

# RSPO NEW PLANTING PROCEDURES

## Summary Report of SEIA and HCV assessments

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## 1. Executive Summary

In 2010, the company Olam Palm Gabon, a subsidiary of the group Olam International Limited, partnered with the Government Gabon, to establish industrial oil palm plantations and palm oil processing facilities adhering to the international standards of the Roundtable on Sustainable Palm Oil (RSPO), to service local and international markets.

The concession assessed in this document (exploration license No. 74/11 for an area of 35,354 hectares) is located between approximately 60 km west of Waka National Park and 140 km east of the Moukalaba Doudou National Park; the concession does not overlap or border with any national or international Protected Area. The concession is not located within one of the CARPE conservation priority landscapes of Gabon or any conservation areas recognised by international conservation NGOs.

Olam Palm is committed to achieving RSPO certification for all of its oil palm plantations, and because this concession is a new planting, it is subject to RSPO new plantings procedure (NPP). RSPO NPP requires a comprehensive and participatory independent social and environmental impact assessment (SEIA) of the area concerned that includes the identification of all primary forest, HCV areas and local peoples' land. A comprehensive SEIA is currently underway for the concession area as a whole and the report will be available in early 2012. However, as a first step, Olam has commissioned a short SEIA and HCV report on potential nursery sites in order to assess the suitability of sites for a 25 ha nursery, as NPP approval is required to get the palm seedlings established during 2012. This summary report of our findings is based on results from a field assessment of 25 ha savannah areas and their surroundings, with the intention of identifying a nursery site.

Based on field data collection, expert consultation and literature reviews the assessors found that biodiversity and social values identified within the potential nursery sites or their immediate surroundings do not qualify as High Conservation Values in the Gabonese context. The lack of HCV areas in the nursery sites does not rule out taking appropriate steps to manage biodiversity and social considerations of local significance. The assessors have identified two key issues for the siting of the nursery: soil volume requirements, and water quality/pollution prevention.

## 2. Scope of the SEIA and HCV Assessments

### ***Organisational information and contact persons***

#### High Conservation Value Assessment

Proforest

Lead assessor: Abraham Baffoe

Abraham@proforest.net

Proforest South Suite, Frewin Chambers,  
Frewin Court, Oxford OX1 3HZ United Kingdom

E: [info@proforest.net](mailto:info@proforest.net)

T: +44 (0) 1865 243439

Proforest is an independent company working with natural resource management and specialising in practical approaches to sustainability. Their expertise covers all aspects of the natural resources sector, from forestry and agricultural commodities to conservation, supply chain management and responsible investment. The company's work ranges from international policy development to the practical implementation of requirements on the ground, with a particular focus on turning policy into practice. Proforest's extensive and up-to-date knowledge of the international context ensures that our work for individual companies and organisations is set within an appropriate framework. At the same time, we are able to bring a wealth of current practical experience to policy development processes and

debates. The Proforest team is international and multilingual and has a broad variety of backgrounds, ranging from industry to academia and NGOs.

#### Social & Environmental Impact Assessment

ECOSPHERE SARL  
Victor Boumono Moukoumi  
E: ecospheregabon@gmail.com  
BP: 655 Libreville, Gabon  
Montagne Sainte  
Tel: 07732545/05180455

Ecosphere SARL, a Gabon based social and environmental consultancy, was founded in 2006. The firm has established expertise in the fields of mining, quarrying, gas and oil, fisheries, forestry, and infrastructure advising on environmental management and sustainable development.

#### **List of Legal documents, regulatory permits and property deeds related to the areas assessed**

- *Convention on the concession of long lease between the Gabonese Republic, represented by His Excellency the Prime Minister and Olam Palm Gabon*
- *Decision No. 141/11 of 18 October 2011 authorizing the exploration of forest concessions*
- *Attribution to Olam Palm of an exploration license No. 74/11 for an area of 35,354 hectares for the establishment of oil palm plantations and cartographic documentation of the project Olam Palm Gabon / DGEF-Ordnance Survey - October 2011*

#### **Location maps and description of the sites**

The SW boundary of the concession runs parallel to the main N-S road and ranges from 1-3 km in from the main road. Mouila, the provincial capital is just over 20 km from the southernmost tip of the concession. About a dozen villages are located along the roadside and on the right bank of the Ngounié River. Approximately 1,700 people live in the 10 villages which are closest to the main concession area. Because of its proximity to the main road and to villages, the area is influenced by various human activities including hunting and fishing, small scale timber extraction, and a recent road-building project. Local people also carry out small scale subsistence agriculture up to 2-3km from their villages, however to date no recent fields have been identified within the concession boundaries. Older traces of cultivations within the concession boundary appear to date back several decades and were probably abandoned in the 1970s, when a new road was built and existing villages close to the old road were regrouped. The current roadside serves as a market for bush-meat, some of which is captured in the concession.

The 35,354 ha concession is located in the forest-savannah transition region of southern Gabon. It is on a gently undulating plain over limestone/shale bedrock, yielding soils of moderately low fertility (including small, highly infertile patches); however, most soils are suitable for palm plantations according to soil analyses commissioned by OLAM, with fertiliser additions as required for economic yields. Located on the left bank of the Ngounié River, the concession is in the catchment of three minor rivers: Rembo, Doubou and Douia, which have their source in the Tandou mountains of the Mayombe massif to the west and flow in the direction southwest - northeast emptying into the Ngounié. These rivers flow through the concession area for 21.70 km (Rembo), 8.30 km (Doubou) and 9.4 km (Douia) respectively. The Rembo and Douia form the northern and southern natural borders of the concession area. There are also smaller permanent water courses in the south eastern section of the concession, most notably the Douguehy River.



