New Planting Procedure - Summary of Integrated Management Plan

RSPO Roundtable on Sustainable Palm Oil	BENSO OIL PALM PLANTATION PLC. ADUM BANSO ESTATE	SCSglobal SERVICES

NPP Reference Number	SCS-RSPONPP-000479
Country of the NPP submission:	Ghana
RSPO Membership Number	2-0017-05-000-00
Reference to the management unit management plan	Adum Banso Smallholder Oil Palm Plantation Management Plan
Name(s) of estate(s) covered under this management plan:	Adum Banso Smallholder Oil Palm Plantation (Nana Kwandoh Brempong III Estate)

Guidance Notes:

This summary management plan shall indicate at a minimum but not be limited to the following:

- Key findings of the various assessments (e.g., potential minor environment and/or social risk requiring mitigation actions; total conservation areas).
- Key mitigation and monitoring regime, covering both the environmental and social aspects.
- Evidence of FPIC and key agreements with local communities (if any).
- An action plan describing operational actions consequent to the findings of the various assessments, referencing the grower's relevant operational procedures.
- Designation of the management team and responsible person for the implementation.

1	**SEIA**	**SOCIAL IMPACT ASSESSMENT** Favourable impacts likely to occur through the establishment of the out-grower project include employment generation, increase in incomes, community-wide development and protection of HCV and HCS areas. Apart from these, potential adverse effects are reduction in farmland for crop production, Non-Timber Forest Products (NTFPs), food sufficiency and affordability, and pollution of air and water bodies. To minimize the potential negative impacts of the project, the study proposed measures that will help ensure its long-term sustainability while consolidating the potential gains to be derived. These are summarized below.

Objective(s)	Action(s)	Timeline
Enhance food sufficiency and affordability	● Allocate fairly 11.25ha land in PDA set aside for food crop farming ensuring that non-indigenes cropping within the PDA are not excluded ● Partner Department of Agriculture to train farmers in sustainable food crop production practices	Before commencement and during implementation of project
Enhance availability of NTFPs	● Train farmers on sustainable use of agrochemicals on land allocated for food crop farming so that they can continue to harvest NTFPs notably mushrooms. ● Implementation of Best Management Practices to enhance availability of NTFPs in the PDA such as medicinal herbs and fishes. ● Regulated incorporation of food crops in established plantation (before canopy forms) as done in previous successful out-grower projects ● Implement additional livelihood support schemes (e.g. snail and grasscutter rearing)	Before commencement and during implementation of project
Reduce air pollution	● Use dust suppression techniques on frequently used roads near community dwellings in the dry season or undertake surface improvement (such as gravelling) where possible. ● Enforce speed limits on roads to reduce dust resulting from vehicular movement.	Throughout implementation of project
Prevent water pollution	● Establish and maintain buffers along water bodies (e.g. Butre river) in line with recommendations in HCV-HCSA report. ● Prohibit the use of agrochemicals within the buffer zones and ensure that only trained personnel are engaged in chemical application around these zones.	December, 2024 and during project implementation

Responsibility for the implementation of these measures will include but not limited

to:

- BOPP Sustainability Manager: Overall oversight for implementation of social mitigation and management measures, and conservation of HCV/HCS areas
- Estate (Plantation) Manager: development and management of plantation; oversight of implementation of environmental, health and safety (EHS) measures at plantation level
- Community Relations Officer: Community engagements
- Department of Agriculture: Relevant farmer trainings

ENVIRONMENTAL IMPACT ASSESSMENT

The actions outlined in the table below are aimed at mitigating the impacts identified by the project including areas related to biodiversity, soil cover, air and water quality, noise levels, land use, sanitation, road networks, health and safety and socio-economic factors.

