



REQUEST FOR CEO ENDORSEMENT

PROJECT TYPE: Full-sized Project

TYPE OF TRUST FUND:LDCF

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PART I: PROJECT INFORMATION

Project Title: Reducing Vulnerability of Banana Producing Communities to Climate Change Through Banana Value Added Activities - Enhancing Food Security And Employment Generation			
Country(ies):	UGANDA	GEF Project ID: ¹	5603
GEF Agency(ies):	UNIDO (select) (select)	GEF Agency Project ID:	140015
Other Executing Partner(s):	Ministry of Agriculture, Animal Industry and Fisheries (MAAIF); Ministry of Industry Trade and Cooperatives (MTIC)	Submission Date: Resubmission date	05/21/2015 08-13-2015
GEF Focal Area (s):	Climate Change	Project Duration(Months)	36 month
Name of Parent Program (if applicable):		Project Agency Fee (\$):	253,800
	<ul style="list-style-type: none"> ➤ For SFM/REDD+ <input type="checkbox"/> ➤ For SGP <input type="checkbox"/> ➤ For PPP <input type="checkbox"/> 		

A. FOCAL AREA STRATEGY FRAMEWORK²

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Grant Amount (\$)	Cofinancing (\$)
CCA1	Outcome 1.1: Mainstreamed adaptation in broader development	Output 1.1.1: Adaptation measures and necessary budget allocations included in relevant frameworks	LDCF	182,000	323,700
	Outcome 1.2: Reduce vulnerability in development sectors	Output 1.2.1: Vulnerable physical, natural and social assets strengthened in response to climate change impacts, including variability	LDCF	809,000	4,583,700
	Outcome 1.3: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	Output 1.3.1: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	LDCF	1,160,000	905,700
CCA2	Outcome 2.3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	Output 2.3.1: Targeted population groups participating in adaptation and risk reduction awareness activities	LDCF	232,000	1,128,700

¹ Project ID number will be assigned by GEFSEC.

² Refer to the [Focal Area Results Framework and LDCF/SCCF Framework](#) when completing Table A.

CCA3	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	LDCF	437,000	123,702
Total project costs				2,820,000	7,065,502

B. PROJECT FRAMEWORK

Project Objective: To support vulnerable communities in Western Uganda to better adapt to the effects of climate change (CC) by providing greater opportunities for income generation, poverty reduction and food security, through banana value addition activities						
Project Component	Grant Type	Expected Outcomes	Expected Outputs	Trust Fund	Grant Amount (\$)	Confirmed Cofinancing (\$)
Component 1: Climate Change Adaptation (CCA) and gender equality for adaptation mainstreamed into National Development Policies/Strategies.	TA	Outcome 1: CCA strategies coupled with appropriate action on gender equality are incorporated into developmental policies and implemented by stakeholders in the various sectors	<p>Outputs 1.1 National policy documents such as the Agriculture sector strategic plan updated with action on CCA and gender mainstreaming for adaptation</p> <p>Output 1.2 CCA coping strategies including gender equality for adaptation promoted among investors and other stakeholders in the agro-industries and rural enterprise development sector.</p>	LDCF	140,000	200,000
Component 2: CC resilience building of vulnerable communities in major banana producing regions and contribute to	INV	Outcome 2: Vulnerable targeted communities are increasingly participating in resilience building activities for	Output 2.1 Sensitization of female and male farmers in the target district on CCA coping strategies to build resilience to CC	LDCF	2,205,000	6,247,000

<p>food and income security thorough livelihood diversification.</p>		<p>income diversification and adopting alternative agricultural practices to tackle the high incidence of diseases affecting bananas, maintain soil fertility and sustain their agriculture based livelihoods</p>	<p>Output 2.2 Small scale processing facilities established in target regions for vulnerable communities to engage in income diversification banana value addition activities</p> <p>Output 2.3 Banana-based products from income diversification activities effectively marketed in locations with good marketing potential</p> <p>Output 2.4 Community-based banana Tissue Culture (TC) industry established to support the demand generated from CCA coping livelihood diversification activities introduced to the vulnerable farming community</p> <p>Output 2.5 Biodigesters to convert banana waste into biogas established to support income diversification activities, and the resulting digestate used for soil fertility</p> <p>Output 2.6 Water purification and water harvesting technologies to support livelihoods diversification and income generating activities promoted</p>			
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Component 3: Dissemination of information and expansion of the strategy and project benefits	TA	Outcome 3: Lessons learned and best practices from policy changes, capacity development initiatives and pilot plants disseminated	Output 3.1 Guidelines on best practices and project knowledge disseminated within the country and the sub-region through websites, publications and communication products in various languages	LDCF	150,000	412,000
Component 4: Quality Control Monitoring and Evaluation	TA	Outcome 4: Quality control and efficient monitoring of project intervention to support adoption by CC vulnerable communities	Output 4.1 Timely quarterly and annual reports prepared; midterm and final evaluation [using Adaptation Monitoring and Assessment Tool (AMAT)] of project activities completed	LDCF	120,000	106,502
Subtotal					2,615,000	6,965,502
Project management Cost (PMC) ³					205,000	100,000
Total project costs					2,820,000	7065,502

C. SOURCES OF CONFIRMED COFINANCING FOR THE PROJECT BY SOURCE AND BY NAME (\$)

Please include letters confirming cofinancing for the project with this form

Sources of Co-financing	Name of Co-financier (source)	Type of Cofinancing	Cofinancing Amount (\$)
GEF Agency	UNIDO	Cash	44,248
GEF Agency	UNIDO	In-kind	188,254
National Government	MAAIF	Cash	6,090,000
National Government	MAAIF	In-kind	36,000
Private Sector	Agro Genetics Technologies Ltd (AGT)	Cash	120,000
Private Sector	Afri Banana Products Limited (ABP)	Cash	12,000
Private Sector	Afri Banana Products Limited (ABP)	In-kind	150,000
Private Sector	Forest Fruit Foods Ltd	Cash	15,000
Private Sector	Forest Fruit Foods Ltd	In-kind	410,000
(select)		(select)	
Total Co-financing			7,065,502

D. TRUST FUND RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY¹

GEF Agency	Type of Trust Fund	Focal Area	Country Name/ Global	(in \$)		
				Grant Amount (a)	Agency Fee (b) ²	Total c=a+b
(select)	(select)	(select)				0

³ PMC should be charged proportionately to focal areas based on focal area project grant amount in Table D below.

(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						

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. PMC amount from Table B should be included proportionately to the focal area amount in this table.

² Indicate fees related to this project.

F. CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS:

Component	Grant Amount (\$)	Cofinancing (\$)	Project Total (\$)
International Consultants	237,000	80,000	317,000
National/Local Consultants	256,700	20,000	276,700

G. DOES THE PROJECT INCLUDE A “NON-GRANT” INSTRUMENT? No

(If non-grant instruments are used, provide in Annex D an indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF/NPIF Trust Fund).

PART II: PROJECT JUSTIFICATION

A. DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN OF THE ORIGINAL PIF⁴

- Changes in project structure since PIF
1. The structure of the proposed LDCF project remains largely the same as at the PIF stage except for a few changes. The proposal was strengthened during the PPG stage and is reflected in the project document
 - i) The objective statement and the definition and numbering of some outcomes and outputs have been modified slightly for better clarity.
 - ii) The project has a significant gender focus in that it focuses on communities; the project intervention provided an opportunity for gender mainstreaming. Component 1 on mainstreaming CCA and output 2.1 under component 2 outcome 2 have therefore been further elaborated to capture gender mainstreaming for adaptation. Outcome 2 and 3 has been merged to correspond to the relating component 2 on supporting the vulnerable communities to build resilience to climate change. In addition, the outputs under Outcome 4 have been redefined into one comprehensive output to better reflect the scope of the project.
 - iii) The PPG studies revealed the need to support the water supply for the sustainability of the project intervention (see project submission package documents Annexes J-N). Water supply also has implications on the gender mainstreaming aspects of the project. A new output has therefore been included under Component 2, to address this. The cost has been made possible through a new UNIDO is implementing in the region which will provide complimentary activities to the project. .
 2. The total co-financing has also changed from \$7,737,533 to \$7,065,502 mainly due to the MAAIF actual budget in 2015. However, new partners that were not captured at PIF stage and the UNIDIO PPP project have been identified.
 - A.1 National strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAS, NAPs, NBSAPs, national communications, TNAs, NCSA, NIPs, PRSPs, NPFE, Biennial Update Reports, etc
 3. The Uganda National Adaptation Programme of Action (NAPA) on CC is the main national strategy document upon which this LDCF project is aligned. Uganda is a Least Developed Country (LDC) which is identified as one of the countries most vulnerable to the adverse effects of CC. As such, Uganda is eligible to receive support from the LDCF for the implementation of urgent and immediate adaptation measures, as described in its NAPA.
 4. According to the NAPA, the western and south western highlands are some of the areas which are most vulnerable to CC and variability, as the predominately poor people are not able to cope with and recover from the predicted adverse effects of CC. The NAPA describes the urgent interventions for priority sectors such as agriculture, to improve the adaptation of the communities in terms of food security and ensure the long-term resilience of such communities to CC.
 5. The core activities of this LDCF project are in line with two priority projects of the NAPA. It will contribute to the NAPA priority project 6 – “Drought Adaptation Project”, which aims to enhance the adaptive capacity of the vulnerable communities in drought-prone parts of Uganda in order to cope with the increasingly frequent droughts. The project will also contribute to the NAPA priority project 7 – “Vector, Pest and Disease Control” which aims to enable subsistence farmers to cost effectively manage disease outbreaks, including disease affecting crops, with a special emphasis on vulnerable communities. In addition, the project will contribute to project 5 – “Water for Production Project” of the NAPA, which aims to promote appropriate and sustainable water harvesting, storage and utilization technologies.
 6. The project will promote some key CCA strategies (food preservation, alternative livelihood systems, including water harvesting and changes in agricultural practice), identified by the NAPA, to provide greater opportunities for

⁴ For questions A.1 –A.7 in Part II, if there are no changes since PIF and if not specifically requested in the review sheet at PIF stage, then no need to respond, please enter “NA” after the respective question.

income generation for men and women, poverty reduction, enhanced food security and enable the local communities, whose livelihoods depend on banana production for their income and food security, to better adapt to the adverse effect of CC.

7. Uganda has also prepared the Second National Communication (SNC) to the United Nations Framework Convention on CC (UNFCCC), which provides general and specific data on CC in Uganda, interventions made and/or proposed in adapting to and mitigating CC. The project interventions will contribute to addressing some of the additional national needs outlined in the SNC such as: promotion of renewable energies technologies and adopting sustainable agricultural practices at community; aligning national policies and legislation with action on CCA; and promoting, PPPs for action on CCA at the sector level.
8. The project is also in line with the national policy on CC, which aims to ensure a harmonized and coordinated approach toward a climate-resilient and sustainable low-carbon development path. Lastly, the project is in line with Outcome 2 on “Livelihood Benefits of Vulnerable Segments of the Population” of the United Nations Development Assistance Framework (UNDAF) 2010/11 – 2014/15, and the National Developmental Objective (NDP), Objective 1 on “Increasing Household Incomes, and Enhancing the Availability of Gainful Employment”, as well as, the Government of Uganda’s (GoU) strategic goals in Vision 2040.

A.2. GEF focal area and/or fund(s) strategies, eligibility criteria and priorities.

9. The project will contribute to the LDCF goal, notably to objective CCA-1 on “Reducing Vulnerability” in that the project will provide opportunities for income diversification through banana value addition activities among the resource-poor banana producing communities in order to build resilience to CC. The project will also contribute to objective CCA-2 on “Increasing Adaptive Capacity” in that it will increase knowledge and understand of the CC concerns and also strength awareness along the whole spectrum of value chain actors in the agro industry subsector on adaptation to the climate risk.
10. Lastly, the project will also contribute to objective CCA-3 on “Adaptation Technology Transfer” by supporting the banana TC industry to ensure the sustainability of the sector. It will set up community owned banana TC plantlet outlets to maintain and distribute clean planting material to the farmers. The project will also setup banana waste utilization facilities to generate biogas for use in the income diversification value addition activities as well as promote it for domestic use, hence addressing women’s access to safe and clean energy sources, where the use of peels for biogas will not only supplement the energy, but would also aid in the reduction of waste in the urban areas. Communities will be encouraged to use the digestate as a soil improver / fertiliser. In addition, the project will support the communities using the facilities with safe portable water by setting up water harvesting facilities and efficient and cost effective water purification systems. This aspect also addresses gender mainstreaming, in that it will help reduce the burden of women with the responsibility to go in search of water.

A.3 The GEF Agency’s comparative advantage:

11. UNIDO’s comparative advantage to implement this project within the LDCF Programme is that its overall mandate is to promote and accelerate sustainable industrial development in developing countries and economies in transition. It provides technical assistance services that transfer scientific and technical knowledge, ensure compliance and standards setting and conducts analytical and policy advisory services, in the industrial and manufacturing sectors. In recent years, UNIDO has assumed an enhanced role in the global development agenda by focusing its activities on poverty reduction, inclusive globalization and environmental sustainability of industries. With the climate sensitive agriculture and agribusiness sectors being fundamental to the livelihoods and food security of populations of women and men worldwide, as well as, the backbone of the economies of many developing countries, agribusiness development is a strategic priority of UNIDO’s Inclusive and Sustainable Industrial Development (ISID) mandate for poverty reduction. UNIDO also has extensive knowledge of supporting the integration of small and medium enterprises (SMEs) into national and global value chains through the establishment of pro-poor business linkages.
12. Over the years, UNIDO has, proved its competences in involving the industrial sector in GEF projects, in the areas of industrial energy efficiency, renewable energy services, water management, chemicals management (including

POP and ODS) and biotechnology. Since 2013, UNIDO has included CCA in its operations with the focus on increasing CC resilience of productive value chains.

13. With respect to this project, UNIDO has competences in supporting livelihoods diversification and income generating activities including among vulnerable groups. Under its thematic programme C.1 “Poverty Reduction through Productive Activities”, UNIDO works to combat poverty and food insecurity in developing countries, especially in LDCs and transitional economies, by strengthening agricultural value chains through inclusive agribusinesses that ensure increased income for female and male farmers, reduced food losses, and increased availability of nutritious food products.
14. From its interventions in Africa, Asia and Latin America, UNIDO has developed robust methodologies for industrial value chain diagnosis and inclusive agribusiness development, particularly in the African context.
15. In response to global trends and Member States’ request, UNIDO, within its programme component C.1.3 “Agribusiness and Rural Entrepreneurship Development” emphasises: the nutritional and qualitative aspects of food processing as a critical element to food security; economic inclusion of vulnerable groups and the promotion of social standards to lift them out of poverty and malnutrition; and an innovative adaptation approach to CC and strengthening the resilience of smallholder farmers. Its projects on this, within the programme C.3 on “Environment and Energy”, deploy cross-disciplinary teams around greening value chains and creating green jobs, measuring carbon footprints, and promoting increased synergies in the food-energy-water nexus in general. To further ensure the inclusion of considerations for gender equality, UNIDO will comply with its gender mainstreaming policy for agribusiness development projects.
16. In implementing the proposed project, UNIDO will draw on its in-house and global network of expertise to ensure the sustainability of the livelihoods diversification for women and men and the adaptation strategies that the project will introduce to the target vulnerable communities.

A.4. The baseline project and the problem that it seeks to address:

A.4.1 Baseline problem

17. Over the past 100 years, rising temperatures of about 0.5 °C have been recorded in East Africa and a mean annual temperature between 0.7 °C - 1.5 °C is predicted by the 2020’s⁵. The mean annual temperature for Uganda is reported to have increased by 1.3°C since 1960, an average rate of 0.28°C /decade. This increase has been most rapid in the January-February months at a rate of 0.37°C /decade⁶. Annual temperatures between 1951-1980 and 1981-2010, showed a notable increase of approximately 0.5-1.2°C for minimum temperatures and 0.6-0.9°C for maximum temperatures. The warming trend is projected to continue, with some models projecting an increase of more than 2°C by 2030. In the south western region of Uganda where the project is located, average temperature of the coolest and hottest month of the year are expected to rise from 18.7°C to 19.27 °C in the past decade (1980-1999) to, 19.92°C to 21.07 °C during 2020-2039 (Figure 1). The region, among the most vulnerable in East Africa to the adverse effects of increased weather variability and CC, also has the highest population growth rate in the country of 6-9.7% per annum. Coupled with the near subsistence livelihoods of the predominantly agriculture dependent population, a significant segment of women, children and men live in absolute poverty, which is recognized as a contributor to reducing the population’s adaptive capacities, increasing their vulnerability to the deleterious effects of CC and limiting their ability to cope with and recover from the shocks.

