

NGHCE – SMALLHOLDER COFFEE REHABILITATION PROJECT (CFP2/25)

Environmental and Social Management Plan (ESMP)

Project Description

This is a joint Partnership between a leading coffee exporter and several smallholder coffee grower groups, who have all mutually agreed to work together to increase the volumes and improve the quality of smallholder coffee by rehabilitating neglected smallholder coffee blocks and by adopting improved post-harvest practices. The Partners under this Partnership acknowledge that smallholder coffee farmers are not producing the maximum volume of cherries per coffee tree due to poor coffee husbandry practices. In addition, the smallholder coffee farmers are not enjoying premium prices for their coffee because the quality of their coffee is poor. Furthermore, smallholder farmers do not perceive the coffee tree as an economic tree. Yet, many of the rural smallholder coffee farmers depend largely on the coffee tree for sustaining their day-to-day needs. In light of these scenario, the Partners have agreed to work together to increase the volumes of coffee, improve the quality of coffee and change the mindsets of smallholder coffee growers to take the coffee tree as a vital economic tree.

The goal of this Partnership is to **‘improve the livelihoods of smallholder coffee producers through the improvement of the performance and the sustainability of value chains in coffee producing areas’**.

The purpose of this Partnership is to **‘increase the cash incomes of rural smallholder coffee farmers in selected villages in Goroka and Kainantu Districts of the Eastern Highlands Province by 2016’**.

To achieve the purpose of the Project, the Partners will undertake the following main activities, and these are:

- a) rehabilitate rundown smallholder coffee blocks /gardens
- b) establish nurseries for raising coffee seedlings
- c) undertake improved post-harvest management practices
- d) conduct farmer training in selected topics, for instance, business management skills, farm book/record keeping, HIVAIDS and gender equality..

The Lead Partner will operate out of its head office based in the provincial capital of the Eastern Highlands Province, Goroka. The farmers identified under Co-Partner 1 are based within the vicinity of Goroka town. Whilst the farmers identified under Co-Partner 2 are based in the Kainantu District of the Eastern Highlands Province.

954 coffee farmers are participating under this Partnership and more than 1,600 family members of the participating farmers including both men and women are expected to benefit directly and indirectly, from this Partnership.

This project spans three (3) years, commencing in January 1st 2013 and ceasing in 31 December 2016.

A. Potentially Adverse Environmental Impacts and Mitigation Strategies

The inputs proposed under this Project are in small volumes and most of them are environmentally friendly. However, steps will be taken to deal with potentially adverse impacts, though minor in nature. Some of the potentially adverse impacts, including their mitigation strategies, are listed below:

- 1) Weed Control: Small amounts of chemicals (Glyphosate) will be used to control weeds in farms where sufficient shade cover is lacking. The potentially adverse impact on the environment is that living things in the river systems will be destroyed if the chemical gets into the waterways. Another potentially adverse impact is that it is a health hazard to the farmer.

Mitigation Plan

- About 4-5 meters away from a waterway, weeds /grasses will be slashed. There will be no spraying of chemicals.
 - Protective gear /clothing will be provided to farmers and farmers will be fully trained on the application of the chemical.
- 2) Storage, Transportation and Handling of Chemicals: If chemicals are stored in an open space, that is easily accessible by animals or children or other people, there is a possibility that the chemicals will spill and leak. During transportation, chemicals will also spill and leak if they are not stored or packaged properly prior to transport.

Mitigation Plan

- Build a small storage house for keeping chemicals and always keep it locked, away from children (at the village level)
 - Put chemicals in a safe container prior to transportation
 - Train smallholder farmers on the proper storage, safe handling and transportation of chemicals.
- 3) Spills, Leaks and Disposal of Container: Generally, if there is a spill or leakage of chemicals and if the spillage gets in the water ways, the potential impact on the environment is that living things in the river systems will be destroyed. The burning of containers has the potential to pollute the air.

Mitigation

- Cut used chemical containers and bury them in holes /pits.
- Mixing chemicals and washing of equipment should be done away from the river

systems /water sources

- Regular monitoring of chemical containers in the store room.

