

Assessment of High Conservation Values in Okomu Extension 2 Concession, Ovia Northeast and Uhunmwode LGAs of Edo State, Nigeria



Full HCV Assessment

Final | Version | December 2015

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- **Location of assessment:** Edo State, Nigeria
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- **Size of assessment area (ha):** 11,416 ha
- **Planned land use for assessment area:** oil palm
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- **ALS Tier rating:** Tier 1

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List of acronyms and abbreviations

| | |
|--------|---|
| ALS | Assessor Licensing Scheme |
| CEPF | Critical Ecosystem Partnership Fund |
| CITES | Convention on International Trade in Endangered Species of Wild Fauna and Flora |
| CR | Critically Endangered Species |
| DBH | Diameter at Breast Height |
| E S | Endangered Species |
| FAO | Food and Agriculture Organisation of the United Nations |
| FR | Forest Reserve |
| HCV | High Conservation Value |
| HCV RN | High Conservation Value Resource Network |
| IUCN | International Union for Conservation of Nature |
| LC | Least Concerned Species |
| NBSAP | National Biodiversity Strategy and Action Plan |
| NNPC | Nigerian National Park Services |
| NPC | National Population Commission of Nigeria |
| NPP | New Plantings Procedures |
| ONFR | Owan North Forest Reserve |
| P & C | Principles and Criteria |
| PA | Protected Areas |
| RSPO | Roundtable for Sustainable Palm Oil |
| RTE | Rare, Threatened and Endangered Species |
| NT | Near threatened species |
| VU | Vulnerable Species |

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1 Introduction and background

1.1 Purpose of the HCV assessment

This is a report of a full High Conservation Value Assessment (HCV) commissioned by Okomu Oil Palm Company (OOPC) Plc located in Edo State of Nigeria. The report covers background of the assessment area, assessment process steps and methodology, the findings, conclusions and recommendations of a comprehensive and participatory independent HCV assessment of a proposed new oil palm development by OOPC on 11,416 ha of land located in a de-reserved areas of the Owan Forest Reserve (OFR) in the Ovia North East and Uhumwode Local Government Areas of Edo State in Nigeria. The assessment was carried out from September to December 2015 by Proforest. The report explains the HCVs that were identified in the concession for the proposed oil palm development. This report also provides recommendations on management and monitoring of HCVs that OOPC could adopt and implement to ensure appropriate management and to safeguard the HCVs that were identified. However, the report neither provides a detailed land use plan for the layout of the proposed plantation in the plantable areas of the concession nor does it contain detailed standard operating procedures (SOPs) that must guide OOPC operations. These are operational requirements which OOPC is expected to develop for use prior to the commencement of plantation development activities.

About Okomu Oil Palm Company Plc

OOPC was established in 1976 as a Federal Government of Nigeria's Pilot Project aimed at rehabilitating oil palm production in Nigeria. At inception, the pilot project covered an area of 15,580 ha of land located in a de-reserved areas of BC 9 and 10 of the Okomu Forest Reserve in the Ovia South West Local Government Area of Edo State in Nigeria. OOPC acquired the state-owned project on 18th October 1986 and the site became the Main Estate of OOPC. In 2001, OOPC acquired a further 6,119 ha of land approximately 5-10 km to the east of the existing plantation from three different companies: Iyaye Brothers, Farms De Imienfan (Nigeria) Ltd and Aghimien & Company Ltd, all through "Deed of Assignments" for the development of rubber and oil palm plantations. This parcel of land is called Extension 1 and it is located near Okomu National Park which is about 52 km south-west of the current Extension 2 concession.

The latest of OOPC's acquisitions is the Extension 2, which is the subject of this assessment and was acquired on 28 November 2013 from A & Hatman Ltd. The area was formerly part of BC 12 of the Owan North Forest Reserve which, similar to Okomu Forest Reserve, was de-reserved and allocated for agricultural development. The total land area of Extension 2 is 11,416 ha assigned for a period of 99 years and covered with a Certificate of Occupancy Number EDSR 15666 dated 3rd May 2006 and registered as No 40 at Page 40 in Volume B. 237 in the Land Registry at Benin City, Edo State. Of the 11, 416 ha, about 760 ha was planted with oil palm by the previous owner from 1997-2009 whiles 3,856 ha of heavily farmed areas in the southern section was cleared by Okomu in early 2015 and prior to the HCV assessment.

As of June 2015, the OOPC operations covered a total of 33,158 ha of land across three separate lease areas including the Main Okomu Estate and Extension 1 (both in de-reserved areas of Okomu Forest Reserve) and Extension 2 which is located in de-reserved areas of Owan Forest Reserve also in the Edo State.

Okomu Oil Palm Plc is a subsidiary of Socfinaf which is an agro-industrial group of companies specialised in upstream plantation development and downstream processing operations.

Socfin FR, of which Socfinaf is a subsidiary of, is an agro-industrial group of companies operating in ten countries in Africa and South-East Asia. Originally a Belgian company, the Socfin FR Group has its origin in plantation agriculture in the 1890s in Belgian Congo and acquired its first Malaysian plantation in 1905, although Socfin FR was not officially founded until 1909. The Socfin FR Group is based in Luxembourg, with operations split between Asia (Socfinasia) and Africa (Socfinaf). The group is primarily involved in rubber and palm oil production

Socfin Indonesia is a member of the Roundtable on Sustainable Palm Oil (RSPO) and has certified plantations in Indonesia. Socfin FR is therefore committed to ensure that all of its operations in Socfinaf are members of RSPO and subsequently achieve RSPO certification.

RSPO requirements on HCVs

The RSPO principles and criteria contain a set of mandatory requirements for new oil palm plantations intending to be certified under the RSPO certification scheme. These requirements are contained in Principle 7 of the RSPO principles and criteria (P&C), and requirements on HCV in Criterion 7.3, which states that *"New plantings since November 2005 have not replaced primary forest or any area required to maintain or enhance one or more High Conservation Values"*. The RSPO's New Planting Procedure (NPP) which is currently undergoing a review also contains additional requirements for new plantings from 1st January 2010. Therefore the unplanted areas of Okomu Extension 2 which has never been used for oil palm plantation development must undergo the RSPO NPP process in addition to complying with all the requirements under Principle 7 of the RSPO P&C.

1.2 Overview of the reference used

High Conservation Values (HCVs) refer to biological, ecological, social or cultural values considered outstandingly significant or critically important at the national, regional or global level and which require special measures for their maintenance and/or enhancement. The HCV concept aims to identify whether these values are present and to develop appropriate management and monitoring strategies to maintain and/or enhance the values. The concept was originally developed in 1999 by the Forest Stewardship Council (FSC) and has since been widely used in the context of FSC certification for sustainable forestry. The HCV approach was adopted by the RSPO and incorporated into the RSPO's first P&Cs in 2005. The six categories of HCVs and their definitions are listed in Box 1.

A key objective of this HCV assessment report is to undertake a comprehensive and participatory assessment in line with current best practice guidance on HCV identification, management and monitoring as required by the HCV Resource Network Assessor Licensing Scheme. Therefore, this report refers in particular to the following guidance documents:

1. Brown, E., N. Dudley, A. Lindhe, D.R. Muhtaman, C. Stewart, and T. Synnott (eds.). 2013 (October). Common Guidance for the identification of High Conservation Values. HCV Resource Network. <https://www.hcvnetwork.org/resources/cg-identification-sep-2014-english>

2. Brown, E. and M.J.M. Senior. 2014 (September). Common Guidance for the Management and Monitoring of HCVs. HCV Resource Network.
<https://www.hcvnetwork.org/resources/cg-management-and-monitoring-2014-english>

There is currently no HCV National Interpretation for Nigeria. However, as an alternative, this report makes reference to other reports from within the West and Central African regions, the HCV National Interpretations (NIs) available for Ghana (Rayden, T. et al, 2006) and Gabon (Steward, C, and Rayden, T., 2008). However, these NIs are now over 7 years old and thus are not considered comprehensive. A more recent reference used here is ZSL's guide (ZSL, 2013) to conserving HCV species and habitats in West African oil palm landscapes.

This HCV assessment report makes reference to numerous other references throughout that are cited whenever used in the document and listed in full in the References.

Box 1: HCV definitions

HCV 1: Concentrations of biological diversity including endemic species, and rare, threatened or endangered (RTE) species that are significant at global, regional or national levels.

HCV 2: Large landscape-level ecosystems and ecosystem mosaics that are significant at global, regional or national levels, and that contain viable populations of the great majority of the naturally occurring species in natural patterns of distribution and abundance.

HCV 3: Rare, threatened, or endangered ecosystems, habitats or refugia.

HCV 4: Basic ecosystem services in critical situations including protection of water catchments and control of erosion of vulnerable soils and slopes.

HCV 5: Sites and resources fundamental for satisfying the basic necessities of local communities or indigenous peoples (for example for livelihoods, health, nutrition, water), identified through engagement with these communities or indigenous peoples.

HCV 6: Sites, resources, habitats and landscapes of global or national cultural, archaeological or historical significance, and/or of critical cultural, ecological, economic or religious/sacred importance for the traditional cultures of local communities or indigenous peoples, identified through engagement with these local communities or indigenous peoples.

2 Description of the assessment area

2.1 Site description

The HCV assessment area is an 11,416 ha concession located in BC 12 of the de-reserved areas of Owan North Forest Reserve (ONFR) located in the Edo State of Nigeria (Figure 1). Edo State is located in South-central Nigeria. It is bordered on the west by Ondo State, southeast by Delta State and northeast by Kogi State. The concession lies between Latitudes 6° 38' - 6° 48' N and Longitudes 5° 48' and 5° 55' E. The climate of the area is tropical with a low annual range in temperature. The area has a tropical climate

characterized by two distinct conditions of wet and dry seasons while April-October is wet with a brief lull in August. The dry season occurs during November-March. Annual rainfall in the landscape is high towards the coast, averaging 2500 mm near the coastal areas and 1500 mm in the northernmost part of the state. Temperatures across the state is relatively high (22-36°C) with a narrow variation in seasonal and diurnal ranges. The soil and weather conditions make the area very conducive for oil palm development. At its closest point, the concession boundary is about 2 kilometres from Uhiere off the Akure-Benin road. The concession lies within the Benin Formation (coastal plain sandstone), which is of Pliocene-Pleistocene age and consists of yellow and white sands with pebble horizons. The formation has clays and sandy-clays in lenses and is partly marine, partly deltaic, and partly fluvio-lacustrine in origin. The beds vary from deltaic sands to fully marine clays and shales. The terrain is characterized by highly undulating ridges to the north-eastern parts and nearly flat topography from the mid-section to the southern part. A few rivers, such as the *Jemide* and *Owan* Rivers, which have widths of less than one metre at narrowest sections and about 2-4 metres in the widest sections drain through the concession and eventually join the Osse River and this then flows into the Benin River which flows into the Atlantic Ocean.

