Area of new plantings and time-plan for new plantings

Olam Palm intends to start conversion and planting during the first year with Lot 8. The company has planned to convert and plant an area of 5,000 ha during the first year in the southern part of the Lot with the remaining area of Lot 8 planted during the second year. The mid-section to the southern part is comprised of moderately to severely degraded forestlands with patches of farms. Figure 17 below shows the proposed planting area in Lot 8.

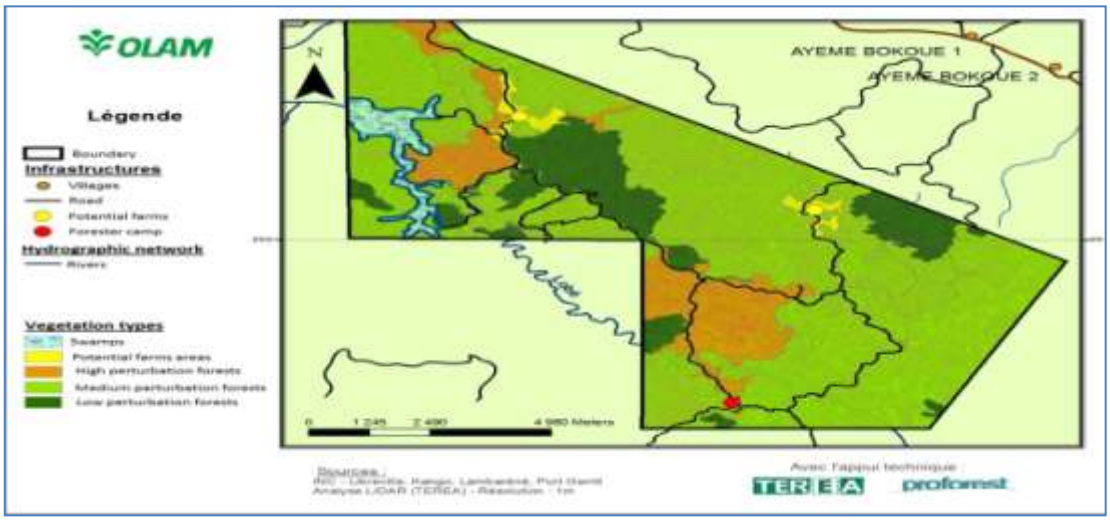


Figure 1: Map of the southern half of Lot 8 showing proposed planting area.

Within this area of new planting, Olam Palm is expected to respect all areas identified as “high erosion risk” and the recommended buffer zone limits for the rivers and wetlands.

Assessment Process and Procedures

Assessors and their credentials

The HCV assessment team consisted of 13 specialists and 11 technicians with diverse academic and professional background and vast experiences appropriate to the task. The team consisted of professionals from various fields including ecology, botany, sociology, ornithology, ichthyology, mammalogy, forestry and GIS mapping. The list of specialist members of the team and their roles in the assessment is presented in Table 1 below.

Table 1: Assessment team members and their roles in the assessment

Name	Key role in the assessment
Abraham Baffoe	HCV assessment team leader RSPO approved team leader for HCV assessment
Rodolphe Métayer	EIA team leader
Rémi Duval	Forest management, conservation planning and social science. RSPO approved HCV discipline specialist and assessor
Sophie Dirou	Socio-economic study and botanical assessment team leader
Julia Biloghe	Sociologist
Dr. Jean-Daniel Mbega	Ichthyologist
Jean-Hervé Mbé Vhé	Ichthyologist
Patrice Christy	Ornithologist

Olivier Pauwels	Herpetologist (desk base study only)
Michelle Lee	Conservation scientist (desk base study only)
Yoann Moreau	GIS expert
Louis Marie Ngoua	Botanical and faunal team coordinator
Sylvestre Awotie	Botanist / mammal expert

Assessment methods (data sources, data collection, dates, programme, places visited)

The methods used for this assessment was in two parts. The first was pre-assessment which consisted of desk and web-based research. The second part, which was the main assessment, consisted largely of field assessments to identify the different types of HCVs present in Olam Palm concessions and a series of stakeholder consultations. Below are the details of the main activities that constituted the methodology used for this HCV assessment.

Pre-assessment: The objective of the pre-assessment was to gather all relevant information and data for review in order to identify HCVs that are likely to be present in the concessions. This approach was extremely useful as it enhanced decision making on what additional expertise the team required for the field verification. It also allowed the team to get a better understanding of data deficiencies of the area which informed decisions on changes to the methodology. The draft methodology was finalised to be used for the field assessment after presentation to stakeholders for their comments and inputs during the first round of consultations. The team used the pre-assessment to study all legal requirements and legal restrictions relating to such large-scale industrial plantation development in Gabon. It was realised during the pre-assessment that obtaining good satellite imagery (one with no or very little cloud cover) of the area was rarely possible. Several authors estimate an 80% cloud cover of satellite imagery taken over the area. Since the assessment had to be undertaken during the rainy season it was almost impossible for the team to obtain an appropriate satellite image. Given this constraint, the management of Olam Palm contracted a company to undertake a Lidar survey which provided relevant mapping requirements for this assessment and could also be used for the plantation design and management. During the pre-assessment, the main guiding documents for this assessment which comprised the Global HCV and the draft Gabon HCV Toolkits were studied and critically analysed to help the team develop criteria and checklist for this assessment. Following analysis of the data and information gathered during the pre-assessment and upon the decision of Olam Palm, Lot 11 was excluded from the field assessment mainly because it was inappropriate for conversion to oil palm plantation.

Why Lot 11 was excluded from the field assessment

A scoping visit report by Proforest based on an aerial viewing of the concessions in October 2010 showed that the southern part of Lot 11 consisted of closed canopy forest while most of the remaining area consisted of marsh forest and wetlands. Additionally, almost half of Lot 11 was found to be located in an Intact Forest Landscape as mapped by WRI. Based on these findings and the requirements of the RSPO New Planting Procedure, the assessment team concluded that Lot 11 is inappropriate for conversion to oil palm plantations. Following this revelation, Olam Palm decided that Lot 11 should be excluded from the field verification of HCVs. However, a description of this Lot has been provided under section 3.1 given that this Lot was part of Olam Palm's concessions and originally included in the scope of this assessment.