- 4) Nurseries: To minimize any potentially adverse impacts on the environment, nurseries will be established in a safe location, some distance away from any river or stream. To promote the growth of seeds, small amounts of fertilizer will be used.
- 5) Shade Management: The cutting down of larger branches has the potential to destroy /disrupt the wildlife in the surrounding area including coffee trees and food gardens,

Mitigation Strategy

- Minimize damage on the environment as much as possible, adopt cutting techniques such as 'cutting and hanging' by using ropes.
- 6) Drainage: Regular maintenance will be undertaken on the drains. Materials taken from the bottom of the drains will be spread over the inter-rows of the coffee plot. Materials extracted from any new drains will be similarly spread in the inter-rows of coffee plots.
 - 7) Pulping: Several potentially adverse impacts are associated with pulping of coffee. First, living things in the river systems will be affected by disposing coffee skin & waste water from wet mill. Second, pile of cherry skin will result in build-up of toxicity that affects micro-organisms in the soil.

Mitigation Strategies:

- Establish a catchment pond to collect waste water (for farmers with more than 1 hectare.)
 - Allow waste water to flow into the dry land (for farmers with less than 1 hectare).
 - Establish wet mills 20-30 meters away from water ways
- 8) Pests /Diseases Control: To control pests /diseases associated with coffee, an Integrated Pest Management Plan (IPM Plan) has been devised. Refer to Annex 11 for details.

B. Potentially Adverse Social Impacts and Mitigation Strategies

Possible social impacts associated with this Project and their mitigation strategies are highlighted below.

1. Indigenous Peoples Policy

This Partnership, together with the activities proposed under this Partnership, have been compiled /developed following prior intensive and broad consultation(s) with the targeted smallholder coffee farmers. As a result, there is broad community support for this project.

2. Involuntary Resettlement Policy

All the lands to be utilized by the activities under this partnership are owned individually by the farmers targeted under this Partnership. No land will be acquired on a permanent basis for use by this Project.

3. Negative Social Impacts

A number of negative social impacts are anticipated with this Project. This is particularly related to the increase in disposable household incomes resulting from the sale of coffee. Examples of such negative impacts include:

- i) Alcohol Abuse
- ii) Increases domestic violence
- iii) Increase in the spread of the HIV/AIDS virus
- iv) Increased drudgery within the family
- v) Marginalization of women in the project activities

Mitigation Strategies

- Technically competent and experienced service providers will be engaged by this Project to offer training to smallholder coffee farmers targeted under this Partnership on the issues highlighted above. Farmer training will be provided in the areas of basic business management skills, farm record keeping, personal viability and integral human development, gender equality, certification of coffee and farmer cooperatives.

Monitoring Programs and Responsibilities

- The PMU will provide overall guidance and ensure that the mitigation strategies are implemented through the quarterly inspections and ensuring that records of all activities are maintained
- The Lead Partner through its' Project Management team (comprising of the Project Coordinator, the Extension Officers and the Field Supervisors) are responsible for the implementation, monitoring and reporting on all activities proposed under this Partnership.
- The Lead Partner will develop and maintain a database, updated regularly, of activities provided /undertaken during the life of the Project. The Lead Partner will also provide regular progress reports to PPAP highlighting progress made to date against planned activities and informing PPAP of major challenges encountered in rolling out the various activities planned under this Partnership.

Cost Estimates and Source of Funds

Funds required to implement the ESMP is part of the Project budget

Project Stage	Project Activity	Impacts	When Impact Occurs	Mitigation Plan			Monitoring Plan			Costs
				Mitigation Measure	Who	When to be applied	Indicator	Who	When	
A. ENVIRONMENTAL MANAGEMENT PLAN (EMP)										
1. Nursery Establishment	Site Preparation	Grass cutting and removal of shrub will disturb natural surrounding	During site preparation	Select a site where little damage will be done to the environment, eg, an old garden and concentrate within existing smallholder coffee blocks	Farmers	During site preparation	Nursery site selected and cleared has not major impact on the environment	EOs	During nursery establishment	As per Project Budget
	Shade /Shelter Construction	Collecting materials for such as posts, bush twines and kunai grass	During shelter /shade construction	Only collect materials that will be required for this purpose	Farmers	During shade construction	Shelter constructed	EOs		As per Project budget
	Soil Mixture /Seed bed / Poly Bed Preparation	Taking top soil & sand for potting mixture	During soil mixture preparation	Only collect materials that will be required for this purpose	Farmers	During soil mixture preparation	Poly bags /seed bed preparation	EOs		
2. Rehabilitation	Pruning (recycle pruning)	Selective pruning will take place, No major impact anticipated	As the pruning takes place	Remove only old & mature stems from unproductive trees	Farmers	First during rehabilitation stage, and Second, after each main harvesting	Only healthy bearing heads and young suckers	EOs	Field Visits	As per project budget

