

REPORT OF PLANNING AND MANAGEMENT

1.0 EXECUTIVE SUMMARY

Sime Darby (Liberia) Plantation Inc. (Sime Darby) plans to develop 10,000 ha of land to oil palm at Bomi County and Grand Cape Mount County, Liberia. This development is part of an ongoing planting that started in 2009 with reconnaissance fieldwork. A Social and Environmental Impact Assessment (SEIA) and a High Conservation Value (HCV) Assessment were completed in 2011 which recognised the following:

- There was no primary forest identified
- All areas required to maintain or enhance one or more HCV
- There was no peat soil identified
- All local peoples' land

Maps have been prepared and presented in the SEIA and HCV Reports to identify all of the above findings.

Abbreviations Used

CITES	-	Convention on International Trade in Endangered Species
EIA	-	Environmental Impact Assessment
EPA	-	Environmental Protection Agency
HCV	-	High Conservation Value
IUCN	-	International Union for Conservation of Nature
RSPO	-	Roundtable on Sustainable Palm Oil
SEIA	-	Social and Environmental Impact assessment
SIA	-	Social Impact Assessment
SOP	-	Standard Operating Procedure

2.0 REFERENCE DOCUMENTS

2.1 SEIA and HCV Reports

“Social and Environmental Impact Assessment for 10,000 ha of Sime Darby Plantation”, prepared by Green Consultancy Inc, Liberia.

“Assessment of HCV sites within Sime Plantations Liberia Inc.” prepared by Dr Yap Son Kheong, S.K. Yap Forestry and Landscape Advisory Services, Malaysia

2.2 Legal Documents

Environmental Permit No: EPA/EC/ESIA/001-0410, Issue Date 21/04/2010, EPA Liberia.

Evidence of Land Tenure: Lease of land issued by Government of Liberia in April 2009 for a period of 63 years with an option of renewal for 30 years; Maps and Boundary Markers.

2.3 Location Maps

Maps showing the project location, landscape level and property level for the new development area are included as Figures 1, 2 and 3 in this Summary Report. The SEIA Report includes additional maps showing the topography, drainage and land use.

Preliminary maps have been prepared of the new development and include areas set aside for riparian reserves, roads, housing and layout of oil palm blocks.

2.4 Area of New Plantings and Time-Plan for New Plantings

The area of the new plantings is 10,000 ha. The new development will commence following the completion of the RSPO public notification period for review by stakeholders and is planned for completion within two years of the commencement date.