Figure 2: Grassy Savannah and Groves of Site 3



Figure 3: River Ngounié

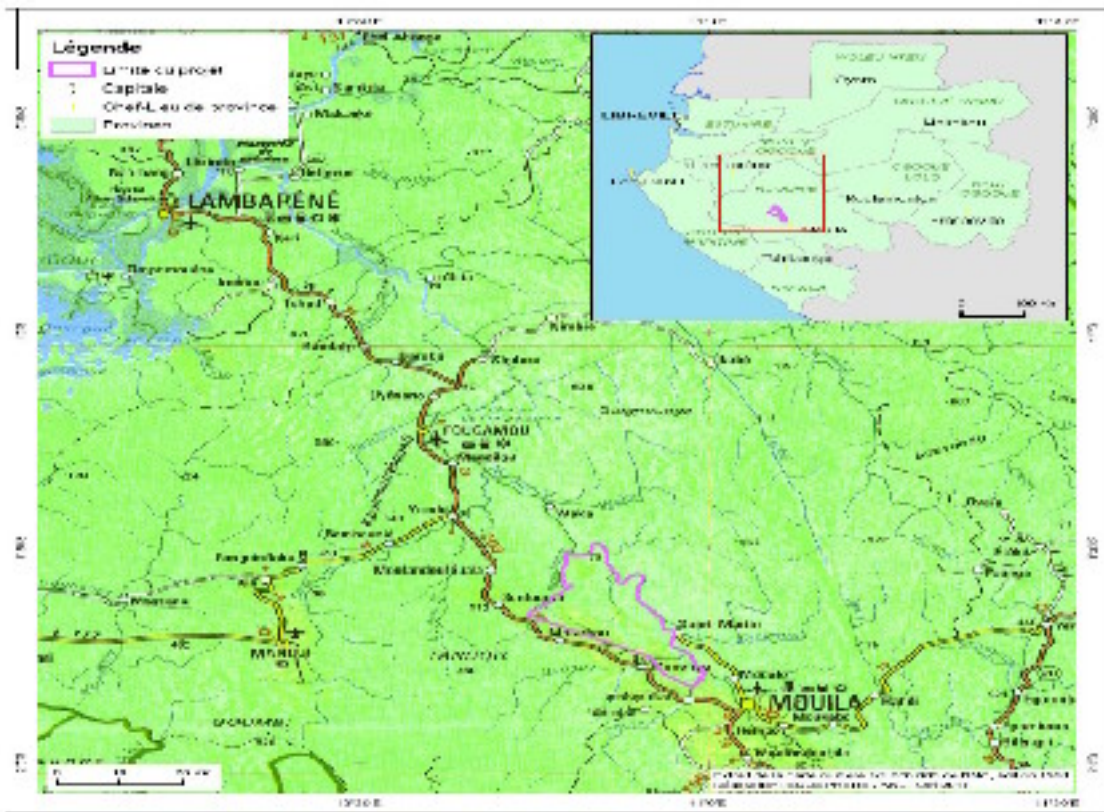


Figure 4 – Location of the concession as a whole (pink boundary) in Ngounie Province