Project Stage	Project Activity	Impacts	When Impact Occurs	Mitigation Plan			Monitoring Plan			Costs
				Mitigation Measure	Who	When to be applied	Indicator	Who	When	
						period				
	Weed Control	<u>Farmer:</u> As the chemical is sprayed <u>Health</u> Hazard to the farmer	As the chemical is sprayed	Farmers use protective clothing when spraying	Farmer	Before spraying	Availability & accessibility to recommended protective gear	EOs	Field Visits	As per project budget
		<u>Environ:</u> Damage to Living Things	If the chemical gets into the water	Slash weeds 4-5 meters from a nearby creek /river	Farmer	During the time of spraying	Weeds close to creeks /rivers have been slashed	EOs	Field Visits	As per project budget
	Shade Mgt	Thinning	Rehabilitation period	Selected shade trees are cut down	Farmer s	During rehabilitation period	Adequate shade cover	EOs	Field Visits	As per project budget
		Shade Lifting		Remove lower branches	Farmer s		At least 5=6m space between top of coffee tree's canopy and lower branches /leaves of shade trees	EOs	Field Visits	As per project budget

Project Stage	Project Activity	Impacts	When Impact Occurs	Mitigation Plan			Monitoring Plan			Costs
				Mitigation Measure	Who	When to be applied	Indicator	Who	When	
	Drainage	No new drains will be dug, so no real impact on the environ	At the time of digging the drain	Only clean drains that are filled with debris or blocked	Farmers	Rehabilitation period	Drains are clean	EOs	Field Visits	As per project budget
	Fencing	Cutting Timber for Fencing – affects living things in the surrounding environment	As the timber falls	Avoid cutting (big leafy) trees that are close to key establishments such as food gardens, and coffee trees	Farmers	Prior to cutting the tree	No major destruction caused by the felling of the tree	EOs	Field Visits	As per project budget
3. Maintenance	Weed Control using chemicals - Glyphosate	<u>Farmer:</u> Health Hazard to the farmer	As the chemical is sprayed	Farmers use protective clothing when spraying	Farmers	Before spraying	Availability & accessibility to recommended protective gear	EOs	Field Visits	As per project budget
		<u>Environ:</u> Damage to Living Things	If the chemical gets into the water	Advise farmers to slash weeds 4-5 meters from a nearby creek /river	Farmers	During spraying time	Weeds close to creeks /rivers have been slashed	EOs	Field Visits	As per project budget
	Shade Mgt	Thinning	Rehabilitation period	Selected shade trees are cut down	Farmers	As part of ongoing	Adequate shade cover	EOs	Field Visits	As per projec

Project Stage	Project Activity	Impacts	When Impact Occurs	Mitigation Plan			Monitoring Plan			Costs
				Mitigation Measure	Who	When to be applied	Indicator	Who	When	
						maintenance				t budget
		Shade Lifting		Remove lower branches	Farmers	As part of ongoing maintenance	At least 5=6m space between top of coffee tree's canopy and lower branches /leaves of shade trees	EOs	Field Visits	As per project budget
	Pruning	Recycle pruning	After the coffee season and every 5 yrs	Removal of old unproductive stems	Farmers	Immediately after harvesting	2-4 stems of coffee per stump /main stem			
		Maintenance pruning	On a 6 monthly basis	Handling and de-suckering	Farmers	Every 6 months	2-4 stems of coffee per stump /main stem and selected suckers only			
	Pest /Disease Control – refer to the Integrated Pest Management Plan attached as Annex 11.									
	Drainage	Removal of debris and	As required	Cutting but no removal of grass along the sides	Farmers	As and when	Well maintained	EOs	Field Visits	As per projec

Project Stage	Project Activity	Impacts	When Impact Occurs	Mitigation Plan			Monitoring Plan			Costs
				Mitigation Measure	Who	When to be applied	Indicator	Who	When	
		soil in drains		and bottom of the channel together with the removal of accumulated silt and grass cuttings to maintain original gradient and depth		required, but normally after harvesting	drains			budget
4. Processing	Pulping	<i>River Systems:</i> Living things in the river systems will be affected by disposing of coffee skin & waste water from wet mill	Harvesting & Pulping Period	i) Establish a catchment pond to collect waste water (for farmers with more than 1 hect.)	Farmer	During coffee season	Water source not polluted	EOs	Field Visits	NIL
				ii) Establish wet mills 20-30 metres away from water ways	Farmer	During coffee season	Water source not polluted	EOs	Field Visits	NIL