FIGURE 2 : LOCATION MAP FOR SIME DARBY 10,000 HA OIL PALM PLANTATION BOMI & GRAND CAPE COUNTIES

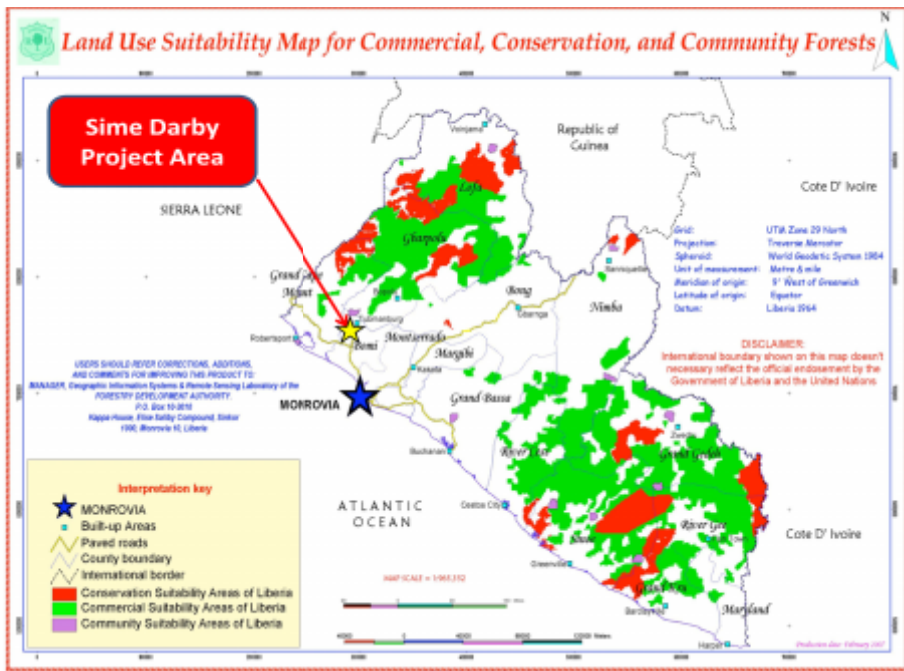
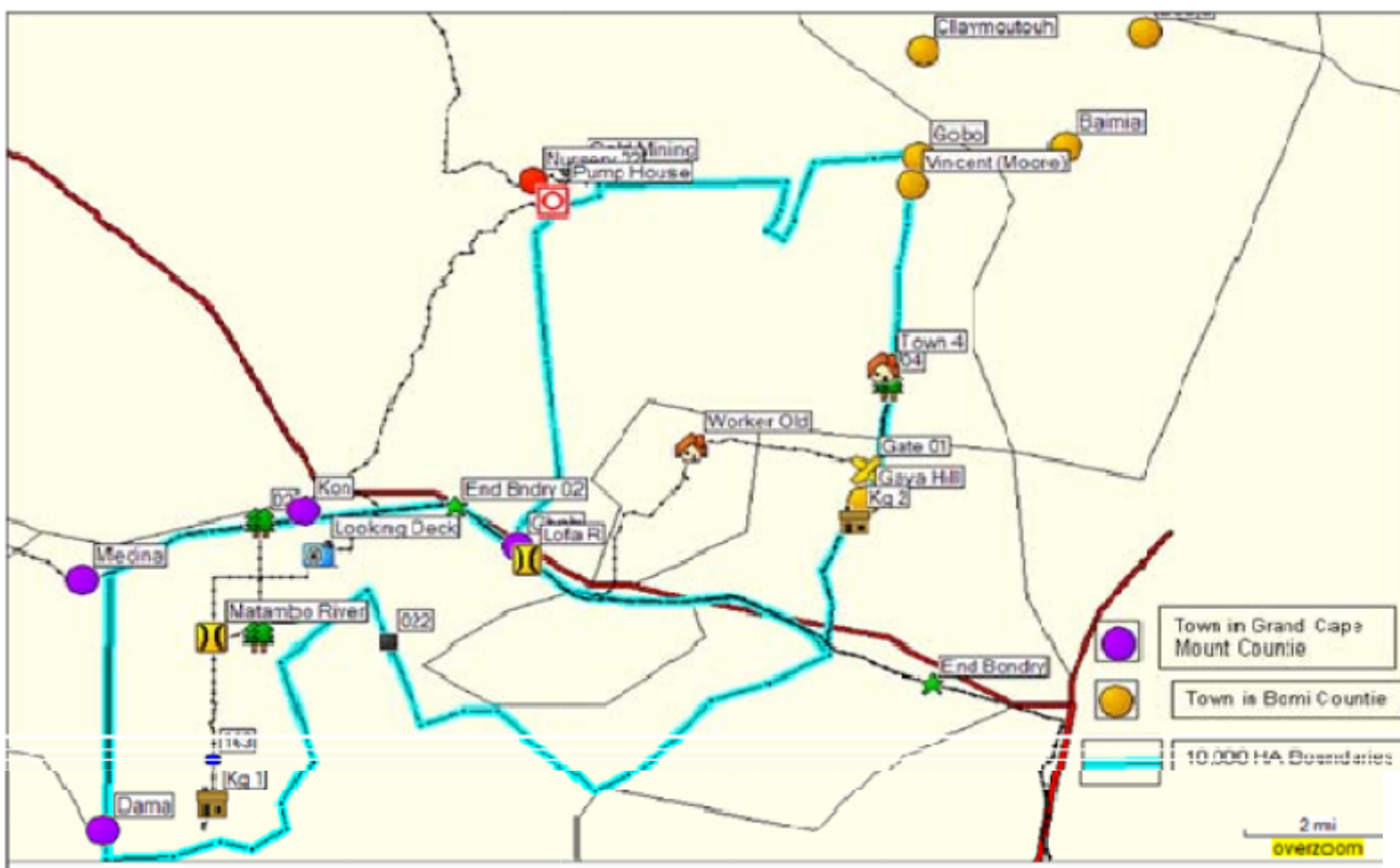


Figure 3: Location of Towns and Settlements with HCV 5 and HCV 6 Attributes



3.0 SEIA AND HCV MANAGEMENT AND PLANNING PERSONEL

3.1 *Organisational Information and Contact Persons*

Sime Darby (Liberia) Plantation Inc is based in Monrovia, Republic of Liberia.