⁵ LTS International (2008) Climate Change in Uganda: Understanding the implications and appraising the response Scoping Mission for DFID Uganda

⁶ McSweeney, et al., (2010). The UNDP Climate Change Country Profiles: improving the accessibility of observed and projected climate information for studies of climate change in developing countries. Bulletin of the American Meteorological Society, 91, 157–166.

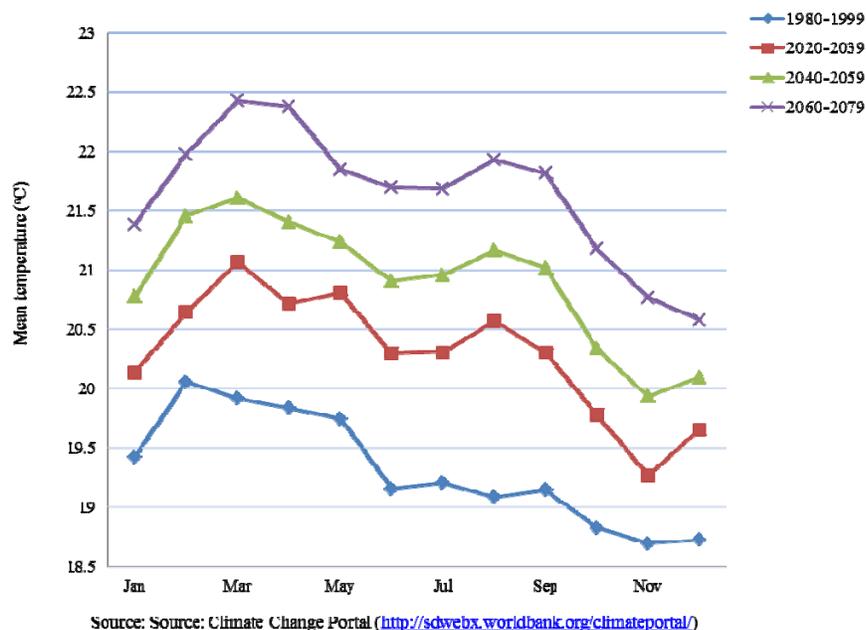


Figure 1 Historical modelled temperature for project location in Uganda

18. Uganda is the second largest producer of bananas in the world, with an estimated annual production of 10 million MT. Banana production occupies 30% of the cropped land and is produced by some 934,558 farm households, representing 24% of the agricultural households. As such, banana production is a major source of rural income. The ability to produce fruits all year round makes bananas an important food security crop and cash crop. The East African Highlands banana varieties traditionally called *matoke* is a major staple, the average daily per capita consumption averages 0.61kg/person. Other widely cultivated types include the dessert bananas, juice/beer bananas and plantains known as “roasting bananas” and traditionally called *gonja*.
19. Over the years banana production in Uganda shifted from the central to western regions as conditions became adverse with declining soil fertility and pest and disease problems. Currently, the western region accounts for over 67% of all the bananas produced in the country, followed by the central region, eastern region and northern region, respectively. Among the western region districts, Isingiro, Mbarara, Bushenyi, Ntungamo, Rukungiri and Ibanda are the major banana producing districts in the region (Figure 2). The majority of the producers, however, depend on near subsistence agriculture for their livelihoods and food security, leading to reduced adaptive capacities. A large number of women are engaged in banana farming. The region also has a very high fertility rate, which limits education and income generating activities, especially among women, and also causes tenure insecurity issues and opportunities for farming for both men and women.

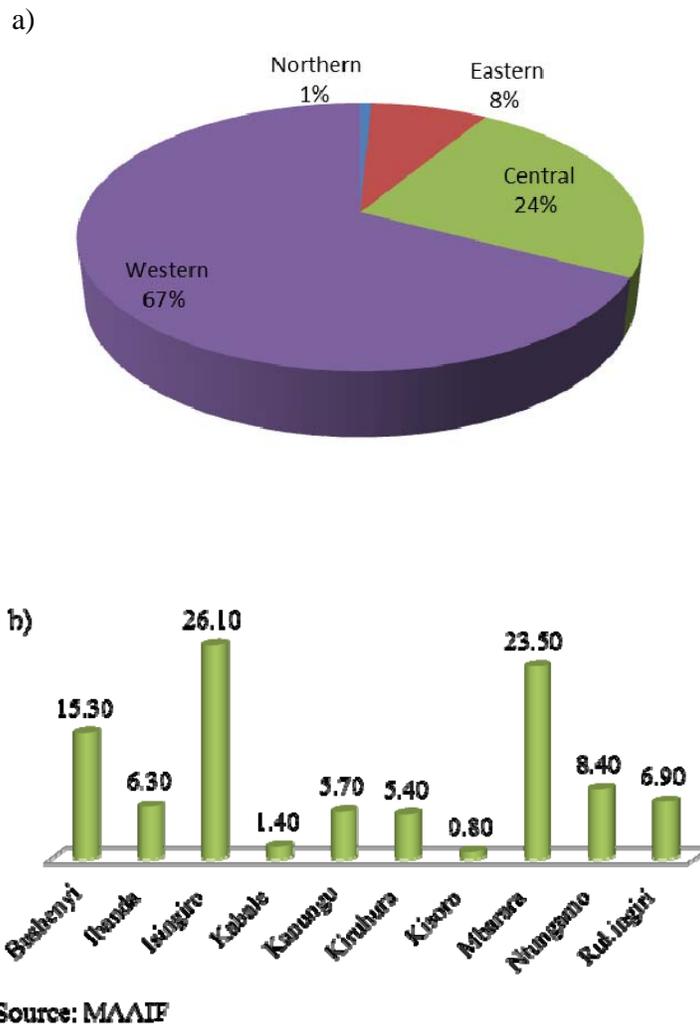


Figure 2 Percentage of total banana production a) across Uganda and b) by top 10 districts in Western Uganda

20. The vulnerability assessment of the banana sector and banana producing communities in the target region conducted during the PPG, showed that while the region currently accounts for the highest production of banana, the outset, CC vulnerability threatens the sustainability of the supply and value chains, in the target region particularly, among farmers and processor (refer to Annex K). In Bushenyi for example, banana is cultivated on 170,000ha of land (40% of the total area), mainly by smallholder farmers. The bananas are mainly sold fresh and the farmers receive very little from sales, typically approximately 2 USD for one bunch in the rural markets, compared to the market prices in Kampala (the capital city) of 9 - 15 USD. Mature bananas ripen in three to five days after harvesting. Even before the effects of CC, huge postharvest losses were incurred during transportation due to ripening and rotting. The rising temperatures and consequently, humidity due to CC, are expected to exacerbate these losses. The problem of postharvest losses resulting in a decline of income for poor small farmers is further compounded by reductions in productivity. The optimum temperature for banana growth is 20-30°C and total yields per ha through time is generally stable within that range. It is predicted that due to CC there will be extended periods of temperatures above 30°C, which will result in a general decline in productivity. The sustainable supply of fresh bananas for the income-dependent communities and the country, will further be affected by increased weather variability and CC, as seen by changes in the onset of and duration of the rainy seasons, more frequent and severe droughts and floods, resulting inter alia in increased incidences of pests and diseases such as the Banana Bacterial Wilt (BBW) disease and anthracnose.

21. Furthermore, a 2011 vulnerability assessment of the agriculture sector in Uganda, covering six USAID/Feed the Future priority districts including Mbale, Isingiro, and Kasese in the western region, revealed the absence of buffers against challenges associated with CC⁷. The report further indicated that the systemic vulnerability of households studied also stems from the fact that these households depend heavily on crops whose value chains are sensitive to climate variability and change; any change in food production critically increases overall vulnerability.
22. The PPG vulnerability study showed that at the central government level action on CC actions are recognised in the medium term and long-term development plans and there are plans for further mainstreaming CCA in planning arrangements of different sectors at the central government level and District Local Government planning and budgeting processes. Isingiro District Local Government within the study area has already initiated mainstreaming of CC into its District Development Plans. However, for all the districts covered in the study, the most rudimentary coping measures to cope with droughts and increased food insecurity such as by adjusting the number of meals and quality of the food, selling some household assets such as cattle, and household items to buy food, are those adopted by the poorest households.
23. In light of the country's population growth rate of 3.2% per annum, one of the highest in the world⁸, there will be an increase in future demands for bananas and banana-based products, and employment in both the rural and urban populations for men and women. Urban growth will demand a shift from fresh to processed foods and beverages. Recently, scientists of the CGIAR's CC, Agriculture and Food Security research group (CAAFS) predicted that CC will decrease availability of other annual staple crops such as maize, rice and wheat, thereby, further raising the demand for bananas⁹. It is therefore critical that vulnerable communities are enabled to engage in alternative livelihoods activities, adjust/update agricultural practices and food preservation systems, to ensure their food security and additional income, to better cope with the higher food prices and scarcity, in the wake of CC.
24. The GoU has therefore requested UNIDO to implement a climate-resilient livelihoods diversification project within its banana value chain development programme, incorporating CCA strategies, in order to achieve a number of key national adaptation goals, as outlined in its NAPA.
25. In line, with the NAPA identified key coping strategies of *food preservation, alternative livelihood systems* and *changes in agriculture practices*, the project will develop capacities for communities to engage in livelihood diversification value addition activities, such as, vacuum packing and solar drying of fresh bananas, banana juice and wine making. The additional income created through these activities will enable further investments into CCA coping strategies by communities, such as on improving agricultural practices, construction of reservoirs for *water harvesting* and *soil conservation*, to strengthen adaptive capacities and resiliency to CC.
26. In addition, the project will support the closed-loop banana production through the conversion of banana waste to biofuel for the processing facilities as well as domestic use. The project will also support the development of the banana TC industry for the benefit of the communities and promote investment and access to finance to support the cottage industries that this project will develop.

A.4.2 Baseline projects

A.4.2.1: Government interventions in the banana sub-sector and rural development

27. Recognizing the socio-economic importance of the banana industry and the potential for poverty alleviation, banana value chain development is a major priority of the GoU. As such, a number of initiatives are in place to ensure the sustainable production and use of banana in the country and improve the livelihoods of the resource poor female and male farmers in the target districts of Western Uganda. Adaptive research and innovation by the country's main universities and research organisation and their collaborating partners worldwide, has led to recent private sector involvement in the banana value chain. The main ongoing interventions are described below.

⁷ USAID 2013. Uganda climate change vulnerability assessment report. USAID African and Latin American Resilience to Climate Change (ARCC)

⁸ United Nations (2009) United Nations Development Assistance Framework (UNDAF) for Uganda, 2010-2014

⁹ CGIAR (2011). Crop Adaptation Cases – Banana. <http://ccafs.cgiar.org/news/media-centre/climatecrops/cases-banana#.VTS4ZiGqpBc>

A.4.2.1.1: Policy framework to facilitate the development of agriculture and rural development

28. The GoU has over the years pursued agricultural development policies and strategies. The Plan for Modernization of Agriculture (PMA), which was a multi-sectoral framework implemented between 2001 and 2009 aimed at transforming subsistence farming to commercial agriculture. However, significant progress was principally made in only two of the seven investments pillars of the PMA:- agricultural research and agricultural advisory services. Following the government's 2006 vision of Prosperity for All (PFA), which required all governmental agencies and local governments to implement programmes in an integrated and coordinated manner to bring about economic transformation, especially in rural areas, the MAAIF developed the Agriculture Sector Development Strategy Investment Plan (DSIP), 2010/11-2014/15) to address four main challenges facing the agricultural sector in Uganda:- low production and productivity; low value addition to agricultural produce and limited market access; weak implementation of agricultural laws and policies; and weak public agricultural institutions. The DSIP objectives are: i) increased rural incomes and livelihoods, and ii) improved household food and nutrition security. Bananas have been prioritized among the ten strategic commodities under the DSIP. Under the programme MAAIF has emphasised both private and public sector investment.
29. As the DSIP is entering its fourth year, the government is planning a new policy document, Agriculture sector strategy document (ASSP) (2015/16-2019/2020)). There is the need to review and update this with specific action for adaptation and resilience building.

A.4.2.1.2: Increasing banana production to contribute to income security and poverty reduction in rural areas

MAAIF's major activities in the banana sector under the DSIP are aimed at improving farmer participation in the value chain in 60 districts in Western, Central and Eastern Uganda within the first three years duration of the programme, and then extended to one to three districts in Northern Uganda, for an overall increase in the national banana production by 30%.

30. In the western region, MAAIF in collaboration with FAO, is establishing farmer field schools (FFS) aimed at assisting farmers in the production of staple crops such as banana, beans and potato, sunflowers, as well as on the eradication of diseases. The group of farmers are provided with training on water harvesting technologies, agronomy, soil fertility, farm husbandry and sanitation practices to stop the spread of BBW. This is being supported by research conducted by the National Agriculture Research Organisation (NARO). NARO has capacities to produce new banana varieties including new high value CC resilient varieties with early maturing (drought and high temperature avoidance), dwarf types (providing resilience to falling during storms) and disease resistance traits through plant breeding, soil analysis and disease diagnosis. Their technologies are disseminated to farmers through the MAAIF and the extension service provided by the National Agriculture Advisory Services (NAADS) and NGO's working in the region.
31. In addition, MAAIF has supported the established of a number of mother gardens for the supply of disease-free planting materials from tissue culture; and promotes the control of banana pests and diseases through routine banana extension services, monitoring and evaluation activities in cooperation with NAAD and the respective district local governments (DLG).
32. Some of DLGs in Western Uganda have also shown a clear and practical demonstration for the need to sustain the banana industry through the zeal to fight BBW and other banana diseases. Some of the districts have enacted by laws to address the problem. This not only demonstrates their commitment but also is an indication of their support for any initiative that will contribute to sustaining the banana industry.
33. This therefore provides an opportunity to create awareness of and promote CCA action, which can further ensure the sustainability of the banana subsector in terms of banana production and maintenance of genetic stocks.

A.4. 2.1.3: Reduction of post-harvest losses and value addition:

34. In general, most of the bananas produced in Uganda are sold and consumed fresh. Whole bunches are collected on the farms and transported to the local markets, which are quickly saturated and therefore most production has traditionally been trucked / transported to the urban areas. There is also some exporting of fresh matoke to Europe, USA and regionally, particularly to South Sudan, where prices on many different types of food are higher. Traditional banana juice, beer and gin are produced, however, the processing is largely unhygienic and where spear grass and bare hands are used to extract the juice, the processor is prone to cuts and tears, rendering the juice

susceptible to contamination, which deters consumers from patronizing the product. Without much value addition, the bananas are susceptible to over-ripening and rotting, during storage and transportation, resulting in substantial losses in income to farmers (who already receive very little for their produce) and shortages of supply in the market. With further reductions of post-harvest losses expected in the face of CC, there is a need to support the people who depend on bananas for their livelihood and food security with technologies that ensure preservation and value addition of the fresh banana fruits.

35. A number of adaptive research programmes have been undertaken in Uganda over the years, to improve technologies for traditional banana products as well as introduced novel products, including red wine, banana starch and flour. The Department of Agricultural Sciences and Food Technology of Makerere University, has developed refined technologies for the extraction, pasteurisation and packaging of banana juice -although not yet commercialised. This and other enabling technologies need to be made available to the resource poor banana producers to improve efficiency of and add value to traditional processing activities to generate additional income and enable resilience building.
36. Other government interventions to address agriculture value addition include a number of presidential initiatives such as the “Presidential Initiative for Banana Industrial Development” (PIBID) and improving infrastructure of the rural markets and installations storage structure, to strengthen farmers’ access to national and regional markets for the sale of fresh and value added agricultural products. PIBID in Bushenyi which is modelled around rural Technology Business Incubators (TBI) and Industrial Technology Parks (ITP), set up a pilot processing plant for the production of high quality banana flour (HQBF) for production of banana based starch product was officially opened on October 6th, 2014. PIBID sources its supply of fresh bananas for its processes from local farmers, and in turn, provides inputs and agronomic extension services to its cluster of farmers.
37. With support from the Swedish International Development Cooperation Agency, the MTIC developed a five year comprehensive programme, the Quality Infrastructure and Standards Programme (QUISP), to support the cross-cutting of standards and quality infrastructure. The programme seeks to develop a market-driven, holistic and coordinated institutional framework for Ugandan quality infrastructure and standards, which supports trade, industry, health, safety, consumer protection and a sustainable environment, while at the same time, promoting the use of best practices in the production and service sectors.
38. To reduce post-harvest losses, the proposed project will work within the QUISP framework to ensure the harmonisation of the livelihoods diversification activities with national quality standards.