Project Stage	Project Activity	Impacts	When Impact Occurs	Mitigation Plan			Monitoring Plan			Costs
				Mitigation Measure	Who	When to be applied	Indicator	Who	When	
				iii) Allow waste water to flow into the dry land (for farmers less than 1 hectares.)	Farmer	During coffee season	Water source not polluted	EOs	Field Visits	NIL
		<i>In the Soil:</i> Pile of cherry skin results in build up of toxicity that affects micro-organisms in the soil	Harvesting & Pulping Period	i) Decompose cherry skin	Farmer	During and after coffee season	Coffee pulp under coffee trees	EOs	Field Visits	NIL
				ii) Spread the coffee skin directly and thinly into the coffee garden		During and after coffee season	Coffee pulp under coffee trees	EOs	Field Visits	NIL

B. SOCIAL IMPACT /ISSUES: SOCIAL MANAGEMENT PLAN (SMP)

1. Indigenous Peoples Policy	All Co-Partners have signed up voluntarily following free, prior and informed consultations
2. Involuntary Resettlement Policy	All land use proposed under this Project are all on existing coffee gardens owned by the beneficiaries, and no land will be used collectively by Co-Partners.

Project Stage	Project Activity	Impacts	When Impact Occurs	Mitigation Plan			Monitoring Plan			Costs
				Mitigation Measure	Who	When to be applied	Indicator	Who	When	
3. Negative Social Impacts	Income generated from Coffee Sales	Increase in disposable income among farmers results in unnecessary spending such as alcohol	During coffee season	Training on basic business management skills, budgeting and savings	Joint Partners	Prior to the coffee season, during the training sessions under this Project	Copies of Training Manuals and No. of families with saving accounts	EOs	Field Visits	As per Project Budget
	All Activities	If activities under the Partnership only caters for men's interests, this will result in further marginalization of women	During implementation of project	Ensure and allow for the full participation and involvement of women in the project and sharing in the benefits of the project	Lead Partner	During the farmer training sessions	List of Women who attended trainings	EOs	Field Visits	As per Project Budget
	All activities associated with rehabilitation	Increased drudgery among the family unit	During implementation of project	Farmers adopt and practice <i>routine</i> coffee husbandry practices	Lead Partner	During the farmer training	No. of farmers trained	EOs	Field Visits	As per Project Budget

Project Stage	Project Activity	Impacts	When Impact Occurs	Mitigation Plan			Monitoring Plan			Costs
				Mitigation Measure	Who	When to be applied	Indicator	Who	When	
	n and processing					sessions				t
	All activities associated with rehabilitation and processing	Increase the spread of HIVAIDS among the coffee communities	During implementation of project	Awareness on HIVAIDS provided to farmers	Lead Partner	During the farmer training sessions	No. of farmers trained	EOs	Field Visits	As per Project Budget
	All activities associated with rehabilitation and processing	Increases in domestic violence due to increased consumption of alcohol	During implementation of project	If alcohol use is rampant, offer training & counseling, both in alcohol abuse and domestic violence	Joint Partners & Lead Partners	During the farmer training sessions	No. of farmers trained	EOs	Field Visits	As per Project Budget
	All activities associated with rehabilitation and processing	Possible exploitation of children in the farms, preventing them from going to school	During implementation of project	Ensure that farmers adopt policy on restricting the employment of children during school days	Joint Partners & Lead Partners	During the farmer training sessions	No. of farmers trained	EOs	Field Visits	As per Project Budget
	All activities associated with rehabilitation	Absence of a grievance mechanism	During implementation of project	Establish a grievance mechanism and encourage farmers to	Joint Partners & Lead Partners	During the farmer training	No. of farmers trained	EOs	Field Visits	NIL

Project Stage	Project Activity	Impacts	When Impact Occurs	Mitigation Plan			Monitoring Plan			Costs
				Mitigation Measure	Who	When to be applied	Indicator	Who	When	
	n and processing			use it		sessions				