The current vegetation of the concession consists of the following:

- 760 ha of mature oil palm plantation planted between 1997 and 2006 in the mid-section of the southern part of the concession
- A mosaic of abandoned farms and farmlands, mainly grasslands, plantain and cassava, in both the southern and northern sections of the concession
- Pockets of active farms in the northern section of the concession whose owners were compensated by the previous lease holder
- Pockets of forests in swampy areas, along rivers and on steep slopes; and
- Approximately 3,856 ha of recently cleared area of abandoned farm and grasslands in the southern section of the concession

As previously stated, the concession is located in BC 12 of the Owan North Forest Reserve which according to the State Forest Authorities has been de-reserved for agriculture development due to its level of degradation. The de-reservation of the degraded portions of the Owan Forest Reserve for agriculture development is consistent with the policy directions and practices of the Edo State Government where forest reserves that are badly degraded as a result of illegal logging and encroachment to the extent that natural regeneration is impossible are earmarked for Taungya System of farming and subsequently for agriculture development. Additionally, the allocation of the degraded portions of the reserve for agriculture development by the State Government is consistent with Nigeria's Land Use Decree and Land Use Acts of 1978.

The Land Use Decree No 6 of 1978 guides land ownership and tenure in Nigeria. By this decree, the authority to own any piece of land, including forestry land, is exclusively vested on the Governor of the State where the land is located. "The objective of this Decree was to make land easily accessible to every Nigerian for development purposes in any part of the country and to vest the control of such development in the State Government so that the use of the land would be monitored and controlled" (World Bank, 1992). The implication of this decree as far as forest reserves are concerned is that, these lands belong to the various State Governments.

The 11,416 ha concession was originally allocated to Iyaye Brothers by the State Governor for a period of 99 years for agriculture development. The original Certificate of Occupancy (C of O) with Number EDSR 15666 is dated 3rd May 2006 and registered as No 40 at Page

40 in Volume B. 237 in the Land Registry at Benin City in the Edo State of Nigeria. The previous lease holder of the land, Iyaye Brothers and A & Hatman Ltd planted only 760 ha of the land with oil palm before re-assigning the land to Okomu Oil Palm Company on 28th November 2013. Upon acquisition of the concession, Iyaye Brothers allowed independent farmers to use the land acquired for agriculture development, mainly subsistence farming. This resulted in conversion of most part of the concession for food crop production.

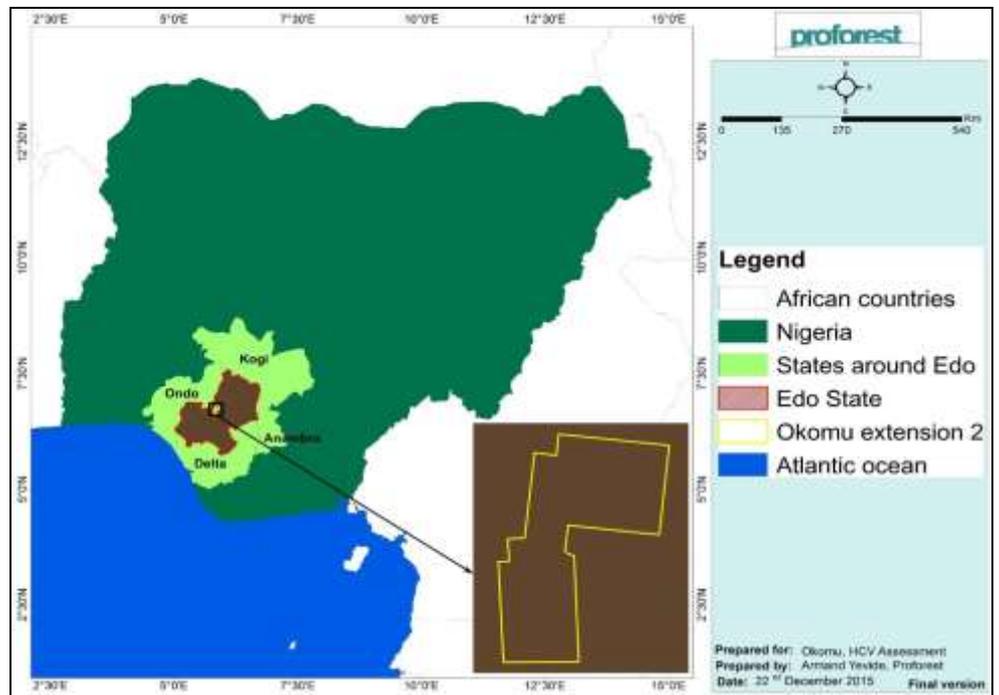


Figure 1: Location of Okomu Extension 2 concession in Edo State, Nigeria.

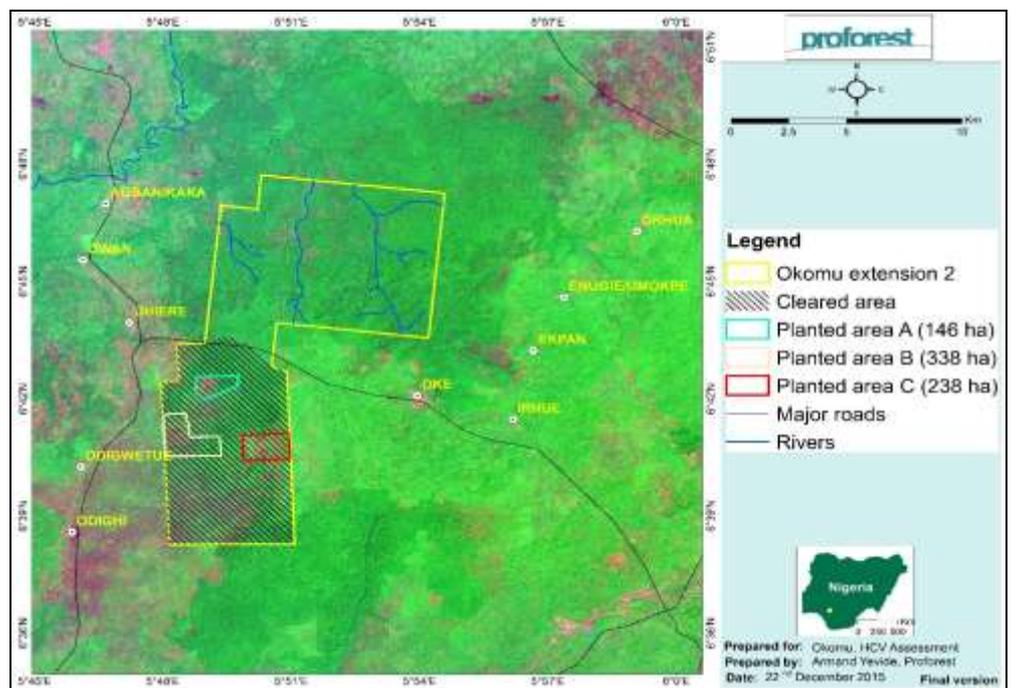


Figure 2: Landscape map showing location of Extension 2, existing oil palm plantations within newly cleared areas by Okomu (hatched) and neighbouring communities

2.2 The landscape context

Edo State is an inland State in South-Central Nigeria, with Benin-city as its capital. The State covers an area of 1,780,200 ha and it is divided into three agro-ecological zones and eighteen political administrative areas called Local Government Areas (LGA). Ovia North-East LGA has a land area of 230,100 ha, while Uhumwode LGA has a land area of 203,300 ha. The major ethnic groups found in the State include: Benin, Esan, Akoko-Edo, Igbanke, Emai and the Ijaw. Edo state is noted for both crop and livestock production. Major crops produced include: palm oil, rubber, cashew, cocoa, citrus, plantain, banana, cassava, rice, maize, melon, leafy and fruit vegetables among others. The State is also endowed with precious stones like; quartz, amethyst, mica, dolomite, granite stone and lime stone used in cement production.

The landscape within which the concession is located forms part of the Lowland Forest eco-region of Nigeria which is confined to a narrow band along the coast in the southwest of Nigeria, from the eastern margin of the Dahomey Gap in Benin to the Niger River in the west. The lowland forest extends more than 100 km inland at its widest extent in the Edo State, but gets narrower to the west, reflecting the former extent of forest.

As in most parts of the Nigeria high forest zone, the deforestation rate in this landscape has been very high over the last few decades. The high pressure on forest resources resulting from high population density and over-exploitation of natural resources have resulted in loss of forest cover outside of legally designated forest reserves and in most cases forest degradation within legally designated protected areas. The concession is located in the Owan North Forest Reserve (Figure 3). The high levels of degradation and deforestation within forest reserves have led to the Edo State Government de-reserving either whole or parts of most forest reserves in the state. Anecdotal evidence from the State Forestry indicates that over 75% of the Owan Forest Reserve has been de-reserved for agricultural purposes while the remaining has been badly degraded.

Studies conducted by Chinedu and Mbee (2014) attributed direct causes of forest depletion in Edo State of Nigeria to overharvesting of industrial wood, fuel wood and other forest products, and overgrazing by cattle with poverty, markets and trade in forest products, and macroeconomic policies as the major underlying causes.

The population of Nigeria (the largest economy in Africa) stood at 178 million as at July 2014. This translates into a population density of 193 people per square kilometre. In 2006, Edo state had a population of 3.2 million and population density of 184 people/sq km according to the official census. Although more recent figures are not available, Edo State's population and population density will now be considerably higher, and given that the state's population density in 2006 was considerably higher than the national average (152 people/sq km), current population density in the state most probably exceeds 200 people per square km.

The landscape is bordered on the west by the main Akure-Benin road which is about 2 km from the closest western boundary of the concession and along which the major settlements including Agbanikaka, Owan, Uhiere, Odigwetue and Odighi are located. The 2 km stretch of land lying between the Akure-Benin trunk road and the concession is predominantly farmland for the people living in the communities along the main road. The north, eastern and southern parts of the concession is bordered by the remaining parts of Owan Forest Reserve which is now reduced to a mosaic of degraded forest, fallow lands and active farms. The eastern part of the concession contains major communities

including the Oke, Irhue, Ekpan, Umokpe and Orhua. The people of these communities continue to farm within the remaining but degraded Owan Forest Reserve to the east of the concession.