Choice of remote data for the vegetation analysis

During the pre-assessment phase of this assessment, it was realised that the few

satellite images available for the assessment area were of poor quality due to heavy cloud cover. Lidar (Light Detection And Ranging) is an optical remote sensing technology that uses a laser beam to find range, which allows the mapping of physical features with very high resolution compared with radar. As Olam had already planned to undertake a Lidar survey of their concessions, there was a consensus with Olam that in addition to collecting data about topography and hydrography, the Lidar survey is adapted to produce vegetation cover of the concessions. A Lidar survey and processing of its data was undertaken in January 2011. The outputs include maps of topography hydrology and vegetation canopy heights in this report.

In undertaking the field verification for flora and fauna, 1991[1] vegetation maps were analysed as part of the planning process for the field verification[2]. Field visits to the concessions were undertaken to evaluate the quality of data obtained during the pre-assessment process. This was to obtain field data on the habitat quality and suitability for species of concern, and to identify specific sampling sites for collecting and verifying the ichthyologic data and information. Overall, the field assessment of flora and fauna in Lots 8 and 9 aimed to:

- provide a better understanding of vegetation cover of the concessions;
- assess vegetation stratification of the study area;
- assess floristic composition of the vegetation of the area with focus on presence and abundance of species of conservation concern;
- assess the tree density (tree/ha) and diameter classes;
- assess the presence of fauna species in the concessions, their distribution and their conservation importance
- identify degraded forest areas that could potentially be converted to oil palm plantation.

The field data were then analysed to identify the different biological or social HCVs present in the two concessions. The assessment methodology was based on the understanding that there will be triangulation of data from secondary data (pre-assessment), field verification, and the output of the Lidar survey. As detailed in chapter 1.2[3], the vegetation cover maps obtained from the Lidar survey (at 1m precision) were used for analysing vegetation stratification of the concessions.

Botanical and mammal survey

The field assessment was undertaken from 6 to16 December 2010. Given that the assessment was to be completed in the two Lots within a specified timeframe, two separate teams were formed to carry out the field verifications, each led by an experienced botanical and mammal survey expert. For quality control purposes, further verification was carried out in Lot 8 on 21st to 25th of December 2010 to check on the quality of work of the field teams.

The details of methodologies used for this assessment are:

Transects: Spotters walked along transects in a pre-defined direction (north-south) and recorded signs of presence of mammals along transects. The signs can be direct (seen, heard) or indirect (nests, droppings, dens etc). Indirect signs located on the ground are recorded not further than 1 metre from transects. All the other signs (chimpanzees' nests, vocalisations, direct observations etc) were recorded independently of the distance. This technique is generally used to reduce the biases that are likely to result from differences of density of the under-storey or herbaceous strata on the observation of indirect signs found on the ground. Also

[1] INC – Libreville, Kango, Lambarene, Port-Gentil – BG petrol Gabon – Land use map 1991

[2] MODIS or LANDSAT images were of poor quality and cloud cover did not allow any analysis of the area.

recorded are the signs of human presence, and forest type at every 50 meters and some remarkable elements (rivers, rocks, etc).

Botanical sampling plot: The main sampling units were 20m by 100 m plots, marked out every 500 meters along each transect. Each main sampling plot is divided in 3 sub-Lots:

- the first sub-plot of 10m by 50 m is identified at the right of the main plot based on the walking direction. In this sub-Lot, the species name and diameter of all trees above 10 cm dbh (diameter at breast height) are recorded.
- the second sub-plot of 20 m x 50 m dimension is identified to the left. In this plot, the species name and diameter of all trees above 20 cm dbh are recorded, and finally;
- in all the main sampling plots (20 m x 100 m), the species name and diameter of every tree above 40 cm dbh is recorded.

This is standard practice for forest botanical field sampling in the region.
The various transects were laid to ensure that:

- the different ecosystems in the concessions are assessed;
- they are perpendicular to the network of rivers in the concessions and;
- they are easily accessible by the field team.

The two next maps show transects in Lot 8 and 9.

Figure 2: Map of Lot 8 showing transects for the fauna and botanical surveys

Figure 3: Map of Lot 9 showing transects for the fauna and botanical surveys

Ornithological survey

The ornithological assessment was undertaken from 25th to 30th November and from 3rd to 8th December. The inventory of the avifauna was taken using visual and in most cases hearing and observations during walks in the villages and on the forest paths as well as movement through rivers using a canoe. During this period of year, birds' activities are known to be generally high, in particular vocal activity (as this is the breeding period for most bird species). This method therefore provided the much needed information on different species of birds that are present in Lots 8 and 9, especially for the canopy or under-storey species that are generally identified by their call. The only species that may have evaded being surveyed are night birds such as owl and nightjar since this assessment was limited to daytime survey. Some of these species nevertheless were observed at twilight (between dawn and sunset and between sunset and dusk). To authenticate the field survey findings, further survey was conducted in areas around Kango and Bifoun to allow comparison of avifauna of these areas to those identified to be present in Lots 8 and 9.

Ichthyology survey

The ichthyologic field assessment was conducted to determine whether there are concentrations of fish species of conservation importance such as RTE species. It was also aimed at identifying the main fish species in the network of rivers in the concessions and the level of disturbances these species can tolerate. The study was undertaken from 6th to 12th December 2010 at a pre-selected number of points along the rivers in Lots 8 and 9. The selected points of interest for the evaluation were chosen based on findings from preliminary assessment undertaken from 20th-21st November 2010 supported by bibliography and expert knowledge of the area. Seven sampling stations were defined for Lot 8 and 3 for Lot 9 during the preliminary survey (Table 2).