Objective(s)	**Action(s)**	**Timeline**
Protect soil structure	● Manual spreading of mulch or organic material evenly ● Planting of cover crops ● Terracing on steep portions of land to check soil erosion ● Train workers in proper application of fertilizers ● Turn the soil after clearing of parcels of land where necessary ● Manual ripping and decompaction of the planting line or point where necessary	Throughout implementation of project
Prevent water pollution	● Ensure proper storage and use of agrochemicals ● Create riparian management zones at water bodies ● Create drains to channel run off into appropriate channels	Throughout implementation of project
Prevent pollution of ambient air	● Regular road surface grading and dust suppression where and when necessary, by watering ● Ensure proper maintenance of engines of any machine used on site	Throughout implementation of project

			● Set and enforce low speed limits for trucks and moving vehicles ● Prohibit any kind of smoke or fire on-site. ● Ensure workers use the required personal protective equipment during operations	
		Ensure noise levels are within acceptable industry limits	● Minimize project activities at early and late hours of the day especially when the project site is near villages ● Perform periodic maintenance of equipment ● Ensure workers use Personal Protective Equipment during operations	Throughout implementation of project
		Protect biodiversity	● Conservation of riparian zones as ecological corridor ● Conservation of wetlands ● Prevent illegal hunting activities ● Promote tree planting around the site	Throughout implementation of project
		Enhance health and safety systems	● Control public access through proper fencing and guarding where applicable ● Provide workers with personal protective equipment ● Provide safety signs, labels and instructions to avoid hazards and accidents ● Provide first aid boxes and emergency contact numbers ● Provide transportation signs and speed limits ● Train workers on routine check-ups and emergency plans. ● Control leakages from equipment and storages ● Delineate spaces for loading and offloading activities ● Sensitize workers on proper	Throughout implementation of project

			sanitation and hygiene.	
		Improve waste management systems	●Avoid littering in the open fields ●Educate workers on proper segregation and disposal of waste, plastics, leaves, sticks etc. ●Contract waste management companies to off-take segregated waste ●Create awareness on hazardous waste management	Throughout implementation of project
		Enhance socio-economic benefits to the communities	●Publicize data on relevant environmental indicators ●Perform regular public consultation to address issues relating to impacts on the project	Throughout implementation of project
		Responsibility for the implementation of these measures will include but not limited to: ● BOPP Sustainability Manager: Overall oversight for implementation of environmental management measures at the project site and conservation of HCV/HCS areas. ● Estate (Plantation) Manager: Development and management of plantation; oversight of implementation of EHS at plantation level ● HSE Manager: Enforcement of HSE protocols ● Community Relations Officer: Community engagements		
2	**HCV areas and HCS forests**	Key findings from the Integrated HCV-HCSA assessment are summarized below: ● Identification of HCS forest patches. ● Identification of HCV 3 areas notably swamps. ● Identification of HCV 4 and HCV 5 areas (rivers/streams). ● Though no slopes were identified as HCV 4, there are erosion risks particularly of slopes of moderate gradient (9-19 degrees). ● 11.25ha land has been allocated within the PDA to be used for food crop farming to support livelihoods. The summary of identified HCVs, HCS forest patches and allocated land for food crop farming is found in Table 1 below. Table 1: Summary of identified HCVs and HCS forest patches and allocated land for food crop farming		

Environmental and social values to be conserved	Area (ha) where the value is found (inside MU only)	Management areas (ha) (inside MU only)
HCS forest	16.139	16.139
HCV 3	0.840	3.211
HCV 4	61.772	61.772
HCV 5	2.683	29.131
Local peoples lands (if any additional to HCV 5&6)**	11.25	11.25
Net Total (after subtracting overlaps):	85.801	90.291

Mitigation and Monitoring Regime

The HCV-HCSA assessment report describes into detail the mitigation and monitoring regime. A summary is provided below under environmental and social monitoring.

- Environmental Monitoring

There should be periodic patrols within the HCS forest patches to check for illegal and unauthorized activities including burning, logging and farming. Moreover, it is recommended that there's regular monitoring of enrichment planting activities (eg. species planted, quantity, area planted, survival rate, etc.) and erosion control measures on areas with moderate slopes (9-19 degrees). Riparian buffers and swamps must also be periodically monitored for illegal and unauthorized activities. Furthermore, sampling and testing of the Butre River and streams to monitor the water quality should be performed regularly.