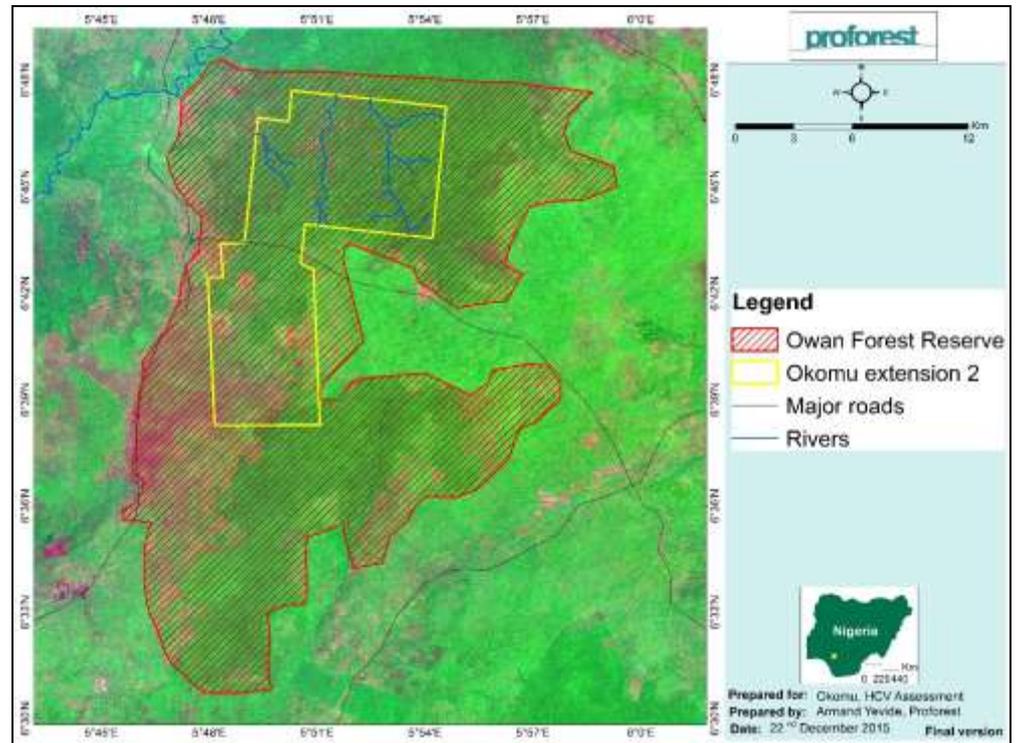


Figure 3: Okomu Extension 2 Concession within the original Owan Forest Reserve

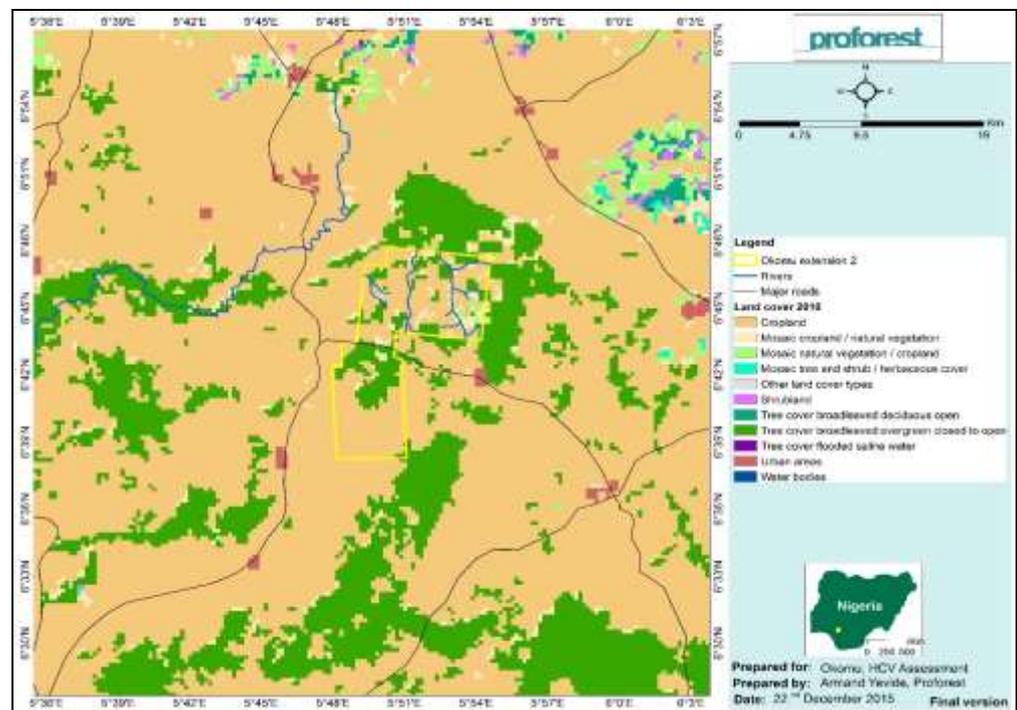


Figure 4: Map of the Okomu Extension 2 concession and surrounding landscape overlaid with 2010 land cover. Collected field data; Land cover data is at a spatial resolution of 300 m and is taken from the ESA's 2010 global land cover map (<http://maps.elie.ucl.ac.be/CCI/viewer/download.php>).

Land use in the landscape

A number of land use activities including settlement, farming, logging and timber processing as well as forest management occur within the landscape. However, agriculture or farming, which is the mainstay of the population within the landscape, is the most common land use activity. The major food crops produced in the state are yams, cassava (manioc), rice, and corn (maize). In addition to this are cash crops and plantations such as rubber, timber, and palm oil and kernels.

Conservation and protected areas in the landscape

The forests of Edo State form part of the Lower Guinea Forest Ecosystem which extends from western Nigeria to the South-Western Cameroon. Together, the Upper and Lower Guinean Forest Ecosystems of this region constitute the Guinean High Forest Hotspot which is home to some 9,000 vascular plant species, (20% of which are considered to be endemic), over 785 bird species (of which 78 are known to be endemic) and some 320 mammal species (of which more than sixty are known endemics, including 18 primates). The Lower Guinea Forests are a centre of primate diversity, supporting 9 endemic primate species and IUCN Red Listed species such as the African forest elephant (*Loxodonta africana cyclotis*), Chimpanzee (*Pan troglodytes ellioti*) and Nigerian white-throated guenon (*Cercopithecus erythrogastrer*). However, the extent of the Guinean High forest has been reduced from an estimated 1,265,000 km² to 141,000 km², representing an estimated 85% loss during the last century (CEPF, 2000). This deforestation has been driven ultimately by the extremely high population density in the region, and directly by hunting, logging, slash and burn agriculture as well as commercial logging, agriculture and mining operations.

The Nigerian government recognizes the need to conserve its biological diversity and has made a commitment to conserve 25% of Nigeria's total forest area. Additionally, Nigeria is a signatory to several international treaties and conventions on conservation and sustainable use of biodiversity. These include the Convention on Biological Diversity, the Convention on International Trade in Endangered Species of Wild Fauna and Flora, the Convention on the Conservation on the Conservation of Migratory Species of Wild Animals, African Convention on the Conservation of Nature and Natural Resources and the Ramsar Convention. The government's conservation efforts place emphasis on in situ conservation of biodiversity within protected areas such as Forest Reserves, Game Reserves, National Parks and Wildlife Sanctuaries. In doing this, the government places priority attention to conservation of unique ecological characteristics and ecosystems such as mountain, mangrove, wetlands, savannas and rain forests and transit sites for migratory species. In spite of this, Nigeria's biodiversity is declining rapidly in the face of its burgeoning human population and effective enforcement of forest reserves and conservation areas is lacking. The 2010 UN Global Forest Resources Assessment for Nigeria, reported that only 10% of Nigeria's land area or 10 million ha was forested, and that ~400,000 ha of forest was lost annually. Nigeria's forest estates have suffered from severe overexploitation due to logging and widespread de-reservation for agriculture, industry and urbanisation.

There are five types of protected area in Nigeria:

1) **Forest Reserves (FRs)**: Owned by state governments and managed by state forestry departments, they aim to protect timber, fuelwood and other forest resources, but allow resource harvesting under license. FRs are commonly overexploited with few remaining in

good condition, and as of March 2014 50% of Nigeria's 994 forest reserves had been de-gazetted,

2) **National Parks (NPs):** Allocated specifically for permanent protection of ecological, environmental or cultural importance and managed by the Nigerian National Park Service. Nigeria's NPs cover ~2.5 million hectares or 2.5% of Nigeria's land area. The only national park located in the Edo State of Nigeria is the Okomu National Park which was gazetted in 1985.

3) **Biosphere and Strict Nature Reserves:** Areas set-aside within FRs for scientific and educational purposes. All human activities such as hunting, logging and collection of timber/NTFPs is prohibited,

4) **Game Reserves:** Set aside to protect wildlife and hunting is typically prohibited, except in a few cases where hunting is permitted under license. The only game reserve in the Edo State is the Orle River Game Reserve which was gazetted in 1960.

5) **Special Ecosystems and Habitats:** Areas revered by local communities for spiritual, recreational, socio-cultural or economic reasons, e.g. sacred groves and streams. Sacred groves are particularly common in the south of Nigeria as the home of local deities, for example the Oshogbo Shrine in Oshun State.

There are few protected areas, including those with national and international significance, in the broader assessment area landscape. These include the Ologbo Forest Reserve, the Orle River Game Reserves, and the famous Okomu National Park. The Ologbo Forest Reserve is located about 71 km from the closest boundary of the concession whiles the Orle River Game Reserve and the Okomu National Park are each located 52 km and 57 km respectively from the closest boundaries of the concession (Figure 5).

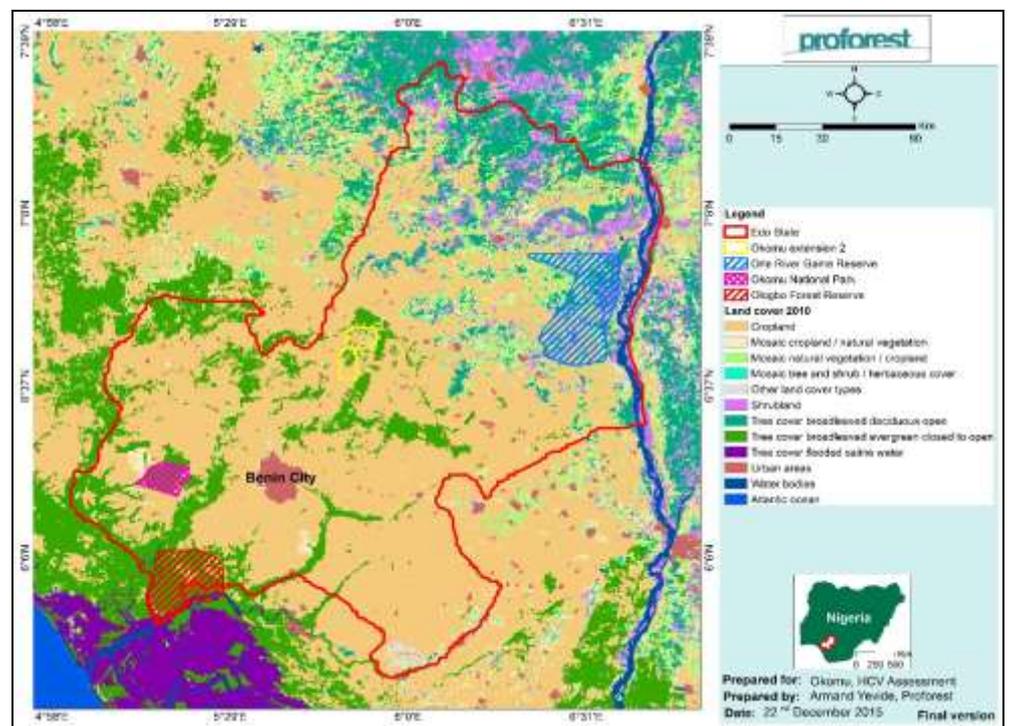


Figure 5: Location of the concession and the closest protected areas in the landscape overlaid with 2010 land cover

Socio-economic context

The Edo State was created in 1991 out of the former Bendel State. The State is made up of three major ethnic groups; namely the Binis (57.5% of the population), Esan (17.1%) and Afemai comprising of the Etsako (12.2%). There are other ethnic groups such as the Akoko Edos, Owans, Ekas, the Isoko, Urhobo and the Itsekiris. Virtually all the ethnic groups traced their origin to the ancient Benin Kingdom hence the dialects of the groups vary with their distance from Benin City. The cultural heritage of the ethnic groups show major similarities in terms of religious worship, folk-lore, dance, festivals, and traditional modes of dress, arts and craft. Critical among these are the Ague and Ekaba festivals done among the Binis and "Manhood initiation" (age groups) by the Etsako people. The Manhood initiation is mainly to initiate boys into "manhood". Traditions and culture of the people in Edo State remain strong and this is demonstrated by the fact that almost all the communities in the assessment area have at least one sacred or spiritual site/shrine either located within or outside of the concession.