Table 2: Ichthyologic field sampling points

Lot	Point	River	GPS point	
			N/S	E
8	1	River North-West	S 00.04819°	010.20658°
	2	Middle Bikoume	N 00.01653°	010.20735°
	3	Bikoume mouth	N 00.15275°	010.03956°

	4	Lobé mouth	N 00.16272°	010.05266°
	5	Lobé tributary		
	6	Awala	N 00.09925°	010.11532°
	7	Upper Lobé	N 00.13069°	010.13127°
9	1	Azougue lake mouth	N 00.16074°	010.51942°
	2	North-east of Lake Azougue	N 00.17233°	010°50230°
	3	Bikarkare river (Afock Bidzi)	N 00.25393°	010.44727°

Most of the sampling points are located on Lot 8: this was because there was a lack of information and data on fishery resources of this area. The region of Ogooué and Lake Nguene and Azougue were well known by the team as the Ichthyologic team leader Dr Mbega (ichthyologist) had conducted extensive research including a doctoral dissertation in the area.
For each of these stations, a non-destructive sampling was conducted, using a wide range of fish-net of different mesh sizes. In general, the nets used are 20 metres long and 2 meters wide with mesh sizes of 10, 15, 35 and 50 mm. Nets were installed in the afternoon when possible and checked after one night the next morning. The size of the mesh used depended very much on the size of the river: nets of 10 to 15 mm mesh size were used on small rivers (less than 5 metres in width) and bigger mesh size were used on bigger rivers such as the Lobe, Bikoume and the Lake Azougue. Figures 20 and 21 below show the itinerary of the ornithologist and the ichthyologist in Lots 8 and 9 for this study.

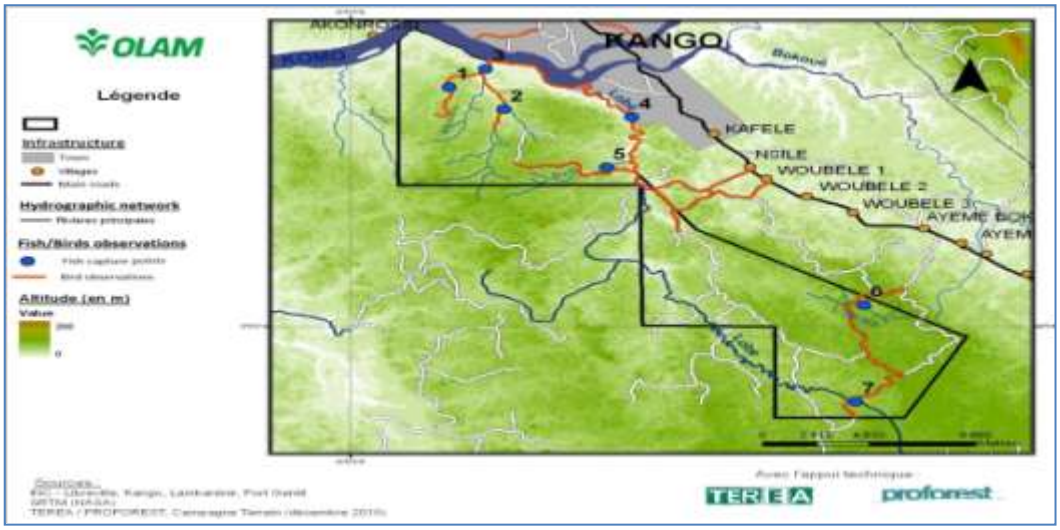


Figure 4: Map ichthyologic and ornithology sampling points in Lot 8

Figure 5: Ichthyologic and ornithology sampling points in Lot 9

Social survey

The socio-economic study was conducted in villages that could potentially be impacted by the Olam Palm Gabon project in the Kango-Bifoun region. The project area is not heavily populated (total population of 9,200). In recent times, there has been migration of people of this region into the big cities such as the national capital mainly because of inadequate job opportunities in the area. Major activity of the people in this region is smallholder agricultural activities. Fishing activities are the main pre-occupation of the people of Kango community and in the areas of Bifoun and Ebel Abanga where they are the main source of household income. In most of these villages, fishermen depend on these activities. Although there are active hunting activities, this is mainly to raise money for the purchase of essential commodities. Artisanal timber exploitation is carried out in the surrounding forest by the people of Lot 8 and along the banks of River Abanga, Ogooué and the two lakes by the communities in Lot 9. For Lot 8, the main sources of water are rainfall harvesting and in Kango from wells fitted with hydraulic pumps. The nearby streams provide water to people during the rainy season. For Lot 8, River Woubélé is the only one that serves as a source of household water to the people in nearby villages. On the contrary, villages in Lot 9 depend on those rivers and streams that are within a kilometre radius from the villages.

The objectives of the socio-economic study were to:

- identify key local stakeholders;
- understand the socio-economical patterns of the area: demography, administrative structure, ethnic composition, social organisation of the local communities including conflict management processes;
- inventory the infrastructures, especially for education, health and sanitation of those communities and;
- classify the importance of the different economic activities of the communities in the assessment area.
- Identify village institutions affecting forest resource management e.g. traditions and rules.
- Identify, with the local people, the main HCVs in the concessions
- find out from the local population the extent of their dependency on natural resources in the landscape
- estimate, with the local population, areas of critical cultural values.

The socio-economic survey was conducted during the period 22nd November to 12th December 2010 by a team of six experts. The method employed included:

Semi-structured interviews

This is an information collecting technique conducted in a fairly open framework which allow for focused, conversational, two-way communication between the interviewer and the interviewees. Semi-structured interviews are useful for providing and/or collecting information. Unlike the questionnaire framework, where detailed questions are formulated ahead of time, semi-structured interviewing starts with more general questions or topics. For this assessment, relevant topics such as local people's use of the concession area are initially identified and the possible relationship between these topics and the issues such as the type of use, frequency etc become the basis for more specific questions which do not need to be prepared in advance. Not all questions were designed prior to the survey but this approach allowed the team to discuss with the local people several important questions that were raised during the consultations.

Participatory mapping

This approach was extensively used for this assessment. In using this approach, a very simplified map of the area was presented to the various groups requesting them to indicate traditional and customary use areas. This exercise helps to delineate local communities' farms, hunting and fishing areas, NTFP harvesting zones and sacred and cultural sites.

Focus group

Using this tool allowed the social team to meet with focus groups which are specialised in different activities such as hunters, fishermen, women, etc. The focus group approach adopted enabled the team to have in-depth discussions on different activities that were being investigated with each focus group such as the specific locations of the activity, techniques used for hunting or fishing and quantity captured, species captured, seasonality of the activity etc.

Brainstorming

This tool is useful for generating ideas with a group of people. It stimulates creative thinking when researching a solution to a problem. It aims to generate as many ideas as possible on a specific theme without criticism or judgement[4]. It gives the interviewer a data base that could be used in the analysis. This approach was extremely useful in soliciting ideas from the community groups.