A.4.2.2: Private sector investment in the agroindustry and banana subsector

39. See Annex J which describes the activities of the banana based SME’s, banana value added activities, actors and estimated capacities based in Western Uganda

A.4.2.2.1: Financing of agribusinesses

40. Recently, a number of donor-supported programmes have been established to provide technical assistance and extend credit to microfinance institutions (MFIs) and Savings and Credit Cooperatives (SACCOs), to enable the support to micro, small and medium sized enterprises, including those in the agribusiness sector. Uganda’s Micro Finance Support Centre (MFSC) is a government institution that provides financial services for productive activities to all Ugandans, especially the rural poor. It lends about 8 million USD every year and it is funded by the GoU and the African Development Bank (AfDB). It provides the cheapest source of finance, at rates not exceeding 9%, to the following key activities/ sectors: i) agriculture/agro processing; ii) SMEs, and iii) employment related activities and loans for vulnerable categories.
41. To ensure the sustainability of any investment in a livelihoods diversification system for the vulnerable smallholder farming communities, there is the need for support in terms of enabling farmers including those most vulnerable to CC to gain access to finance and credit.

A.4.2.2.2 Private sector engagement in the value chain

42. Private sector investment is also crucial for an inclusive and sustainable growth of the banana subsector and especially in the face of CC. A number of SMEs in the agro industries are engaging banana producers in the supply of fresh banana or semi processed for their industries in Western Uganda.

A.4.2.2.2.1 Banana juice processing

43. Forest Fruit Foods Ltd in Bushenyi and Excel Hort Consult in Mbarara, are the commercial banana juice processors. Under the brand name Forest Fresh, Forest Fruit Foods Ltd is producing and marketing Eshandy juice. The juice is processed from the beer banana known as Mbidae. Forest Fruit Foods Ltd has a juice processing plant located on 7 acres of land in Nyabicerere Ward II, Central Division of Bushenyi-Ishaka Municipality (1km along St Kagwa – Rwakiwire Road). The company produces 5000ltrs of juice per week from 3000 l/ week and 800 l/ week in 2013 and 2012 respectively. The company targets to produce 9000ltrs/ week in the next 2 years. The product has not yet been certified by the UNBS.
44. Excel Hort Consult a private firm incorporated in 2003 is located in Kakoba division, Mbarara municipality. The company produces a number products but banana juice from matoke is their lead product. The juice production capacity is said to be 1000 l/week. Although the juice is not certified by UNBS it is marketed in major towns of 1 Ugandan towns and has a 6 month shelf life.
45. About 1200 farm families are contracted to supply banana juice as a raw material for banana juice production in Western Uganda

A.4.2.2.2.2 Banana wine processing

46. In recent times, small scale cottage industries and individual or household scale businesses have emerged, producing red and white wine made from bananas in the districts of Bushenyi, Sheema, Mitooma, Rubirizi, Isingiro, Mbarara and Ntungamo. It estimated that the region produces about 460,000 litres of banana wine in a year with Bushenyi district producing over 85% of that wine. Nonetheless, the baseline studies conducted under the PPG (refer to Annex J and M) indicate that capacities and scales differ slightly in each district. There are nineteen (19) community based organizations, nineteen (19) individuals (also producing wine from pineapples) and two (2) companies involved in banana wine production in the target districts. Female headed enterprises have also been identified. Banana wine is processed from cooking bananas, dessert banana (Bogoya) and FHIA (17, 21 and 25) bananas. The lead firm for this product group is Tigebwa Development Association, which was trained by the Uganda Cooperative Alliance (UCA) on wine making

A.4.2.2.2.3 Sun dried banana chips and banana slices

47. Majority of farmers involved in banana chips/ crisps processing are found in Ntungamo and Mbarara Districts with a few in Isingiro District. In Ntungamo district, processors are clustered into 14 clusters; Rutungulu, Kamunyiga, Ihunga, Rwenfunjo, Kiyoola widows, Kiyoola central, Rwoho, Kyabashenyi, Kyaruhunga, Kirera, Nyakasa, Kibingo, Nyakigufu & Kyakabanda under Ntungamo Fruit Dryers Association, a registered CBO. Fruits of the Nile is the sole buyer of the products which they export to Europe. Production from clusters is between 70kg/ month to 200kg/month. This production seems to be quite low although some clusters have a good number of solar driers. Fruits of the Nile buys sun dried Ndiizi and Bogoya at UGX6000/kg and UGX 4800/kg respectively. The company organizes the farmers, provides solar driers, trains farmers and ensures that they meet both fair trade and organic certification.
48. Solar fruit drying is an affordable technology, uses only renewable energy (the sun), adds value, extends shelf life, and makes fruits more transportable, retaining waste at the point where it is grown. Fruits are sun dried when fresh and fully ripe so capturing flavour and are free from added sugar and preservatives. As they are dried at temperatures lower than 420°C, sun-dried bananas are suitable for a raw food diet. This method can be used on a commercial scale as well at the village level or household level. Indeed Fruits of the Nile works with a network of farmer suppliers who are both fair trade and organic certified.
49. Recently Excel Hort Consult started a pilot production of dried banana chips and crisps (fried chips). The baseline studies conducted during the PPG (see Annex J) show that together, Forest Fruit Foods Ltd and Excel Hort Consult, engage 1200 farmers in their total operations. Fruits of the Nile (FoN) works with some 200 farmers in Western Uganda (Ntungamo and Mbarara districts) to dry and package sun dried dessert bananas, which are exported to the EU;

A.4.2.2.4 Freshly Packed Matoke (FPM)

50. Afri Banana Products (ABP) Ltd is the only facility processing vacuum packed bananas (Matoke) for export to the UK and USA market in western Uganda. This not for profit organization is located at the Mbarara SME Park, Nyakabungo cell, Kakiika sub-county, Mbarara District with a head office in Kampala. It was initially funded by GoU under the Presidential Support to Scientists through Uganda National Council for Science and Technology (UNCST) and now it is supported by DANIDA. Although the firm has equipment that packs 1 ton/day, only 1 ton of matoke in a month is exported as per current. The product is not certified by UNBS but it is certified by US Food & Drug Authority under UIRI. The facility also operates as an incubation centre.
51. The Vacuum Packed Matoke process is semi-manual; Matoke is all manually received, sorted, washed, peeled, trimmed, and treated with sodium metabisulphate, drip dried, packed, weighed and vacuum sealed. The Vacuum sealing machine was supplied by The Tamales, a local trading firm. The company employs six workers (one female and five male). The Vacuum Packed Matoke process is semi-manual; Matoke is all manually received, sorted, washed, peeled, trimmed, and treated with sodium metabisulphate, drip dried, packed, weighed and vacuum sealed. The Vacuum sealing machine was supplied by The Tamales, a local trading firm. The company employs six workers (one female and five male).
52. In order to enable SMEs to meet their targets and improve the delivery efficiency of banana based products, there is a need to engage more farmers in the supply of primary processed banana products. As such, this provides opportunities to build capacities of some of the most vulnerable farmers, by enabling them to engage in banana value addition as alternative livelihoods activities to generate additional income. In addition, the SMEs will be sensitized on CCA coping strategies and will acquire the necessary support and knowledge to be able to build these CCA coping strategies into their operations.
53. Common constraints, harping operations of SMEs, household or individual businesses identified during the PPG (refer to Annex M) include: i) organised growth and harvesting to ensure sturdy supply; ii) collection and transport of suitable raw or semi processed material; iii) inefficient processing technology and inadequate processing facilities, especially for primary processing; v) limited access to clean/ potable water, and vi) access to clean, reliable and affordable energy. Other major problems include: i) absence of an efficient marketing strategy and branding; ii) inadequate packaging, and iii) poor standard and quality control.
54. As a means to building adaptive capacities and resilience to CC through alternative livelihoods and income diversification activities, the need to further support the ongoing activities to address the constraints related to value addition, persists. Further support will ensure improved participation of the smallholder farmers, including women and female headed farming households, and value chain actors in the vulnerable communities and improve product quality, which in turn leads to high market value for additional income.
55. Under UNIDO's "*African Agribusiness and Agro-industries Development Initiative (3ADI) to promote agribusiness development in Africa through supporting innovative Public Private Partnership (PPP)*", a new project, funded by the Government of Japan, was recently initiated in three pilot countries, including Uganda. In Uganda, the project seeks to promote private sector (both foreign and local) investment in banana based food and beverages products for domestic and export markets. UNIDO has also been conducting the "*Investment Promotion Technical Assistance Programme (ITAP) for Uganda*" and supporting the UIA to attract greater flows of investments to various sectors, including agribusiness. Attracting investors to support climate resilient livelihood values activities would further ensure CCA coping strategies are promoted in the country.

A.4.2.2.3 Banana tissue culture industry to ensure the sustainability of the sub-sector:

56. Banana plantlet production and virus indexing methodologies are well established technologies and routinely used in the banana production systems of major producing countries such as India, China, Ecuador, and Brazil. In Uganda, NARO together with the MAAIF, have been carrying out demonstration trials within their FFS to show the profitability of using TC plantlets. A number of entrepreneurs are also supporting the efforts of increasing productivity through the banana TC industry. These include AGT, BioCrops Ltd. and Nsigotech Tissue Culture Laboratory (refer to Annex O).
57. However, opportunities for the banana producing communities to build resilience, through the use of disease free TC derived planting material when available, are still bleak, as the current price range from 1800-2200 Ugandan

Shillings (0.65-0.75 USD) for each plantlet is out of the reach of the resource poor farmer on an individual basis. In addition, the current capacities of the few companies producing TC banana plantlets are not sufficient to realistically meet the needs of all banana producers and sustain a banana value addition and product diversification programme.

58. There is the need to further strengthen the banana TC industry, by bringing its products to the reach of the resource poor and CC vulnerable female and male banana producers, to ensure a sustainable supply.

A.4.2.2.4 Banana and agriculture waste utilisation:

59. Banana stems, fruit stalks and leaves are a natural source of fibre for value added products or biomass for fuel. However, generally in Uganda, after the fruit has been harvested, millions of stems and stalks are thrown away as waste, with a very small proportion of the fibre being produced for making handcraft items like baskets, mats, table mats, decorations and cooking fuel.
60. Banana fibre extracted from banana stems can be used for the production of paper and textiles. The Uganda Industrial Research Institute (UIRI) has developed a prototype for the extraction of fibre from the stem for paper and fabric production. TEXFAD, a non-profit making business incubator, has been exploring the potential for utilizing the large quantities of waste that lie in the city and in the banana growing rural areas, in order to clean up the environment and create green jobs for the economically disadvantaged rural population of Uganda. The TEXFAD Banana Fibre project focuses on training farming communities especially the unskilled vulnerable people, women and youth on value addition to banana pseudostem, by extracting fibres and creatively producing cultural items that have market value within and outside their locality.
61. Although there is a large and untapped potential for the utilization of agricultural waste in biogas production, very little has been harnessed in Uganda to date (except with animal dung). The introduction of the biogas technology also reduces the daily labour of women and children, by eliminating the daily task of firewood gathering. One of the challenges with biogas systems is the relatively high upfront costs that are only compensated through fuel savings within 2-3 years. As the initial upfront investment deters many potential users, co-financing by financial institutions or donors is recommended to encourage the practice in Uganda. Since 2009, under the Uganda Domestic Biogas Program (UDBP), Heifer International and other partners have been implementing a project to install 12,000 biodigesters based on cattle manure as feedstock, in rural and peri-urban areas in Uganda. The biogas generated from these domestic biodigesters is sufficient for the daily domestic needs of typical rural households and the digestate can be used as compost to improve soils for crops. The target groups for this biogas programme are farming households with more than two zero-grazed cattle, where the beneficiary contributes to the cost of the installation of the biodigesters. While some banana producers in Western Uganda have already benefited from the project, the majority of the resource poor farmers, particularly female headed households, without the basic number of cattle requirement and financial means to raise the initial investment cost, have not been eligible and/or benefitted for the programme.
62. Currently, organic waste from bananas (including peelings) is not routinely composted in either rural or urban areas. As fresh bananas from the major producing districts like Isingiro, Bushenyi and Mbarara are mainly consumed in Kampala, the nutrients are removed from the farm and remain dispersed in heaps of garbage (from which recycling back into agricultural fields not feasible). If the crop nutrients passed on from crop fields are not restocked, it will lead to the depletion of soil nutrient stocks and a decline in crop yields.
63. The basic protocol to convert banana waste to biofuel exist has been discussed (refer to Annex N). The use of banana waste as biomass for biofuel within a primary processing site (farm household or community level), or at secondary processing facility (factory level using large amounts of raw banana) will add value to the process by supplementing the energy needs. In addition, it will ensure environmental sustainability in that, crop nutrients can be transferred back into the fields, reducing the need for large amounts of inorganic fertilisers.

A.4.2.3 Gender and vulnerability to CC in Uganda

64. Due to the different roles, needs, capacities and positioning of men and women in society, the risks and vulnerability to CC affect women and men differently. In Uganda, the integration of gender into CC related interventions is a key recommendation of the NAPA projects. The CC Department (CCD) of the MWE has produced a training manual "*Gender and Climate Change in Uganda –Who should carry the burden?*" to build

knowledge and understanding of CC and its impacts on development and gender, and to build local capacities in Uganda to design and implement gender responsive CC policies, strategies and programs.

65. The current Uganda National Industrial Policy (UNIP) places an emphasis on promoting gender balance and gender sensitive industrial transformation, while the Agriculture Sector Development Strategy included specific gender mainstreaming action for some commodities including coffee, dairy and rice. However, in Uganda, agricultural labour is generally supplied by women and children. While women may be the main contributors to agricultural production and productivity, they are usually marginalized when it comes to decision making concerning the revenue generated from the sale of agricultural products. In fact, women account for only 16.3% of the agriculture holders in the country¹⁰. The Western region of Uganda also has a very high fertility rate, which limits education and income generating activities, especially among women, and also causes tenure insecurity issues and opportunities for farming for both men and women.
66. A gender impact analysis (refer to Annex L) of the proposed LDCF project conducted during the PPG phase showed that, while women provide the bulk of agricultural labour and are responsible for providing food and other necessities for their families, they do not have any control over the money they earn from other income generating activities such as petty trade. In addition, service provision is also biased towards the “better off” and to some extent neglects the issues of marginalized categories of the population.
67. Since the impacts of CC affect women and men differently, with the poorest or less well off, being the most vulnerable, the proposed LDCF project therefore offers an opportunity to further enhance the national gender equality agenda. All these effects are threats to human security, with significant gender implications, due to the different roles, needs, capacities and positioning of men and women in society. As a consequence, women and men are exposed to different risks and vulnerabilities.

A.4.2.5 Civil Society Organisations (CSOs).

68. A number of CSOs and not-for-profit organisations are operating in Western Uganda to support communities to improve their livelihoods and overall quality of life through activities in health, agriculture, and biodiversity conservation and education sectors.
69. In Bushenyi District for instance, Farm Radio International provides advisory services to farmers through regular radio program on banana enterprise. The UCA supports entrepreneurs/ processors to aggregate production through formation of cooperatives as well as training of processors on product improvement, basic business management. Their major support has been to the dairy enterprise and more recently, to wine processing.
70. The activities of these organisations present opportunities to promote awareness on livelihood diversification activities as adaptation coping strategies to CC.

A.4.2.6 GEF supported LDCF programmes.

71. The GEF, through FAO, is supporting a regional project entitled “*Transboundary Agro-ecosystem Management Programme for the Kagera River Basin*”. The Kagera River Basin lies within Burundi, Rwanda, Uganda and Tanzania. In Uganda, the project covers communities in the Kabale and Mbarara Districts. The programme responds to key priorities of the countries sharing the Kagera river basin and is generating local and national benefits and global environmental benefits by promoting sustainable land and agro-ecosystems management (SLaM) across the basin, including the use of FFS approaches. The programme started in 2010 and is scheduled for completion in August 2014. Lessons learned and best practices in promoting CCA strategies in FFS from the programme project will be applied for this proposed project.