Edo State remains largely agrarian, with cultivation of rubber, oil palm, cocoa, yam, cassava, maize, rice and plantain common. Farming is not an exclusively rural occupation, as many city dwellers own farms on the outskirts of the capital and commute regularly to work in their farms. Farming in the region was formerly dominated by small-scale shifting agriculture but cash crops are becoming increasingly common, in part due to the decline in availability of new land for agriculture expansion.

There are no settlements in the concession but there are ten main communities which are located within 5-10 km from the boundaries of the concession. These communities are located within two Local Government Areas of Ovia Northeast and the Uhumwode Local Government Areas and altogether have a total population of 25,500 people (Foremost Development Services, 2014). The five communities including Agbanikaka, Owan, Uhiere, Odigwetue and Odighi which are located to the west of the concession and along the Akure-Benin Highway are in the Ovia North-East LGA while those located within the landscape to the east of the concession are in the Uhumwode LGA.

2.3 Regional and/or National context

In spite of its significant biodiversity and global importance, the extent of the Guinean High forest has been reduced from an estimated 1,265,000 km² to 141,000 km², representing an estimated 85% loss during the last century (CEPF, 2000). The remaining forests are mainly concentrated in protected areas while the rest is highly fragmented. The Guinean High Forests is ranked as the highest priority for primate conservation but also with the highest threat (CEPF, 2000). The area is also important for bird diversity and endemism and has six Endemic Bird Areas, as defined by Birdlife International. In addition to its fauna conservation significance, the Guinean High Forests are also home to several species of economic plants such as the African mahogany (*Khaya* and *Entandophragma* species), African Ebony (*Diospyros gracilis*) and Iroko (*Milicia excelsa*).

Additionally, the oil palm (*Elaeis guineensis*) is native to this hotspot. This remnant forest is highly fragmented largely by logging and agricultural activities, settlements and other developmental activities. Most of the remaining forests in this ecoregion are largely confined to inaccessible locations such as areas with steep terrains and protected areas.

Nigeria occupies a unique position on the west coast of Africa, extending over different climatic and geographic zones. The diverse ecosystems in the country range from semi-

arid savannahs, montane forests, lowland tropical rainforests, seasonal swamps, and diverse coastal vegetation including the largest tract of mangroves in Africa. The variable climatic conditions and ecological features in the country have consequently endowed the country with a high biodiversity. The unique biodiversity of the country include several species of rare, threatened, endangered and endemic species. For example, the White-throated Monkey (*Cercopithecus erythrogaster*), the Scatter Guenon (*Cercopithecus sclateri*), the Niger Delta Red Colobus (*Procolobus penantii epieni*), the Anambra Waxbill (*Estrilda poliopareia*), the Ibadan Malimbe (*Malimbus ibadanensis*) and the Rock Fire-Finch (*Lagonostica sanguinodorsalis*) are all species known to be endemic to the country.

Nigeria's National Biodiversity Strategy Report of 2010 makes reference to up to about 5,000 species of plants, 22,090 species of animals including insects and 889 species of birds. Additionally, the National Biodiversity Strategy indicates that there are over 135 reptilian species, 109 amphibian species, and 648 fish with the forests of the Cross River State being considered as a hotspot for amphibian biodiversity. This high diversity in Nigeria is underpinned by its diverse geology and climate that ranges from low-lying, humid and tropical mangrove and freshwater swamps in the south of the country, through lowland rainforest, into woodland and then short grass and marginal savannahs in the drier and more seasonal north.

The Cross River State is known to contain much of the remaining natural forests in Nigeria (up to 50% of the country's remaining forests). Estimates have it that approximately some 36% of the land area of the state is forested. The rainforests of the Cross River State together with those in the western Cameroonian border is a hotspot of global significance that supports a high diversity of plant and animal species, large numbers with restricted ranges and many of which are threatened. The Cross River Gorilla for instance is listed as Critically Endangered under the IUCN Red List and it is estimated that there are fewer than 300 individuals of this subspecies scattered in 11 highland sites in the Cross River State and western Cameroon. One-third of the global habitat area of this species is located in the Cross River State and at three sites within the state- The Afi Mountains Wildlife Sanctuary, the Mbe Mountains and the Okwango Division of the Cross River National Park. The Edo State unlike the Cross River State has lost much of its forest cover. This is compounded by the fact that over 60% of forest reserves such as the Owan and the Ologbo in the State have been de-reserved for agricultural purposes. The remaining good forests are located in protected areas of forest reserves such as the famous Okomu Forest Reserve, Urhonigbe Forest Reserve, the Gili-Gili and the Orle River Game Reserve. However, the protected areas of these forest reserves shelter a number of ungulates, primates, rodents, reptiles and several bird species of conservation importance. In order to protect the good forest cover contained in these protected areas, the Gili-Gili Forest Reserve which covers an area of about 36,300 hectares and drained by a dense network of rivers has been demarcated into core conservation and buffer zones. The reserve has mosaic vegetation ranging from mangrove and fresh water swamp to tropical rainforest and secondary forests re-growth. Similarly, the Okomu Forest Reserve was declared a National Park (Decree 46 of 1999) to ensure effective protection and conservation of the forest resources and the rich biodiversity the forest. The park has diverse fauna, with 33 species of mammals including the African buffalo and the endangered African forest elephant. The park also hosts a population of the vulnerable white-throated guenon. Although no thorough study of the primate population has been done since 1982, chimpanzees were reported to be present in the region in 2009. The number of chimpanzees estimated to live in the Okomu Forest Reserve was guessed to be 25–50 in

2003. Other animals of conservation importance that are known to be present in the park include dwarf crocodiles, red river hog, sitatunga, warthog, civet cat, Maxwell's duiker, grass cutter, mona monkey, Thomas's galago and tree pangolin. About 150 species of birds have been identified in the park. These include Angolan pitta, grey parrot, wrinkled hornbill, fish eagle, hawks, woodpeckers, great owl, grey hornbill, cattle egret and black-casqued hornbill. Others are the yellow-casqued hornbill, Sabine's spintail, Cassin's spintail, black spintail, white-breasted negrofinch, chestnut-breasted negrofinch, pale-fronted negrofinch and yellow-throated cuckoo. The importance of the Okomu National Park for biodiversity conservation is therefore unparalleled to any other forest areas in the Edo State.

As can be seen in figure 5 above, the remaining areas of Owan Forest Reserve is patchy and fragmented. Additionally, consultation with officials of the Edo State Ministry of Agriculture and Forestry suggest that the remaining areas of the Owan Forest Reserve (mainly in the north-eastern and south-eastern sides of the Extension 2 concession are patchy and do not have significant concentration of biodiversity that should trigger delineation for conservation and special protection.

3 HCV assessment team

The HCV assessment process was led by ALS provisional License Assessor from Proforest, working together with a team of local experts in Nigeria. Table 1 outlines the key team members and their respective roles in the assessment process. Biographies of team leaders and key team members are provided in Annex 1.

Table 1: Summary of HCV assessment team experience. Contact information for the Lead Assessor is listed on the cover page of this report.

| Name | ALS Licence | Organisation | Role | Expertise |
|-------------------------|--------------------------|------------------------|---------------|--|
| Abraham Baffoe | Provisional (ALS15006AB) | Proforest | Lead assessor | Forest Ecology, Hydrology, Biodiversity, conservation and social expert |
| Nana Darko Cobbina | Provisional (ALS15034NC) | Proforest | Team member | Community consultations and participatory mapping |
| Dr Armand Yevide Sedami | NA | Proforest | Team member | Forest ecology, GIS, conservation, PhD in Natural Resources Management. |
| Joseph Ugbe | N/A | Independent Consultant | Team member | Forest inventory, botanical survey, ecology and fauna survey. Surveyed herpetofauna for this assessment. |
| Akomaye Ashikem | N/A | Independent Consultant | Team member | Forest inventory, botanical survey and fauna species identification. Led the botanical survey for this assessment. |
| Dr Emmanuel Danquah | N/A | Independent Consultant | Team member | Ornithologist and mammal expert |

4 Methods and timelines

4.1 Timeline for the assessment

The assessment process commenced in July 2015 with a scoping visit. The field study for the full HCV assessment commenced on 18th September and was completed was completed on 2nd November 2015. Analysis and drafting of the report commenced immediately after completion of field work and was completed on 30th November 2015. Below is the detail timeline for the HCV assessment.

| Process Steps | Main activities | Timeline | | | | | | | |
|---|--|----------|------|-----|------|-----|-----|-----|-----|
| | | Jun | July | Aug | Sept | Oct | Nov | Dec | Jan |
| Pre-assessment | Desk study: Information exchange, Tier rating and information gathering and review of data and information collected | | | | | | | | |
| | Field scoping visit and stakeholder meetings including meeting with SIA team | | | | | | | | |
| | First round of stakeholder consultations including analysis of information including feedback to client | | | | | | | | |
| | Closing of pre-assessment and preparation of Full HCV assessment proposal and planning for the full HCV assessment. | | | | | | | | |
| Field assessment | Botanical and fauna survey including ecosystem typing and mapping | | | | | | | | |
| | Participatory mapping and identification of social HCVs | | | | | | | | |
| Communities (pre and post field assessment) and stakeholder consultations | Communities consultations | | | | | | | | |
| | Consultations with state and local government agencies, experts and NGOs | | | | | | | | |
| Analysis drafting of report | Analysis of field data and drafting of report | | | | | | | | |
| Peer Review of reports | Peer review of report by | | | | | | | | |
| Finalisation of report | Finalisation and submission of report | | | | | | | | |

4.2 Assessment methods

The methods employed for this assessment included a pre-assessment which covered desk and web-based research, a field visit and stakeholder consultations and detailed field surveys to identify HCVs present in the concession. Stakeholder consultation was an integral part of the assessment process right from the onset up to finalisation of the draft report. Proforest experts worked closely with local consultants and experts in Nigeria in carrying out the field assessments to ensure that the environmental and social assessment processes were not only consistent with the requirements of the RSPO comprehensive

impact assessment but also the local and traditional, cultural and beliefs of the communities located within the landscape.