SWOT analysis

This tool was used for collective evaluation of the public facilities installed in the village, the basic needs of the population interviewed, the strengths and weaknesses of the various villages and the intervention required for the administrative services to satisfy those needs. A combination of this tool with the other tools allowed the social team to have a good idea of the composition of each community, to identify the potential conflict with and/or within a community, to estimate the local economy patterns, and to delineate the HCV 5 and 6. Before any meeting commenced in a particular village, the survey team presents the project to the local authorities, as detailed in Table 3. A combination of those tools and methodologies allowed the social team to have a good idea of the composition of each community, to identify the potential conflict with and/or within a community, to estimate the local economy patterns, and to delineate the HCV 5 and 6.

Table 3 Details of Local Authorities contacted

Date	Place	Authority
22/11/2010	Libreville	Estuaire province Governor
23/11/2010	Kango	Secretary General of Province

[4] SCHOLTES Peter. R, Le guide pratique du travail en équipe pour améliorer la qualité, Joiner, 1992, P21

		Town council Secretary General
		Departmental Council President
	Lambaréné	Moyen-Ogooue province Secretary General
24/11/2010	Ndjolé	Abanga Binié Head of Department
25/11/2010	Kango	Chef of Bokoué canton
		Kango mayor
		Kango Birgade major
		Kango Commissioner
04/12/2010	Bifoun	Akok Administrator
05/12/2010		Ebel Abanga Canton Chief
		Bifoun Centre Canton Chief
06/12/2010		Bifoun Health Centre chief doctor
		Bifoun Brigade chief
09/12/2010	Kango	Kango Health Centre chief doctor
04 to 09/12/2010	Bifoun	School directors

After meeting with the authorities of each administrative sector, the social team proceeded to meet with the chief representative of each community to present the project and organise a meeting with the entire community. This meeting was planned in advance to allow the chief to pass the message onto all villages and village authorities that are not always living within the community during the week. Overall, 37 villages located in 5 Cantons and 2 Provinces were surveyed. The total number of persons that attended the various communities and village meetings is 750.

Stakeholder consultation (stakeholders contacted, consultation notices and dates)

A broad range of stakeholders within Gabon were consulted in November 2010. The objectives of the stakeholder consultations were to:

- Ensure relevant institutions, organisations and individuals are informed of the project;
- Solicit their input into the HCV methodology, management and monitoring plans;
- Ensure information obtained by the assessment team is accurate and up to date;
- Solicit relevant information and data from institutions, organizations and individuals who have relevant information about the area through research, studies or by virtue of the institutions and organizations they work with.

All the stakeholders contacted were notified of the consultation at least one week before the consultation through email messages, telephone appointment or face-to-face verbal appointment. However, all local communities consulted received prior written notification through the community leaders. Although concerns and inputs varied across the wide range of stakeholders consulted, the commonest concerns included potential impacts of large-scale oil palm plantation on the biological resources of the landscape and the potential impacts on environmental services and possible overlap of land-use in the area. A major concern of most stakeholders in Gabon is the potential impact of the oil palm plantation development on the two lakes (Lakes Nguene and Azougue) that are located in Lot 9 which are known to

host a concentration of manatees. There were other concerns on impacts of a large scale oil palm plantation on the fishery resources in the network of rivers and lakes in the landscape and downstream impacts on the Pongara National Park.
In all, 19 institutions (Table 4) including ministries, research and academic institutions and NGOs were consulted during the assessment period.

Table 4: List of national stakeholder institutions consulted

Date	Organisation/ Institution	Focus on consultations	Contact person
15/11/10	ECOFAC	To solicit ECOFAC inputs on conservation values present in the concessions and the landscape	Mr. Jean-Michel Sionneau
16/11/10	CARPE and IUCN	Discussions on biodiversity and conservation values in the landscape	Mr. Constant Allogo
16/11/10	CIRAD	Discussions on forest permit already granted for the areas and level of degradation of forests	Mr Eric Forni
16/11/10	National Agency for Parks (ANP)	Discussions on planned or proposed parks in the landscape and biodiversity values in the landscape	Mr. Lee White
16/11/10	Fauna Expert from Zoology Department of the University of Oxford	To discuss species of conservation concern in the landscape	Ms. Michelle Lee
17/11/10	WWF-Gabon	Discussions on biodiversity values and ecosystems of conservation importance in the landscape	Mr. Pauwel De Wachter
17/11/10	PAPPFG (Project of Management of the Forest Small Permits in Gabon)	To discuss possible overlap of small permit with Olam Palm licensed areas	Faustin LEGAULT Project Director Vincent FESNEAU SIG Manager Leon Freez NZIMBILI SIG Expert
18/11/10	Ministry of Mines	Consultations and discussions on current and planned mining permits in the landscape	Mr. Constant Mbompa
18/11/10	National Cartographic Department	Discussions on maps for the landscape	
18/11/10	IRET	Consultations on current land use systems in the concession area and in the landscape and species of conservation significance	Mr. Yves Issembé
18/11/10	IRAF	Consultations on fishery resources of the lakes and rivers in the concessions and in the landscape	Mr. Jean-Hervé Mvé and Ms. Eva
18/11/10	Hydrologist/ Ichthyologist	Consultations on fishery resources of the area and methodology for the study	Dr. Yves Fermon
19/11/10	BRAINFOREST (Umbrella organisation of local Gabonese	Consultations on social and environmental issues that should be considered in the HCV assessment	Mr. Martial Djimang Mr Marc Ona General director

	NGOs)		
19/11/10	Gabon Institute to Support Development (IGAD)	Consultations on agricultural use of the concession area and planned agricultural research in the area	Mr. Christian Renardet
19/11/10	Zoological Society of London (ZSL)	Consultations on wildlife issues of importance in the concession and in the landscape	Dr. Sandra Ratiarison
22/11/10	Direction General of Water and Forests Administration	To discuss legal and customary use rights and to check whether there are any overlaps	Assistant Director General
23/11/10	WCS (Wildlife Conservation Society)	Consultations on wildlife issues of importance in the concession and in the landscape	Mr. Romain Callach Mr. Tim Rayden
25/11/10	Direction General of Agriculture	To discuss legal and customary use rights and to check whether there are any overlaps	Mr. Raoul Ndong (General Director)
26/11/10	Direction General Water and Forests Administration	To discuss legal and customary use rights and to check whether there are any overlaps	Director General

As part of the stakeholder consultation process, a summary of this report, including the methodology used, the HCVs identified and justifications for their identification and the management and monitoring recommendations were presented to various stakeholders on 17- 20th January 2011. The objective of this was to solicit stakeholders' inputs into the management recommendations being proposed for Olam Palm and to solicit their endorsement of the final recommendation.
Below are the comments raised by the stakeholders and responses provided.

