

GERAME ALENUMPA PARTNERSHIP (CFP2/27)
Environmental and Social Management Plan (ESMP)

Project Description

The creation and strengthening of the Gerame partnership arrangement will improve relationship between the farmer groups in villages as co-partners with Gerame Coffee allowing access to free flow of communication, regarding, market information, issues affecting coffee production, quality requirements, transfer of knowledge and skills through training and to ensure that all parties benefit resulting in the development of a sustainable coffee industry to improve production and quality fetching better prices for coffee producing households. The farmers will benefit immensely with increased knowledge in improved farming and assistance provided. The lead partner will have a stable supply of coffee to supplement its current operations.

The Gerame Alenumpa Partnership has in place an activity based plan to achieve its aim to;

1. Rehabilitate existing coffee farms to increase production;
2. Improve Quality for maximum return;
3. Develop Capacity by conducting trainings.

A. Potential adverse environmental impacts and mitigation measures

The 'Social and Environmental impacts' section of the proposal describes positive impacts of the project. It states that 'The coffee plots available for immediate rehabilitation do not pose any significant environmental problems as the coffee farms are existing smallholder coffee gardens spread around the Goroka area going towards Asaro and are not in a concentrated large area to pose any negative environmental impact. Most of the inputs proposed under the PPAP are in small amounts and will progressively lead to producing coffee under environmentally friendly conditions and promote sustainable farming practices with little or no chemical inputs.' However, following are descriptions of possible adverse environmental impacts identified and measures to mitigate them;

1. The use of small amounts of chemicals is intended during the initial phase of project implementation. Spot spraying of Glyphosate is intended to be used for weed control in coffee gardens where sufficient shade cover is lacking and during establishment of new shade. Fungicides will be used to inhibit the spread of "Coffee Leaf Rust" during the initial major pruning phase and thereafter only where serious infestations are identified. Unless care is taken, there is a danger of pollution of streams and water courses.

Storage: Gerame Coffee Estate has identified a large well aerated storage shed within which an area measuring 6m x 6m will be enclosed and separately secured for the limited amounts of chemicals needed. All containers will be properly labeled and stored on pallets. Records will be maintained for all incoming and out-going chemicals, including technical data on application rates and a list of farms on which the sprays will be applied.

Transport: To avoid potential for spills and leaks while in transit and reduce chances of over dosage and misapplication, movement of chemicals from the store to the farmers' field will be under taken by Gerame's field officers in clearly labeled and closed lidded containers and store records will also maintained including monitoring field application.

Training: In order to remove ignorance and lack of capacity in handling and using chemicals, field staff will be fully trained in the handling and use of all chemicals, a service generally provided by the dealers. However, the project will arrange additional training where suppliers' services are lacking. Spray teams will then be trained and supervised by Gerame's Field Officers.

Safety Equipment: To reduce and correct potential for misapplication and exposure to sprayers, each operator will be trained in maintenance of spraying equipment to ensure correct application rates and droplet size. Each will be provided with necessary safety clothing (overalls, hat, gum boots etc.,) and accessories (gloves, face masks, goggles etc.,)

Spills, Leaks & Disposal of containers: To manage potential of droplets falling on the floor while being measured out for application, a supply of sawdust and coffee husks will be maintained at all sites where chemicals are being stored and/or transferred between containers and/or sprayers. The use of water for cleaning up spills will be strictly forbidden. All used containers will be decontaminated using detergents while those deemed unsuitable (plus cardboard boxes) will be buried in a suitable location free from leaching.

2. Nurseries: To avoid the potential of minimal amounts of chemicals and fertilizers being exposed or allowed to spill and leak into waterways. This could potentially lead to toxicity to terrestrial and aquatic life forms while they are applied on the young seedlings in nurseries. This will be avoided and by centrally locating the nurseries in the vicinity of the three different areas of operation remote from any river or stream. Chemicals use will be discouraged or minimized if small amounts are deemed necessary.
3. Drainage: In order to minimize spoil from removal of debris from drains and water logging within drains, farmers will be required to ensure that existing drains are maintained/de-silted. Spoil taken from the bottom of drains will be spread over the inter-rows of the coffee plot. No new drains are envisaged.
4. Shade management: This activity will involve removal and cutting down of larger branches from shade trees which could be destructive in nature by falling on existing coffee bushes and younger shade trees and also be obstructive to the farmers' movements within the coffee gardens. To minimize and avoid such issues, the bigger branches will be used for fence maintenance and smaller wood is traditionally used for firewood (home-cooking) while leaves are spread on the ground amongst the coffee.
5. Pulping: Coffee pulp and waste water from pulping could impact negatively on the terrestrial and aquatic environments if allowed into water ways. Smallholder farmers will process their coffee cherries to parchment stage on their own coffee gardens. The hand-pulpers used are generally operated in the vicinity of coffee blocks; therefore, the coffee pulp is easy to return to the coffee block or food garden as mulch. Water used is minimal and seeps into the ground. Farmers will be instructed and trained in the pulping of their coffee.