In order for Proforest to obtain appropriate condition of the concession area and all key conservation issues, the assessment team collected data and information from multiple sources. These included desk and web-based reviews, consultations with relevant stakeholders and field assessments.

4.2.1 Scoping

A scoping study of the assessment area and a review of documents including legal permits and Certificate of Occupancy were undertaken prior to the full HCV assessment. The objective of the scoping, which was carried out as part of the baseline assessment of the overall Okomu operations in July 2015, was to obtain preliminary information about the concession, the legal status, nature of vegetation in the concession and in the landscape and potential HCVs in the concession. This exercise was helpful as it allowed the assessment lead to conclude that the concession does not contain primary forests. Though very brief, this process was also helpful in designing the HCV assessment methodology. The scoping study involved brief visits to areas in the concession and brief consultations with the local population and the staff of Okomu. Preliminary, broad findings from the scoping study identified land cover in the concession as mostly oil palm plantation, a mosaics of farmlands, grassland, bush fallows and much degraded forest areas. This informed the design of the HCV assessment methodology and protocols including expertise required for the full assessment and the stakeholders to be consulted throughout the assessment.

4.2.2 HCV Tier rating

The HCV Resource Network Assessor Licensing Scheme requires HCV lead assessors to rate each new HCV assessment according to a predefined tier rating system. Under the system, HCV assessments are categorised into Tier 1 and Tier 2. The Tier rating is based on the level of perceived risks associated with the HCV assessment. The table below provides details of the criteria for rating HCV assessments. It also concludes on the Tier system for this particular HCV assessment based on the results of the scoping study and information provided by the stakeholders consulted, including the management of Okomu, state government officials and the local communities as well as the assessors own information. According to the HCV Resource Network Assessor Licensed Scheme requirements, a HCV assessment should be classified as Tier 1 if the response to one of the six main issues in Table 2 below is "YES".

Table 2: Assessment Tier Rating

| Indicators of potential risk and impacts | The assessment is Tier 1 if the response to one or more of the following is YES | Assessor's response |
|---|---|---|
| Rating | | |
| Scale of project: the overall area (ha) affected by production activities. | Will the operation cover or affect more than 50,000 ha | No. The total area of the concession under consideration is 11,416 ha. |
| Intensity | | |

| | | |
|---|--|---|
| <p>Conversion of natural ecosystem or habitat: a change from the natural ecosystem or habitat composition and structure to forestry plantation, agriculture or other land cover/ land use.</p> | <p>Is conversion of more than 500 ha of natural ecosystem or habitat planned</p> | <p>Yes. Although the concession area has been used for Taungya farming for several years and for farming by previous lease holders, there are pockets of natural vegetation that could rarely be more than 500 ha in extent.</p> |
| <p>Risk</p> | | |
| <p>Experience level of HCV assessor: while an assessor holds a provisional licence, a peer review is required as an additional means of quality assurance.</p> | <p>Does the lead HCV assessor hold a provisional licence?</p> | <p>Yes</p> |
| <p>Threats to biodiversity: production activities that may disturb or damage a national or international priority biodiversity area.</p> | <p>Does the project area contain, border or overlap with any priority biodiversity areas?</p> | <p>No. Although the concession forms part of the remaining Owan Forest Reserve, this reserve has been badly degraded and therefore over 60% has been de-reserved for agricultural development.</p> |
| <p>Local and indigenous people: populations of people that overlap and/or use resources in the project area</p> | <p>Are there local or indigenous peoples living in or using the area that have claims to land, water and or natural resources in the project area?</p> | <p>No. Local people were allowed first by the State government and the previous lease holder, Iyaye Brothers, to use the land for taungya farming, but they don't have legal right or claim to the land.</p> |
| <p>Within certification schemes. If used outside of a widely recognised certification scheme, there is a higher risk that complementary safeguards may be lacking.</p> | <p>Is the HCV assessment taking place outside of a recognised certification scheme?</p> | <p>No. The client is part of Socfin Group of companies which is currently in the process of applying for RSPO membership and the assessment is being conducted for the purposes of meeting the RSPO New Planting Procedure requirements.</p> |
| <p>Result</p> | | <p>Tier 1</p> |

The HCV Resource Network Assessor Licence Scheme, requires that Tier 1 HCV assessment project includes a scoping study prior to the full HCV assessment. It also requires the report of the assessment to be peer reviewed by a HCV Resource Network approved peer reviewer. Given the outcome of the above HCV assessment rating requirements, this assessment is classified as Tier 1.

4.2.3 Desk-based literature review

A desk review of relevant documents and reports was carried out prior to the field assessment. The objective of the desk review was to identify the key landscape level concerns that apply and the likely conservation values present in the area. Literature reviewed included surveys that had been conducted in the company's concessions and adjoining areas, academic papers, reports and documents made available by Okomu such as concession maps, acquisition documents, etc. Additionally, literature on the main landscape level conservation concerns as well as state and national level documents such as the Nigeria National Biodiversity Action Plan were reviewed. Relevant documents that were reviewed included:

- The draft EIA report
- The draft Social Impact Assessment report prepared by Foremost Development Services Ltd, December 2014
- The Okomu Extension 2 Soil Survey and Land Evaluation report prepared by Foremost Development Services Ltd, December 2014
- The Biodiversity survey report prepared by Foremost Development Services Ltd, December 2014
- Certificates of Occupancies and Deeds of Assignments
- The Nigeria National Biodiversity Strategy and Action Plan
- Relevant literature and information freely available on the web
- The Nigeria Land Use Act of 1978

4.2.4 Consultations with State government agencies and other stakeholders

Consultative meetings were organised with the relevant government institutions responsible for land administration, agriculture, forestry and natural resource management at both the local and state levels throughout the assessment process. Consultative meetings with state government officials and all other stakeholders were held at the offices of the different stakeholder groups. The aim was to establish the formally designated land use of the concession areas and also to verify whether the Certificate of Occupancy for the concession area was acquired through the due process. This was also to understand the state government's approach in protecting biodiversity in a landscape such as the one where the concession is located. This process was also useful in helping the assessment team obtain an understanding of the company's legal obligation in terms of sustainable natural resource management and obligations to local communities in the catchment area of the concession. Institutions consulted included the Edo State Ministry of Environment and Public Utilities (which includes Forestry), the Edo State Ministry of Agriculture and the Uhumwode Local Government. Additionally, Environmental Rights Action/Friends of the Earth Nigeria and various Community Development Associations (CDAs) in the local communities were consulted during the assessment. Preliminary meetings were also held with the traditional authorities, elders and local population of all the ten communities which are located within 5-10 km from the concession boundaries to elicit their perception and concerns and also opportunities they

identify with the proposed project. Outcome of the consultative meetings are attached to this report in Annex

4.2.5 Socio-economic survey and communities consultations

The socio-economic survey and extensive community consultative meetings with all the surrounding communities that could potentially be impacted by the OOPC oil palm plantation development activities were made during the social impact assessment that was completed in December 2014 by Foremost Development Services Ltd and the HCV assessment process. The objectives of the survey and the consultative meetings were to: provide information about the project to the local people; collect basic socio-economic information about the communities; identify with the local people all areas of social and cultural HCVs in the concession; and assess the threats posed to these HCVs as well as opportunities for their maintenance and possible enhancement. The various community groups (as per their communal governance structures) were represented at these meetings. All the communities engaged actively in the consultative process. During these meetings, a map of the landscape within which the concession is located (map of the landscape with the concession clearly marked and showing communities in the landscape) was presented to the various groups requesting them to indicate traditional and customary use areas. Apart from farming by five communities on the western side of the concession, and fishing activities by the people of Agbanikaka, there was no any other major use of the concession area by the people of the neighbouring communities although there was also indication that there are occasional hunting and collection of NTFPs in the wider landscape and including the concession area by the local people. Consultation meetings were held with all the communities prior to field work to share information with the local communities about the project and to solicit information to guide the assessment. Further consultations were held just after the assessment to elicit local people's input into the HCV management recommendations. Consultative meetings were held at either town halls eg Odighi and Agbanikaka, under sheds eg Odigwetue and in front of chief's house eg Umokpe and Irhue. Summary consultation notes can be found at Annex 2 of this report.

4.3 Field data Collection

In order to obtain primary data to enhance understanding of which HCVs are in the concession, the team carried out a number of field surveys and data collection. The various assessments and studies carried out were informed by the experts' knowledge of the region, observations made during the scoping visit, and information gathered from consultations with stakeholders as well as data from the literature reviewed. Based on this, biological assessment of flora and fauna in the concession was conducted in addition to assessment of the general vegetation cover and relief of the area.

4.3.1 Assessment of fauna and flora

Analysis of vegetation maps of the area was made as part of the planning process for the assessment of fauna and flora. The field assessment of flora and fauna in the concession was undertaken to:

- obtain a better understanding of vegetation cover of the concession

- assess floristic composition of the vegetation of the area with focus on presence and abundance of species of conservation concern;
- assess the presence of fauna species in the concessions, their distribution and their conservation importance
- identify areas with reasonable forest cover or habitats of conservation importance that could be set aside and precluded from conversion activities

The field data obtained from the survey were analysed to identify the different biological or social HCVs present in the concession.

Sampling design for flora survey

For the assessment of flora, a sampling intensity of 1% was used. Given that about 3,856 ha (most part of the southern section) of the concession was cleared by Okomu during the first half of 2015 and just before the HCV assessment, those areas were excluded from the flora survey. Additionally, the existing 760 ha old oil palm plantation was also excluded from the flora survey. The flora assessment was thus limited to about 6,800 ha of the concession which has not been cleared by Okomu. Based on this and the sampling intensity of 1%, 68 one-ha sample plots measuring 500m x 20m (i.e. 1 ha) were selected. The 1 ha plots were laid out using systematic random sampling such that they were fairly distributed to cover all the vegetation types and land uses present in the concession area for the flora survey. In carrying out data collection in each 1 ha plot, a 500m long transect was laid through the middle of each 1 ha plot in east-west direction with the aid of GPS and a compass. Data and information on trees within 10 m from both sides of the 500 m transect and within the plot were collected for each plot. The total distance of transect lines covered along all the 68 long transects was 34 km.