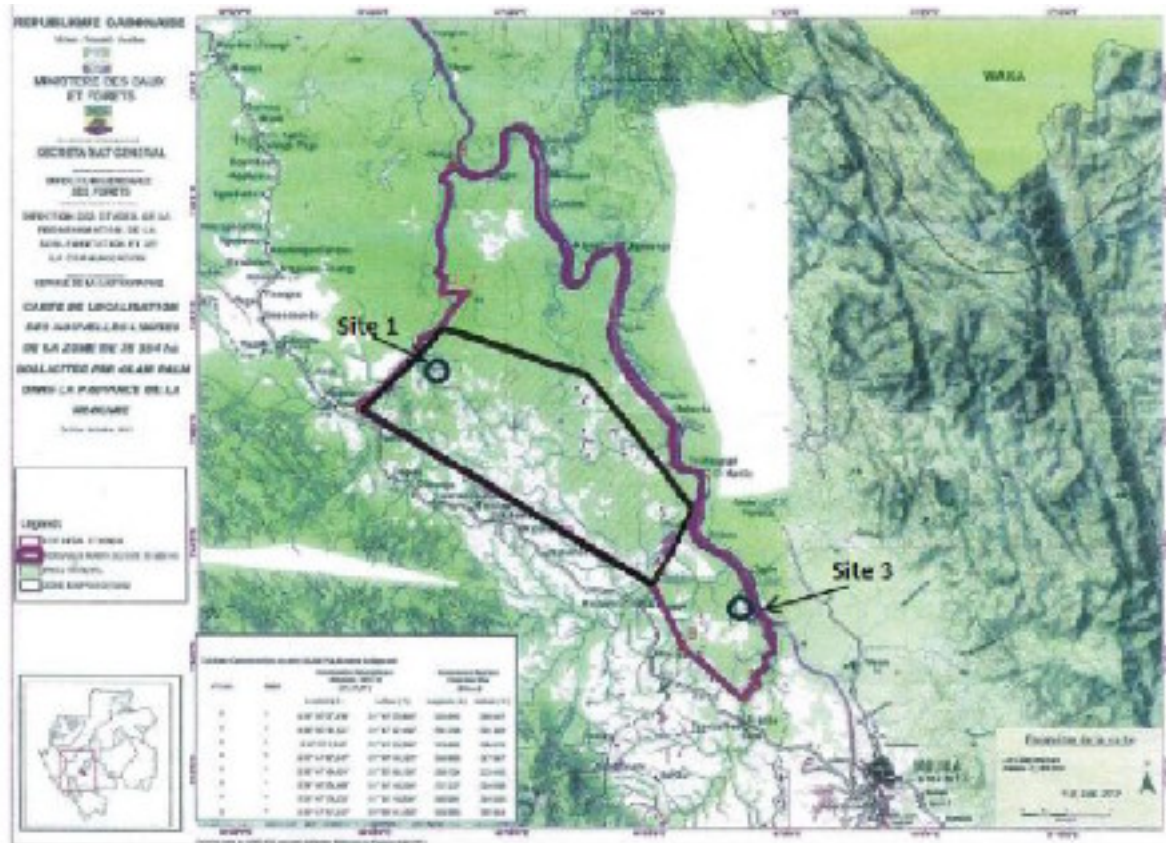


Figure 5: Location of proposed nursery sites 1 and 3 detailed in this report

### Area of new plantings and time-plan for new plantings

The implementation of a palm plantation requires the establishment of a pre-nursery and nursery. Seedling development is subject to specific conditions. For the initial development of a nursery, a 25 ha pre-nursery ("Phase 1") area is required to get the palm seedlings established in pots prior to the dry season of 2012. This phase will last at least four months, following which the nursery site will need to expand in "Phase 2" by ca. 100 ha, to a total of 125 ha. However, expansion beyond the 25-30 ha savannah area into "Phase 2" is contingent upon the results of the comprehensive SEIA and HCV results for the whole concession area. There are specific requirements for the choice of a nursery site including:

- 1) 25 ha area of savannah zone to avoid the need for forest clearing,
- 2) proximity to a permanent water source capable of providing 750m<sup>3</sup> of water per day,
- 3) suitable soil conditions (including volume) for filling seedling bags and
- 4) accessibility (distance from main road, transport of materials and workers, etc.).

Olam has investigated 5 potential 25 hectare pre-nursery plots, and has selected one of the plots, Site 3, Ngounié, after completing SEIA and HCV assessments. Site 3 is the most suitable at this point in time for pre-nursery development given agronomic, social and environmental considerations. The site is near water, on savanna (limited vegetation), has good soil quality and quantity, and is accessible by an existing road but is the farthest from important village activity zones. More importantly the site has the least environmental impact and there are no HCVs within or adjacent to the plot.

The detail of Site 3 area is shown below:

**Details of Characteristics of Site 3**

Conditions	Details of Characteristics
Total area	25 ha
Water requirement of pre-nursery	10m <sup>3</sup>
Water requirement of nursery	600m <sup>3</sup>
Distance from water source	Ngounié river – 400m
Distance from main road	7.4 km
Availability of humic soil	75,000m
State of soil	Loamy
Access road	Yes

**Timeplan for new plantings:**

ACTIONS	2011				2012									
	S	O	N	D	J	F	M	A	M	J	J	A	S	O
First field trip														
Second field trip														
HCV/ESIA study on the ground in the entire site of 35,354 ha (in which the pre-nursery is located)														
Writing of the pre-nursery report														
Writing of the plantation report														
Notification period for RSPO														
Validation of report by DGEPN														
RSPO notification period for the plantation														
Development of the pre-nursery														

### 3 Assessment process and procedures

The following experts led technical assessment processes for the SEIA and HCV assessments.

#### **Social and Environmental Impact Assessment Team**

Responsibility	Team Member	Credentials
Environmental and Natural Risk Engineer	Victor Boumono Moukoui	MA Georesources and Natural Risks
Hydrological and Environmental Engineer	Michelle Sylvana Tsioba Moubouali	MA Hydrology and Environment
Environmental Engineer	Joseph Ndong Nlo	MS Chemical and Environmental Engineering
Entomologist	Jacques Mavoungou	PhD Invertebrate biology
Botanist	Alfred Ngomanda	PhD Vegetative Biology and forest ecology
Agronomist	Emma Bernice Bouanga	MA Environmental Engineer, Agronomy
Pedologist	Jean Paul Mayeki	MA Environmental Engineer, Soil science
Sociologist	Rose Ondo	PhD, Sociology and Development Studies
Social Cartographer	Edwige Eyang Effa	MA, Sociology and rural development
Animal Biologist	Joseph Okouyi	PhD, Animal biology and conservation

#### **High Conservation Value Assessment Team**

Responsibility	Team Member	Credentials
HCV Assessment Team Leader	Abraham Baffoe	MSc Forestry and Environmental Science, approved RSPO HCV assessor
Ecology and Land Use Management Specialist	Christopher Stewart	PhD. Tropical forest ecology
Bushmeat, Livelihoods and African Land Use Specialist	Ellen Brown	MSc Environmental Management and Anthropology

#### **Assessment methods**

A review of publications and unpublished reports relevant to the zone was completed prior to the field studies. Detailed background information was provided in an initial HCV scoping report (Proforest September 2011). A comprehensive literature review will be included in the final HCV assessment document to be produced in early 2012.

Two key reference documents, the HCV tool kit and the Gabonese National HCV Interpretation, were used as guiding documents for this HCV assessment. The Gabonese National HCV Interpretation is still in draft form and there is no direct guidance on the identification of HCVs in grasslands or on the management of HCVs in the context of industrial scale oil palm plantations. Therefore, Proforest conducted consultations with experts and participated in field studies in order to aid in the interpretation of field SEIA results and to determine the status of HCVs in the nursery site.