A. 5. Incremental /Additional cost reasoning: describe the incremental (GEF Trust Fund/NPIF) or additional (LDCF/SCCF) activities requested for GEF/LDCF/SCCF/NPIF financing and the associated global environmental benefits (GEF Trust Fund) or associated adaptation benefits (LDCF/SCCF) to be delivered by the project:

¹⁰ <http://www.fao.org/gender-landrights-database/data-map/statistics/en/>

A.5.1 Incremental /Additional cost reasoning

72. The proposed LDCF project aims to build resilience to CC among vulnerable communities in Western Uganda, and contribute to their income and food security. The project will be fully integrated into existing national processes and programmes, and will avoid the creation of parallel structures. More specifically, the project will rely on the following operational principles:

- Ensuring national leadership and ownership – High degree of participation and engaging stakeholders will ensure high-level support and a strong sense of ownership;
- Ensuring multi-stakeholder participation and consultation – Participation is critical to generate sense of ownership. A detailed stakeholder analysis was developed during the baseline assessment and will be reviewed and updated during the inception phase. This will help determine appropriate level and types of participation;
- Building on existing and on-going work – Avoiding duplication and maximising past investments by GEF, UNIDO, the government and donor community in relevant areas of support. This principle will ensure that synergies and complementarities are identified and fully realized;
- Adopting a long-term approach – Finding strong links with critical development policy frameworks for long term policy change, developing critical capacities at local and national levels and leveraging a follow-up funding.

73. The project will work in Isingiro, Mbarara, Ntungamo, Bushenyi, Sheema, Rubirizi, Mitooma and Buhweju districts in the Western region where banana farming is heavily concentrated and is experiencing increased post-harvest losses as a result of CC, as well as increased disease pressure with rising temperatures (Figure 3). Together these eight districts produce about half of Uganda’s bananas. The main banana types produced are the EHBs matoke and beer bananas for local gin. Dessert bananas are also an important consumer product from the area.

74. The LDCF financing for the project will support the interventions described in section B part I as detailed below.

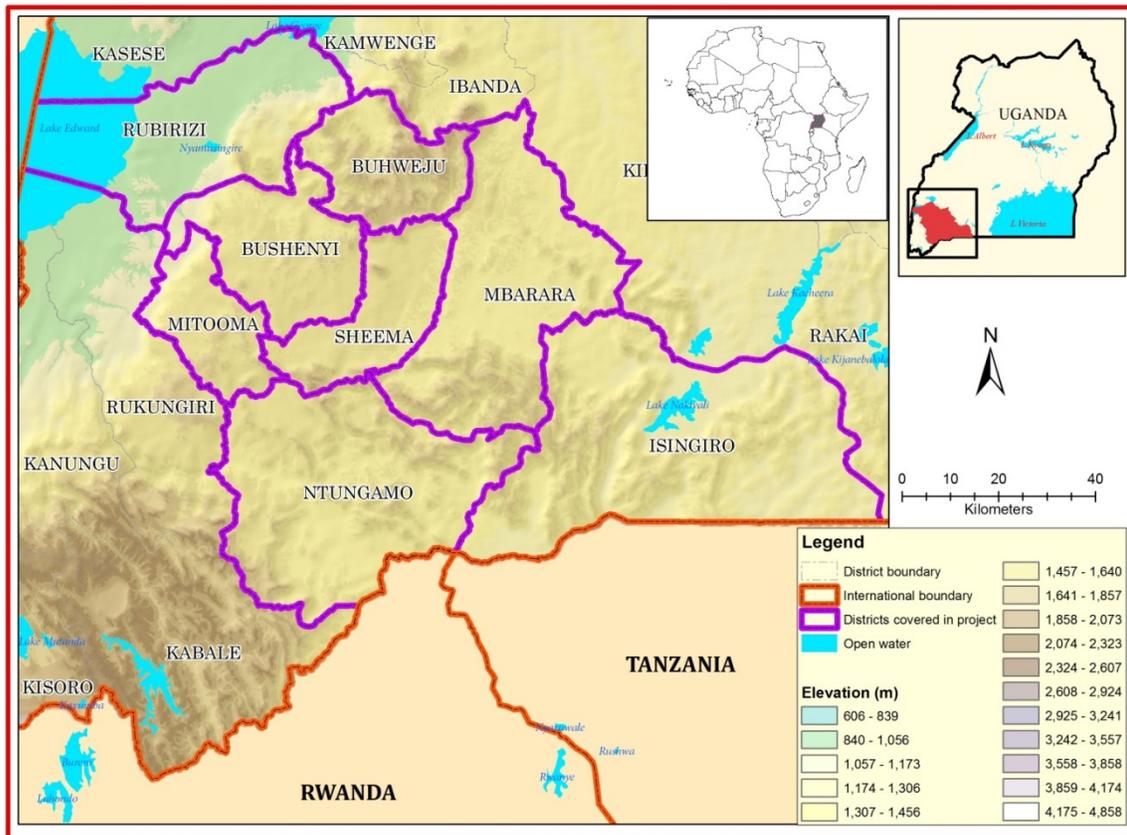


Figure 3. Map of Uganda showing district where the LDCF project is located

Component 1: Climate Change Adaptation (CCA) and gender equality for adaptation mainstreamed into National Development Policies/Strategies.

Outcome 1: CCA strategies coupled with appropriate action on gender equality are incorporated into developmental policies and implemented by stakeholders in the various sectors

Outputs 1.1 National policy documents such as the Agriculture sector strategic plan updated with action on CCA and gender mainstreaming for adaptation.

75. The LDCF funds under this component of the project will build on ongoing initiatives by the GoU to develop the agriculture and agro-industry sector and support the implementation of the National CC Policy. Key activities under this component are:

- a. Experts will be recruited to assist in updating the new Agriculture sector strategy document (ASSP) (2015/16-2019/2020)) and the National Industrial Sector Strategic Plan (NISSP) being developed by MAAIF and MITC respectively with action on CCA, identify source of and allocation of funds for these activities.
- b. A validation workshop will be held to enable staff of the ministries and their implementing agencies better understand the concept of adaptation and how it relates to their work and to enable proper monitoring and evaluation of adaptation activities.

Output 1.2 CCA coping strategies including gender equality for adaptation promoted among investors and other stakeholders in the agro-industries and rural enterprise development sector.

76. The project will mobilise public and private sector value chains actors to develop CCA action in their operations to ensure the sustainable growth of the sector, including activities that support gender equality with CCA coping strategies.

- a. At least one stakeholders' sensitization workshop will be held at the start of the project to promote the concept of CCA and the coping strategies proposed in this project. Participants will include beneficiary community representatives, the DLGs; private sector SMEs in agribusiness and the banana subsector. At least five SMEs already identified during the PPG will be targeted for this activity; others are expected to be identified during the project execution.
- b. Experts will be recruited to assist DLGs and beneficiary communities to develop community adaptation plans, including a focus on the empowerment of women. This will enable DLGs and beneficiary communities to build on the CCA coping strategies proposed within the scope of this project and adopt other CCA opportunities to further build resilience, through ongoing or future programmes beyond the scope of this project.

Component 2: CC resilience building of vulnerable communities in major banana producing regions and contribute to food and income security through livelihood diversification.

Outcome 2: Vulnerable targeted communities are increasingly participating in resilience building activities for income diversification and adopting alternative agricultural practices to tackle the high incidence of diseases affecting bananas, maintain soil fertility and sustain their agriculture based livelihoods

77. Based on the stakeholder consultation during the PPG, Isingiro, Mbarara, Ntungamo, Bushenyi, Sheema, Rubirizi, Mitooma and Buhweju districts in the Western region, where banana farming is heavily concentrated and is experiencing increased post-harvest losses as a result of CC, as well as increased disease pressure with rising temperatures (Figure 3), were selected as the project locations. Together these eight districts produce about half of Uganda's bananas. The main banana types produced are the EHBs *matoke* and beer bananas for local gin. Dessert bananas are also an important consumer product from the area.

78. Though faced with an array of constraints, the baseline studies conducted during the PPG phase clearly show that banana wine, juices, sun dried chips, sliced banana fruits and crisp/chips represent underexploited market opportunities, with both national and international market prospects (refer to Annex J). The gender analysis also showed a clear opportunity for achieving greater gender equality for the earning of additional income through off-

farm value addition, enabling a gender balanced resilience building for livelihoods and food security (refer to Annex L).

79. Component 2 of the LDCF project will therefore build on the existing structures along the banana value chain in the eight districts to support value chain actors especially female and male smallholder farmers and female headed households in the vulnerable communities. It will provide opportunities for livelihood diversification activities and additional income, improve product quality, which leads to higher market values and further improves the income generation potential for the value chain actors.

Beneficiaries

80. During the project inception, MAAIF in consultation with the DLGs will select the beneficiary farmer households/processing groups for the value added products (juice, wine, FPM and dried chips/sliced fruits) identified during the PPG baseline study (Annex J). The selection of beneficiary farmer households/processing groups will be based on their vulnerability in terms of adaptive capacity as described in the PPG vulnerability study (Annex K). The numbers of beneficiaries listed below are indicative and following the establishment of MOUs with project partners during the project inception phase, clarification on the precise number of beneficiaries will be determined.
81. The project will support this process through a validation assessment of the vulnerability of identified beneficiaries and will establish the baseline on the adaptive capacities in terms of income, use of banana/agriculture waste for biogas and fertilization, use of tissue culture material/disease free planting material, water harvesting and purification systems.
82. During the project inception phase the identified beneficiaries will be aggregated into processing groups for the various products, based largely, on already existing cooperates. The inclusion of more members into exiting cooperates will enlarge and strengthen these cooperates.
83. The hosts of the processing facilities will be selected from among the identified beneficiaries during at project inception, based on their existing facilities and the potential for them to be used as training/incubation centres for a wider participation of other farmer households. These are essential micro and small scale enterprises with up to ten employees or use family/group labour.
84. At least 2,500 farming households, from the eight districts, will be targeted for support under this project intervention. Partnerships will be established and/strengthened between the aggregated groups and the identified partner SME's already engaged in processing of banana juice, solar dried banana chips and FPM, to purchase the products from the beneficiary groups. Attention will be paid to ensure equal representation of females and males in these groupings.
85. Farmer households/processors will be grouped according to district and product/processing category. Based on the initial PPG baseline assessment (Annex J) it is estimate that at least: i) 497 farming households will be aggregated into banana wine processing cooperatives from the districts of Bushenyi, Mbarara, Isingiro, Ntungamo, Sheema and Mitooma; ii) 250 farming households will be supported for the integration into the existing banana wine processing cooperative in the districts Rubirizi and Buhweju; iii) 1,200 farming households will be supported for the integration into the existing banana juice processing cooperatives in the districts Rubirizi and Buhweju; iv) 675 farming households from the districts of Ntungamo, Mbarara and Isingiro will be aggregated into banana chips and dried fruit processor groups (some farmers in this region are currently already being incubated by identified SME's). The number of groups and farming households/processors beneficiaries will be confirmed during the project inception phase.

Output 2.1 Sensitization of female and male farmers in the target district on CCA coping strategies to build resilience to CC

86. This output will deliver the sensitization of the larger farming communities in the eight districts on CCA coping strategies to build resilience to CC as well as sensitization workshops targeted at banana producer groups and processors along the value chain on CCA coping strategies and on the type and benefits of technologies/systems to be deployed in support of building resilience to foreseen CC risks.

- a. With the support of MWE (CCD) and NAADs, the farming community of the eight districts will be sensitized on CCA coping strategies. Among other initiatives to raise awareness on the issue, at least two community sensitization events will be held.
 - b. Two farmer/processor based sensitization workshops will be held for the banana producer/processor groups per district. At least 10 farmers/processors from each group, who are identified as group leaders, will participate in the 2-3 day event. Participants will disseminate the information within their groups.
 - c. Beneficiaries and secondary processing partners will be sensitized on the need to implement food safety management systems (FSMS) along the banana value chain and acquisition of UNBS certification for their products. The training and capacity needs of the partner secondary processors are being addressed through the UNIDO 3ADI PPP project.
87. This aspect aims to i) increase the capacities of existing primary processing facilities for efficient operations to supply quality products; ii) enable a wide participation of farming households in the communities engage in livelihood diversification activities and iii) scale up from small-scale processing system to intermediate-scale processing.
88. A key aspect of the project intervention is to ensure the beneficiaries of the project engaging in livelihood diversification banana value addition at the primary processing level (farm gate/community level) and the partner secondary level processors to whom the products from the beneficiaries will be supplied to produce safe and quality products.

Output 2.2 Small scale processing facilities established in target regions for vulnerable communities to engage in income diversification banana value addition activities

89. This output will realise the upgrading/establishment of primary processing facilities for solar dried banana chips; banana wine, FPM and banana juice (primary extraction) in the identified districts according to the concentration of banana varieties suitable for the products. At least two to three primary processing facilities (farm gate/community level) will be selected as host facilities for each of the four values added products. The extent of renovation and minor construction work will be based on the recommendations for the minimum operational facilities described in the PPG report on capacity needs of the processing facilities (Annex M) and to enable at least the following production quantities:
- a. Banana juice – 3,000 l/week
 - b. Banana wine – 5,000 l/week
 - c. Solar dried fruit – 250kg/week
 - d. FPM – 250kg/week
90. Technologies and equipment to improve the efficiency of and add value to traditional processing methods will be introduced. The facilities will be upgraded with adequate testing facilities and will introduce the certification of products and processes (MITC co-financed) according to national rules and regulations for food handling and marketing (the development of standards or specifications for particular banana products, such as Standard Operating Procedures (SOP), Good Hygienic Practices (GHP) and Good Manufacturing Practices (GMPs), will be facilitated). Emphasis will be placed on labour saving devices and protective clothing to allow both men and women to participate in any given activity in the processing line.
91. Fresh bananas for primary processing will be acquired from farmer households within the aggregated groups and from other farmers within the communities. The primary processed products in the case of juice, solar dried sliced fruits and chips will be supplied to the partner SME's. Proceeds from the processing will go into the running and maintenance of the facilities and profits shared proportionately between members.
92. The host facilities will be managed by the identified host groups. The facilities will, in addition to processing the respective products, serve as training centres (and owners of the training packages produced through this project), where people from the communities can come to learn how to process the different products and also can be further incubated within the facility. The host groups will be provided with the necessary training on management and operating equipment. Additional staff will be engaged from among eligible persons within their communities.

93. At least ten onsite training workshops will be organised at each facility on food safety management systems (FSMS) to ensure that safe and quality products are produced, as well as, basic business management skills including the preparation of business plans, financial planning among others. At least 90 participants representing individual processors, processing facilities and leaders of the farmers / primary processors groups will be trained at each event. These workshops will serve as a train the trainer events and participants will disseminate the information in the groups and provide guidance to the group members on good practices.

Output 2.3 Banana-based products from income diversification activities effectively marketed in locations with good marketing potential

Promoting investments and access to financing of resiliency building diversified livelihoods activities – ensuring sustainability

94. The LDCF project will build on the existing structure to support agribusiness in Uganda. Partnerships will be established with the existing commercial and donor backed micro finance institutions and schemes to facilitate access to credit for the growth and maintenance of the income diversification activities of farmers.

95. A series of at least ten training events (by trained trainers) will be conducted for the farmers/processing groups on basic business management skills including the preparation of business and financial planning. Training will be tailored to suit beneficiaries with or without basic formal education so as not to exclude any specific group or persons, particularly women

96. To promote the products and create awareness on the benefits of engaging in such livelihood diversification activities, at least 20 open days targeting the envisaged end-users and stakeholders from the food and beverages industry, financial institutions and UNSB, will be held at the processing facilities.

97. To assist the beneficiaries to gain access to credit from commercial banks and the existing micro finance institutions and schemes that supporting SMEs in agribusiness, a series of skills training events will be conducted for the farmers/processing groups on basic business management skills including the preparation of business and financial planning. Training will be tailored to suit beneficiaries with or without basic formal education so as not to exclude any specific group or persons, particularly women.