Contact Person : Mr Azmi Jaafar
Phone : + 231 880624228
Email : azmi.jaafar@simedarby.com

3.2 *Personnel Involved in Planning and Implementation*

A. The SEIA was carried out by Green Consultancy Inc of Liberia, whose senior staff Mr Solomon Wright and Mr Abraham Tumbey are licensed by the EPA Liberia as EIA evaluators.

B. The assessment of HCV sites was led by Dr. S.K.Yap with the assistance of a team of biologist, forester, social scientist and GIS scientist:

Dr. S.K.Yap Team Leader, Ecology
Mr. Roslan Yaacob, GIS
Mr. Solomon P. Wright, Social
Mr. E. Abraham Tumbey Jr., Geology/soil
Ms Patience Awhavbera Flora/Fauna
Mr. Ezekiel H. Kpehe Forestry

C. The Sime Darby Management Team involved in the Planning and Implementation are as follows:

Name	Designated	Task
Azmi Jaafar	Vice President I, Sime Darby Liberia	Overall Plantation Management of Liberia
Mohd Zulkifli Isa	Vice President II Operation	Operation and Site Environmental Manager
Norazam Abdul Hameed	Vice President II Plantation Sustainability	Sime Darby Plantation Sustainability and RSPO Officer

4.0A SUMMARY OF MANAGEMENT AND MITIGATION PLAN (SEIA)

The summary of the Management and Mitigation Plan are as follows;

Element of Environment and Social	Environment/Social Impact	Management Plan and Mitigation Measures								
River water quality	Soil Erosion, Water Erosion,	<p>No disturbance of any Riparian Reserve as below</p> <table border="1" data-bbox="805 506 1318 1050"> <thead> <tr> <th data-bbox="805 506 1047 660">Stream Width</th> <th data-bbox="1047 506 1318 660">Minimum width of Riparian Reserve (x2)</th> </tr> </thead> <tbody> <tr> <td data-bbox="805 660 1047 788"><3m</td> <td data-bbox="1047 660 1318 788">5 m</td> </tr> <tr> <td data-bbox="805 788 1047 917">>3m – 20m</td> <td data-bbox="1047 788 1318 917">30 m</td> </tr> <tr> <td data-bbox="805 917 1047 1050">>20m (Lofa and Mahe Rivers)</td> <td data-bbox="1047 917 1318 1050">100 m</td> </tr> </tbody> </table>	Stream Width	Minimum width of Riparian Reserve (x2)	<3m	5 m	>3m – 20m	30 m	>20m (Lofa and Mahe Rivers)	100 m
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<3m	5 m									
>3m – 20m	30 m									
>20m (Lofa and Mahe Rivers)	100 m									
Soil Quality	Soil Erosion, Surface runoff, landslide	<ul style="list-style-type: none"> • Boundaries of the riparian reserves should be clearly demarcated on maps and marked with highly visible, indelible means (e.g. paint) in the field. • If tractors are used for clearing, they should be small size and equipped with brush rake in place of earth moving blade, in order to minimize soil disturbance and compaction. The brush rake should be moved above the ground surface without touching the ground to prevent any soil disturbance and forming of rill erosion. • Table drains, culverts and other drainage structures such as those needed to channel run-off water to road-side filter strips prior to entry into streams should be installed 								