Field visits were conducted in September 3 and October 2011. September was an initial scoping visit by an expert team collecting baseline data on flora, entomology and aquatic life (fish and macro invertebrates). This was followed in October 4 by a field visit focused on identifying and assessing potential nursery sites in savannah zones. Five potential nursery sites were evaluated based on a suite of characteristics including soil quality, hydrology, vegetation and distance from permanent water sources. Out of these sites, two sites (1 and 3) were identified as the most suitable. This HCV report focusses on sites 1 and 3. The field reports have been compiled separately as an SEIA for the nursery site.

During 13 – 18 September, at the end of the dry season, qualitative baseline data on species composition and ecosystem characterisation was collected, using forest transects and small plots for the identification of plant species in savannah zones. During this field visit, three forest transects of 1km x 10m (3 ha) were completed with identification and measurement of all trees and lianas with a dbh5 greater than 10cm. For a qualitative assessment of savannah areas, six 5m x 5m plots were delimited along a 100m line and all plant species were identified.

From 20 - 26 October 2011, shortly after the beginning of the wet season, a botanical team conducted a second field visit targeted specifically to potential nursery sites. During this visit 18 plots of 10m x 10m were delimited in forested areas surrounding and within a few hundred meters of the potential nursery sites and all tree species within the plots were identified. In the savannah areas of sites 1 and 3 the botanical team conducted identification/collection transects through the savannah sites in order to identify as many species as possible. Observations of animal tracks were recorded within the savanna areas. A full-scale faunal survey including transect recordings and interviews with local people is underway for the whole concession.

For the soil and hydrology studies, approximately 35 soil samples were taken along different slopes and in different vegetation types (gallery forests, savannah-forest transition/edge and savannah). Six samples were taken at site 1 and four samples were taken at site 3. Measurements of temperature, pH, dissolved solids (TDS), dissolved oxygen, salinity and transparency were performed in ten water bodies (rivers, streams and one lake) in the concession area.

Width and depth of smaller streams, velocity and flow rate was also recorded. *It is important to note that there are no lakes or permanent streams running through either of the nursery sites.* In both cases, the nearest permanent water is over 200 meters away.

The method for studying aquatic biodiversity included collecting samples from 26 water bodies (rivers, streams and lakes) using 5m long nets with variable mesh size. Nets were strung up across streams – acting as a barrier for different size fish depending on the mesh size. Nets were installed in the late afternoon or evening and harvested the next morning. Fish are then identified immediately on the bank/shore, photographed, etc. When lifting the nets, the catch is sorted by family and by species, weighed and photographed. If there is a doubt, the specimen is packaged in 8% formalin solution for examination in the laboratory of Hydrobiology and Ichthyology of IRAF in Libreville. Macro invertebrates were also studied.

The social assessment included group interviews, household interviews and social mapping and was conducted for 11 villages surrounding the concession. Participatory mapping was prepared in the villages through selection of participants and discussion of applicable land uses, and was completed in the field with village representatives, led by a social cartographer. A full social report covering the entirety of the concession is in preparation.

### Stakeholders Consulted

- Wildlife Conservation Society
- World Wildlife Fund
- Ministry of Housing, Urban Development, Environment and Sustainable Development, Director General of Environment and Protection of Nature
- Ministry of Water and Forests, Director General of Water and Forests
- Ministry of Agriculture, Livestock, Fisheries and Rural Development
- Directorate of Artisanal Fisheries
- Ministry of Mines, Petroleum, and Hydrocarbons
- Ministry of Labor, Employment and Social Welfare
- The communities of Douya, Guiamba, Mutame Sane Fumu, Doubou, Mboukou, Ditounga, Rembo, Guidouma, Mouladoufouala, Moudouma, Ningui, Apindji, Migabé

### List of Legal, regulatory and other guidance referenced

Subject	Law/Decree/Regulation	Relevance
Protection and improvement of the environment	Law n°16/93	Includes provisions to ensure: 1) The conservation and sustainable use of natural resources; 2) The prevention and reduction of pollution and nuisances; 3) Improving and protecting the living environment; 4) The promotion of new values and income generating activities, related to; 5) Protection of the environment and