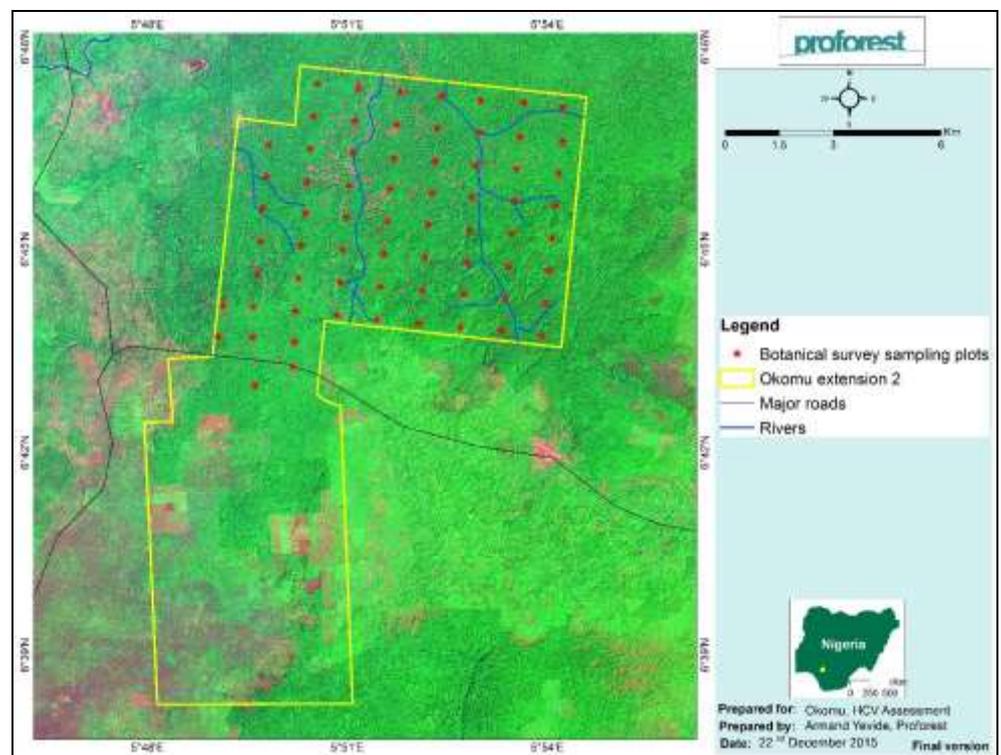


Figure 6: Map of Extension 2 concession showing the location of the survey plots

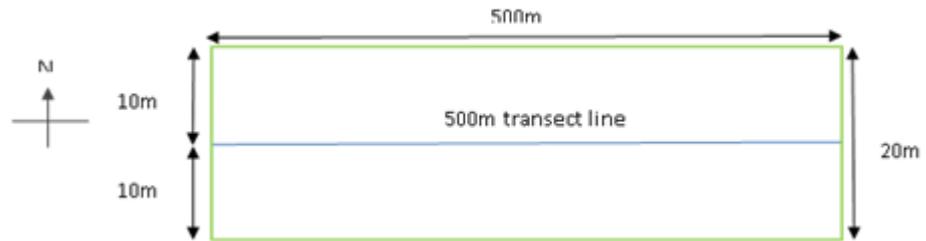


Figure 7: Layout of a sample plot and transect line

The field team walked along the transect lines and recorded all trees and lianas of 10 cm diameter at breast height (dbh) and above, 10 m on either side of each transect. The variables recorded were species name and dbh. Characteristics of the trees such as whether they are forked, fluted, multi-stem, coppice, etc. were also recorded. Additionally, other features of conservation interest were recorded; spotters looked out for and recorded fruiting trees, seed trees, hollow trees, etc. In order to get a better idea of the regeneration potential of the previously forest reserve land, 20 m x 20 m quadrats were laid at the end of each 500 metre transect. Within each quadrat, all trees and regeneration seedlings and saplings were recorded. Additionally, descriptive information about the area (such as farm, grazing land, regenerating area, etc.) was also noted.

Sampling design and distribution of transects for fauna survey

A grid consisting of plots, each 2-kilometre length and breadth was superimposed on a map of the concession using GIS applications. Nine plots out of the 27 plots were randomly selected (33%) and the existing trails and paths used as a baseline for the likely beginning of survey transects. A minimum of one kilometre was searched on survey transects in each plot. The first transect of each plot was randomly placed whilst subsequent ones were distributed systematically (Norton-Griffiths 1978).

An average of two transects per square km (plot) was ensured conforming to a systematic line transect design. Where possible, transects were orientated perpendicularly to the main drainage lines of the area.

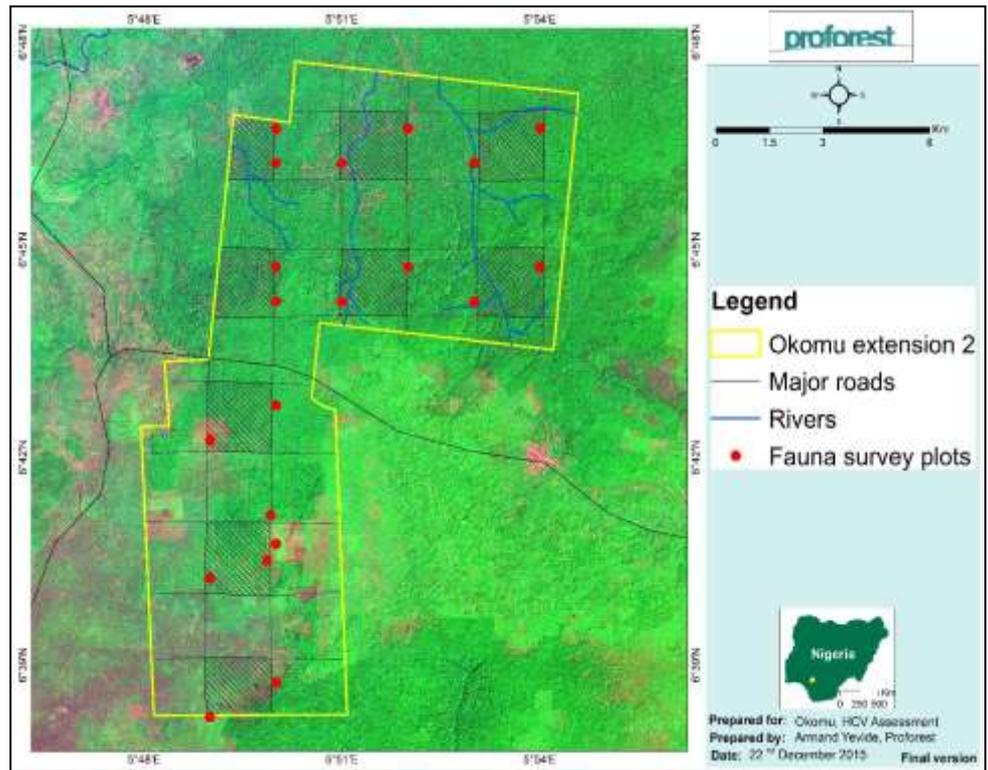


Figure 8: Map of the concession with fauna survey quadrats and the distribution of the sample plots

Conservation status of fauna species identified in the concession

The conservation status of the identified fauna was assessed using the Global (International Union for the Conservation of Nature (IUCN)) and National Ranking in IUCN/WCMC's Nigeria Biodiversity Report (1988).

The International Union for Conservation of Nature (IUCN) Red List of Threatened Species (2014) which provides taxonomic, conservation status and distribution information on taxa that have been evaluated using the IUCN Red List Categories and Criteria (Appendix 1a) was the Global Criteria used. The main purpose of the IUCN Red List is to catalogue and highlight those taxa that are facing a higher risk of global extinction (i.e. those listed as Critically Endangered, Endangered and Vulnerable). The IUCN Red List also includes information on taxa that are categorized as Extinct or Extinct in the Wild; and taxa that cannot be evaluated because of insufficient information (Data Deficient).

A combination of methods were used for the assessment of different categories of fauna species such as large mammals, small mammals, herpetofauna, birds etc.

Herpetofauna surveys involved systematic refuge examinations (searching under rocks, logs, in rotten tree stumps, in leaf litter, old termite mounds and rodent burrows) along line transects. Special attention was given to riparian vegetation and other favourable habitats, to discover as many species of amphibians and reptiles as possible. All captured and identified specimens were released as soon as possible at the point of capture. Many specimens were identified on site. Some specimens, particularly those that could not be identified conclusively in the field, were collected and preserved for later identification in the laboratory. Main reference for identifying herpetofauna was Hughes (1988). A software; EstimateSWin800 Version 8.0.0 (Colewell, 2006) was used to

determine indices of fauna diversity and richness in the various land-use types in the concession.

Bird surveys were conducted systematically along the line transects in the early and late hours of the day. Direct observations, including visual as well as vocal records were made to determine bird species occurrence. Birds were also observed opportunistically at other times of the day, outside transects. Additional information was also obtained from local people through interviews. Pictures in the field guide (Barrow and Demey, 2008) were shown to the local people to help in the identification.

Sampling for small terrestrial mammals involved a systematic live trap lay-out (10 meter intervals) in addition to casual observations and refuge examinations (searching under rocks, logs, in rotten tree stumps, in leaf litter, old termite mounds and rodent burrows) along line transects. Main reference for identifying small mammals was Happold (1990). All captured and identified specimens were released as soon as possible at the point of capture.

Information on large terrestrial mammals was systematically recorded by direct observation and record of signs (droppings and footprints) along line transects. Visual and aural observations were important for the primates, because this group of animals is not captured by camera traps, have diurnal habits and do not leave tracks on the forest floor. Surveys were conducted during the early hours of the day and evenings. Additional information was obtained from interviewing local people, particularly farmers in the area. Pictures in field guides (Stuart and Stuart, 2006; Happold, 1990) were shown to the local people to help in the identification of the mammals; it also gave the opportunity for others to corroborate or challenge the authenticity of information.

4.4 Participatory mapping

Participatory mapping was an important part of the community consultation process that was carried out in all the 10 communities within 5-10 km from the concession boundaries during 19-26 October 2015. Given that local population confirmed that the land is government land and that government has granted it to a palm oil company, the objective of the participatory mapping was to get a confirmation from the communities on the boundaries of government land and the communities land for farming and also to find out whether there are any sites of conservation importance to them that still exist in the concession area. For each of the community meetings, local people came together to a recognised community meeting place where the lead assessor, after introduction and objective of the meeting, presented a bigger version of the map of the landscape which clearly shows the locations of all communities and the boundaries of the concession to the people and solicited their confirmation on the boundaries of the concession. The communities were also shown map of the concession superimposed on the Owan Forest Reserve (Figure 3) during the consultations. This enabled them understand clearly the boundaries of the concessions and how far it is from each community since they are already very familiar with the boundaries of the forest reserve. Further discussions on likely HCV and socio-cultural and traditional values that communities have in the concession and in the landscape also took place after the lead assessor had explained the HCV concept and the six categories of HCVs to the participants. The meeting was used to request the local people to mention natural resources and use areas within the concession that are of importance to them. They were also requested to indicate the locations of those areas on the landscape map that was used for the participatory mapping. The social

team lead and representatives of the communities went to the concessions on the 25th and 26th of October to map out all social HCV areas with GPS. The population of the various communities easily identified the boundaries of the Owan Forest Reserve and the concession. This is partly because the people were already familiar with the original boundaries of the Owan Forest Reserve (clearly marked) and their traditional use areas outside of the forest reserve.