		<p>concurrently with road construction.</p> <ul style="list-style-type: none"> • Table drains should be seeded with grass to prevent erosion of drainage banks and to prevent formation of erosion channels. • Road grade should not exceed 15% (8 degrees). • Roads should not cross main streams unless appropriate crossing structures (e.g. culverts or bridges) are built. • Table drains should be provided and roads should be appropriately cambered, crowned, insloped or outsloped as appropriate to the circumstances to ensure water drains from road surfaces. • Avoid pushing excess spoil into gullies and the edges of road embankments during road maintenance. Spoil should be compacted "<i>in situ</i>", or transported to disposal sites away from the road, thus minimizing erosion of roads and sedimentation of waterways. • Provide filter strips^{5e} along the roadsides to help to reduce siltation of river systems and to prevent an increase in the intensity and frequency of peak flows into the river system downstream of the land clearing activities
Soil Protection	Lanslide, surface runoff	<ul style="list-style-type: none"> • Terracing and platforming • Anti erosion bund • No land clearing activity during wet season • Early establishment of LCC • Slope protection for >25 degree
Flood Levels	Flood	<ul style="list-style-type: none"> • Proper management practices. This encompasses aspects of land clearing and site preparation discussed earlier

		<ul style="list-style-type: none"> • Development of the Project area in phases. There must be a detail map showing the development in phases. • Planting of cover crops and secondary vegetation immediately after clearing and maintaining adequate streamside buffer strips, also known as riparian reserve
<p>Protection of Water Quality from Sediment Yield</p>	<p>Water erosion, declining of aquatic life and habitats</p>	<ul style="list-style-type: none"> • Develop the proposed oil palm plantation in different phases and scheduled over drier period or months o Roads must be carefully laid out, preferably following the contour and must be far enough from stream. • Clearing should be done parallel to contour lines, starting from high to low ground. • Install cross drains for minimizing overland flow. • Timing of road construction or road upgrading to conform to periods of less rainfall and allowing sufficient time for earthworks to stabilize. • Using the appropriate machineries in the land clearing to minimize disturbance to the soil. • All clearing, grading and stabilization operations would be done before starting the next phase. • Where possible, the stages of development should be from the high to low grounds, so as to take advantage of the present vegetation to act as silt and runoff barriers. • Reduce the duration of land exposure to natural elements i.e. reduce the time between land clearing and tree establishment (maximum 3 months interval). • No person shall carry out any tree felling, building or structures erecting and other works within the buffer strips.

Soil Organic Matter	Loss organic matter, humus activity	<ul style="list-style-type: none"> • on-site natural decomposition of all non-usable debris • zero burning policy
Air Quality	Air Erosion	<ul style="list-style-type: none"> • No open burning - Zero burning policy
Fertilizer Application and Pests and Diseases Management	Water pollution, health problems	<ul style="list-style-type: none"> • Correct timing of application • Fertilizers, pesticides and weedicides should not be applied during the wet season or before a downpour as this will result in surface run-off. This will reduce unnecessary loss which but also contribute to minimizing pollution of the environment. Spraying should avoid windy conditions. • Split application of fertilizers
Chemical Handling	Water pollution, Health problem	<ul style="list-style-type: none"> • Use approved Class IA and IB • Proper handling of chemical • Storage, inventory and disposal to follow SOP • Use biological control, IPM
Fire Prevention and Control	Destroying of natural resources, forest fire, air pollution	<ul style="list-style-type: none"> • Form a forest fire team consisting of permanent project staff. • All project staff and workers, as well as local community leaders, should be made aware of their responsibilities related to fire safety by participating in regular training exercises and demonstrations. Besides, it is advisable to conduct regular public awareness campaigns in settlements within and adjacent to Project area • Provide equipment – Water Tank, Fire protection equipments
Infrastructure, Facilities	Hygiene, social conflict	<ul style="list-style-type: none"> • To ensure that proper base camps equipped with all the basic