		e harmonization of arrangements to safeguard the natural environment
<b>EIA</b>	Law n°16/93 Decree n° 539/PR/MEFEPEPN (15/07/2005)	The EIA is defined as an evaluation study of direct and indirect impacts of a project on the ecological balance and quality of life of people living in or near the area where the project is located. The EIA process is regulated by the Ministry of the Environment. The formal requirement for public consultation is an integral part of the process with the establishment of a Committee of Public Counsel for the organization and direction of consultation with local communities and other stakeholders.
	Ministerial decree n°2/PM/MEPNRT (14/04/2006)	Procedures for the approval of the EIA by the Gabonese government.
<b>Water</b>	Law n°16/93 Article 12, Decree n° 542/PR/MEFEPEPN	Regulating the discharge of certain products in surface water, groundwater and sea.
<b>Fauna and Flora</b>	Law n°16/93, Article 23 Decree n°189/PR/MEFCR and decree n°678/PR/MEFE	On the protection of wildlife species and defining the wholly or partially protected: Any industrial development, urban, mining, tourism or otherwise, that may affect the wildlife, or result in the destruction of their habitats are either prohibited or subject to the prior approval of the Minister of Environment.
<b>Soils</b>	Law n°16/93 Articles 14 and 15	Human activities - including agriculture and forestry, prospecting, mining and quarrying, farming and other agro-industrial sites - must respect the soil and climatic conditions of the soil.
<b>Air</b>	Law n°16/93, Article 20	Preservation of air quality against all forms of pollution that can affect ecosystems, human health and the frame. Industrial facilities and uses of vehicles and equipment have to build, equip, maintain or use them to reduce and prevent air pollution.
<b>Odors, Fumes and Dust</b>	Law n°16/93, Article 56	The offensive odors should be eliminated wherever possible. The production of dust, especially thick smoke soot, fumes and smoke from all that may affect the health and welfare of the neighborhood beyond the regulatory limits is prohibited.
<b>Noise and vibration</b>	Law n°16/93, Article 45	Industrial facilities, engines and vehicles must be constructed, equipped and serviced used to reduce or eliminate noise and vibration they generate or could generate.
<b>Management of Waste</b>	Law n°16/93 Article 36 Decree n° 541/PR/MEFEPEPN	Regulation of waste management. Waste from all sources must be collected, collated, processed to eliminate or reduce their adverse effects on health, natural resources and environmental quality.
	Lawi n° 16/93 Decree No 545/PR/MEFEPEPN	Regulating recovery of waste oils.
<b>Protected Areas</b>	Law n°16/93 Article 27	Any area of land or water of special interest environmental, archaeological, visual, cultural or socio-economic development must be protected to preserve its integrity.
<b>Fishing</b>	Code on Fishing and Aquaculture n°15/2005	it is included here because of fishing common in the project area. Indeed, the geographical area of the project has a natural boundary represented by the river Ngounié. The latter it extends through the interior wetlands that are for local fish stocks in reserve.
<b>Labor Code</b>	Law n°12/2000 of 1 <sup>er</sup> October 2000 which modified lawi n°3/94 of 21 November 1994 And the decree n°741/PR/MTE/MEFBP of 22 september 2005	Concerning the methods of repression of any infringement in labor matters, employment, health and safety at work and social security.
<b>Agriculture Code</b>	Law n°22/2008 of 10 December 2008	It determines the rules for development of agricultural and rural sector allowing the state to promote a policy of investment aid in the protection of the environment including species and ecosystems, improvement of farm structures, working conditions and living in rural areas, development of forestry and the promotion of sustainable organic agriculture.
<b>Policy on Sustainable agricultural</b>	Law n°23/2008 of 10 December 2008	In the Gabonese Republic, it is advocated the practice of sustainable agriculture. This involves taking into account:-economic and environmental roles of agriculture and the concerns of regional planning. Also for obtaining approval under section 5

<b>development</b>		of the Agricultural Code, Olam will demonstrate that the proposed activities are to: protect the environment, including species and ecosystems, promoting sustainable organic agriculture .
<b>Introduction of a Phytosanitary policy</b>	Law n°7/77 du 7 December 1977	It establishes a policy including pest responsible to authorize and perform phytosanitary control on admission, the introduction or removal of all or part of the plant material throughout the country.
<b>Regulatory measures required on imports, distribution and use of plant protection products</b>	Law n°247/96 du 12 March 1996	Article1 provides that any importation of plant protection products requires technical approval and authorization of the management of pest inspection of police, while any large-scale use of these products is subject to its control technique. Finally, storage of pesticides and herbicides should be brought to the knowledge of this direction.

#### 4a. Summary of assessment findings (for SEI assessments)

##### *Socioeconomic Activities in and around the pre-nursery area*

Population distribution is uneven between villages. There are villages with high population density such as Mboukou, and other smaller, less populated villages. The sites chosen are closer to Rembo for Site 1 and Douya for Site 3. The population ranges from 75 people (Village Rembo) and 81 people for the regroupment of Douya. The following table shows the different population densities in the project area.

<b>Village</b>	<b>Population</b>
<b>Moudouma</b>	94
<b>Mouladoufouala</b>	321
<b>Guidouma</b>	400
<b>Rembo</b>	75
<b>Mboukou</b>	332
<b>St Martin</b>	211
<b>Doubou</b>	150
<b>Ningui</b>	0
<b>Migabe</b>	99
<b>Douya</b>	0
<b>Guiumba</b>	81
<b>Ditounga</b>	11

- **Farming Activities**

The farm activities are conducted in all villages surveyed and are also the primary source of fixed income for local communities. Plantations usually start in the immediate vicinity of the village and do not extend more than 4 to 5 km from the village. This is due in part to the existence of animals damaging fields (elephants, monkeys, wild boars, porcupines) and to the desire to comply with the provisions of the old Forest Code, which provided a band of 5 km along main roads for the practice of village activities. To date, only old (abandoned) plantations can be found beyond this band of 5 km. One of the major demands of local people is that this band for agro forestry is respected by Olam Palm Gabon. The villages accessible only by water do not carry out their farm activities in the project area, but practice them on the other side of Ngounié, opposite to their respective villages. No village subsistence farming areas were identified within or near either 25 hectare proposed pre-nursery site.

- **Fishing**

Fishing plays an important role in the lives of communities. It is done both in streams and rivers nearby the proposed pre-nursery sites and within lakes and ponds (see Table below). During the mission, only the names of rivers near the site of pre-nursery were provided. There are no lakes or ponds in the site of pre-nursery. However, the names of lakes and ponds around the plantation site will be provided in the EIA of the entire concession.