98. Based on UNIDO's ongoing experiences and network of domestic and international investors in agro-industries, the project will organize an investment forum to promote investments into the income diversification activities of the smallholder farmers and CCA strategies that enable resilience building of vulnerable people in general

Output 2.4. Community-based banana Tissue Culture (TC) industry established to support the demand generated from CCA coping livelihood diversification activities introduced to the vulnerable farming community

Support for a sustainable banana industry

99. With the resurgence of the BBW disease, some of the districts in Western Uganda have demonstrated the zeal to fight BBW and other banana diseases by enacting by-laws to address the problem. These initiatives demonstrated government commitment and support towards curbing the spread of disease and ensuring the sustainability of the sector.

100. The project will support the ongoing initiatives to facilitate the uptake of disease free TC derived planting material to further build resilience in the banana producing communities and ensure the sustainability of the banana industry.

101. A study tour for beneficiaries to enlighten them on a sustainable banana production systems from use of tissue culture derived planting material, sustainable agronomic practices, value addition and product marketing in other countries with successful banana based industries will be organised for up to 20 participants from the DLGs, and beneficiaries communities.

102. Central banana TC nurseries will be setup/upgraded within existing farmer groups in each of the districts for hardening-off, and supply of disease-free planting material to farmers. There will be at least one nursery each with capacity to hold 20,000 plantlets per annum or planting season per district. 5,000 households are expected to benefit from this intervention.

103. A subcontract will be awarded to the identified partner (refer to section B 1.3 below) to supply high quality and indexed (certified disease-free) banana plantlets of varieties used in target communities.
104. The farmer groups to host the nurseries will be selected during the beneficiaries' selection process at inception and additional staff will be engaged from among eligible persons within their communities.
105. Through the services of the technology providers, MAAIF and NAAD, at least six training sessions will be provided on the management of the nurseries, minisetting to rapidly multiply the healthy plantlets, sales and distribution. This will also be extended to the multiplication of conventional clean suckers (from non-diseased banana trees). Female farmers will be offered equal opportunities to be trained and to participate in the management of nurseries.
106. The nursery sites will also serve as multiplication/demonstration gardens within the baseline project. The project will in addition support the nursery hosting group to maintain banana conservation plots for biodiversity conservation and also as a means of storing desirable banana varieties.
107. In the long term, these facilities will further serve the dissemination and introduction of new varieties including CC resilient, vitamin A and iron rich varieties, when these are developed by the researchers.

Output 2.5. Biodigestors to convert banana waste into biogas established to support income diversification activities, and the resulting digestate used for soil fertility

Promoting banana waste utilization for biogas and for soil fertility

108. To further add value to the livelihood diversification banana processing activities mentioned above, the project will support the use of biogas technology at the processing facilities. This aspect of the project will draw on expertise from ongoing initiatives as well as private companies that can promote sell and provide maintenance service for biodigesters in Uganda. Women will be provided equal opportunities to join these activities.
109. The project will install Biogas digester plants will be installed at each of the banana processing facilities supported in the project. The fixed dome types are recommended for the banana processing facilities. It is expected that the minimum amount of waste generated will be about 40 kg, suitable for a digester with capacity of 30-50m³. Awards for the construction and installation will be undertaken through competitive international bidding.
110. In addition, the project will support 320 individual households (and six processing facilities) involved in the project with domestic biodigesters of about 9m³ in size and provides about 2,500 litres of biogas per day based on banana waste and other domestic organic waste. The identified households will be selected based on their need and as incentive for their willingness to adopt climate adaptation coping strategies proposed and the improved primary processing technologies introduced.
111. Through the services of the successful technology provider, at least 6 training events will be provided on the use (preparation of banana waste and co-digestion with cow dung) and maintenance. This will also facilitate widespread use of banana waste in existing domestic biodigesters.
112. Within MAAIF's ongoing projects on improved agronomic practices and farm sanitation, demonstrations on the benefits of using the resulting digestate as organic fertilisers on agriculture fields will be carried out.

Output 2.6 Water purification and water harvesting technologies to support livelihoods diversification and income generating activities promoted

113. The PPG studies indicated that one of the constraints to the banana value addition, especially at the primary farm level, is the access to potable water. Culturally, women and children go out to fetch water for all household activities as part of the daily chores. However, water resources are diminishing in most areas where swamps have been tampered with and because of land fragmentation that has interfered with consolidated land use planning within the area/ landscape
- To further add value to the livelihood diversification banana processing activities mentioned above, and ensure that water used at all stages of value addition meet the minimum water quality standards of potable water, water purification systems will be set up consisting of basic UV treatment and further chemical treatment where necessary.

- The LDCF project will setup rain harvesting technologies and water purification systems at all the primary processing facilities in areas with an acute shortage of water resources where potable water needed for processing is absent.
- The identified partner processing companies will also be supported to improve their water quality. This aspect will start with an awareness raising campaign on the importance of using safe potable water for the processing as well as the benefits for drinking. It will be conducted with the UNBS, the processing companies and the DLGs. The exact chemical treatment needed for the water at the different locations will be determined during the inception phase by testing of the current water sources.

Component 3: Dissemination of information and expansion of the strategy and project benefits.

Outcome 3: Lessons learned and best practices from policy changes, capacity development initiatives and pilot plants disseminated

Output 3.1 Guidelines on best practices and project knowledge disseminated within the country and the sub-region through websites, publications and communication products in various languages

114. Lessons learned and best practices from policy changes, capacity development initiatives and the processing plants will be disseminated throughout Uganda and within other countries with similar banana-based agro-ecosystems. Cooperation with CSOs, such as The Uganda Cooperative Alliance (UCA) and Farm Radio International, for example, will be sought, to expand dissemination activities to a much larger audience. Project publication material in the form of newsletters, flyers, USB sticks and DVD's will be produced and a project webpage on the UNIDO website. The webpage will be linked to the website of the executing agencies and project partners and updated with regular information on the project activities.
115. In addition, the project will identify and participate, as relevant and appropriate, in at least five national and regional scientific, policy-based and/or any other networks, which may be of benefit to project implementation through lessons learned; and also as a means of disseminating project results.
116. The project will identify, analyse, and share lessons learned that might be beneficial in the design and implementation of similar future projects. There will be a two-way flow of information between this project and other projects with a similar focus.

Component 4: Quality Control Monitoring and Evaluation.

Outcome 4: Quality control and efficient monitoring of project intervention to support adoption by CC vulnerable communities

Output 4.1 Timely quarterly and annual reports prepared; midterm and final evaluation [using Adaptation Monitoring and Assessment Tool (AMAT)] of project activities completed

117. A Project Management Unit (PMU) will be established and will be responsible for the day-to-day implementation of all project activities, including the direct supervision of those activities contracted to responsible parties. This will include a National Project Coordinator (NPC), a project administrator and a clerk/driver. To facilitate implementation and monitoring at the project sites, a vehicle will be acquired and maintained throughout the project.
118. Annual project monitoring reports will be done in accordance with UNIDO's regulations and GEF's RBM and AMAT. Independent mid-term and final evaluations of the project will also be conducted. The monitoring and evaluation plan is described in detailed under section C.

A.5.2 Adaptation Benefit

119. The project is expected to have an impact in the country by contributing to an increased resilience of small holder farming households to CC, and contribute to income and food security. The benefits from the four project

components described above will be reflected at the national, sectorial, local government and community levels. The direct adaptation benefits envisaged from the LDCF interventions are described in Table1 below.

Table1. Expected Adaptation Benefit from the LDCF Intervention

LDCF Intervention	Expected Adaptation Benefit
<p>Mainstreaming CCA and gender equality for adaptation to National Development Policy/Strategies.</p>	<ul style="list-style-type: none"> • Agriculture, Industry and District Administrative Government policy documents updated with actions on CCA
	<ul style="list-style-type: none"> • Male and female value chain actors in the agro industry sector acquire knowledge and skills on CCA
	<ul style="list-style-type: none"> • Female and male agro industry value chain actors practice CCA coping strategies to build resilience of the sector to adverse effects of CC
<p>Building resilience of vulnerable communities in major banana producing regions to CC through livelihood diversification.</p>	<ul style="list-style-type: none"> • Information and knowledge of CC, CCA coping strategies available to target beneficiaries and applied in their activities
	<ul style="list-style-type: none"> • CCA strategies applied by female and male farmers and their communities in their activities
	<ul style="list-style-type: none"> • Target beneficiaries improve their income and food security through their engagement in sustainable value addition activities in equitable ways. In addition to providing the added income to reduce the vulnerability and enable beneficiaries to build resiliency to CC, the new products will also supplement the diets contributing to food and nutritional security and impact positively on women and children
	<ul style="list-style-type: none"> • Target beneficiaries, including women, empowered economically to acquire additional CCA intervention which otherwise would be too expensive from them to afford.
	<ul style="list-style-type: none"> • Genetic stocks from which banana plantations can be replaced in the event of losses due to the adverse effects CC will be readily available.
	<ul style="list-style-type: none"> • Ensure a synchronised and sustainable supply of bananas for food and as a raw material.
	<ul style="list-style-type: none"> • Reduced effect of nutrient depletion in banana fields and plantations due to the transportation of fresh bananas to markets ensuring the long-term environmental sustainability of the intervention.
<p>Dissemination of information and expansion of the strategy and project benefits</p>	<ul style="list-style-type: none"> • Reduced impact of banana waste in markets in urban cites and the associated negative effect on sanitation
	<ul style="list-style-type: none"> • CCA coping strategies based value addition to build resilience among vulnerable agriculture dependent communities documented and potential replicated or adopted in similar settings.

A.6 Risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and measures that address these risks:

120. The major risks envisaged to prevent the project objectives from being achieved and detailed in the PIF are grouped into:

- i) Risk that will impact the banana supply and value chains from biotic and abiotic stress resulting in production failure which would be further aggravated with CC (i.e. banana crop failure due to CC and insufficient supply of raw material for the banana value addition;

ii) The risk of social and cultural behaviors hindering adoption of strategies (i.e. low rate of consumption of traditional banana beverages, particularly in urban areas with high market potential, adoption of TC derived clean planting material and utilization of banana waste for biogas and fertilization.

iii) The risk of inadequate supply of energy for processing.

121. The potential risk to the project activities are further discussed in Table 2 below.

Table 2 Risks and Mitigation Measures

Expected Results	Assumption	Risk	Mitigations
Outputs 1.1 National policy documents such as the agriculture strategic plan updated with action on CCA and gender mainstreaming for adaptation	Baseline projects preparing and upgrading national strategies are implemented	CCA will not be adequately captured in strategy documents for agriculture, industry and other sectors <u>LOW</u>	<ul style="list-style-type: none"> • The project is designed with the key involvement of MAAIF and MTIC as well as close cooperation with the MWE, which will be represented in the PSC • Other relevant sector ministries will be involved in workshops, meetings and awareness raising events
Output 1.2 CCA coping strategies including gender equality for adaptation promoted among investors and other stakeholders in the agro-industries and rural enterprise development sector.	Stakeholders and project beneficiaries interested in the sustainable growth of the sector in the face of CC	Lack of interest among stakeholders and beneficiaries on promoting awareness on CC and CCA coping strategies to build resilience <u>VERY LOW</u>	Stakeholder and beneficiaries, including women, will be sensitized through open days, workshops and meetings
Output 2.1 Sensitization of female and male farmers in the target district on CCA coping strategies to build resilience to CC			
Output 2.2 Small scale processing facilities established in target regions for vulnerable communities to engage in income diversification banana value addition activities	<ul style="list-style-type: none"> • There will be sufficient raw material for the banana value addition income diversification activities • Adequate supply of energy to power the processing plant in the communities where there is little or no electricity 	<ul style="list-style-type: none"> • The potential impact of pests and diseases on the crop. • Inadequate supply of energy to power the processing plant in the communities where there is little or no electricity. <u>MODERATE</u>	<ul style="list-style-type: none"> • As a sturdy perennial crop, banana is relatively less vulnerable compared to maize and coffee for instance • MAAIF and its partners in the baseline project are developing and introducing new varieties improved agronomic and farm sanitation measures. • The processing facility will be set up in major banana production areas, which characteristically suffer losses when they are unable to sell their fresh bananas. • The project will also introduce the use of the banana waste for biogas production as an energy source for the processing plant and also domestic use for farmers willing to acquire them. • Solar dryers will also be used for drying
Output 2.3 Banana-based products from income diversification activities effectively marketed in Bushenyi, Kampala and	• Beneficiaries adopt the new technologies and protocols the project will	• The current social stigma associated with the consumption of traditional banana	<ul style="list-style-type: none"> • The project will work with the UNSB to ensure quality and safety standards of the products • Open days will be held at the processing facilities as part of

other locations with good marketing potential	provide to improve quality and quality of value added banana products <ul style="list-style-type: none"> • End-users accept and patronize the products from the target beneficiaries 	juice and wine due to the perceived unhygienic means of processing, could pose a risk to purchasing and consumption of the products in the urban areas. <p><u>LOW</u></p>	information dissemination activities, marketing and to further attract investments in the livelihood diversification activities the project aims to promote.
Output 2.4. Community-based banana TC industry established to support the demand generated from CCA coping livelihood diversification activities introduced to the vulnerable farming community	<ul style="list-style-type: none"> • Communities will be willing to maintain the nurseries and use the material • Producers will accept to use the issue culture derived planting material 	A low rate of adoption of clean TC derived planting material could be a risk to the expansion of the banana TC industry <p><u>LOW</u></p>	<ul style="list-style-type: none"> • The MAAIF and FAO are providing farmers' knowledge and skills on good agronomic practices including demonstrations on the benefits of the use of TC plant material. • The project will in the first instance work within this network of communities, provide them with skill on how to run their own plantlet outlets as a business. • The project will also contract a supplier to supply plants of the desired banana varieties, the starting material will be taken from the communities.
Output 2.5 Biodigesters to convert banana waste into biogas established to support income diversification activities, and the resulting digestate used for soil fertility	<ul style="list-style-type: none"> • Feasible system to convert banana to waste into biogas • Sufficient banana waste generated to supply the biodigesters 	<ul style="list-style-type: none"> • As the existing domestic biodigesters are based on cow dung as the feedstock, there is the risk that the system will not be compatible with banana waste • A low rate of adoption of the derived digestate from banana waste biodigesters for soil fertilization. <p><u>LOW</u></p>	<ul style="list-style-type: none"> • An assessment during the PPG established the feasibility of a banana waste system • The study also showed the benefit in soil fertility and environmental sanitation • The project will set up demonstration facilities among processing groups which produce sufficient quantities of banana waste daily to ensure the sustainable production of biogas
Output 2.6 Water purification and water harvesting technologies to support livelihoods diversification and income generating activities promoted	Processors at both the primary and secondary levels will be willing to use the new technology and/or additional processing steps in their operations	A low rate of adoption of clean TC derived planting material could also be a risk to the expansion of the banana TC industry <p><u>VERY LOW</u></p>	<ul style="list-style-type: none"> • The intervention will start by raising awareness on the benefits of using potable water for the processes as well as drinking. • Water harvesting will allow closer proximity to water sources, saving time and energy used in collecting water

Output 4.1 Guidelines on best practices and project knowledge disseminated within the country and the sub-region through websites, publications and communication products in various languages	Project results are consistently documented to generate information for dissemination	Project results will not be disseminated <u>VERY LOW</u>	Reports manuals and other communication material will be routinely produced and disseminated
Output 5.1 Timely quarterly and annual reports prepared; midterm and final evaluation (using AMAT) of project activities completed	Project will be monitored and evaluated according to schedule	There is a very low risk that the project will not be monitored and reported <u>VERY LOW</u>	<ul style="list-style-type: none"> • The PMU is responsible for the day-to-day execution of all project activities including oversight of the monitoring and verification of indicators by stakeholder will be established. • Stakeholders at the community, district and national levels will be trained on the verified indicators at inception

A.7. Coordination with other relevant GEF financed initiatives

122. With financing from GEF through UNEP, Uganda prepared the second national communication (SNC) to the UNFCCC, which essentially summarizes up to date information as well as general and specific data on CC in Uganda, the national greenhouse gas inventory, interventions made and/or proposed in adapting to and mitigating CC. This LDCF project will to the extent possible, utilize the information and data in the SNC and build collaboration with other interventions in CCA. In addition, the present project will seek collaboration and coordination with the following, GEF funded projects:

1) The proposed project will build on the technical capacities and growing experience of the GEF funded FAO-led regional project “*Transboundary Agro-Ecosystem Management Programme for the Kagera River Basin (Kagera TAMP)*” (GEF ID 2139). This project aimed at adopting an integrated ecosystems approach for the management of land resources in the Kagera Basin that will generate local, national and global benefits including: restoration of degraded lands, carbon sequestration and CCA and mitigation, protection of international waters, agrobiodiversity conservation and sustainable use and improved agricultural production, leading to increased food security and improved rural livelihoods.