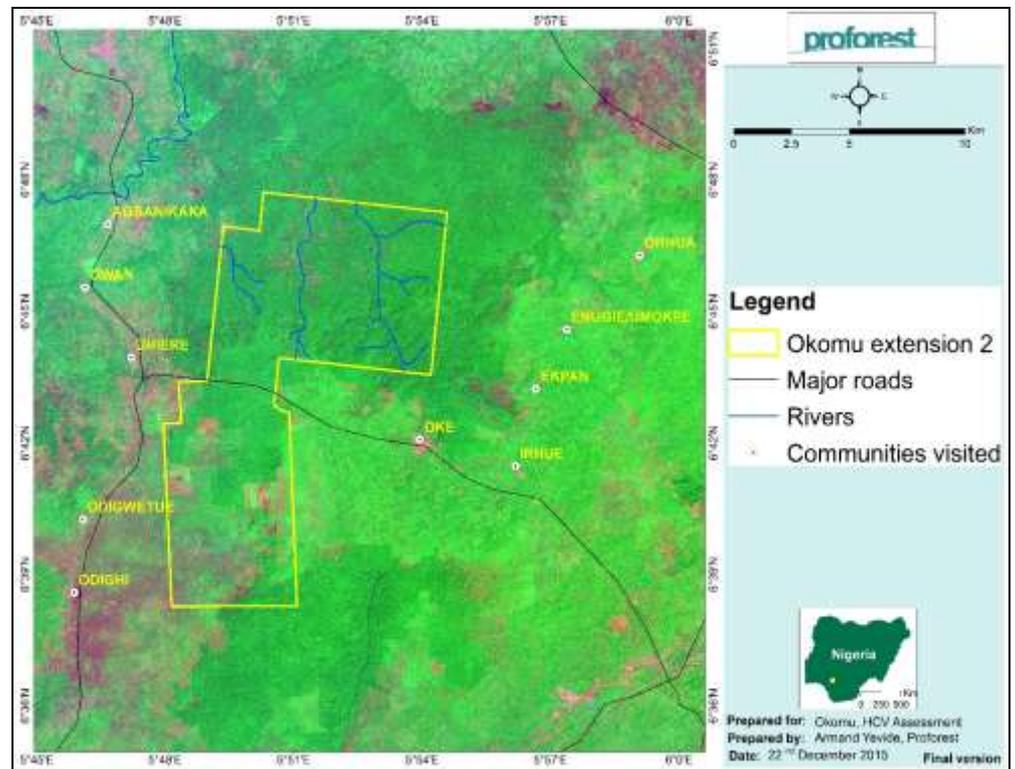


Figure 9: Smaller version of the map used for the participatory mapping

5 Assessment findings/HCV identification

This section presents findings of HCVs that were identified in the concession. For each of the HCVs, information is provided about their identification, current status and potential threats to their continued existence. The definitions and justifications used for the presence, potential presence or absence of HCVs follow the 2013 Common Guidance for the identification of High Conservation Values.

Given that there is no HCV National Interpretations for Nigeria, this report refers to globally applicable data sources and definitions used in the Common Guidance, and to some extent to the HCV National Interpretations for Ghana and ZSL’s guide to conserving HCV species and habitats in West African oil palm landscapes (ZSL, 2013).

Table 3: Summary of HCV assessment findings

| HCV | Definition | Present | Potentially present | Absent |
|-----|---|---------|---------------------|--------|
| 1 | Species diversity. Concentrations of biological diversity including endemic species, and rare, threatened or endangered (RTE) species that are significant at global, regional or national levels. | | | |

cultivation in the farms include cassava, plantain), maize, and yams. The fallow lands are generally covered by a variety of weeds including *Commelina nodiflora*, *Panicum repens*, *Indigofera suffruticosa*, *Chromoleana odorata*, *Tridax procumbens*, *Panicum maximum*, *Axonopus compressus*, *Ageratum conyzoides* and *Sida acuta*. Trees within the fallow area of the northern part of the concession include *Musanga cecropioides*, *Terminalia ivorensis*, *Irvingia gabonensis* etc. The southern part of the concession contains old oil palm plantations, swamp forest and a patchy forest. The rest consists of farmlands dominated by weed species and fallows. The dominant species include Guinea grass (*Panicum maximum*), *Trema orientalis*, *Alchornea cordifolia* and *Chromoleana odorata*. Additionally, the concession does not adjoin and neither does it contained within nor contain any area identified in Nigeria as Key Biodiversity Area (KBA) or Important Bird Area (IBA). The closest IBAs in the Edo State are the Okomu National Park and the Sunvit Farms (Agenebode Forests).

A total of 98 tree species with dbh \geq 10 cm, dominated by the Fabaceae and Annonaceae, were identified. All of which are known to be common or widespread in the landscape and none of them is listed as rare, threatened or endangered in Nigeria as can be observed in Annex 4. The only shrub encountered is the *Vernonia amygdalina* popularly called "Bitter Leave" in Nigeria which is not listed as rare, threatened or endangered in Nigeria or in the region. The tree basal area of the relatively good riparian forest areas rarely exceeds 28m²/ha whilst the moderately degraded site had a patchy canopy and basal area of 18m²/ha. The cropland areas represented highly disturbed forests and old cropland with a variety of grass species, thickets of *Chromolaena odorata* and isolated trees (basal area of less than 10 m²/ha). There were no records of tree species that fall under HCV 1 categories (rare, threatened, and endemic or endemic) and therefore HCV1 is considered absent for flora considerations.

General findings from the Fauna survey

The fauna team recorded 12 species of reptiles and amphibians, 109 species of birds, 6 species of small mammals and 23 species of large mammals. The species recorded included one frog species (*Phrynobatrachus alleni*; Near Threatened) and crocodile species (*Osteolaemus tetraspis*; Vulnerable) which are both of international conservation interest and listed on the International Union for Conservation of Nature (IUCN) Red List of Threatened Species (2015). Some of the recorded species of the families Varanidae, Pythonidae and Testudinidae are also listed in Appendix II of CITES (species that are not necessarily now threatened with extinction but may become so unless trade is closely controlled). Riparian vegetation was the most diverse land use type in terms of herpetofauna species diversity. Some of the recorded herpetofauna were very rare species and this included the tree frog *Ptychadena longirostris* which was encountered only once in riparian vegetation during the entire survey. Most of the species encountered were restricted to the riparian vegetation near water bodies. The full list of fauna species identified in the concession can be found at Annex 5 of this report

Herpetofauna

The fauna survey team recorded a total of 5 species of amphibians and 7 species of reptiles in the concession. Overall, riparian vegetation (8 species) had the highest herpetofauna species diversity of the five different land use types in the concession (riparian vegetation, degraded forest, oil palm plantations, fallow areas and cropland), followed by degraded forest vegetation (7 species) which had the greatest number of reptile species. Comparably, these indices were low in the fallow areas (2 species), oil

palm (1 species) and cropland (0 species). The frog species (*Phrynobatrachus alleni*) is listed as Near Threatened, whilst the only recorded crocodile species (*Osteolaemus tetraspis*) is listed as Vulnerable on the IUCN Red List of Threatened Species (2015). Some of the recorded species of the families Varanidae, Pythonidae and Testudinidae are also listed in Appendix II of CITES (species that are not necessarily now threatened with extinction but may become so unless trade is closely controlled) whilst *Osteolaemus tetraspis* is also listed in Appendix I of CITES (species that are the most endangered among CITES-listed animals and plants). However, the number of sightings of the *Osteolaemus tetraspis* (2 sightings) is not significant to warrant designation of HCV 1 in this concession. Besides the two sightings were made in the riparian vegetation which have been recommended as set-aside areas to be precluded from conversion and with management recommendations.

Birds

The fauna team recorded 109 species of birds. The bird species identified were typical of disturbed forests and fallow lands. The overall species list was highest for degraded forest (96 species), followed by riparian vegetation (47 species), fallow areas (28 species), oil palm (24 species) and cropland (16 species). 47% of all species encountered, were observed in degraded forests. Bird densities were significantly higher (Mann-Whitney U-Test: $U=923.412$, $P<0.05$) in the riparian and forest vegetation than the fallow areas, oil palm plantation and cropland.

In terms of birds of conservation interest, the African Grey Parrot (*Psittacus erithacus*) and Green Turaco (*Tauraco persa*) are listed in Appendix II of CITES. Also, the African Grey Parrot is listed as Vulnerable on the IUCN Red List of Threatened Species (2015). The parrot is known to migrate seasonally into the concession in response to fruiting of *Dacryodes edulis* and *Canarium schweinfurtii* during June to August. 96 species, (approximately 88%) of all species encountered, were observed in degraded forests. Birds that are characteristic of old growth secondary forest such as hornbills, turacos, various bulbuls, flycatchers and birds of prey were also spotted in the degraded forest areas. This finding might be as a result of loss of forest cover in the landscape where only degraded forest areas present the best vegetation cover.

Fauna-small mammals

The fauna survey team found 6 species of small mammals (excluding bats). This included 5 species of murid mice and one species of shrew which are all very common in most non-forest landscapes in Nigeria. Cropland and fallowed areas were the most successful site for small mammals, indicating a healthy source of prey species for predators such as cats, owls, and snakes. In contrast, small mammals were not very successful in forest and riparian vegetation as there were no records in those areas. This indicates that small mammals may be relatively tolerant to alterations to their habitat and may even thrive in degraded areas or agriculture-dominated landscapes like what exists in the concession. No small mammal species of international conservation interest were recorded in the concession.

Fauna-large mammals

The fauna team recorded 23 species of large mammals, including the white-throated monkey (*Cercopithecus erythrogaster*), which is endemic in Nigeria of international conservation interest and listed as Vulnerable on the IUCN Red List of Threatened Species and one pangolin species in the genus *Phataginus*, listed as Near Threatened. The species

were sighted in the small forest area closed to the management quarters and the riparian vegetation. There were three sightings of the white-throated monkey which is known to be very common and in large populations in the Cross River and the Okomu National Parks. There were no sightings of Chimpanzee or Elephant given the small and patchy nature of the remaining degraded forests and lack of reasonable connectivity in the landscape. However, these species are known to occur in the Okomu National Park which is located 52 kilometres south-west of the concession. All primates sighted are listed in Appendix II of CITES (species that are not necessarily now threatened with extinction but may become so unless trade is closely controlled). Some of the recorded large mammals which are rare in general included primates and other species like Beecroft’s anamalure (*Anomalurus beecrofti*) and tree pangolin (*Phataginus tricuspis*) which were encountered only twice in forest vegetation during the entire survey. Primates in the area seem to be severely impacted by human activities such as hunting, habitat destruction and encroachment. Most species were restricted to the forest and riparian vegetation near water bodies. Only a few generalist rodent species like giant rats and grasscutters were common throughout the concession. This indicates that the majority of large mammals may not be tolerant to hunting or alterations to their habitat and have probably not benefited from the destruction of forests for agriculture.