<b>Name of village</b>	<b>Main Rivers and Streams used</b>
<b>Douya (Tendoufilou-Biléngui)</b>	Douya, Miamba, Boukouama, Didouguila, Issane, Mougoba, Ngounié
<b>Guiamba,</b>	Midzazala, Ngoya, Douya, Divemba ; Ngounié
<b>Mutame Sane Fumu,</b>	Konzou, Doubou, Magougou, Douya, Ngoya
<b>Doubou</b>	Doubou, Mouèdi, Ngounié
<b>Mboukou,</b>	Mikoukou, Maraya, Timba, Massimbi, Dougehi, Remboé, Baguedila, MOUNGONVI, Cambenya, Ngounié, Mouri
<b>Ditounga,</b>	Rembouè Déndé, Rembé Ditounga, Remboué Bitsatsa, Ngounié
<b>Rembo,</b>	Makoubou, Mikembi, Boukoumbi, Rembo, Petit Rembo, Ivepri 1, Ivepri 2 and Ivepri 3
<b>Guidouma (Regroupement),</b>	Mounzobou, Benga-Mamba, Mounzao, Moutiessi, Bindougoulou, Mbamba, Miniengui, Remboè, Dougehi, Ngounié
<b>Moulandoufouala (Regroupement),</b>	Carte sur papier non réalisé
<b>Moudouma,</b>	Moabi, Mbamba, Mamimba, Diga, Dougoumbi, Ngounié
<b>Ningui</b>	Ngounié, Dougoumbi, Mossanda, Nzokou, Petit Nzokou
<b>St Martin des Apindji</b>	Ndoubou, Leyeye, Ngounié
<b>Migabé</b>	Leyeye, Dourembou, Woupou-Woupou, Remboué, Ngounié

- **Hunting**

Hunting is presently practiced by communities in the areas of the proposed pre nursery sites. It begins in the vicinity of villages (small hunting) and gradually extends into the forest (large hunting). It is the activity

for which communities travel the longest distances. It remains the prerogative of a small number of people in the villages, especially with regards to hunting larger game. In villages, the differentiation between small and big game hunting is done on the basis of the hunting area, the equipment used and the type of game hunted.

- **Other Aspects of Village Activity in the area**

For some communities, the creation of the plantation and the associated activities, will help to limit the advance of the elephants and will thus reduce damage to their crops.

The sites chosen for pre nursery are far from villages (between 7 and 15km) and the activities of the pre nursery on the sites do not impact people directly. Socio-economic activities near the sites concentrate mainly on fishing, to a lesser extent, hunting. Other activities are also practiced, including crafts. Fishing activity by molvillois (Mouila residents) who regularly fish more often than natives is present nearby Site 3.

- **Summary of stakeholder responses:**

Potential risks posed by the nurseries were not considered to be significant by local people. Villagers in several villages expressed concern about the impact of the plantation as a whole on their traditional agriculture and on fisheries. These concerns will be addressed through the FPIC process which has been started for the concession as a whole through the process of participatory mapping and social engagement, and through the application of a comprehensive plan for management of social and environmental risks which is in development.

National NGOs have not expressed any specific concern about the development of the nursery sites. However concerns have been voiced about the landscape level impacts of the concession e.g. the influx of workers, changes in local livelihood patterns, consumption of bush-meat and long-distance impacts on national parks and priority landscapes, and public health issues. These issues are beyond the scope of the nursery-level EIA and will be addressed in full at the concession level.

Concerns of local authorities and national government representatives focus on the overall impact on job creation and rural development, and on compliance with national law. Environmental impacts as a whole and carbon impacts in particular are also considered to be of great importance. The relevant legal authority for the nursery development have been obtained. The concerns for development, job creation and environmental impacts need to be answered at the level of the concession development as a whole.

## **4.b Summary of assessment findings (for HCV assessment)**

The HCV report applies to two 25 ha potential nursery sites (1 and 3), located in savannah areas, within Olam Palm's 35,354 ha concession northwest of Mouila town. **Based on field data collection, expert consultation and literature reviews we find that biodiversity and social values found within the potential nursery sites or their immediate surroundings do not qualify as High Conservation Values in the Gabonese context (see Table, below).** The lack of HCV areas in the nursery sites does not rule out taking appropriate steps to manage biodiversity and social considerations of local significance.

Two key reference documents, the HCV tool kit and the Gabonese National HCV Interpretation, were used as guiding documents for this HCV assessment. The Gabonese National HCV Interpretation is still in draft form and there is no direct guidance on the identification of HCVs in grasslands or on the management of HCVs in the context of industrial scale oil palm plantations. Therefore, Proforest conducted consultations with experts and participated in field studies in order to aid in the interpretation of field SEIA results and to determine the status of potential HCVs in or affected by the nursery sites.

## HCV Summary Table for Nursery Sites

HCV	Description	Present	Potentially present	Absent
HCV 1.1	Protected areas			
IICV 1.2	Concentrations of rare, threatened or endangered species			
IICV 1.3	Concentration of endemic species			
HCV 1.4	Seasonal concentrations of species			
HCV 2	Large landscape level ecosystems			
IICV 3	Rare, threatened or endangered ecosystems			
IICV 4.1	Areas critical to water catchments			
HCV 4.2	Areas critical to erosion control			
HCV 4.3	Natural barriers to destructive fire			
IICV 5	Areas fundamental to meeting basic needs of local communities			
HCV 6	Areas critical to the cultural identity of local communities			

### Description of HCV findings

#### HCV 1

All grasses and shrubs identified in the savannah areas were classified as common or widespread according to botanical reference guides for Gabon (White et Abernathy 1996, Sosef et al. 2006). Consultation with national experts raised a possibility that some rare or endemic species of flowers are present in savannah areas in the concession: *Asclepias spp.* (Asclepiadaceae, often coming out after fire at the beginning of the rainy season and not lasting long); and *Syngonanthus ngoweensis*, *Syngonanthus schlechteri*, *Eriocaulon nadjae* (Eriocaulaceae, restricted range species of wet savannas in coastal Gabon). However these were not documented by informed experts during botanical field visits. The surrounding forests contain a number of endemic or protected species, also listed in Annex 1 of the HCV report. These are not found within the savannah areas or the forest edges (which tend to be dominated by species typical of secondary regeneration and/or gallery forests).