2) The Ugandan “*Sustainable Land Management Country Program*” (GEF ID 3392). The project’s objective is to increase agricultural productivity and incomes of participating households by improving the performance of agricultural research and advisory service systems. The project timeframe is from 2010 until 2016, and is being implemented by the World Bank (WB). The reinforcement of the extension systems might be successfully realised in collaboration with the proposed LDCF project. The proposed LDCF project will seek to establish a partnership with the WB to promote its successfully tested technologies in the proposed project.

3) The “*Enabling Environment for Sustainable Land Management (SLM) to Overcome Land Degradation in the Cattle Corridor Districts of Uganda*” (GEF ID 3393) aims to support the local government and communities in the cattle corridor to have in place policies and practices that ensure good and sustainable use of their land to mitigate both degradation and CC, while at the same time, supporting economic activities that improve their lives. The project is implemented by the MAAIF in partnership with the Ministry of Lands, Housing and Urban Development, MWE, MTIC, Ministry of Energy and Mineral Development, NARO and the DLGs of Kamuli and Nakasongola.

4) “*Strengthening Climate Information and Early Warning Systems in Eastern and Southern Africa for Climate Resilient Development and Adaptation to Climate Change*” (GEF ID 4993). The project is part of the UNDP Climate Information and Early Warning Systems Africa Regional Initiative which covers 10 Countries in Africa. In Uganda, the project is being implemented by UNDP in partnership with MWE. The project intends to enhance the capacities to monitor extreme weather, hydrology and CC and promote efficient and effective use of hydro-meteorological and environmental information for making early warnings and long-term development plans.

Additionally, the project is expected to integrate weather and climate information into national policy plans such as the National Development Plan and the local government development plans.

123. The project will build synergies with these ongoing projects; in particular, it will draw on the results from the early warning systems project, which will strengthen the meteorological system, including the placement of automatic weather stations across the country.

124. In addition, where applicable, synergies will be established with new and ongoing projects. These include:

1) Integrating climate resilience into agricultural and pastoral production in Uganda, through an Agro-pastoralist/FFS approach. This project seeks to build climate resilience into the agricultural sector as an effective means for reducing vulnerability and disseminating community-level adaptation measures. The project will target vulnerable districts in at least five of eleven agro-ecological zones, within the central cattle corridor and the Karamoja region through 13 districts (Nakasongola, Nakeseke, Luwero, Kiboga, Mubende, Ssembabule, Abim, Amudat, Kaagon, Kotido, Moroto, Nakapiripirit, and Napak).

2) The project “*Building Resilience to Climate Change in the Water and Sanitation Sector in Uganda*” is financed by the AfDB and GEF and is executed by the MWE. The project aims at building resilience to CC in the flood-prone areas of Mount Elgon;

3) “*Enhancing Adaptation to Climate Smart Agriculture Practices in the Farming Systems of Uganda*” is a UNDP– Common Market for East and Southern (COMESA) project, which started in June 2014 and is scheduled to end in December 2015. The project is being implemented in the five districts of Namutumba, Bugiri, Budaka, Busia and Buyende, where land productivity is decreasing at a fast rate due to the high population and poor farming methods. The project, which is a scale up of previous sustainable land management projects focuses on building the capacities of farmers and extension officers at local government level in an effort to build a CC resilient society. This project is intended to specifically increase the numbers of farmers using “Climate Smart” agricultural practices and putting in place measures to improve input supply and produce markets and economic sustainability for farmers.

4) Uganda’s NARO is currently implementing two long-term CCA projects directly relevant to the proposed LDCF project: i) Conservation agriculture for improved land management and livelihoods of smallholder farmers, and ii) Sustainable land management (SLM) research at the National Agricultural Research Laboratories (NaRL), Kawanda. The objective of the agriculture conservation project is to increase agricultural productivity and improved livelihoods, while the objective of the SLM research is to generate CCA technologies for sustainable land management.

5) The Uganda “*Information System for Food and Nutrition Security*” project (2013-2015), funded by the FAO, aims to generate data that will be utilized for designing and implementing development oriented projects to improve household food security and the livelihoods of food insecure and vulnerable people. The main component is the establishment of an integrated information system that enables the monitoring of multiple environmental, climate, geological, and socio-economic threats for a more comprehensive understanding of, and response to, food and nutrition insecurity. The lessons learned on the integrated information system will be utilized towards improving the design and establishment of the knowledge management system under the project proposed LDCF.

B. ADDITIONAL INFORMATION NOT ADDRESSED AT PIF STAGE:

B.1 Describe how the stakeholders will be engaged in project implementation.

B 1.1 GEF Implementation Agency (IA)

125. UNIDO is the GEF Implementing Agency. UNIDO will be responsible for the overall implementation, monitoring and reporting of the project according to GEF procedures and established UNIDO rules and regulations. UNIDO will fulfil this responsibility by appointing a Project Manager and mobilizing services of its other technical, administrative and financial branches at UNIDO Headquarters and the UNIDO field office in Uganda.
126. UNIDO will be responsible for the following inputs:
- Overall project implementation, monitoring and reporting
 - Recruitment and remuneration of all experts and consultants required for the project. Experts will be identified in consultation with the National executing partners (NEPs). In all the recruitments, due attention will be given to have a gender balance, subject to the availability and suitability of the resource.
 - Procuring international service needed for delivering of the planned outputs;
127. UNIDO will fulfil this responsibility by appointing a Project Manager and mobilizing services of its other technical, administrative and financial branches at UNIDO Headquarters and the UNIDO Field Office in Uganda. All procurement will be done in accordance with UNIDO established regulation. Partnership agreements will be made with the NEPs.
128. Any amendments to the project will be done in accordance with the GEF policy C.39.09 and UNIDO rules and regulations.

B 1.2 National executing partners (NEPs)

129. The Ministry of Agriculture, Animal Industry and Fisheries (MAAIF and the Ministry of Trade, Industry and Cooperatives (MTIC will be the two main executing agencies coordinating with UNIDO.

B.1.2.1 Ministry of Agriculture, Animal Industry and Fisheries (MAAIF)

130. MAAIF will be the Lead NEP and will be responsible for the delivery of the project outputs and will be accountable for resources provided, in accordance with UNIDO rules and procedures. The Ministry has the responsibility for providing national level coordination of project activities and their integration into other agro industries and initiatives on building resilience at the national level.

B.1.2.2 Ministry of Trade, Industry and Cooperatives (MTIC)

131. The Ministry is responsible for promoting trade, industry and cooperatives for the development of the country. MTIC through its Department of Industry & Technology and its affiliate institutions will execute activities relating to value chain development. Other roles include policy development and project quality assurance through monitoring.

B.1.3 Other project implementation partners

132. Ministry of Finance, Planning and Economic Development (MFPED) is the signatory of the project on behalf of the GoU (GEF focal point) and the Ministry of Water and Environment (MWE) coordinates the implementation and monitoring of national CC actions on mitigation and adaptation in different sectors.
133. Other public and private sector stakeholders include: Uganda National Bureau of Standard (UNBS); Uganda Industrial Research Institute (UIRI); Micro Finance Support Centre (MFSC); Agro Genetics Technologies Ltd (AGT); Fruits of the Nile (FoN); Afri Banana Products Limited (ABP); Uganda Cooperative Alliance (UCA); Uganda Export promotion board (UEPB); District Local Governments (DLGs) of Isingiro, Mbarara, Ntungamo, Bushenyi, Sheema, Rubirizi, Mitooma and Buhweju districts.
134. The project will also partner with the relevant CSOs such as UCA and Farm Radio International to provide services on information dissemination, training and incubation of farmers in aggregated processing groups.

135. More detailed information on project stakeholders is presented in Annex H.

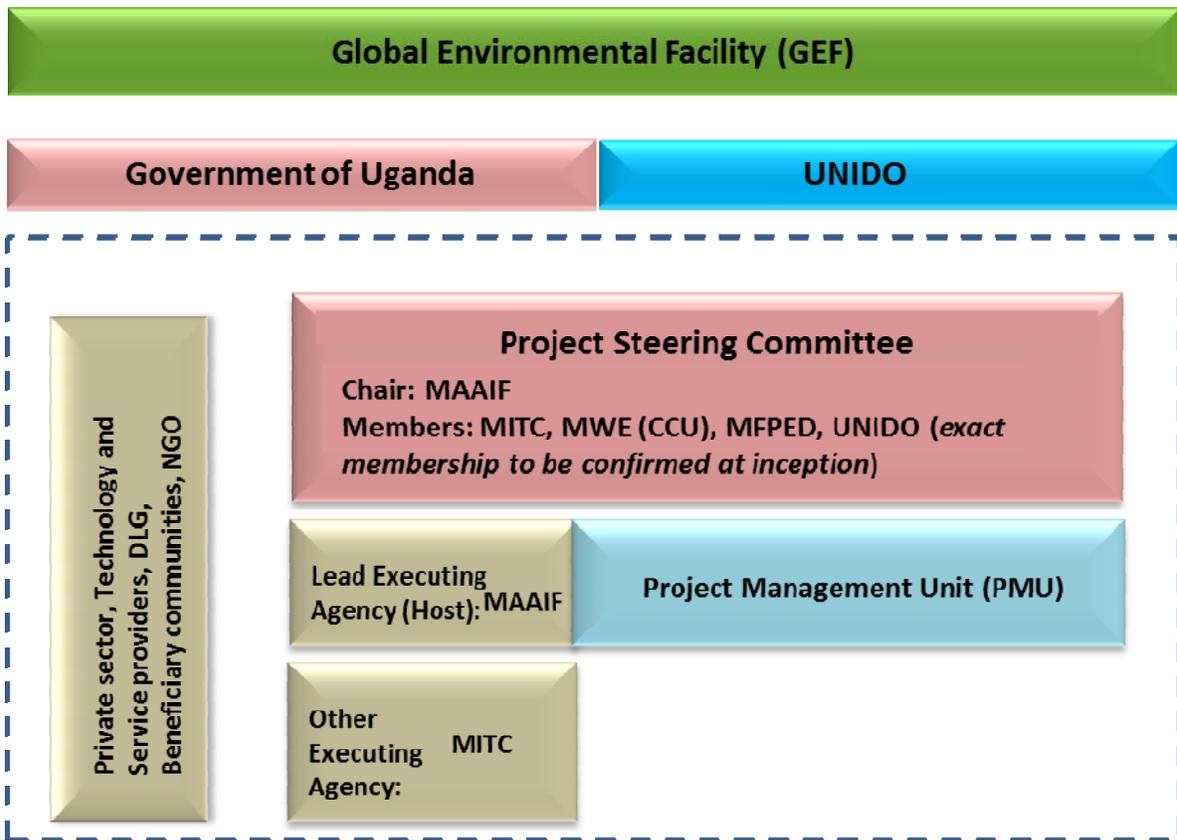


Figure 4 Diagrammatic representation of project structure

B.1.4 Implementation arrangements

B.1.4.1 Project Steering Committee (PSC)

136. The PSC will be established with the responsibility of coordination among Government agencies and will provide the necessary guidance on project execution. The PSC will steer the project to make sure that project resources are allocated effectively and efficiently in accordance with the approved project document to achieve the stated outcomes. Acting in accordance with the UNIDO and GEF (GEF/C.39/Inf. 3) policies and procedures, the PSC will also ensure the high level support and participation of key stakeholders both at national and sub-national levels.

137. The PCS will have three roles:

- (1) Executive role - The Permanent Secretary of the MAAIF or any other official delegated by him to chair the PSC, will assume the executive role. MTIC will co-chair the PSC The Executive's function is to represent project ownership on the PSC.
- (2) Representatives from key beneficiaries and stakeholders - This will include MAAIF, MWE (CCD, MTIC) and the eight districts where the project is implemented.
- (3) Oversight - UNIDO's primary function within the PSC is to provide guidance regarding the project including the appraisal and approval of the activities, oversight of project performance and quality assurance.

138. The membership and specific ToRs for the PSC will be reviewed and finalized during the inception phase. PSC Meetings will be held once in every six months. The PSC will invite members and experts for specific meetings, as needed.

B.1.4.2. Project Management (PMU)

139. The PMU will be established and will be responsible for the day-to-day execution of all project activities,

including direct monitoring of those activities contracted to consultants and other vendors. The PMU will be hosted by MAAIF, in Entebbe. The PMU will consist of a National Project Coordinator (NPC), a Project/Administrative Assistant, Office Attendant and a Project Driver, as well as, international and national experts, as required.

B.1.5 Inception Phase

140. During the project inception phase the PMU and the project governance structure will be established. An inception workshop to present the project objectives (key expected results, implementation modality, M&E framework, risk management strategy, work plan and budget) to stakeholders will be organised to mark the launch of the project and to raise awareness and build partnerships for CCA mainstreaming into the national poverty reduction programmes at national and local government levels.

141. Activities foreseen to be concluded during the inception phase include, but are not limited to:

- Establishing the project governance structure
- Inception workshop - The key results the Inception Workshop is expected to achieve are:
 - i. All partners fully understand and take ownership of the project. The roles, functions, and responsibilities of partners, the PSC, reporting and communication lines, and conflict resolution mechanisms, will be clarified.
 - ii. Based on the AMAT, indicators, targets and the means of verification are presented to stakeholders and the schedule for field monitoring visits, agreed upon.
 - iii. The First Year Work Plan of activities to be carried out in accordance with the project framework (described in Annex A) will be agreed upon.
 - iv. The budget breakdown of the project will be presented and the financial reporting procedures and obligations, and arrangements for annual audit will be discussed.
 - v. The plan and schedule of the PSC meetings will be discussed.
- Training stakeholders on baseline targets for monitoring during project implementation - The baseline targets and vulnerability indicators identified during the PPG will be set and monitored during the project. Stakeholders will be trained to include such indicators in their immediate and long-term plans for the target regions and the banana production system in general.

142. The Inception Report (IR) will be prepared immediately following the inception workshop. It will include a detailed work plan for year one in quarterly time-frame detailing the activities and progress indicators/ milestones to be achieved in the first year. The IR will also include the detailed project budget for the first year of implementation, and based on the agreed annual Work Plan. The IR will also include a more detailed narrative on the institutional roles, responsibilities, coordinating actions and feedback mechanisms to project related partners. In addition, a section will be included on the progress to date, project establishment and start-up activities, and an update of any changed external conditions that may affect project implementation. Prior to adoption of the IR, the PSC and UNIDO will review the document.

B.1.6 Implementation Phase

143. During this phase, all technical activities foreseen by the project (relevant for all four project components) will be undertaken. This phase will cover the activities under Components 1-3 and some of the activities under Component 4 described above. Estimated timeline is illustrated in Annex D.

B.1.7 Project completion/ final phase

144. This is the final phase of the project and therefore all project activities under all components and outputs must be completed at the end of this phase. Activities under this phase include but not limited to:

- Documentation of the lessons learned and best practice
- Dissemination of lessons learned and best practices on policy changes, capacity development initiatives and pilot demonstrations, through the project website and other media and networks.

- Undertake terminal evaluation (end of project/ terminal evaluation) of project success against agreed indicators.