Monitoring program and responsibilities

- Staff of the CIC PMU will routinely undertake field inspections of the activities of the Lead Partner and the smallholder farmers included in the Co-Partnership agreement to verify the Quarterly reports provided by the Lead Partner.
- The Lead Partner will maintain records of the use of chemicals, the application of rehabilitation activities (drainage & shade management) and coffee processing.

B. Potentially adverse social impacts and mitigation measures

The social impact is a positive one of increased income to the household. However, it requires more time to be spent in the coffee gardens as opposed to other social activities. The high income from these farming activities will assist in the reduction of HIV/AIDS and other anti-social behavior by the farming population.

Following are descriptions of possible adverse social impacts identified and the associated mitigation measures;

1. **Indigenous peoples policy:** The partnership has been established based on the co-partners' need to improve productivity of their existing coffee gardens and improve the quality of the produce in order to target markets that desire good quality coffees and are prepared to pay a higher price. This has resulted from intensive consultation and awareness which has enabled the project to have broad community support.
2. **Involuntary Resettlement policy:** All the lands to be utilized for the partnership activities are owned by beneficiaries themselves. There will be no land donated to the project by members of the community.
3. **Negative social impacts:** To avoid misuse of income from coffee sales, members of the participating households will be trained in planning expenses / budgeting and record keeping. Awareness and information sessions will also be provided to reduce alcohol abuse and HIV/AIDS prevention. Women will participate fully in all activities and school aged children will be discouraged from involving in farming activities on a full-time basis and during schooling hours. The availability of a grievance mechanism has been made known to the beneficiaries including the locations of grievance boxes.

Monitoring program and responsibilities

- Staff of the CIC PMU will routinely undertake field inspections of the activities of the Lead Partner and the smallholder farmers included in the Co-Partnership agreement to verify the Quarterly reports provided by the Lead Partner.
- The Lead Partner will maintain records of training provided and awareness/information sessions.

Cost Estimates and Source of Funds

Funds to implement the ESMP will be part of the Partnership Budget. These are specified for the initial sub-project investment.