<p>and Amenities</p>		<p>infrastructure, facilities and amenities is available for its workforce to avoid putting pressure and disruption of the existing infrastructure, facilities and amenities of Bomi and Cape Mount Counties These may include but not limited to water supply, power supply, medical clinic, school (where appropriate), fire protection services, security services, transportation, spiritual facilities and recreational.</p>
<p>Resources Degradation and Siltation</p>	<p>Poor quality of water, hygiene</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Good site development practices e.g. conservation of riparian reserves, soil erosion minimization, etc., would help to minimize adverse impacts on river water quality otherwise alternative water supply should be considered. <input type="checkbox"/> Storage tank, if any, must be constructed on stable ground with bunding and sited at least 50 m away from any waterway. <input type="checkbox"/> The Project Proponent shall cooperate with the communities and local authorities on solving water supply issue of the directly affected communities. This may include identification of sub-catchment for protection, alternative water supply or modification to its operation and development practices. <input type="checkbox"/> Water quality monitoring of affected rivers shall be carried out by the Project Proponent on a regular basis to ensure that the implementation of Project do not contribute further to the pollution. <input type="checkbox"/> The Project Proponent will work with the Ministry of Health and EPAL to protect against bacterial and viral contamination of surface waters

4.1.1A Monitoring Program

The monitoring program is designed to evaluate impacts resulting from the development and operation of Sime Darby (Plantation) Liberia project operational activities. Continuous monitoring of the environment will be an integral part of all phases of the project. Monitoring data will provide management with information regarding the effectiveness of environmental management and mitigation measures and may identify situations requiring corrective measures. Thus, the monitoring program will confirm the environmental stability of the project.

Internal Monitoring Team

Internal Monitoring Team had been set-up to monitor the social and environment compliances of the project. The Personnel and their task are as follows;

No.	Personnel	General Task
1	Project Director/General Manager	Allocate financial resources as and when required.
2	Environmental Manager	Oversee the overall management and operation of the environmental requirements. Supervise and enforce environmental requirement. Coordinate staff and resources in the delivery of remediation measures. Advise the Management on the environmental issues. Liaise with the relevant Government agencies and stakeholders.
3	Environmental Officers	Brief the contractors of all the legislative requirements. Monitor the implementation of all the mitigating measures in all the development area. Carry out monthly environmental audit for all the plantation area. Inform the Manager of the potential issues or noncompliance.

External Monitoring

A. Government Agencies

All the relevant government agencies such as the EPAL, Forestry Development Agency, Ministry of Labor and the Ministry of Agriculture would carry out regular or random check in on the plantation areas at their discretions.

B. Independent Consultants

Apart from carrying out internal monitoring, the Project will engage an independent environmental consulting firm to carry out environmental auditing and monitoring on a quarterly basis. A quarterly report should be compiled and submitted to the EPAL. In addition, the Consultant should advice when required during their contract period to ensure environmental compliance and protection. It is also the duty of the Consultant to check the effectiveness of the suggested mitigating measures and recommend, as and when appropriate, additional mitigating measures to ensure the project is implemented in a sustainable manner. The monitoring requirement are presented as follows;

- **Riparian Reserve**
- **Hydrological Impact**
- **Infrastructure Development**
- **Access Road**
- **Base *camp and Workshop***
- **Socio-Economics**
- **Resettlement and Compensation**
- Water Supply Source
- Waste Management
- **Occupational Safety and Health**
- **Biomass Management**

4.0B SUMMARY OF MANAGEMENT AND MITIGATION PLAN (HCV)

This is to establish an HCV management plan defining specific areas requiring special management and defining appropriate management practices for each HCV found within the project area.

The summary of HCV sites in and the recommended management measures are listed in the Table as below:

HCV	Element	Status	Management measures
1	Forest areas containing globally, regionally or nationally significant concentrations of biodiversity values		
1.1	Protection areas	Not present within the project site.	
1.2	Threatened and endangered species	Presence of protected animals within the riparian forests	<p>Poaching for bush meat is still practiced. Inform the Forestry Development Bureau on any cases of poaching.</p> <p>Educate estate workers from encroaching into the protected sites.</p> <p>Erection of signage. Establish no hunting policy</p>
1.3	Endemic species	Not present	
1.4	Critical temporal use	Not present	
2	Globally, regionally or nationally significant large landscape-level forests	Not present	
3	Forest areas that in or contain rare, threatened or endangered ecosystems	Not present	
4	Forest areas that provide basic services of nature in critical situations		