B.2 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/NPIF) or adaptation benefits (LDCF/SCCF):

145. It is well documented that agriculture (and the agroindustry sector in general) plays a significant roles in the socio-economic development of Uganda. The proposed LDCF project has a strong socioeconomic dimension, in that it is centred on the banana sub-sector and its value chain actors. An important group of these actors are the small holder farmers with extremely low adaptive capacities in terms of financial, physical, and environmental capital. The project is expected to have an impact in the country by contributing to an increased resilience of small holder farming households to CC, and contribute to income and food security. The benefits from the four project components described above will reflected at the national, sectorial, local government and community levels.
146. On the national level, the project will contribute to the GoU's overall DSIP on the agriculture and agribusiness sectors, as it prioritises the participation of the private sector in value addition activities and investment for the country's economic growth and poverty reduction.
147. At the local district level, the economic benefit to the target vulnerable small holder farmers and their communities from engaging in the livelihood diversification activities cannot be overemphasized. There will be direct addition income to the households. For instance, with an initial investment of US\$ 160 on inputs for processing and bottling, a single bunch of banana yields a profit of US\$ 95 as banana wine compared to US \$ 3 from the sale of the same bunch at farm gate or US \$10 in an urban market. In addition, new jobs will be created in the communities where primary processing facilities and TC nurseries will be setup enabling employment opportunities for the youth and women that do not own their own land for farming. Through the introduction of labour saving technologies, both men and women will have equal opportunities to be engaged in the various stages of the value chain.
148. Water harvesting technologies are an important CCA strategy. The PPG demonstrated a clear need for this in the project activities. Making the water harvesting available at the processing facilities will reduce the time needed to go out in search of water. To further promote this practice among the vulnerable communities will has positive implications, in particular, to the wellbeing of the women and young people who, culturally, are the ones assigned the task of fetching water.
149. In line with the ISID mandate of UNIDO, the project will allow for an environmentally sustainable growth of the banana industry in the target districts, by supporting additional value added technologies. The use of TC derived planting material to replace disease plantation, will ensure the sustainable supply of fresh bananas for food security and to the envisaged demand for value added banana products. The use of banana peels (waste) for biogas will reduce the dependency on other traditional so protection of the environment. The resulting digestate from the biodigestion process, when used as organic fertiliser, will restore soil fertility and contribute to recycling the nutrients back into the farm lands.
150. It is envisaged that, as a result of improved income and financial status, the target beneficiaries will be able to afford other innovative adaptation strategies at the household level. These include strategies such as the construction of reservoirs for water harvesting and adopting soil conservation strategies to increase resilience to the increasingly frequent landslides and CC exacerbated soil degradation, and engaging in other forms of value addition to build further resilience.
151. In terms of the global adaptation benefit, the project component on mainstreaming supports one of the key functions of the LDCF, which is to help integrate adaptation into national policy and planning. It envisaged that by engaging a diverse range of stakeholders at the national government level (agriculture, industry, water and environment), DLGs, as well as national agencies and institutions, will result in harmonised action plans on CCA and facilitate the actual implementation of activities.
152. By engaging the value chain actors in the private sector, they will also become sensitized on CCA strategies and especially how to support those value chain actors who dependent on the primary natural resources of their

businesses. It is envisaged that, this, will lead to private sector investments in agroindustry in line with CCA strategies, further resulting in building resilience of agro value chains to CC.

153. Lastly, DLGs will gain first-hand knowledge and experience on implementing and promoting CCA coping strategies (and their associated benefits) within their communities and thus, will be better equipped to implement CCA actions throughout their jurisdiction.

B.3. Explain how cost-effectiveness is reflected in the project design:

154. Cost effectiveness is ensured throughout the project in that the project interventions are structured around ongoing initiative and programmes rather than setting up completely new initiatives. The project will be fully integrated into existing national processes and programmes of Uganda and will avoid the creation of parallel structures.

155. The component of mainstreaming will result in comprehensive sector strategies covering their primary mandate and other key development issues include adaptation to CC, and is more cost effective than having separate strategies for each developmental issue related to a particular sector. This in turn will allow institutions to more efficiently plan and implement activities with a broader view of CCA for sustainable development.

156. Within the component on resilience building through livelihood diversification by vulnerable communities, cost effectiveness is attained by engaging value chain actors already operating in the target areas. By upgrading the facilities of primary processing centres and building the capacities of the smallholder farms for improved value addition and linking them with the processing companies with factories where the value added products will be further processed, is more cost effective than setting up new facilities from scratch. Furthermore, most of these SMEs are currently operating under their potential capacities and is cost-ineffective. Therefore, by being associated with this LDCF project, cost-effectiveness is translated into the operations of the SMEs.

157. The project also includes cost effective options for the waste utilisation/biogas production demonstration. The fixed dome digesters with a long lifespan (30 years) and low maintenance costs will be installed. These digesters maintain stable temperatures. This system results in fuel savings within 2-3 years of use.

158. The long term benefits and cost-effectiveness of the use of banana plant TC derived material cannot be overemphasised. While the initial cost of healthy disease-free plantlets from the entrepreneurs such as AGT will be out of the reach of small holder and climate vulnerable farmers. Typical interventions when there are outbreaks of crop disease or other disasters is to distribute new seed or clean planting material to replace lost crop. The approach taken in this project, which will setup nurseries and provide skills to run them as community based enterprises, is more cost-effective in ensuring the long term use of disease free planting material.

159. The information dissemination component will be executed in a cost effective manner in that it will combine traditional print material with electronic and web based material.

B4. Sustainability strategy and potential for scale up

160. The project has been designed in such a way that GEF resources and matching funds from other donors and stakeholders will set up systems and approaches that lead towards the sustainability of project interventions in the banana value chain. The proposed project will demonstrate the efficacy and profitability achieved through the introduction of the described coping strategies, within organized farming groups, that can also be scaled-up and replicated in other districts of Uganda and more widely, other banana-based agroecosystems of the region.

161. The project is innovative as it does not focus on the production system alone, but also on the value chain. By establishing profitable value-addition activities coupled with sound business management skills in normal banana production and the subsistence farming routines of the communities, that would otherwise become increasingly food insecure due to CC, will ensure their food security.

162. A second point of innovation involves the enablement of communities to better adapt to CC in that the resulting wealth created from the introduction of the CCA strategies described (food preservation, alternative livelihood systems and changes in agriculture practices), will enable communities to afford more changes in agricultural practices including the routine use of disease free TC planting material to replace older trees for sustainable high productivity, construction of reservoirs for water harvesting and adopting soil conservation strategies. Furthermore, the intervention will ensure food security through a continual supply of the staple banana and additional income to afford a variety of nutritional foods.

163. This LDCF project will be fully integrated into existing national processes and programmes of Uganda and will avoid the creation of parallel structures. More specifically, the project will rely on the following operational principles:

Ensuring national leadership and ownership

- Project execution by MAAIF and MTIC ensures that project initiatives, lessons and best practices easily become focal areas for government to build on in their future plans and programmes.
- Co-financing from partners and beneficiaries included in project budget
- High degree of participation and engaging stakeholders will ensure high-level support and a strong sense of ownership;
- Ensuring multi-stakeholder participation (e.g. Steering Committee) and consultation – participation is critical to generate the sense of ownership. A detailed stakeholder capacity analysis (and the elaboration of detailed partnerships and collaborative arrangements) was developed during the baseline assessment and will be reviewed and updated during the inception phase. This will help determine appropriate level and types of participation;
- Building on existing and on-going work – avoiding duplication and maximizing past investments by GEF, UNIDO, the government and donor community in relevant areas of support. This principle will ensure that synergies and complementarities are identified and fully realized. E.g., collaboration with NAADS activities
- Adopting a long-term approach – Finding strong links with critical development policy frameworks for long term policy change, developing critical capacities at local and national levels and leveraging a follow-up funding.

Training/ capacity building for farmers/SMEs and local Government

- Capacity building through training of DLG, processors and farmers in CCA strategies will increase confidence by all in addressing CC challenges.
- Capacity building to support access by the vulnerable communities to CC technologies in banana value addition and the whole banana value chain will strengthen the viability of interventions supported by the project.
- Human resource capacity strengthened through training in value addition processes, quality control, and business management.

Income diversification and adoption of alternative agricultural practices to tackle the high incidence of diseases affecting bananas, maintaining soil fertility and sustaining agriculture based livelihoods

- TC planting materials for addressing CC vulnerability for bananas will ensure the sustainable supply of bananas as raw materials in the banana value addition initiatives of the project.
- A substantial portion of Western Ugandans depend on banana farming for their livelihoods. The sustainability of banana production through soil nutrient enhancement by waste from banana processing and bio digesters plays an important role in ensuring continuous production.
- Access to potable water is a major constraint hindering the upscale and sustainability of banana value addition in Uganda. Water purification systems will be introduced to support the livelihoods diversification of banana processing activities.

Product competitiveness

- Certification of products provides an incentive for processors to keep in the market (US-mark) and encourage process to get the Q-mark. By supporting banana based products to meet national standards ensures creating products that meet consumers' safety and builds trust and confidence that comes with economic rewards as well as motivation for processors to stay in the market.
- Access to finance - Lack/limited access to micro finance is one of the hindrances for SMEs to take and retain their products in the market due to limitations in capitalization of their investments. Building partnerships with the existing commercial and donor backed financial institutions and schemes to facilitate access to credit for the growth and maintenance of the income diversification activities of the farmers will contribute to addressing the gap.
- Branding and marketing.

C. DESCRIBE THE BUDGETED M &E PLAN

164. Project M&E are conducted in accordance with established UNIDO and GEF procedures. The M&E activities are defined by project component 4 and the concrete activities that are specified and budgeted in the M&E plan. Monitoring will be based on indicators defined in the strategic results framework (which details the means of verification), and the annual work plans. M&E will make use of the GEF Tracking Tool, which will be submitted to the GEF Secretariat three times during the course of the project: at CEO Endorsement, at mid-term review, and at project closure. UNIDO as the IA Agency will involve the GEF Operational Focal Point and project stakeholders at all stages of the project M&E activities in order to ensure the use of the evaluation results for further planning and implementation. According to the M&E policy of the GEF and UNIDO, follow-up studies like Country portfolio evaluations and thematic evaluations can be initiated and conducted. All project partners and contractors are obliged to (i) make available studies, provide reports or other documentation related to the project and (ii) facilitate interviews with staff involved in the project activities. The M&E budget is presented in Table 4. The following M&E activities will be conducted:

Periodic monitoring and site visits

165. The UNIDO Project Manager and the NEPs will conduct visits to the project sites based on the agreed schedule in the project's Inception Report/Annual Work Plan to assess first hand project progress. Other members of the PSC may also join these visits. A back-to-office-mission report will be prepared by the NPC and will be circulated no less than one month after the visit to the project team and PSC members.

Annual reporting

The project status will be monitored each year through an Annual Monitoring Review (AMR) exercise covering the activities of the previous reporting period. The APR activities to be carried out include, but are not limited to following:

- Review of the progress made towards project objective and project outcomes - each with indicators, baseline data and end-of- project targets (cumulative)
- Project outputs delivered per project outcome (annual).
- Expenditure reports
- Lesson learned/good practice.
- Risk and adaptive management

Midterm review

166. The project will undergo a mid-term review at the mid-point of project implementation. The mid-term review will determine progress being made towards the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; it will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project's term. The organization, ToRs and timing of the mid-term evaluation will be

decided upon after consultation between project partners. The ToRs for the evaluation will be prepared by the UNIDO Project Manager. The review will also include the LDFC/SCCF AMAT update at midterm.

End of Project

167. An independent terminal evaluation will take place during the last quarter of the project implementation prior to the final PSC meeting and will be undertaken in accordance with UNIDO and GEF guidance. The terminal evaluation will focus on the delivery of the project’s results as initially planned (and as corrected after the mid-term review, if any such correction took place). The evaluation will look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental and adaptation benefits/goals. The LDFC/SCCF AMAT will also be completed during the terminal evaluation cycle. The ToRs for this evaluation will be prepared by the UNIDO Project Manager based on guidance from the UNIDO evaluation group.

Learning and knowledge sharing:

168. The projects interventions will result in a wealth of information and knowledge on ways in which vulnerable communities can sustainably engage in livelihoods diversification income generating off-farming activities, and thereby build CC resiliency. In addition, information on how the use of technologies such as clean planting material derived from TC and organic soil composite from biodigested banana peels, aid in building resilience of the agriculture production system, will be disseminated. The Lessons learned and best practices will be disseminated widely within and beyond the project intervention zone (nationally, regionally and internationally) and through existing information sharing networks and forums, as described under section A. 5.4 above.

Table 4 Project Monitoring and Evaluation

Description	Budget US\$	Responsible Parties	Time frame
Means of verification of project results (experts to conduct studies and training on indicators)	20,000	UNIDO PM; PMU;	Start of project and if required following midterm review
Periodic site-visits /monitoring of result/status reports	Covered under project travel in components 1-3	PMU; NEPs project teams	Continuous
Midterm Review	40,000	UNIDO PM; PMU; external consultants	Midway through the project
Independent Terminal Evaluation	60,000	UNIDO PM; PMU; external consultants	during the last quarter of the project
Terminal Report	included in cost of review	UNIDO PM; external consultants	At least one month before end of project
Subtotal	120,000 USD		

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 form. For SGP, use this [OFP endorsement letter](#)).

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
Mr Patrick Ocailap	Deputy Sectary to Treasury	MINISTRY OF FINANCE, PLANNING AND ECONOMIC DEVELOPMENT	08/05/2013

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF/LDCF/SCCF/NPIF policies and procedures and meets the GEF/LDCF/SCCF/NPIF criteria for CEO endorsement/approval of project.

Agency Coordinator, Agency Name	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address
Mr. Philippe R. Scholtès, Managing Director, Programme Development and Technical Cooperation Division -UNIDO GEF FocalPoint		08-13-2015	Yvonne LOKKO	+43 1 26026 3737	Y.Lokko@unido.org

ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

Intervention logic	Verifiable indicators	Sources of verification	Assumptions
Impact			
Increased resilience to CC, income and food security of small holder farming households in Western Uganda	<ul style="list-style-type: none"> At least 5000 small-holder farmers disaggregated by sex with improved assets* (such as soil and water conservation structures, water harvesting structures) to adapt to CC At least 5000 small-holder farmers disaggregated by sex reclassified as income and food secure 	<ul style="list-style-type: none"> Baseline and Impact assessment study UNBS 	X
Objective			
To support vulnerable communities in Western Uganda to better adapt to the effects of CC through banana value addition activities, to provide greater opportunities for income generation, poverty reduction and food security	<ul style="list-style-type: none"> Average income of banana producing households in target districts increased by 30% at project completion (baseline will be established at inception phase); disaggregated by sex of head of household 30% increase in the banana value addition in the target region (baseline will be established at inception phase) 	<ul style="list-style-type: none"> Inception baseline, midterm and final reports MTIC, MAAIF reports 	<ul style="list-style-type: none"> Government continuous to prioritise development of the agro industries as a means to poverty reduction
Component 1: CCA and gender equality for adaptation mainstreamed into National Development Policy/Strategies.			
Outcome 1: CCA strategies coupled with appropriate action on gender equality are incorporated into developmental policies and implemented by stakeholders in the various sectors	<ul style="list-style-type: none"> CCA captured in the new Agriculture Sector Strategy Plan (ASSP) (2015/16-2019/2020); the National Industrial Sector Strategic Plan (NISSP); and District level strategies on adaptation produced Eight DLG development plans setting priorities on reducing vulnerability to CC along the value chain 	<ul style="list-style-type: none"> Actual policy documents/ strategies 	<ul style="list-style-type: none"> Government stakeholders and private sector partners are willing to engage in the development of CCA strategies
Component 2: Climate Change resilience building of vulnerable communities in major banana producing regions and contribute to food and income security through livelihood diversification.			

<p>Outcome 2. Vulnerable communities are increasingly participating in resilience building activities for income diversification</p>	<ul style="list-style-type: none"> • 30% increase in number of farming households, disaggregated by sex of head of household, engaged in banana value addition (baseline established at inception) • 40% increase of banana wine and juice, 40% increase in of banana chips produced in the target area per annum and reflected in the expansion of local and regional markets (baseline established at inception) • # of banana based products from the target region meeting Uganda Bureau of Standards • # of processors meeting minimum requirements (UNBS food Safety and quality standards (US;2002) • # of UNBS certified products from beneficiaries on the market(baseline established at inception) • Number of TC derived plant material purchased/year by smallholder farming households, disaggregated by sex of head of household, from established nurseries/mother gardens (baseline at PPG zero). • Number of farming households, disaggregated by sex of head of household, applying biodigestate residue in fertilisation of banana plantations and adopting improved farm management practices • Increase in number of water harvesting facilities setup in vulnerable communities (baseline established at inception) 	<ul style="list-style-type: none"> • Project, midterm and final reports • UBS certificates awarded to project beneficiary and processors • NAAD, MTIC, MAAIF reports 	<ul style="list-style-type: none"> • It is much more profitable for farmers to participate in value addition activities compared to selling fresh banana bunches on the markets • Commitment of service providers, and beneficiaries to adopt proposed technologies for planting material and banana waste utilisation • Higher profit margins for banana due to value addition activities will provide an incentive for investing in increased banana production incl. disease free plant materials
<p>Component 3: Dissemination of information and expansion of the strategy and project benefits</p>			

<p>Outcome 4. Lessons learned and best practices from policy changes, capacity development initiatives and pilot plants disseminated.</p>	<ul style="list-style-type: none"> • Number of similar project and initiatives started as a direct result of or citing the project • Number of external events, conferences, and show where project results are highlighted 	<ul style="list-style-type: none"> • MAAIF, MWE reports 	<ul style="list-style-type: none"> • Successful implication of proposed project and demonstration of easy of replication
<p>Component 4: Quality Control Monitoring and Evaluation</p>			
<p>Outcome 5. Quality control and efficient monitoring of project intervention to support adoption by CC vulnerable communities</p>	<ul style="list-style-type: none"> • Baseline assessment of measurable indicators in the eight Districts • Number of communities based primary processing /farming groups, district and governmental agency staff, disaggregated by sex, trained to monitor the project(baseline established at inception) 	<ul style="list-style-type: none"> • Baseline assessment study • Project reports • Project training certificate 	<ul style="list-style-type: none"> • Key stakeholders actively participate in the project inception study • Stakeholders at national district and community levels able to implement recommendations of baseline/inception study

* Assets defined as environmental, social, human, financial, and physical capital resource base with which the community is able to adapt to CC. The stronger the asset base the higher the adaptive capacity of the community while a poor asset base indicates high vulnerability to CC and an urgent need for planned adaptation.