- Social Monitoring

There should be monitoring of the allocation of land set aside for food crop farming to affected farmers and the cultivation of crops. Also, productivity of crops on this land and the overall food security of affected communities should be monitored to assess impacts of the oil palm project.

Management and monitoring recommendations

Management and monitoring recommendations have been provided in table 2 to address the threats for the HCS forests and each of the identified HCVs and ensure they are maintained or enhanced.

Table 2: Management and monitoring recommendations for HCS forests and HCVs

Value identified	Threats	Management areas and prescriptions	Monitoring recommendations
HCS forest	• Logging within HCS forest • Clearing for food crop farming • Encroachment by oil palm, cocoa and rubber farms • Risk from fire	• Preclude the HCS forest patches from oil palm development. • Prevent any encroachment by oil palm development or farming activities within the HCS forest patches. • Prevent logging, burning or other unauthorised activities within the HCS forest patches. Erect warning signs around the forest patches. • Sensitize workers and local communities on unauthorised activities within the HCS forest patches. • Enrichment planting of the HCS forest patches in collaboration with relevant stakeholders such as the FSD. • Develop standard procedures on management and monitoring of HCS patches and train workers and farmers on it.	• Regularly monitor HCS patch boundaries especially during land preparation to check for any accidental clearing/ encroachment. • Periodic patrols within the HCS forest patches to check for logging, farming, burning and other unauthorised activities. • Regularly monitor and report on enrichment planting activities (eg. species planted, quantity, area planted, survival rate, etc.) in collaboration with relevant stakeholders. • Review implementation of standard procedures to assess effectiveness.
HCVs 1 and 2	Not Present		
HCV 3, 4, 5	• Habitat conversion/ degradation from illegal mining, conversion or land	• All swamps within the Management Unit (MU) should be demarcated and precluded from the smallholder project. • Establish a buffer of at least 30 metres around the	• Regular sampling and testing of the Butre River and streams to monitor the water quality. • Regular patrols to monitor

			preparation ● Pollution from agrochemical use	swamps from the high-water level to protect the swamps. ● Collaborate with the local communities and farmers to protect Swamp 3. ● Establish buffer of 40 metres on both sides of the Butre river and 15 metres on both sides of the Bonsamanka, Atedja, Mrehua, Afiafi, Abibre and Anwianwia streams. ● Collaborate with the local communities to identify and map the Fia stream. ● Map any other stream or tributary which is identified during land preparation which has not yet been mapped. ● Establish the recommended buffer of 15 metres on both sides of the Fia stream and any other stream/tributary encountered during land preparation. ● All buffer areas should be clearly demarcated and precluded from the oil palm development. ● Prevent farming, illegal mining, logging, burning and other habitat degrading activities within the riparian buffers and swamps. ● Prevent or minimize agrochemical application close to the riparian buffers. ● BOPP should take direct responsibility for the management and monitoring of the riparian buffers.	unauthorized activities in the riparian buffers and swamps including encroachment, illegal mining, burning, farming, logging, etc. ● Regularly monitor and report on enrichment planting activities (eg. species planted, quantity, area planted, survival rate, etc.) in collaboration with relevant stakeholders. ● Monitor implementation of erosion control measures on areas with moderate slopes (9-19 degrees)