Table 5: List of stakeholders consulted to solicit inputs and comments on the findings of the assessment

Date	Organisation	Contact person	Comments	Answer
18/01	ANPN	Lee White	Olam should study the carbon stocked in the actual forest prior to conversion. They should monitor the carbon stock changes to ensure that carbon stocks of the concessions are at least maintained at pre-plantation levels.	Measurement of carbon stocks is not included in the scope of this assessment since this has not yet been part of the HCV concept. This said, it is crucial that Olam Palm considers carbon stocking and accounting.
	WCS	Romain Calaque	Olam should implement the recommended management and monitoring recommendations to ensure that conservation values in the concessions are maintained. Olam should clarify whether the same strategy proposed for this project will be used for the 200,000 ha concession in the savannah zone that the company intends to convert to oil palm plantation.	Olam has committed itself to RSPO certification compliance management requirements and will hopefully implement all of the recommendations provided. To facilitate this, a table of all the management and monitoring recommendations necessary to maintain and enhance HCVs in Olam's concessions has been defined in the final report.
	Botanical and Fauna expert	Jean-Pierre Vande Weghe	The notion of endemism must be defined at the lower Guinean forest level and not only at the national level. The best definition to characterize the forest is "secondary old pioneer forests" The tern, which could be endemic of the Ogooué (potential sub-species of *Sterna hirundo senegalensis*) is nesting in Lake Nguene and should be considered in this study Riverine forests of the north of Lot 8 are submitted to freshwater tides and could potentially be interesting for science	This was taken into account when the team was considering the landscape. This remark has been included in the final report. Although not much is known about this species, the team has considered the precautionary principle. We also believe that the measures recommended to protect HCV 1.4 in Lot 9 will be sufficient to protect this specie. These forests have been considered under recommendations for implementing buffer zone.

	WWF	Pauwel De Wachter Bas Huijbregts Stephane Louembet	Olam should plan and prepare for potential conflict with elephants Expressed worries about impact of the project on hunting activities: increase activity (if external workforce contracted) /shifting to other areas Olam should negotiate with Ramsar international representatives to understand their obligation regarding Bas-Ogooué site.	This has been considered and included in the report. There is no doubt that Olam will have to bring additional labour from afar. Our recommendations are that should this be the case, their accommodation (temporary or permanent) should be located in areas where there is less chance for migrant workers to engage in hunting, such as setting up camps in the eastern part of Lot 8 to avoid workers hunting in the forests located in the west of the concession. We have also recommended to Olam to have a policy that prevents its workers from hunting. We have recommended that Olam should not undertake any activity in Lot 9 until negotiation with both the National and International representatives of Ramsar has been concluded on what is possible within the Ramsar site.
19/01	BRAINFOREST	Marc Ona	BRAINFOREST was concerned about possible conversion of Lot 9. Their concern was that there are villages in the concession and the fact that it overlaps with Ramsar site, means the area should not be considered for conversion into oil palm plantations. There was also concern about possible contamination of the water table in this project area which Olam should be aware of.	See response below Olam made the commitments to comply with RSPO certification requirements. This means that they will have to ensure that their operations comply with RSPO criterion 4.4 "*Practices maintain the quality and availability of surface and ground water*" and criterion 4.6 "*Agrochemicals are used in a way that does not endanger health or the environment. Appropriate recommendations have been provided to address this.*
20/01	CENAREST	Yves Issembé	Marsh forest/areas should be excluded from conversion into oil palm plantation. Confirmation that forests of Lot 8 are highly disturbed with no longer continuous canopy. Lidar data shows the predominance of "young trees".	These forests have been protected under HCV 1.4, 4.1.

List of legal, regulatory and other guidance referenced

Legal documents

- Convention de RAMSAR du 2 février 1971 relative aux zones humides d'importance internationale ;
- Convention CITES (Convention sur le commerce international des espèces de faune et de flore sauvages menacées d'extinction signée le 3 mars 1973 par 87 États, intégrée au Programme des Nations Unies pour l'environnement en 1991) ;
- Code forestier, loi n° 16/01 du 31 décembre 2001 ;
- Code de l'environnement (loi 16/93 du 26 août 1993 et ses décrets d'application :
    - Décret 541/PR/MEFEPEPN 15/07/05 règlementant l'élimination des déchets ;
    - Décret 542/PR/MEFEPN 15/07/05, règlementant le déversement de certains produits dans les eaux superficielles souterraines et marines.
- Décret n° 692 du 24 août 2004 fixant les conditions d'exercice des droits d'usages coutumiers en matière de forêt, de faune, de chasse et de pèche ;
- Arrêté n° 118 du 1 mars 2004 portant réglementation des activités forestières, minières agricoles, aquacoles, cynégétique et touristique à l'intérieur d'une zone tampon.

Regulatory permits and property deeds

- Convention portant concession de baux emphytéotiques entre la République Gabonaise, représentée par Son Excellence le Premier ministre et Olam Palm Gabon ;
- Décision portant autorisation d'exploration des concessions forestières d'une superficie de 51.920 ha, N°0000303 MEF/SG/DGEF ;
- Documents cartographiques du projet Olam Palm Gabon / Service cartographique – D.G.E.F – November 2010.

Summary of the SEI Assessment Findings

Summary of key findings in respect of socio-economic impacts to country, region and local communities

In oil palm plantations, construction of roads (or other infrastructure related to traffic, such as bridges or drains) on bare soil, significantly increase soil erosion due to poor implementation and / or improper construction techniques. In view of the influence of drainage on the site, the risk of erosion of trails laid out across rivers is even more significant. The opening up of roads will facilitate access for poachers to areas potentially rich in species of large bodied mammals. The risk of trapping by wire (traditional hunting method for collecting game regardless of species or selective sorting) and hunting with firearms remains a potentially significant impact on wildlife.