The toolkit considers areas to be HCV if they contain significant concentrations of species that are globally threatened, according to the IUCN definition, or that are nationally listed as protected or

CITES listed species. However, the toolkit does not attempt to define and set critical threshold for what is meant by “significant concentrations” in Gabon, and refers to the need to consult expert opinion and research institutions to identify populations of national significance.

There is evidence that some nationally and globally protected species use the concession area as a whole. For the nursery sites which occur in savannah areas, field visits noted prints and dung of buffalo, small ungulates and elephants. However, there is no indication that the nursery sites are particularly important for these species, especially at the scale considered. Information from the systematic faunal survey currently underway for the full concession EIA will inform the next steps required for any further assessment and/or management of these species on a concession-wide or landscape basis (particularly for elephant).

Field visits have yielded anecdotal information on the presence of great apes and hippos. Reports of hippos in the Ngounié River have not been validated and may refer to a historical presence (hippos have been hunted to extinction in most inland areas of Gabon). Physical evidence for great apes has not been found as yet, indicating that they are uncommon at best. Because the concession is located along a major road, it is unlikely that the forest supports nationally significant concentrations of great apes or elephant, given that these species are generally found at greater distances from roads.

In total 551 individuals of benthic macro invertebrates were collected for four days: 30 taxa of aquatic invertebrates divided into ten orders and four classes. Macro invertebrate assemblages encountered in the study area reveal the predominance of species or taxa as potentially sensitive to pollution including Plecoptera, Trichoptera and Ephemeroptera. Based on early indications, the water courses are of conservation interest and may be considered HCV 1.2 or 1.3 (further data is required). However, no water courses are present within or close to the nursery sites and within the scope of this assessment, aquatic HCVs are not considered present.

Fish sampling was conducted in 26 streams and rivers documenting 19 species during the September field visit and 54 species during the October field visit. Field teams identified previously undocumented fish species in the Ngounié (127 fish species in total have been documented in Ngounié River basin). This does not necessarily mean these are endemic fish species, but a precautionary principle should be adhered to. Additionally there are no permanent streams within the boundaries of nursery sites 1 and 3 so concern for fish populations is not an HCV in this case. However, fish and other aquatic life are important and will be addressed in HCV 4 (hydrological system / rivers). When considered at the 25 ha nursery scale, there are no significant concentrations of rare, threatened or endangered species.

### *HCV 2*

The Gabon HCV Toolkit does not provide definitive guidance on HCV 2, considering that the much of Gabon is covered by a vast forest landscape and that the concept is more readily applicable for identifying important forest blocks within a more fragmented landscape. However, in the case of significant potential fragmentation of the forest due to large scale land use changes (e.g. conversion from forestry to agriculture), HCV 2 should be considered in the wider context of planned conversion activities. At the wider scale, the concession is not located in an Intact Forest Landscape or a CARPE landscape. Moreover, the concession is a highly modified landscape due to logging, hunting and seasonal burning; therefore we consider HCV 2 to be absent.

### *HCV 3*

Ecosystems listed as rare or threatened in the Gabon Toolkit are not present within the nursery sites. Full descriptions of the forest types will reveal whether there are significant areas of old-growth forest in the wider concession, but such forests were not documented close to the nursery sites.

The grasslands in the concession are at the northern edge of a very much greater extent of anthropogenic grassland in S Gabon and NE Congo. These ecosystems are not rare or likely to be under threat and we do not currently consider them to be HCV 3. There is no indication to date that the rivers



and riparian forests should be considered rare or threatened habitats (HCV3), however given the importance of the network of rivers for fish and ecosystem services in the concession, the precautionary principle requires that further description and analysis should be done prior to making any decisions affecting the management of rivers.

#### *HCV 4*

There are no villages downstream of the concession until the Ngounié River. There is no risk of catastrophic erosion or mudslides affecting local communities or infrastructure, as the area is essentially flat. No communities are thought to be dependent for drinking water on the streams flowing through the concession. However, fishing forms an important part of the livelihoods of several villages, and provides a significant component of the protein intake of the local people. Riparian vegetation protects water quality by trapping sediments and pollutants associated with run-off, helping recharge underground aquifers, dissipating stream energy during floods, and providing detritus for aquatic organisms. A reduction in the vegetation cover of riparian areas can thus lead to increased sedimentation and nutrient loading of streams which will reduce water quality. Sedimentation associated with the clearance of riparian vegetation can lead to eutrophication, stimulate the growth of noxious aquatic algae, reduce plankton and degrade fish populations upon which local people depend. Whilst we do not consider that sites 1 and 3 contain/maintain HCV 4, we do not yet know if fishing activities could be affected by nursery management and this deserves special attention during planning and management.

Fire plays a role in the annual cycle of savannahs. In the dry season, conditions are ideal for savannah burning by local people, which sets off a series of ecological events. For example, birds feed on insects as they attempt to escape the heat. Shortly after a burn and with fresh rains at the beginning of the rainy season, grasses quickly regenerate and are used by buffalo, elephants, duikers and bush pigs (White and Abernathy, 1996). The savannah areas do not protect local people from destructive fires; therefore HCV 4.3 (protection from fire) is not relevant in this context.

#### *HCV5*

Interviews and participatory mapping with local people have shown that fishing, hunting and gathering are important livelihood activities for people in the surrounding villages along the main road, as well as villages on the right bank of the Ngounié.