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 shrub removal may cause erosion	During Site Preparation	Clearing only within the area to be utilized within existing smallholder garden	Farmers	During Site Preparation	No. of nursery sites cleared	Village Extension Officer (VEO)/ Extension Officer (EO)	During nursery Establishment	AS per activity Budget
	Shade & Shelter Construction	Collecting materials such as posts, bush twines, and kunai grass may result in denudation of small areas	During shade/shelter construction	Only collect sufficient materials for the task in hand	Farmers	During shade/shelter construction	Sites used for nursery material collection undamaged	VEO or EO		AS per activity Budget
	Soil mixture / Seed bed / polybag preparation	Taking excess top soil and sand for potting mixture	During soil mixture preparation	Only collect top soil and sand that will be required	Farmers	During soil mixture preparation	Areas used for taking of soil re-vegetated	VEO or EO		AS per activity Budget
	Seedling Development	Taking excessive amounts of water from nearby creek / water source	During seedling development	Monitor use to ensure other users are not negatively impacted	Farmers	During seedling development	Water courses and streams continue to serve the needs of all users	VEO or EO		AS per activity Budget
2. Rehabilitation	Fencing	Timber required for post preparation may denude areas of trees	During coffee rehabilitation	Avoid unnecessary tree cutting when preparing fencing posts / sticks	Farmers	Coffee rehabilitation period	Fence completion without soil erosion and / or removal of trees unnecessarily	VEO or EO	Farm visit during rehabilitation period	As per project budget
		Post planting may cause erosion		Minimum size holes dug and filled immediately						
	Herbicide (Glyphosate) Spraying	Pollution or contamination of water courses and/or chemicals ingested by	At shade establishment stage	Proper transportation & use of approved chemicals in accordance with IPMP	Special spray team and trained co-partners	During coffee rehabilitation & shade establishment period	Records of no. of plots sprayed, chemicals used, frequency of application applied and by whom? location	Lead Partner, PMU	Quarterly Reports and farm visit during rehabilitation period	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	
		sprayers					of water courses and streams			
	Shade Management	Reduced vegetation cover	Rehabilitation period (after weed control & drainage maintenance)	Minimum number of shade trees cut down and lower branches removed	Farmer	Rehabilitation period	Adequate shade cover and at least 5-6m space between coffee and lowest shade	VEO or EO	Farm visit during rehabilitation period	As per project budget
	Pruning	Recycle Pruning	During project implementation	Old/mature stems of unproductive trees removed	Farmer	After main harvesting period	Only healthy bearing heads and young suckers on all trees	VEO or EO	Farm visit during rehabilitation period	As per project budget
		Maintenance Pruning	After harvesting and every 2-4 months thereafter	Sucker selection, de-suckering & skirting	Farmer	Every 2-4 months	2-4 stems /uprights per stump/main stem	VEO or EO	Farm visit during rehabilitation period	As per project budget
		Drainage	Removal of debris and soil in drains	After harvesting & prior to west season	Cleaning drains of matter that clogs-up drains and spreading this under the coffee	Farmer	Rehabilitation period	Well drained coffee block	VEO or EO	Farm visit
3. Processing	Pulping	Hand-Pulping (by s/holder) may result in waste water entering drainage system	Harvesting period	Use of small amounts of water and recycle	Farmer	During coffee season	Water source not polluted	VEO or EO	Farm visit	NIL
				Decompose pulp and spread under coffee	Farmer	During & after coffee season	Coffee pulp under coffee trees	VEO or EO	Farm visit	NIL
B. SOCIAL IMPACT / ISSUES: SOCIALMANAGEMENT PLAN (SMP)										
1. Indigenous Peoples Policy	<i>All Co-Partners have signed up voluntarily following free, prior and informed consultations</i>									
2. Involuntary Resettlement Policy	<i>All land used are existing coffee gardens owned by beneficiaries and no land will be used collectively by Co-Partner Groups</i>									
3. Negative Social Impacts	Coffee Sales	Partnership only catering for men's interests may result in marginalization of women	Cash is received in payment for coffee	Training on expenses planning & budgeting for both husbands & wives	Lead Partner	During farm management training for households & capacity building training for farmer	List of training materials offered include training on budgeting and attendance list	Lead Partner (PMU)	Quarterly (review reports & random verification inspections)	In line with budget

Project Stage	Project Activity	Impacts	When Impact Occurs	Mitigation Plan			Monitoring Plan			Costs
				Mitigation Measure	Who	When to be applied	Indicator	Who	When	
				Farmer group adopts a policy of income expenditure record keeping		groups				
	All Activities	Incremental income could worsen existing problems of alcohol abuse and domestic violence	When income potential increases as a result of more income for household	If alcohol abuse is rampant, ensure partnership activities include awareness and counseling	Lead Partner	When capacity building trainings are provided, when tools and farm implements are distributed, and encourage both men & women to be involved equally	Training materials should include alcohol abuse prevention, counseling, etc.,	Lead Partner (PMU)	Quarterly (review reports & random verification inspections)	In line with budget
	HIV / AIDS Training	Possible increase incidences of HIV / AIDS	When income potential increases as a result of more income for household	If HIV/AIDS is prevalent ensure partnership activities include HIV/AIDS awareness and prevention seminars	Lead Partner	HIV / AIDS awareness and prevention training	List of proposed activities include HIV / AIDS awareness and prevention campaigns	Lead Partner (PMU)	Quarterly (review reports & random verification inspections)	In line with budget
	Child abuse	Possible exploitation of children in the farms, preventing them from going to school	Project implementation	Ensure farmers / groups adopt policy restricting employment of children during school days	Group Leaders / Lead Partner	During Training sessions		Lead Partner (PMU)	Quarterly (review reports & random verification inspections)	In line with budget
	Communications	Absence of grievance mechanism	Project implementation	Ensure that grievance mechanism is in place and the people are aware of it	Lead Partner (PMU)	During project implementation		Lead Partner (PMU)	Quarterly (review reports & random verification inspections)	Negligible