the local population. Acknowledging the potential of this unutilized source, the project will promote the establishment of a gasifier and biogas installations in two pilot sites. The energy produced will be used both as an income diversification source and for rural applications mostly to increase the efficiency in water use, cassava processing, and storage of agricultural products.

Through this component the project is expected to achieve the following adaptation benefits:

- More efficient use of water for both irrigation purposes and in the processing of cassava. This would be achieved by using energy produced out of cassava peels/barks to operate efficient water pumping systems located nearby the processing sites. This will counterbalance the negative effect of climate change on water availability for both cassava production and processing;
- Improved storage of marketable agricultural products, through the use of storage facilities operated by the energy generated from cassava by-products. These facilities would work as a buffer against climate-induced local supply changes as they would allow storing crops for longer periods and fetching better prices;
- Offer an alternative source of income to the project beneficiaries through the sale, on the local market, of the gas/biogas and the energy produced. This additional incomes would allow them maintaining their livelihood despite the negative effects of climate-related impacts on their harvests and sales;
- Ensure the quality and nutritional value of cassava derivatives, which are likely to be compromised by the climate change effects –in terms of their nutritional contents (starch and proteins). The use of equipments operated mechanically (thanks to the energy produced from cassava by-products) could in part compensate these losses by helping to produce a higher quality of final cassava food derivatives –with a higher market value than derivatives produced using traditional, manually operated, technology.

The energy produced could be also used to replace firewood for domestic use. This would in turn reduce the pressure on natural resources that are key to halt the impacts of climate change on soil in terms of increased and/or accelerated land degradation.

The innovative aspect of this component is the promotion of a self-sustaining and virtuous circle in the cassava sub sector that foster adaptation to climate change for food security and development along the value chain and takes advantage of the use of an environmentally-friendly technology that can be easily operated by the local population. To encourage the scaling-up of a similar approach in countries with the same potential, exchange visits with Congo and Cameroon will be organized. The added value of this activity is that with the use of this technology equally positive benefits can be generated through up scaling in a different geographic context.

B.3. DESCRIBE THE SOCIOECONOMIC BENEFITS TO BE DELIVERED BY THE PROJECT AT THE NATIONAL AND LOCAL LEVELS, INCLUDING CONSIDERATION OF GENDER DIMENSIONS, AND HOW THESE WILL SUPPORT THE ACHIEVEMENT OF GLOBAL ENVIRONMENT BENEFITS(GEF

TRUST FUND) OR ADAPTATION BENEFITS (LDCF/SCCF). AS A BACKGROUND INFORMATION, READ [MAINSTREAMING GENDER AT THE GEF.](#)":

The project will directly target rural households composed mostly of economically active poor people such as small-scale cassava farmers and processors (both single and associated). It will have a special focus on women as they play a major role in cassava processing (90% of them are involved in cassava processing). Time savings associated with the use of more efficient equipment for cassava processing will also allow them to engage in other income generating activities and/or education. Gender mainstreaming will be integral and central to the implementation at all levels and in all respects. Gender-specific concerns will be integrated into all the topics addressed during capacity building. The awareness and capacity building campaigns on climate change will emphasise gender awareness and sensitivity. Also, where possible the reports and M&E activities will provide gender-disaggregated data.

Unemployed, young people and the most vulnerable groups will be also targeted. By creating off-farm job opportunities, for instance linked to the production and use of energy and biogas, the project will contribute to mitigate migration flows, otherwise likely to be exacerbated by climate change impact.

The project is also expected to deliver significant environmental benefits. The vast majority of cassava peels and processing waters resulting from the cassava processing is, in fact, either abandoned nearby processing places or used as land fill or burnt. Due to their high cyanide contents, the current ways of disposing cassava wastes result in serious threats to the environment (both to the soil and water-table). The possibility to use it for energy production to increase efficiency along the cassava value chain offers therefore the prospects of adaptation and environmental win-wins. The use of biomasses for energy production also contributes to climate change mitigation as it reduces greenhouse gases emissions.

The potential application of energy for domestic uses can also produce significant health benefits by contributing to reduced risk of respiratory diseases and reduced incidence of intestinal problems (thanks to the use of water boiled with the energy). A combined effect of these two benefits is a decline in the share of the household income devoted to medical bills. In turn, labor force availability would be improved. Furthermore, the eventual availability of energy for other purposes could also contribute to improve education and increase connectivity (e.g. radio, internet, etc.).