Summary of key findings in respect of socio-economic impacts of emergent communities (workers, suppliers, etc)

The oil palm plantation project will no doubt create jobs in the area and hence could result in an influx of people into the region in search of jobs. Although this is expected to increase household income and diversify income sources, a high concentration of population on a limited area results in a significant impact, mainly related to loss of vegetative cover, implementation of infrastructure and equipment, and discharge of solid waste and wastewater (water from kitchen, toilet and laundry

containing fats, soaps, detergents and various waste and cleaning products such as dishwashing liquid, disinfectants). Each base-camp will be supplied up to of 30,000 gallons per day of water. Pumping that water into the existing drainage system may cause a serious decrease in flow, which can have severe consequences on aquatic ecosystems present. The presence of a relatively high concentration of people in remote sites will increase poaching and illegal fishing. Practised by construction workers (either by themselves or by villagers), these activities will put significant additional hunting and fishing pressure on already sparse wildlife.

Issues raised by stakeholders and assessors' comments on each issue

The risks of converting Lot 9 were consistently raised and discussed during the stakeholder consultations (table 4). There were also some issues raised during the socio-economic survey with the local communities. It is expected that people from other parts of Gabon will migrate to the region in search of jobs when the project takes off. There were some concerns that an influx of immigrant workers into the area could be a source of conflict with local populations. Some concerns relating to water pollution were also raised. These concerns stem from the fact that the concessions are located in two major watersheds: the watershed of River Ogooué which the people of Lambaréné (about 15 000 inhabitants) and Port Gentil (nearly 80 000 inhabitants) depend on and that of Komo which the people of Libreville depend. To this extent, if chemicals are released from the plantation, polluting the watershed, more than a third of the population of Gabon could be affected. In addition, the wetlands of Lot 9 are likely to be breeding grounds for many species of fish and manatees. Pollution of the rivers in the area could have very serious consequences for the wetland ecosystem and the species that depend on it. The issue of carbon dioxide emission as a result of conversion of degraded forestland was also raised several times. For this reason, some stakeholders suggested Olam Palm considers CO2 accounting.

Summary of the HCV Assessment Findings

Overall HCV identification and proposed measures to maintain and enhance those identified.

The table below gives a summary of HCVs present, potentially present or absent in Olam Palm concession Lots 8 and 9 in Gabon, with the status of HCVs noted for Lots 8 and 9 separately. Although Lot 11 is not to be considered for conversion into oil palm plantation, the presence of HCV 1.1 and HCV 2 has been recognised for Lot 11.

HCV	Description	Present	Potentially present	Absent
HCV1.1	Protected areas			
Block 8	Pongara National Park			
Block 9 and 11	Bas-Ogooué RAMSAR site			
HCV 1.2	Concentrations of rare, threatened or endangered species			
Block 8	Manatee (*Trichechus senegalensis*) and chimpanzee (*Pan troglodytes*)			
Block 9	Manatee (present) and Long snouted crocodile (*Mecistops cataphractus*)(Potential)			
HCV 1.3	Concentrations of endemic species			
Lot 8	Not applicable			
Lot 9	Not applicable			
HCV 1.4	Seasonal concentration of species			

Block 8	Lower part of River Lobe and Bikoume watershed			
Block 9	The entire hydrological system of River Abanga, Lake Nguene and Lake Azougue and the associated flooded areas			
HCV 2	Large landscape level forests			
Blocks 8 and 9	Not applicable			
Block 11	Intact Forest Landscape Lope-Chaillu-Louesse			
HCV 3	Rare, threatened or endangered ecosystems			
Block 8	Not Applicable			
Block 9	Not applicable			
HCV 4.1	Forest areas critical to water catchments			
Block 8	Traditional fishing areas of Awala and Bikoume rivers and the banks of Komo estuary; riparian forest protecting Woubele river which is a major source of drinking water for the local communities			
Block 9	Forest protecting Abanga river, Lake Nguene, Lake Azougue and their tributaries and the flooded area			
HCV 4.2	Forest areas critical to erosion control			
Block 8	Hilly areas with slopes above 20˚			
Block 9	Hilly areas with slopes above 20˚			
HCV 5	Forest areas fundamental to meeting basic needs of local communities			
Block 8	Customary use of timber for construction (NB agricultural lands within concession)			
Block 9	Customary use of timber for construction; Collection of NTFPs (Andok and Coula) (NB agricultural lands also within the concession)			
HCV 6	Forest areas critical to local communities traditional cultural identity			
Block 9	Akouk, Afog Bidzi, Ebel Abanga (cemeteries in the villages); fishing campsite around Lake Nguene			
Block 8	There are no HCV 6 in this Lot			

In order for Olam to meet the RSPO certification process it is crucial that the company implements the recommendations described in this report. To ensure that the field operations follow the steps indicated in this report (and listed in the following table), Olam should designate a responsibility for the monitoring of the field implementation of the measures for protecting and maintaining HCVs in their concessions. This person should be given the authority, time and resources to train staff properly, prepare a robust SOPs including recommendations contained in this report and to organise the plan activities before the conversion operations, and to monitor them in the field.

Legend	
Actions to be implemented:	
Before conversion	During conversion	After planting	

Objective	HCV ref	Action required	Timeline	Monitoring measures/proofs
<u>Maintaining water quality and the HCVs it supports</u>				
Protection of rivers	4.1	Evaluate Awala/Lobé confluence and the extent of swamp area This area, representing a fishing area for women of local communities is classified as HCV 4.1		Area included in GIS database as HCV 4.1
	4.1	Evaluate origin of the river that passes through Ayeme village This river is HCV 4.1 if it originates from Lot 8.		Area included/excluded from GIS database as HCV 4.1
	ALL	Formation of "HCV field team" to be responsible for training and ensuring that field workers adhere to management recommendations for HCV areas		/
	1.2,1.4, 4.1	Field team to delineate 10 meter buffer zones on both sides of streams of less than 5m in width		Measurement of width of rivers/buffer zone width Buffer zones included in GIS database
		Field team to delineate 50 meter buffer zones on major rivers with widths of 5-20m width		Measurement of width of rivers/buffer zone width Buffer zones included in GIS database
		Field team to delineate 100 meter buffer zones on both sides of big rivers with width greater than 20 m (e.g. Lobe upper course)		Measurement of width of rivers/buffer zone width Buffer zones included in GIS database
		Field team to delineate Komo estuary protection area		Area delineated and included in GIS