4.1	Forests critical to water catchments	Not present	Water catchment outside the project site
4.2	Forests critical to erosion control	The main river systems are critical for the local communities as sources of water and food.	Strictly maintain the riparian buffer belts in accordance to width specified in the EIA Report.
4.3	Forests providing barriers to destructive fire	Not present	
5	Forest areas fundamental to meeting basic needs of local communities (e.g. subsistence, health)	Residual forested areas are critical to local communities as sources of food and wood	Protection of all residual forested sites. Placing of signs to prevent encroachment into forested areas by field workers All identified towns and associated planted land would be excluded from the project activities.
6	Forest areas critical to local communities' traditional cultural identity	Mosques and churches for local communities within project sites, Burial sites of local communities Social program like schools	Erect signage indicating HCV values. Demarcate on maps and on ground. Consult with local communities on management practices. All identified sites of religious importance to local communities would be excluded from the plantation activities. Monitor progress of education progress in villages

For HCV 4 and HCV 5 sites the management recommended to maintain the existing vegetation in its natural state within the prescribed buffer belt. The process of natural regeneration will encourage introduction of more species. The increase in diversity of plants will also improve the food sources for the animal species and nesting sites. The vegetation cover will also provide a buffer from the surrounding oil palms having any impact on the forested area.

In sites identified to have attributes of HCV 4.1 and HCV 4.2 the existing natural vegetation will be maintained and excluded from the future replanting program.

For all the above HCV sites demarcation on maps and signage on ground will be essential to avoid possible encroachment.

HCV Monitoring

The main objective of monitoring is to determine whether HCV management objectives are met as well as providing the management with up-to-date information on the HCV under its care. This allows intervention or ongoing adjustment of operation plans.

Monitoring plans should be derived from management objectives and written into the management plan. Data gathered during the HCV assessment should be used to determine what should be the generic and specific objectives of the monitoring program. A set of measurable indicators for each key value is to be developed. Monitoring activities can include social and biological surveys and direct and indirect observation.

An outline of the monitoring regimes is presented in Table 7.

Table 7 Outline of Monitoring Regime

PARAMETER	LOCATION OF MONITORING	FREQUENCY OF MONITORING	RESPONSIBLE PARTY
HCV 4.2 Riparian Reserve (flora/fauna). Determination of boundary of riparian buffer. Assessment of any damages to vegetation	Riparian management zones along river, streams and steep slopes	Quarterly and also regular patrolling of the protected sites	Sime Darby Environmental Unit
			Independent Consultant
		Discretionary	FDA, EPA, MOA

Records of sightings of animals Ensure signage demarcating the protected zone			
HCV 5 Monitor boundary agreed with the local communities Consultations with communities through Liaison Committee	Towns and villages within and at the parameter of the project area	Biannually	Sime Darby Environmental Unit/Personnel Unit Independent Consultant
		Biannually	Independent Consultant
HCV 6 Monitor boundary of all sacred sites Consultations with communities through Liaison Committee	Village churches and mosques Burial ground	Biannually	Sime Darby Environmental Unit/Personnel Unit

Training on the Management and Monitoring of High Conservation Value Sites

To be effective in the maintenance of the high conservation values of the sites identified in the different estates, a monitoring program followed by management practices will be developed.

Scope of a Training Module

A training module will be developed for the management to be able to understand the principles of HCV and techniques to monitor and manage these sites. A practical training in one of the estates will be included.

Scope of a Training Module

1. HCV concept in the Liberian context
 - a. The attributes of HCV
 - b. Relevant regulations and laws related to HCV
 - c. RSPO and HCV identification

2. Determination of HCV sites within the plantation (ecological expertise and stakeholders)
 - a. Documentation and consultation
 - b. Field assessment methodology
 - c. The required expertise
 - d. Information within the estates
 - e. Demarcation and Protection of HCV sites
3. Management practices
4. Monitoring and record keeping
5. Working with other agencies
6. Financial implementation

5.0 INTERNAL RESPONSIBILITY

I hereby sign off on the above Summary Report of Planning and Management. The above may be amended and clarified for improvement during the phased development of the oil palm plantation, but it will remain in accordance with RSPO Standards and Principles.

Signed on May 16, 2011:



Azmi Jaafar

General Manager, Sime Darby (Liberia) Plantation Inc.