B.4 INDICATE RISKS, INCLUDING CLIMATE CHANGE RISKS THAT MIGHT PREVENT THE PROJECT OBJECTIVES FROM BEING ACHIEVED, AND IF POSSIBLE, PROPOSE MEASURES THAT ADDRESS THESE RISKS TO BE FURTHER DEVELOPED DURING THE PROJECT DESIGN:

A major risk is associated to a low beneficiaries' participation in the project activities. However, for the components on awareness and capacity building, and adaptation of cassava production, this risk should be mitigated by the existence of an already sound enabling environment to support these activities created through the past and ongoing cassava-related IFAD operations in the country. In particular the lessons learned from the Root and Tuber Improvement Programme offer a good basis to build on and provide indications on the best ways to involve the project beneficiaries. For the technology-based component the non-adoption risks are low as the input for energy production is largely available at zero-cost in the country and not used for other purposes. Availability of adequate skills to the use of the proposed technologies could be a constraint, although for the production of energy the proposed technology is very user-friendly. Technical assistance will be however provided to support these activities ensuring the full engagement of community-based organizations. In general, the project will adopt also a demand-led and participatory approach that should ensure the active engagement of the beneficiaries in the project implementation and reinforce their sense of ownership on the proposed activities. A full assessment of risks will be undertaken during project preparation.

The project is not expected to produce any major environmental impacts. On the contrary it is expected to produce a number of environmental benefits. The project will benefit from awareness raising and capacity building activities supported in the baseline on issues of job safety, pollution, etc.

B.5. IDENTIFY KEY STAKEHOLDERS INVOLVED IN THE PROJECT INCLUDING THE PRIVATE SECTOR, CIVIL SOCIETY ORGANIZATIONS, LOCAL AND INDIGENOUS COMMUNITIES, AND THEIR RESPECTIVE ROLES, AS APPLICABLE: The project will work with small-scale operators in the root and tuber sub-sector, be they farmers, trade and women organizations, private sector (such as: processors, traders, exporters...). The private sector's role will be particularly relevant in areas such as the distribution on improved, drought resistant varieties and the manufacture of more efficient processing equipment. Medium- and large-scale enterprises could be engaged, as appropriate to absorb raw and intermediate products, including the energy produced. Also, the project will work with NGOs and agricultural extension agents to screen interested farmers, processors and traders and to support communication, education and awareness efforts. Implementation Partners will be selected in a transparent manner based on their capacity, experience and expertise. They will be mostly engaged in supporting non –agronomical activities. Research and Universities will provide backstopping on research-related activities. The project activities will be largely self-targeting as the root and tuber sub-sector is dominated by the rural poor. However, targeting mechanisms will be put in place to guarantee access by the poorest and avoid elites capture.

B.6. OUTLINE THE COORDINATION WITH OTHER RELATED INITIATIVES: the project will seek synergies and will build on the lessons learned from other poverty-reduction and climate change-related projects. These include the Global Cassava Initiative supported by IFAD and FAO, the Regional Cassava Marketing Initiative that supports the New Partnership for Africa's Development initiative, the World Bank-financed Community-based Rural Development Project, several food security projects financed by the Canadian International Development Agency and IFAD and the DANIDA funded Climate Change Adaptation project all focusing on the three northern regions of Ghana, the DFID's technology development and extension work on cassava processing, the Japan's funded project on developing capacity and financing options for mainstreaming climate change adaptation in Ghana with a focus on early warning systems, the WB/GEF-funded Climate, Water and Agriculture project focusing on the impacts on and adaptation of agro-ecological systems in Africa, and the People's Dialogue on Human Settlements Community-led response to climate change through communication, awareness creation and education that targets Ghanaian slum dwellers. Possible linkages and synergies will be explored with the ongoing IFPRI/IFAD work on the assessment of carbon sequestration potential and incomes' increase through carbon credits for cassava carried out in partnership with CSIR.

C. DESCRIBE THE GEF AGENCY'S COMPARATIVE ADVANTAGE TO IMPLEMENT THIS PROJECT: IFAD has a longstanding, well-performing and diversified portfolio in Ghana. Since 1980 IFAD has invested in initiatives to reduce poverty by funding 16 loans to implement 15 programmes and projects. Five of them are ongoing. IFAD loans amount to a total commitment of US\$193.4 million, making Ghana the second highest recipient of IFAD funding in West and Central Africa. Ghana has also benefited from a number of technical-grant-financed activities, especially for improving the production of roots and tubers and rice, for knowledge sharing (FIDAFRIQUE) and for policy dialogue (the Hub for Rural Development and Food Security in West and Central Africa).