				● Carry out enrichment planting of the riparian buffers in collaboration with the relevant stakeholders such as the FSD to enhance the structure and function. ● While no slopes have been identified as HCV 4, erosion risks particularly of slopes of moderate gradient (9-19 degrees) should be addressed by implementing protection measures such as terracing, platforms and cover crops.	
		HCV 6	Not Present		
		Land allocated for food crop farming/ livelihood security	● Cultivation of oil palm/other cash crops rather than food crops ● Non-allocation of the food crop farming area to the affected food crop farmers ● Pressure on the food crop land ● Soil degradation and decline in productivity	● BOPP should strictly ensure that the allocated area for food crop farming within the MU is used for that purpose. ● The reserved food crop farming area should be allocated to the affected farmers whose food crop farms were identified and mapped. The allocation process should be transparent and fair. ● BOPP should continue to engage the leadership of Adum Banso to identify and make available other communal/stool lands for use by community members for food crop farming. ● BOPP should collaborate with relevant stakeholders including the District Assembly to expand the additional livelihoods component or develop other alternative/additional	● Monitor land allocation within the reserved food crop farming area for the affected food crop farmers ● Monitor cultivation of crops within the reserved food crop farming area within the MU. ● Track and monitor farm productivity indicators for the food crop farmers. ● Track and monitor food security and livelihood indicators with the affected communities to assess impacts of the oil palm project. ● Monitor key performance indicators for the additional livelihood

			livelihood projects for the communities. ● BOPP should work with the District Department of Agriculture and other relevant stakeholders to train and support food crop farmers on sustainable intensification and best management practices.	project.

Cross-cutting recommendations

The following recommendations have been made for the management and monitoring of the identified HCVs and HCS forests, and to address issues relating to land for food crop farming.

- Development/revision of standard operational procedures

BOPP should develop standard operational procedures (SOPs) or revise existing ones to guide management and monitoring of the identified HCS forests and HCVs, as well as guide operations of the smallholder oil palm plantation development including reservation of buffer areas, agrochemical application, etc.

- Community engagement and collaboration

BOPP must develop and implement a comprehensive community engagement and collaboration plan for the management and monitoring of the HCS forest and HCV areas. This should include regular training for farmers under the smallholder project on best management practices and HCV/HCS management measures, and regular sensitization of community members and cocoa and rubber farmers on HCV/HCS management measures. BOPP should take leadership in the management and monitoring of the HCS forests and HCV areas; however, this must be done with the active participation of the smallholder farmers, cocoa and rubber farmers and local communities. Development and implementation of final HCV/HCS management and monitoring plans should thus be done with the active involvement of the communities and other relevant stakeholders.

- Adaptive management

Management review of the monitoring records should be conducted at least annually to assess the effectiveness of the management actions to maintain or enhance the HCS forests and HCVs. The outcome of the management review should be incorporated into ongoing planning and implementation actions including revising the management and monitoring measures where necessary.

- Livelihoods and food crop farming

BOPP should take a keen interest in the determination of project beneficiaries to

ensure that this is fairly done, and the affected farmers benefit from the project. BOPP should also ensure that the allocated lands for food crop farming are used for that purpose, and they are allocated to farmers who lost their food crop farming areas within the MU. Again, BOPP should follow through with their decision to allow controlled intercropping within the oil palm plots at the immature stage (first 3 years) until the oil palm canopy closes.

Furthermore, in collaboration with relevant stakeholders including the Mpohor District Department of Agriculture, farmers should be trained in additional livelihood options and supported to practice sustainable intensification to increase farm productivity on their food crop farms.

Summarized objectives and actions for the conservation and maintenance of the identified values are provided below:

Objective(s)	Action(s)	Timeline
Mapping of streams and updating of maps	Collaborate with the affected communities to identify and fully map the Fia stream. Any other stream or tributary which is encountered during land preparation which has not been mapped should be mapped. This information should be used to update and finalize the HCV 4 and summary maps.	Before and during implementation of project
Conservation of identified values	Develop/Revise and implement SOPs on management and monitoring of HCV and HCS areas in line with relevant recommendations in HCV-HCSA report (e.g. riparian buffer areas etc.)	Throughout implementation of project
Improved food and livelihood security	Ensure fair distribution of allocated land for food crop farming and implement additional livelihood options programme	Before and during implementation of project