Objective	HCV ref	Action required	Timeline	Monitoring measures/proofs
Protection of rivers	1.2,1.4, 4.1	Land preparation teams are trained to respect river buffer zone		Evidence of training and demonstration of understanding of buffer zones management and monitoring recommendations by field team Buffer zone recommendations respected
		Land preparation teams are provided with maps of areas to be protected		Existence of operational maps with all areas for protection clearly indicated. Copies of these maps available to field team leaders
		Land preparation teams are trained to convert forest laterally to river buffer zone to avoid having it destroyed by falling trees		No impact on buffer zones Regular inspection and measurements to assess whether guidelines are being adhered to in practice
	ALL	Field team to control respect of river buffer zones If buffer zones are not respected, corrective actions must be taken immediately		Corrective actions record
		Bridges and river crossing must be pre-planned		/
		Bridges and river crossing must be done according to recognised best practices		Check erosion around bridges
Erosion control	ALL	HCV or environmental management field team trained to implement and respect erosion control recommendations		Records of training Proof of training
	1.2,1.4, 4.1, 4.2	Areas with slopes above 20 degrees are excluded from conversion		Area delineated on the ground and recorded in GIS database
		Areas with slopes between 5 and 20 degrees are identified		Area delineated on the ground and recorded in GIS database
		All areas with slopes categories are mapped in GIS database		GIS database – Slopes map
		Conversion team/Road construction team trained to implement erosion control measures		Records of training Proof of training

Objective	HCV ref	Action required	Timeline	Monitoring measures/proofs
		Roads are planned prior to conversion to avoid being perpendicular to slopes and to avoid fragile soils		Road map – Contour map
		SOP for terracing is completed before conversion		SOP
		Cleared vegetation is windrowed		Windrowed in the field
		Gutters are built according to best international practices		Frequency/slope
		Road soak away are built depending on down slope of road being constructed		Frequency/slope
		Silt pits are built to avoid sediments being discharged into rivers		/
Erosion control	1.2,1.4, 4.1	Appropriate leguminous cover crops that do not have invasive properties are selected to avoid invasiveness		Olam to justify the choice of leguminous crop
		Cover crops are planted immediately after conversion to avoid erosion of soils during the first rains		Date of planting
Monitoring of water quality	1.2,1.4, 4.1	Annual water quality testing in the following rivers: • Lobe river (near the bridge crossing between the northern and central parts of Lot 8) • Bikoume river mouth (if North part being converted) • Woubele river • River crossing Ayeme Bokoue village		Test results
		Annual meetings with the following community to control water quality: Woubelé 2, Woubelé 3, Ayeme Bokoué and Agricole		Meeting minutes
		Bimestrial evaluation of siltation of rivers		Evaluation results Records of remedial actions taken if any
		SOP in place for Corrective/Preventive action to be taken in case of degradation of water quality		Documented SOP
<u>Respect and Maintain local populations basic needs</u>				
Implementing FPIC	5, 6	Nominate a Community Representative Officer		/
		Define Olam Palm's FPIC process and contract competent body to undertake FPIC		SOP

Objective	HCV ref	Action required	Timeline	Monitoring measures/proofs
		Identify representatives for each community		Community representatives list
		Define conflict resolution procedures with local communities Agree on mode of compensation and payment process with local people to be affected by the conversion operations		SOP List of parties to be affected Documented agreed means of compensation and mode of payment
		Delineate HCVs areas with communities		Area included in GIS data base
		Negotiate management decision for HCV areas following Olam's FPIC procedures		Signed agreement with community/concerned people
Monitoring results		Regular (twice a year at the beginning of the project, minimum once a year after relation with communities are strengthened) evaluation of changes in communities needs		Meeting minutes
		<u>Fauna conservation programme</u>		
Assessment of species and population of mammals	1.2	Mammal survey of the northern part of Lot 8 during the major rainy season		Survey report
		Mammal survey of the northern part of Lot 8 during the major dry season		Survey report
		Definition and delineation of conservation areas in the northern part of Lot 8		Survey report – GIS database
		Definition and delineation of habitat corridors in the North and South of Lot 8 to enable animal movement between WE and W of the plantation		Survey report – GIS database
Hunting and access control	1.2	Seek and reach an agreement with Bitoli permits for controlling hunting and access on the road in the Southern part of Lot 8		Agreement document signed as part of FPIC process
		Plan workers' campsite/housing in existing city/villages to reduce the impact of external worker hunting on wildlife		Campsite plan – GIS database
		Olam shall implement community educational programme on hunting particularly during the closed season and RTEs		Records of any educational or any other programme undertaken to address issues with hunting particularly during the closed season Records of community education conducted.
		Olam shall have a clear no hunting policy for employees		Company policy

Objective	HCV ref	Action required	Timeline	Monitoring measures/proofs
		Olam shall strive to prohibit hunting within its concessions		Company policy
		Olam shall control access to its concessions for hunting particularly during the close season as defined by the Forest law N0016101		Company policy – SOP – Control records
Elephant conflict	1.2	Olam should evaluate the feasibility of measures to avoid conflict with elephants		Conflict prevention record
		<u>Conversion operation</u>		
	N/A	Conversion operations shall start during the dry season		Records on starting dates for operations
	N/A	Conversion should start from the eastern boundaries to the western one		/
		<u>Scientific Research</u>		
	N/A	Development of partnership with research institutions on reptile research		/
	N/A	Development of partnership on Hydrology research		/
		<u>Implement recommendation in the field</u>		
	N/A	Designation of a responsible person for monitoring the field implementations of HCV management recommendations		/

Documentation showing the Obtained Free, Prior and Informed Consent of any indigenous people affected by the development of the concession

Although there are no indigenous people in the region where the concessions are located, a handful of people in communities closer to Lot 8 who farm in this concession will be affected. Additionally, local people with permits to harvest trees in the area will be affected by the conversion activities if ample time is not given to them to harvest those trees. Olam Palm through the FPIC process which started recently is identifying these groups for commencement of negotiations. Additionally, communities such as Akok, Afog Bidzi and Ebel Abanga which are located in Lot 9 would like the boundaries of this concession to be redefined to ensure the plantations are established at least 5 km from the communities. However, it has been recommended that Lot 9 be excluded from any conversion activities due to it being in a Ramsar site in addition to the potential impacts of any conversion activities on the two lakes and the associated flood plains as well as the endangered species in the lakes and the network of rivers in the area.