C.1 INDICATE THE CO-FINANCING AMOUNT THE GEF AGENCY IS BRINGING TO THE PROJECT:

The IFAD co-financing to the project is 8.15 million USD through the Root and Tuber Improvement and Marketing project.

The total SCCF funding requested for this project and the associated agency fees is at 2,750,000 USD (exclusive of 110,000 USD for PPG and associated agency fees).

C.2 HOW DOES THE PROJECT FIT INTO THE GEF AGENCY'S PROGRAM (REFLECTED IN DOCUMENTS SUCH AS UNDAF, CAS, ETC.) AND STAFF CAPACITY IN THE COUNTRY TO FOLLOW UP PROJECT IMPLEMENTATION:

The IFAD strategy in Ghana 2006-2011 is aimed to support the Ghana Growth and Poverty Reduction Strategy (GPRS). The result-based country strategic opportunities paper (RB-COSOP) fosters the development of a market-driven agricultural sector and dynamic private sector. It also recognizes that being almost exclusively rain fed, the sector remains highly volatile, and the resulting risk-minimization strategies of agricultural households hinder specialization and microenterprise development downstream from production. Furthermore, the fragility of the soils and climatic factors are posing the risk of desertification. The goal of the RB-COSOP and of the corollary country programme is to achieve improved, diversified and sustainable livelihoods for rural poor people, particularly those who are dependent on marginal lands, for rural women and for other vulnerable groups (thereby contributing to Millennium Development Goal 1 and marginally to Goal 3 (gender and equality for women) and Goal 7 (environmental sustainability)). The RB-COSOP targets smallholders, particularly women and other vulnerable groups, and has three main thrusts: improve food security and arrest environmental degradation; assist resource-poor, subsistence farmers; and enhance income-generating activities. The proposal is also aligned to the IFAD's regional strategy for Western and Central Africa stipulates that the rural poor need to have greater access to a variety of interdependent assets - human and social, natural, infrastructural and financial. They need to have influence over the major decisions that affect their wellbeing. They also need to be less vulnerable to shocks (e.g. disease, conflict, natural disasters) that threaten to destroy their asset base. In order to achieve this objective, the regional strategy calls for "raising agricultural and natural resource productivity and improving access to technology" and "reduce vulnerability to major threats to rural livelihoods". Environmental factors are considered key elements of sustainability; hence IFAD's developmental efforts have to ensure a sensible, situation-specific balance between economic and environmental concerns. The present proposal is also in line with IFAD's Climate Change strategy approved in April 2010. It aims to maximize IFAD's impact on rural poverty reduction in the changing context of climate change by supporting innovative approaches to helping smallholder farmers build their resilience to climate change. IFAD's engagement on climate change is centred on the promotion of a coherent approach to climate change, rural development, agriculture and food security. The present proposal is consistent with this approach.

In terms of staff capacity to follow up project implementation, IFAD's staff to be dedicated to the formulation, implementation and supervision of the project consists in:

- the Country Programme Manager who is responsible for all IFAD's operations in the country and responsible for the management of the project implementation;
- the Coordinator of the regional cassava processing marketing initiative to provide technical backstopping in relation to cassava;
- the Programme Manager for GEF/LDCF/SCCF operations in Western and Central Africa to provide technical backstopping on environmental and climate change related issues throughout the project implementation and technical supervision cycle;
- support staff and consultants at HQs and in the country;
- the staff of the RTIMP with a PCO based in Kumasi and three zonal offices established at Tamale, Koforidua and Techniman.

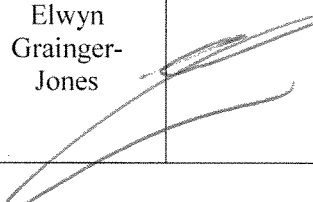
IFAD and the Ghanaian government have recently signed the Host Country Agreement to facilitate IFAD's country presence. **Under this agreement IFAD will soon establish a permanent office in Ghana.**

PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the Operational Focal Point endorsement letter(s) with this template. For SGP, use this OFP endorsement letter).

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
Jonathan A. Allotey	Director	ENVIRONMENT PROTECTION AGENCY	

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF/LDCF/SCCF policies and procedures and meets the GEF/LDCF/SCCF criteria for project identification and preparation.					
Agency Coordinator, Agency name	Signature	DATE (MM/dd/yyyy)	Project Contact Persons	Telephone	Email Address
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