Responsibility for the implementation of these measures will include but not limited to:

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BOPP Sustainability Manager: Overall oversight for implementation and monitoring of management measures for conservation of HCV/HCS areas
Estate (Plantation) Manager: Development and management of plantation; implementation of best management practices; and oversight of implementation of EHS at plantation level.
HSE Manager: Enforcement of HSE protocols
Community Relations Officer: Community engagement

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<tr><td>3</td><td>Stakeholder and local people engagement (FPIC process)</td><td>
Based on FPIC processes followed, below are summarized objectives and actions for implementation to ensure all relevant stakeholders benefit fairly from the out-grower project
<table>
<tr><th>Objective(s)</th><th>Action(s)</th><th>Timeline</th></tr>
<tr><td>Fair compensation paid to affected farmers in accordance with relevant laws</td><td>● Ensure that any outstanding crop enumeration is done
● Develop crop compensation procedures in accordance with relevant local laws if applicable
● Explain compensation procedures to affected farmers and implement them in paying the compensation</td><td>Before and during implementation of project</td></tr>
<tr><td>Mapping of outstanding cocoa and rubber farms</td><td>Complete mapping of all cocoa and rubber farms within the PDA</td><td>Before commencement of project</td></tr>
<tr><td>Improved food and livelihood security (ICLUP)</td><td>● Continue to engage the broader affected communities and relevant stakeholders during the Integrated Conservation and Land Use Plan (ICLUP) development and throughout the project lifespan on the measures proposed to address concerns on food crop farming areas to gain broader consensus and incorporate any future concerns or inputs.
● Figures and maps for land allocated for food crop farming should be updated and agreed through FPIC during the ICLUP development</td><td>Before and during implementation of project</td></tr>
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		Responsibility for the implementation of these measures will include but not limited to: ● BOPP Sustainability Manager: Overall oversight for crop enumeration and compensation, and ICLUP development. ● Estate (Plantation) Manager: Mapping of farms ● Community Relations Officer: Community/farmer engagement
4	**Soil and Topography**	The assessment identified the following soil units for cultivating oil palm using the FAO soil evaluation criteria with limiting factors related to topography (t), coarse fragment (gravel and concretions) (c), wetness (drainage class and flooding hazard indicative of oxygen availability) (w) and soil conditions (texture, structure) (s): ● Highly Suitable soils (S1) constituting the *Kokofu series* on the Birrimian Phyllite geology accounting for 4.43% of the PDA ● Moderately Suitable soils (S2t, S2tc) constituting the *Omappe* (S2tc), *Agona* (S2t), *Akroso* (S2t) and *Nkwanta* (S2t) series collectively representing 93.09% of the assessment area. Both *Omappe* and *Akroso* represent the most extensive soils of the area, covering over 82% of the total acreage and ● Marginally Suitable Soils (S3sw) constituting *Nta/Ofin* soil units on the Granite and *Kakum/Oda/Temang* units on the Phyllite geology which represent 2.48% of the study area. In respect of soil fertility, the assessment revealed that the soils in the study area are acidic (high pH) and are low in Effective Cation Exchange Capacity (ECEC) and minerals including Phosphorus, Nitrogen, Magnesium, Calcium and Potassium. There are moderate to high levels of Soil Organic Matter (SOM) across the PDA but it declined with soil depth. Also, most the areas have soils which are gravelly and concretionary, developed over phyllite and biotite granite containing quartz gravels, stones and ironstone concretions. Gravel content of the soils ranged from 20% to 60% with an average of 40%. Furthermore, some of the soils at some sites had soil bulk density values above the critical value of 1.33 g/cm. This means there is subsoil compaction at most of the sites. Finally, the topography in the area was assessed to be moderately steep (15-20%)[1] with hills rising to a height of 110 metres above sea level which allows for upland mechanical cultivation with not so much difficulty. The underlisted actions have been recommended to address the limiting factors and

[1] This result corroborates the results of gradient analysis in The Integrated HCV-HCSA report which reported a moderately steep slope in the PDA of 9 to 19 degrees.

issues pertaining to the fertility status of the soils.