Data sources and quality

The limitations in data collection and analysis of biological data were mainly due to lack of availability of good satellite imagery and accurate mapping information in Gabon. Additionally, since the field assessment coincided with the major rainy season in Gabon, most parts of Lot 9 were heavily flooded, a situation that hindered effective botanical and mammal surveys in those areas. The main limitations of the different aspects of this assessment are detailed below:

Landsat and satellite images: The quality of all Landsat and satellite images obtained by the team for the identification of different ground cover was found to be of a very low quality due mainly to high cloud cover in Gabon. However, this problem was resolved through engagement of Tridex Solutions by Olam Palm to undertake a Lidar survey of the concessions. The output of this survey was the major source of topographical and vegetation cover maps used for the slope and land cover analysis of this assessment.
Botanical and mammal survey: There are two major limitations to the botanical and mammal survey. First, the assessment team could not survey one of the five transects (transect C) planned for Lot 8 mainly because of the danger posed by seismologic studies for oil exploration undertaken by Oil India in the south-central part of this lot. The field team could not undertake extensive field botanical and fauna survey in the north-east to the central part of lot 9 due mainly to heavy flooding. To address this, a survey was organised on transect C during the field verification quality control measures. In spite of these limitations the data obtained from the field combined with those from high resolution maps of vegetation cover (1m resolution) and the secondary data obtained provided sufficient reliable data for ecosystem classification, habitat quality assessment and conservation values in the area.

The HCV toolkits used for this assessment

The HCV toolkits used this assessment are the Global HCV Toolkit and the draft HCV National interpretation document for Gabon. This draft document was prepared based on national stakeholders workshops led by WWF Gabon and facilitated by Proforest. All the six HCVs were assessed using these documents and other HCV assessment guidelines developed by Proforest.

Decisions on HCV status and related mapping

HCV	Findings	Management objective	Spatial presence	Status of mapping	Management recommendations
1.1	Present in Lot 9 and potentially present in Lot 8	To respect the objectives and maintain the intended functions of the Bas-Ogooué RAMSAR site and protected areas.	Distinct	Mapped	Olam Palm should not begin operations in Lot 9 until negotiations are concluded with the international and national representatives of Ramsar to agree on Olam's obligations in the conservation and wise use of the natural resources in the site. All recommendations provided for Lot 8 on management and monitoring of HCV will apply should it be agreed for Olam to undertake oil palm plantation programme in Lot 9. Respect for buffer zones of 5km for protected areas and riverine buffer zones for rivers in the concessions.
1.2	Present in both Lot 8 and 9	To promote maintenance of the quality and functionality of water bodies in the concessions to enhance use of the rivers by aquatic species	Few but widely distributed	Partially mapped	Riparian vegetation and buffer zones of 10 metres for smaller streams of less than 5 metres in width, 50 metre buffer for rivers greater than 5 metres in width but less than 20 metres and 100 metres for big rivers with width greater than 20 metres. These are established mapped and respected.
1.3	Absent in both Lot 8 and 9			/	
1.4	Present in both Lot 8 and 9	To promote maintenance of the quality and functionality of water bodies in the concessions to enhance seasonal use of the rivers by aquatic species	Few but widely distributed	Partially mapped	Riparian vegetation and buffer zones as explained under HCV 1.2 above for rivers and other big rivers are established, mapped and respected.
2	Present in Lot 9 but not in 8	To ensure that the oil palm	Distinct	Mapped	Recommendation for Lot 9 is to exclude the Lot from any conversion activity until Olam Palm has

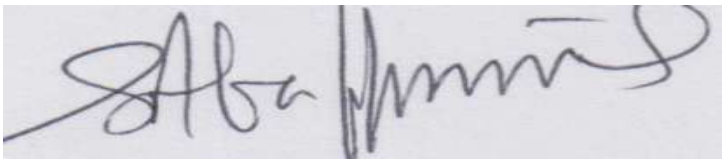
		plantation development does not reduce the ecological functioning of the Pongara National Park and the Intact Forest Landscapes in the area			confirmed the western boundary with the Ramsar secretariat and Gabonese authorities. With regards to Lot 8, management recommendations had focused on appropriate management of hydrological systems of this Lot to avoid pollution of degradation of the network of rivers in this concession which could subsequently lead to pollution of the Pongara National Park, a wetland conservation area located at the north-east of Lot 8 and drained by water from rivers in Lot 8
3	Absent in both Lot 8 and 9		N.A	N.A	
4.1	Present in both Lot 8 and 9	To ensure perpetual flow of clean water for local communities by setting aside and maintaining appropriate buffer zones for all rivers in the concessions.	All rivers in the concessions	Partially mapped	Management recommendations include protection and maintenance of buffer zones, erosion control practices for all areas with slopes of above 5 degrees.
4.2	Present in Lot 8 to a large extent, and to a much lesser extent in Lot 9	To avoid erosion problems caused by the oil palm plantation development especially in northern parts of Lot 8	Various but diffuse in Lot 8 and very small areas of lot 9	Partially mapped	Recommendations include excluding planting in areas above 20 degrees while implanting strict erosion control measures in areas with slopes above 5 degrees but less than 20 degrees.
5	Present in both Lot 8 and 9	To ensure that the oil palm plantation development programme does not threaten communities' access to their basic needs.	Assorted and scattered	Not mapped	Using FPIC and participatory mapping to delineate areas to be protected in addition to implementing erosion control and buffer zones recommendation.

6	Present in only Lot 9	To ensure that fishing campsites at Lake Nguene and cemeteries for the Akouk, Afog Bidzi, and Ebel Abanga communities are mapped and excluded from planting if an agreement is reached that Lot 9 can be converted.	Assorted and scattered	Partially mapped	Subject to recommendations under HCV 1.1, HCV 6 management will be implemented for Lot 9 through delineation and mapping of cemeteries and traditional fishing camps around Lake Nguene

Internal Responsibility

Formal signing off by assessors and company

Signed on behalf of HCV assessors



Abraham Baffoe
HCV assessment team leader