In terms of farming, people tend to be close to their houses and often prefer to tend their gardens and farms on the southern/western side of the main NW –SE road because of the presence of elephants on the north (concession-side) of the road. The sites are both over 7km from any habitations. Hunting is an important source of income for a minority of young men. Several of these same young men have been hired during the course of the SEIA, with this temporary paid task replacing hunting; the result being less bush meat available for sale in the villages. There are no specific claims for important hunting or fishing areas in sites 1 and 3 and it is unlikely that the nursery would significantly affect these activities.

#### *HCV 6*

Social teams conducted interviews in 11 villages and approximately 110 household surveys; however the results are still being analysed and will be presented in the final HCV report for the full concession. In addition to interviews and surveys, social participatory mapping was carried out in surrounding villages. The social maps do not show any important cultural sites (HCV 6 areas) associated with the nursery sites. Before the final HCV and SEIA reports, the social maps should be corrected to reflect the correct concession boundaries and accompanied by detailed interpretation.

#### **Consideration of locally important social and biodiversity issues:**

Although there are no HCVs within the proposed nursery site or in immediate proximity, there are biodiversity and social values of local importance which need to be addressed, and for which detailed recommendations for management and monitoring have been made, summarized in a separate

document. Below are two of the most important issues we have highlighted, referring to site selection and protection of water catchments.

*Soil Volume for Nursery*

Analysis of soil samples revealed that soils are rich in clay and iron and the surface horizon (humus) is shallow, measuring approximately 15 cm. In site 1 soil scientists estimated that there is approximately 30,000 m<sup>3</sup> of soil available for filling seedling bags. This volume is too low for the quantity of seedlings which would be produced in the nursery and would therefore require additional soil from the surrounding (forested) area. We recommend against harvesting soil from forest areas before the results of the full forest inventory are analysed. We therefore recommend against choosing site 1 for the nursery. By contrast, site 3 has an estimated soil volume of 74,000m<sup>3</sup> which is sufficient for seedling bags.

*Protecting water catchments*

Oil palm nurseries are high intensity chemical use zones, with risk of ground water and stream pollution from fertilizer and pesticide applications. Nursery sites therefore require mitigation measures to protect rivers, streams and groundwater. The draft Gabon HCV Interpretation states that a 50 – 100 m buffer zone should be left along rivers and that a narrower buffer zone should be implemented for streams. However, this was written specifically with forestry in mind, rather than the greater disturbance of plantations. For plantation purposes, as a precautionary measure, savannah vegetation will not be transformed within 150 m of a permanent stream, if any is discovered, and any riparian forest vegetation near the sites will not be converted. Given that there will be earth disturbance and vehicle movement, soil erosion and sedimentation needs to be managed through the use of grading, appropriate drainage and silting ponds.

Water quality and aquatic life should be sampled over time to monitor whether harmful pollution is occurring. Fish species such as Mormyridae depend on high water quality and could be important indicator species for water quality over time as chemical inputs are used in the nursery and plantation.

*Summary of environmental management requirements*

This table highlights relevant management recommendations to be considered in conjunction with the management and monitoring plan developed through the SEIA:

<b>Biodiversity and Social Considerations</b>	<b>Management Recommendations</b>
Forest loss and cutting of protected or endemic tree species	The 25 ha nursery site should be developed in savannah. In order to avoid accidental damage to notable species identified in Annex 1, or notable forest ecosystems as yet to be identified (through the concession-wide ecosystem classification currently underway), no forest whatsoever should be cut during Phase I of Nursery development (except for small patches of scrubby regeneration within the savannah)
Water quality and aquatic life	No pollution of water catchments (rivers, streams, etc). No forest areas will be cut, and a buffer zone of at least 150 m from any permanent water courses will be left as natural vegetation (savannah or forest). All use of agrochemicals including pesticides, herbicides and fertilisers should be carefully controlled to avoid

	<p>excessive environmental loads, avoidance of spraying into buffer zones, avoidance of accidental spillages, safe handling and cleaning of spraying equipment and controlled disposal of waste water, and safe storage and disposal of chemical containers. These measures need to be developed into Standard Operating Procedures and staff need adequate training and supervision to ensure compliance.</p>
Decline in wildlife species	<p>Olam Palm should implement a strict “No Hunting” policy for all employees.</p> <p>If Olam is to hire migrant workers, their accommodation (temporary or permanent) should be located in areas where the migrant workers will not increase hunting pressure on local fauna.</p> <p>No hunting or transport of bushmeat in company vehicles</p>
Access rights of local people to fishing camps along the rivers	<p>Olam should ensure that the nursery does not impede legitimate access by fishermen to traditional fishing camps (e.g. by allowing free passage if required).</p>
Human-Elephant conflict	<p>Field visits and village discussions reveal that elephants are present in the area. It is important to understand this management issue in the nursery and young oil palm plantation. An elephant management strategy is required.</p>


### 5. Internal responsibility

This document is the summary of SEIA (Social and Environmental Impact Assessment) and HCV assessment for the pro-nursery "Phase 1" 25 ha development within the Olam Palm Mouila concession (license No. 74/11 of 35,354 ha in Ngounie Province) and has been accepted by the Management of Olam Palm Gabon. We, the undersigned accept responsibility for the assessments and summary

Signed on behalf of SEIA assessors



Signed on behalf of HCV assessors



High Conservation Value Assessment  
Proforest Ltd, UK  
Associate Director: Dr Christopher Stewart

The assessment results for the SEIA and HCV assessments carried out by Ecosphere SARL and Proforest Ltd., summarized here, are accepted as part of the guidelines for managing the Olam Palm Mouila concession (license No. 74/11 of 35,354 ha in Ngounie Province).

Signed on behalf of Olam Palm



Arun Venkatesan  
Vice-President Sustainability  
Palm Division - Olam International

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