Objective(s)	Action(s)	Timeline
Reduce risk of soil erosion on identified moderately steep slopes	Implement erosion control measures such as terracing, platforms and growing of cover crops to prevent erosion and possible loss of soil and nutrients.	During implementation of project
Reduce high soil acidity	Use rock phosphate (250 kg/ha) or lime (0.5-1.0 ton/ha) to reduce acidity and boost crop growth.	During implementation of project
Enhance SOM to sustainable levels	Apply mulching, cover cropping, and organic manures to sustain organic matter contents	During implementation of project
Improve available soil Nitrogen levels	Apply Nitrogen fertilizers at 90-120kg per ha as urea or NPK compounds or blends. Alternatively, use poultry manure and cow dung applied at 5 t/ha to supply the required nitrogen.	During implementation of project
Improve available soil phosphorus levels	Apply 60 kg P_2O_5 per ha as triple super phosphate (TSP), di-ammonium phosphate (DAP) or NPK compound fertilizers	During implementation of project
Improve exchangeable bases (calcium, magnesium and potassium) to enhance levels of ECEC	● Apply rock phosphate or triple super phosphate or soluble calcium sources like dolomite and calciprill to improve soil calcium content. ● Apply dolomite to improve soil magnesium content. ● Apply potassium fertilizer to improve yield and quality of crops. ● Apply soil conservation practices (terracing, soil erosion control, cover cropping, etc.)	During implementation of project
Reduce gravel content in	Adopt intermittent irrigation and split application of fertilizer to ensure improved	During implementation

		soils	and sustained yields of oil palm.	of project
		Reduce soil compaction	Use inter-row rippers or subsoilers to break up the compaction.	During implementation of project

Responsibility for the implementation of these measures will include but not limited to:

- BOPP Sustainability Manager: Overall oversight for conservation of HCV/HCS areas
- Estate (Plantation) Manager: Slope and soil fertility management

5 **GHG**

The scenario analysis from the GHG assessment identified scenario 3 as the recommended scenario. Key findings associated with this scenario are:

- Crop carbon sequestration is the largest emission reduction factor accounting for of -5,274.78 tCO_2e.
- Field fuel is the largest emission factor accounting for 307.22 tCO_2e.
- Fertilizer usage is the second highest emission factor accounting for 222.51 tCO_2e

Objective(s)	**Action(s)**	**Timeline**
To maximize sequestration of GHGs	● Protect conservation areas in line with recommendations in HCV-HCSA report such as maintaining buffer areas. ● Cultivation of cover crops especially on the land allocated for food crop production by communities.	During implementation of project
Emission reduction from fertilizer usage	● Inorganic fertilizers applied to address deficiencies based on soil and tissue sampling reports. ● Stacking of palm fronds in the plantation and re-use of EFBs to serve as mulch. ● Adoption of Good Agronomic Practices such as cultivation of nitrogen-fixing crops to minimize use of inorganic fertilizers.	During implementation of project
Reduction in emission from fuel usage	● Use of fuel-efficient trucks to reduce number of trips associated with transport of FFBs	During implementation of project

			● Periodic maintenance of vehicles (e.g. FFB transport trucks) and other equipment ● Sourcing of high-quality fuel that is guaranteed to give optimal performance of vehicles	
		Monitoring of GHGs	● Development of GHG reports using GHG calculator	Annually (during implementation of project)

Responsibility for the implementation of these measures will include but not limited to:

- BOPP Sustainability Manager: Overall oversight for conservation of HCV/HCS areas and monitoring of GHGs
- Estate (Plantation) Manager: Crop production, Nutrient management

6	**Acceptance of Management Plans**	**Name of Person Responsible**	Samuel Avaala Awonnea
		Designation	General Manager
		Signature	
		Date	04/09/2024