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

n/a

ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS

PPG Grant Approved at PIF:			
<i>Project Preparation Activities Implemented</i>	<i>GEF/LDCF/SCCF/NPIF Amount (\$)</i>		
	<i>Budgeted Amount</i>	<i>Amount Spent To date</i>	<i>Amount Committed</i>
Determination of baseline scenario, identification of project location	20,000	20,000	
Vulnerability assessment, determination of indicators and gender analysis	20,000	20,000	
Identification of project stakeholders, partners and securing commitment	30,000	30,000	
Determination of facilities needs and preparation of project document	30,000	25,095	4,905
Total	100,000	95,095	4,905

ANNEX D: TIMELINE OF ACTIVITIES

Output	Main Activity	Year 1			Year 2			Year 3		
		Month 1-4	Month 5-8	Month 9-12	Month 1-4	Month 5-8	Month 9-12	Month 1-4	Month 5-8	Month 9-12
Outputs 1.1 National policy documents such as the Agriculture sector strategic plan updated with action on CCA and gender mainstreaming for adaptation	1.1.1 Facilitate the development/updating of key policy documents of related sectors									
Output 1.2 CCA coping strategies including gender equality for adaptation promoted among investors and other stakeholders in the agro-industries and rural enterprise development sector.	1.2.1 Conduct sensitization workshops for SMEs and other agro based value chain actors on incorporating CCA strategies in their operations									
Output 2.1 Sensitization of female and male farmers in the target district on CCA coping strategies to build resilience to CC	2.1.1 Sensitize female and male farmers in the target districts on CCA coping strategies to build resilience to CC									
	2.1.2 Conduct sensitization workshops for banana producer groups, processors along the value chain on the project intervention n and benefits of the technologies/systems to be introduced									
Output 2.2 Small scale processing facilities established in target regions for vulnerable	2.2.1 Upgrade/establish primary processing facilities for banana wine, juicing and chips									

communities to engage in income diversification banana value addition activities	2.2.2 Facilitate development of standards or specifications for particular banana products (Establish Standard Operating Procedures (SOP) and provide training in Good Hygienic Practices (GHPs) and Good Manufacturing Practices (GMPs))								
	2.2.3 Train banana processors in basic business management skills including preparation of business plans, financial planning among others.								
	2.2.4 Upgrade/Equip the centre with adequate testing facilities, certify the products and the processes according to national rules and regulations for food handling and marketing								
	2.2.5 Train processors on the aspects of quality control and quality assurance								
	2.2.6 Provide information on the business plan, what training the centre can provide, where to source technology and how to access credit for investing banana processing equipment.								
	2.2.7 Facilitate certification of products (MITIC co-financing activity).								
	Output 2.3 Banana-based products from income diversification activities	2.3.1 Promotion and marketing of the banana-based products with project specific branding							

effectively marketed in Bushenyi, Kampala and other locations with good marketing potential	2.3.2 Conduct open days and promotion events in the processing centre for banana-based products among retailers, wholesalers, marketing agents and other traders									
	2.3.3 Develop contractual agreements for marketing of products between the primary processing centres (target vulnerable communities) and partner processing SMEs identified in the project									
	2.3.4 Build partnerships with the existing commercial and donor backed financial institutions and schemes to facilitate access to credit for the growth and maintenance of the income diversification activities of the farmers									
	2.3.5 Organise an investment forum to promote investments into the income diversification activities of the smallholder farmers and CC adaptation strategies that enable resilience building of vulnerable people in general									
Output 2.4. Community-based TC industry established to support the demand generated from CCA coping livelihood diversification activities introduced to the vulnerable farming community	2.4.1 Study tours for beneficiaries, stakeholders on banana value chain – commercial low-cost tissue culture, value addition & product marketing									
	2.4.2 Establish weaning and distribution nurseries in the identified districts									

	2.4.3 Training on handling plantlets, weaning and distribution									
	2.4.4 Demonstrate to other farming communities the advantages of using disease free planting material in combination with best agricultural practices as demonstrated in FFS (superior yield, mitigation of disease spread) (MAAIF financing activity)									
Output 2.5 Biogas digesters to convert banana waste into biogas established to support income diversification activities, and the resulting digestate used for soil fertility	2.5.1 Construction of Biogas digesters at primary processing facilities and at households of target beneficiaries									
	2.5.2. Training on banana waste preparation and use in digesters									
	2.5.3. Demonstration on application of banana waste based fertiliser and sound agronomic practices (MAAIF financing activity)									
Output 2.6 Water purification and water harvesting technologies to support livelihoods diversification and income generating activities promoted	2.6.1 Baseline water purity testing at secondary processing sites and water sources at primary processing sites									
	2.6.2. Installation of water harvesting and water purification systems at processing sites for processing and other domestic use (at primary processing sites)									
Output 3.1 Guidelines on best practices and project	3.1.1 Project website and regular updates									

knowledge disseminated within the country and the sub-region through websites, publications and communication products in various languages	3.1.2 Publication of promotional material, guidelines, communication and material								
	3.1.3 Global forum activities								
Output 4.1 Timely quarterly and annual reports prepared; midterm and final evaluation of project activities	4.1.1 PSC meetings								
	4.1.2 Mid and Annual review exercise using Adaptation Monitoring and Assessment Tool (AMAT)								

ANNEX E: BUDGET

Budget breakdown in US dollars

TABLE 1 GEF GRANT BUDGET BREAKDOWN

		GEF Grant Budget Component 1			
Component 1	Type of Expense	Year 1	Year 2	Year 3	Output Total
<i>Output 1.1</i>	International Expertise	18,000	25,000		43,000
	Training/Workshops		10,000		10,000
	Subcontract (editing/publishing)		10,000	12,000	22,000
	Output sub-total	18,000	45,000	12,000	75,000
<i>Output 1.2</i>	Local Travel	5,000	5,000		10,000
	National Expertise	3,500	15,000	15,000	33,500
	Training/Workshops	5,000		5,000	10,000
	Miscellaneous (printing material)	6,000		5,500	11,500
	Output sub-total	19,500	20,000	25,500	65,000
		GEF Grant Budget Component 2			
Component 2	Type of Expense	Year 1	Year 2	Year 3	Output Total
<i>Output 2.1</i>	Local Travel	5,000	2,400	2,400	9,800
	National Expertise	9,000		16,200	25,200
	Training/Workshops	25,000	10,000	10,000	45,000
	Output sub-total	39,000	12,400	28,600	80,000
<i>Output 2.2</i>	International Expertise	12,000	36,000		48,000
	Contractual Arrangement	240,000	30,000		270,000
	Training/Workshops	15,000	70,000	20,000	105,000
	Equipment	100,000	340,000		440,000
	Miscellaneous (procurement of supplies/consumables)	15,000	15,000	25,000	55,000
	Output sub-total	382,000	491,000	45,000	918,000
	International Expertise		15,000	15,000	30,000
<i>Output 2.3</i>	Local Travel		5,000	5,000	10,000
	National Expertise	9,000	7,200		16,200
	Contractual Arrangement		15,000		15,000
	Training/Workshops	5,000	5,000	5,000	15,000
	International Meetings/Workshops			30,000	30,000
	Miscellaneous (procurement of supplies/consumables)	8,800	20,000	10,000	38,800
	Output sub-total	22,800	67,200	65,000	155,000
<i>Output 2.4</i>	Local Travel	5,000	5,000		10,000
	Contractual Arrangement	120,000	30,000		150,000
	International Meetings/Workshops	50,000			50,000
	Miscellaneous (procurement of supplies/consumables)	5,000	10,000	5,000	20,000

	<i>Output sub-total</i>	180,000	45,000	5,000	230,000
Output 2.5	International Expertise		9,000	9,000	18,000
	National Expertise		5,000	5,000	10,000
	Contractual Arrangement or Procurement	200,000	100,000		300,000
	Miscellaneous (procurement of supplies/consumables)	6,000	10,000	6,000	22,000
	<i>Output sub-total</i>	206,000	124,000	20,000	350,000
Output 2.6	Contractual Arrangement	25,000	25,000		50,000
	Equipment	100,000	280,000		380,000
	Miscellaneous (procurement of supplies/consumables)	20,000	12,000	10,000	42,000
	<i>Output sub-total</i>	145,000	317,000	10,000	472,000
		GEF Grant Budget Component 3			
Component 3	Type of Expense	Year 1	Year 2	Year 3	Output Total
Output 3.1	International Expertise			18,000	18,000
	Local Travel	2,500	2,500	5,000	10,000
	National Expertise	16,200			16,200
	Contractual Arrangement			20,000	20,000
	Training/Workshops	10,000	5,000		15,000
	International Meetings/Workshops		15,000	20,000	35,000
	Equipment	5,000			5,000
	Miscellaneous (printing/communication material)	3,800	15,000	12,000	30,800
	<i>Output sub-total</i>	37,500	37,500	75,000	150,000
		GEF Grant Budget Component 4			
Component 4	Type of Expense	Year 1	Year 2	Year 3	Output Total
Output 4.1	International Expertise		35,000	45,000	80,000
	National Expertise		15,000	20,000	35,000
	Miscellaneous (printing material)		2,500	2,500	5,000
	<i>Output sub-total</i>		52,500	67,500	120,000
		GEF Grant Budget PMC			
PMC	Type of Expense	Year 1	Year 2	Year 3	Output Total
	National Expertise	40,200	40,200	40,200	120,600
	Training/Workshops	10,500	4,300	3,000	17,800
	Equipment	50,000			50,000
	Miscellaneous (operational cost)	6,000	6,000	4,600	16,600
	<i>Output sub-total</i>	106,700	50,500	47,800	205,000

TABLE 2 CO-FINANCING BUDGET BREAKDOWN

Proposed Co-financing Budget						
	Co-financing Budget Component 1					
Component 1	UNIDO	MAAIF	AGT	ABP	FFL	Output Total
<i>Output 1.1</i>		200,000				200,000
<i>Output 1.2</i>						
TOTAL Component 1		200,000				200,000

	Co-financing Budget Component 2					
Component 2	UNIDO	MAAIF	AGT	ABP	FFL	Output Total
<i>Output 2.1</i>		1,000,000			5,000	1,005,000
<i>Output 2.2</i>	150,000			150,000	410,000	710,000
<i>Output 2.3</i>	50,000			12,000	10,000	72,000
<i>Output 2.4</i>		4,340,000	120,000			4,460,000
<i>Output 2.5</i>						
<i>Output 2.6</i>						
TOTAL Component 2	200,000	5,340,000	120,000	162,000	425,000	6,247,000

	Co-financing Budget Component 3					
Component 3	UNIDO	MAAIF	AGT	ABP	FFL	Output Total
<i>Output 3.1</i>	12,000	400,000				412,000
TOTAL Component3	12,000	400,000				412,000

	Co-financing Budget Component 4					
Component 4	UNIDO	MAAIF	AGT	ABP	FFL	Output Total
<i>Output 4.1</i>	20,502	86,000				106,502
TOTAL Component 4	20,502	86,000				106,502

	Co-financing Budget PMC					
PMC	UNIDO	MAAIF	AGT	ABP	FFL	Output Total
		100,000				100,000
TOTAL PMC		100,000				100,000

ANNEX F: LEGAL CONTEXT

The present project is governed by the provisions of the Standard Basic Cooperation agreement between the Government of the Republic of Uganda and UNIDO, signed on 27 May 1994.

ANNEX G: ENGAGEMENT OF NATIONAL STAKEHOLDERS

Outcome	Output	Lead national institution	Key national partners	Key re
1: CCA strategies coupled with appropriate action on gender equality are incorporated into developmental policies and implemented by stakeholders in the various sectors	1.1 National policy documents such as the Agriculture sector strategic plan updated with action on CCA and gender mainstreaming for adaptation	MWE (CCD)	MAAIF, MITC, MFPED	<ul style="list-style-type: none"> • Rev • Fac • kno • Ens • dev • wo
	1.2 CCA coping strategies including gender equality for adaptation promoted among investors and other stakeholders in the agro-industries and rural enterprise development sector.	MAAIF, MITC	MWE (CCD), UCA, DLGs	<ul style="list-style-type: none"> • Mo • cha • Ass • trai
2. Vulnerable targeted communities are increasingly participating in resilience building activities for income diversification and adopting alternative agriculture practices to tackle the high incidence of diseases affecting bananas, maintain soil fertility and sustain their agriculture based livelihoods	2.1 Sensitization of female and male farmers in the target district on CCA coping strategies to build resilience to CC	MAAIF, MITC	MWE (CCD), DLGs, NAADs, CSOs*	<ul style="list-style-type: none"> • Mo • dist • wo • Ass • trai
	2.2 Small scale processing facilities established in target regions for vulnerable communities to engage in income diversification banana value addition activities	MAAIF, MITC	UNBS,UIRI,MFSC, UCA, Processing SME's (FoN, FF, ABP)	<ul style="list-style-type: none"> • Ide • pro • juic • esta • Ass • star • Ass • trai • Ov • cen • Bac • qua
	2.3 Banana-based products from income diversification activities effectively marketed in locations with good marketing potential	MAAIF, MITC	UNBS,UIRI,MFSC, UCA Processing companies	<ul style="list-style-type: none"> • Fac • inv • Mo • act

	2.4 Community-based banana TC industry established to support the demand generated from CCA coping livelihood diversification activities introduced to the vulnerable farming community	MAAIF	NARO, NAADS, Biotech/TC SMEs (AGT)	<ul style="list-style-type: none"> Identify locations where the nurseries will be set up Facilitate training on handling plantlets, weaning and distribution to identified groups Mobilise farmers to use TC products
	2.5 Biodigesters to convert banana waste into biogas established to support income diversification activities, and the resulting digestate used for soil fertility	MAAIF, MITC	DLGs, NAADS	<ul style="list-style-type: none"> Oversee construction of biogas digesters at primary processing facilities Facilitate training/demonstration workshops on application of banana waste based fertiliser and sound agronomic practices
	2.6 Water harvesting technologies to support livelihoods diversification and income generating activities promoted	MAAIF, MITC	MWE, UNBS, Processing SME's (FoN, FF, ABP)	<ul style="list-style-type: none"> Oversee construction of reservoirs and installation of tanks and water purification systems at primary processing facilities
3. Lessons learned and best practices from policy changes, capacity development initiatives and pilot plants disseminated.	3.1 Guidelines on best practices and project knowledge disseminated within the country and the sub-region through websites, publications and communication products in various languages	MAAIF, MITC	MWE (CCD), DLGs, NAADS	<ul style="list-style-type: none"> Oversee project website and its regular updates Assist in production of publication of promotional material, guidelines, communication and material
4. Quality control and efficient monitoring of project intervention to support adoption by CC vulnerable communities	4.1 Timely quarterly and annual reports prepared; midterm and final evaluation (using AMAT) of project activities completed	MAAIF, MITC	MWE (CCD), MFPED	<ul style="list-style-type: none"> Assign institutional focal points for the project Assist in identification and recruitment of suitable experts (national and international) for the project Assist in monitoring and reporting activities

*CSOs will be identified at inception