Based on the findings of the fauna survey and literature reviewed, HCV 1 is concluded to be absent in the concession.

5.2 HCV 2: Globally, regionally or nationally significant large landscape level forest

Definition

HCV 2 refers to globally, regionally or nationally significant large landscape forests contained within or containing the management unit where viable populations of most if not all naturally-occurring species occur in natural patterns of distribution and abundance. Generally, areas that form part of, or serve as a linkage between larger forest complexes and can thus provide connectivity between two or more forest fragments and/or act as a wildlife corridor for the movement of animals between various habitat areas may also be considered as HCVs. A threshold of 50,000 ha has widely been used including the Ghana National Interpretations (Rayden, T. et al, 2006).

| HCV | Key question | Finding |
|-----|--|---------|
| 2 | Does the concession form part of a large landscape-level ecosystem and ecosystem mosaics that are significant at global, regional and national levels, and that contain viable populations of the great majority of the naturally occurring species in natural patterns of distribution and abundance? | Absent |

5.2.1 Identification and justification

As in most parts of Nigeria, the concession is contained within a landscape which has been fragmented and modified significantly due to a combination of land use and factors such as over exploitation of timber and forest resources, settlements and conversion to agriculture. The current vegetation cover of the landscape is predominantly cropland, fallow land and galleries of degraded and riparian forests. Although the findings from the fauna survey suggest that species diversity were highest in the degraded forest areas and

riparian vegetation, the numbers of species sighted were significantly lower than what is contained in a good forest area, such as that contained in Okomu National Park. The vegetation and ecosystem found within the landscape of which the concession forms a part is not a representative of any large landscape forest or natural ecosystem of global, regional or national significance (Figure 4 and 5). HCV 2 is therefore considered to be **absent**.

5.3 HCV 3: Rare, threatened or endangered ecosystems

Definition

HCV 3 refers to areas with ecosystems that are naturally rare due to geographical or climatic factors limiting their distribution and development or ecosystems whose extent and/or distribution has been reduced by anthropogenic activities.

| HCV | Key question | Finding |
|-----|---|----------------|
| 3 | Does the concession fall within or contain an ecosystem or habitat that is considered to be rare, threatened or endangered. | Present |

5.3.1 Identification and justification

Nigeria contains different types of vegetation that include tropical rainforests, arid savannah, coastal mangroves, freshwater swamps forests, etc. Though there are no recent detailed mappings of the vegetation cover or an assessment of threats against them, it is generally accepted that the country's forest cover has been reduced in extent drastically in the past decades. Hence all existing forests in the country would be a priority for conservation.

Given that no reference toolkit exists for Nigeria, this assessment considered the following types of vegetation as HCV 3, based on consultations with experts and key stakeholders and using the precautionary principle approach:

- All high forest areas containing intact/good forest cover without significant degradation. This is due to the fact that the natural forest cover of the country has been significantly reduced in extent and badly degraded
- All areas with montane forests- due to their rarity at the national level
- All areas containing mangroves and swamps due to their rarity and threat to their continued existence
- Areas with coastal or lowland forest.

Intact high forest vegetation

It was observed during the assessment that the entire concession area consisted of modified natural vegetation. This included bush-fallow, smallholder food crop farms and planted forest areas with evidence of continued logging. None of the areas assessed during field observations appears to contain an intact forest cover within the concession except relatively good forest cover in the north-east and the mid-section of the concession and those riparian vegetation. The best forests areas encountered in the entire concession are the 7.1 ha swamp forest (HCV 3), the riparian vegetation (HCV 4), the 24 ha recommended set-aside forest near the management quarters and the recommended set-aside forest to the north-east of the concession. Apart from the swamp forest, all these

identified forests are not in the natural state although they have reasonably good vegetation cover and are the only areas with good forest cover.

Montane Forests

No montane forests were observed in the concession as the concession lies on a relatively flat land with pockets of hilly areas to the north.

Mangroves and swamp forests

Although the Extension 2 concession is neither contained within nor contains any nationally or internationally recognised Ramsar site, the southern portion of the concession contains a small area of permanently wet forest with total area of 7.1 ha. There is another wet forest in the northern section of the concession which covers an area of 3 ha. The two swamp forests have a total area of 8.8 ha. The swamp area also contains the only remaining comparatively undisturbed vegetation in the concession. However, given the volume of water in the area, the assessment team could not survey the swap area to identify species present. Given that swampland ecosystems are increasingly becoming rare due largely to drainage for agriculture and other purposes (because of their inherent fertility), the two swamp forests have been considered for protection and thus **HCV 3 is confirmed to be present** in the concession. It is strongly recommended that Okomu continues to protect this area which has already been set-aside for conservation. Two of the communities (Odighi and Odigwetue) have their sacred sites located at the fringes of this wet forest. **The total area of this wet forestland is 10.1 ha.**

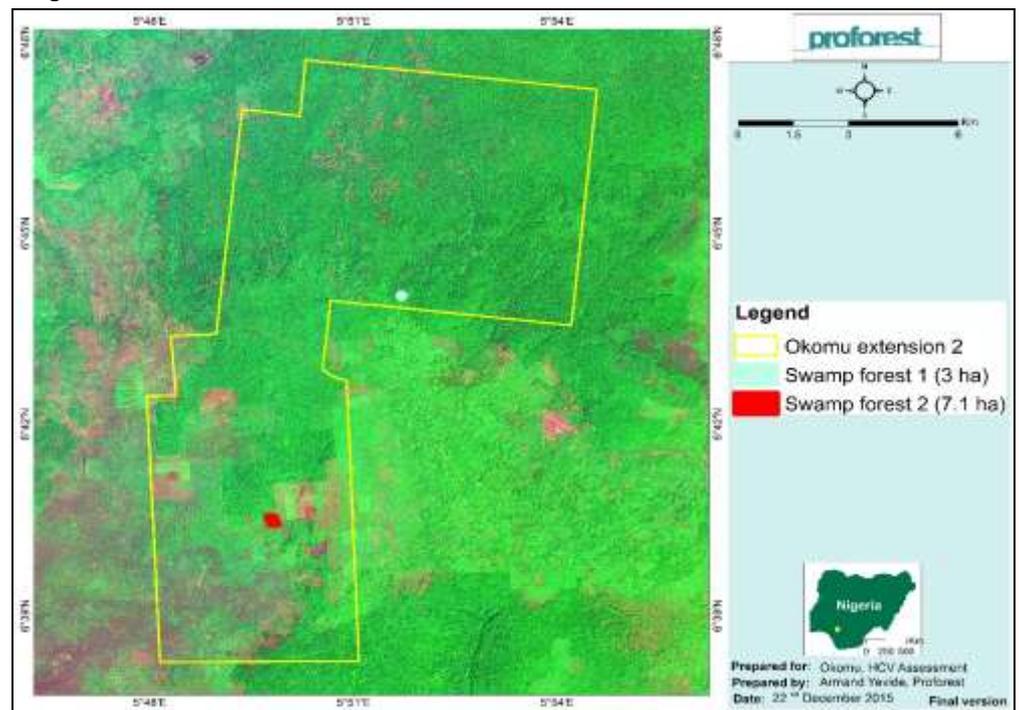


Figure 10: Map of the concession with the locations of the two swamp forests (Total area 10.1 ha)

5.4 HCV 4 Areas that provide basic services of nature in critical situations

HCV 4 refers to areas with basic ecosystem services in critical situations, including protection of water catchments and control of erosion of vulnerable soils and slopes.

These services include flood regulation, water purification, climate regulation, nutrient cycling.

| HCV | Key question | Finding |
|-----|---|----------------|
| | Ecosystem services. Basic ecosystem services in critical situations, including protection of water catchments and control of erosion of vulnerable soils and slopes. | PRESENT |

5.4.1 Identification and justification

The concept of critical situations covers cases where either:

- There are no viable, readily available or affordable alternatives, or
- The loss/damage to an ecosystem service could cause serious prejudice/suffering to recipients either immediately or periodically.¹

This typically covers, but is not limited to, areas that:

- Protect watersheds, regulate stream flow and prevent potentially catastrophic floods,
- Prevent the spread of fires, or
- Control erosion of vulnerable soils and slopes.

Furthermore, the HCV Common Guidance on HCV Identification lists the following as potential indicators of HCV 4 (we highlight in bold text the indicators that occur in the Okomu Extension 2 concession):

- Remote and/or poor rural areas where people rely directly on natural resources to supply most of their needs, including water,
- Upstream of extensive or important wetlands, fish nurseries and spawning grounds, or sensitive coastal ecosystems (e.g. mangrove forests, coral reefs etc.),
- Steep or mountainous areas, or areas of high rainfall, where the risk of catastrophic erosion is high,
- Where there is naturally low soil fertility, especially on sandy, peaty or fragile soils, where land clearance, drainage, use of heavy machinery or other intensive land use might affect soil structure and fertility,
- Arid or dryland areas particularly susceptible to erosion and desertification
- All rivers and streams including seasonal ones

Erosion and water quality

The topography of the concession is largely flat with few undulating places in the southern half but with pockets of steep slopes and valleys in the middle and in the southern part of the north-eastern sections (Figure 11). This is an indication that while erosion might not be a problem in the most southern half of the concession, it could potentially be a problem from the middle section to the northern half if appropriate measures are not taking during land preparation. Additionally, the northern half has several networks of both permanent and seasonal rivers and streams. This also presents potential for water body degradation and pollution during land preparation and plantation management. The main source of water for populations of the communities in the landscape are the boreholes fitted with or without pumps and rivers and streams. In particular, the people

¹Brown, E., N. Dudley, A. Lindhe, D.R. Muhtaman, C. Stewart, and T. Synnott (eds.). 2013 (October). Common guidance for the identification of High Conservation Values. HCV Resource Network.

of Agbanikaka and Owan confirmed during the socio-economic surveys and community consultations that rivers and streams such as the Owan and Jemide Rivers are crucial for household and on farm use. This makes rivers and streams that drain the concession an important source of water for the local communities. Ecosystem services are considered of critical importance when their absence or loss of functionality could significantly affect local communities concerned, and/or there isn't an obvious or reliable alternative to the services. **Subsequently, all rivers and streams including seasonal ones located in the concession are considered as HCV 4 and should be managed to ensure their quality and functionality are maintained.**

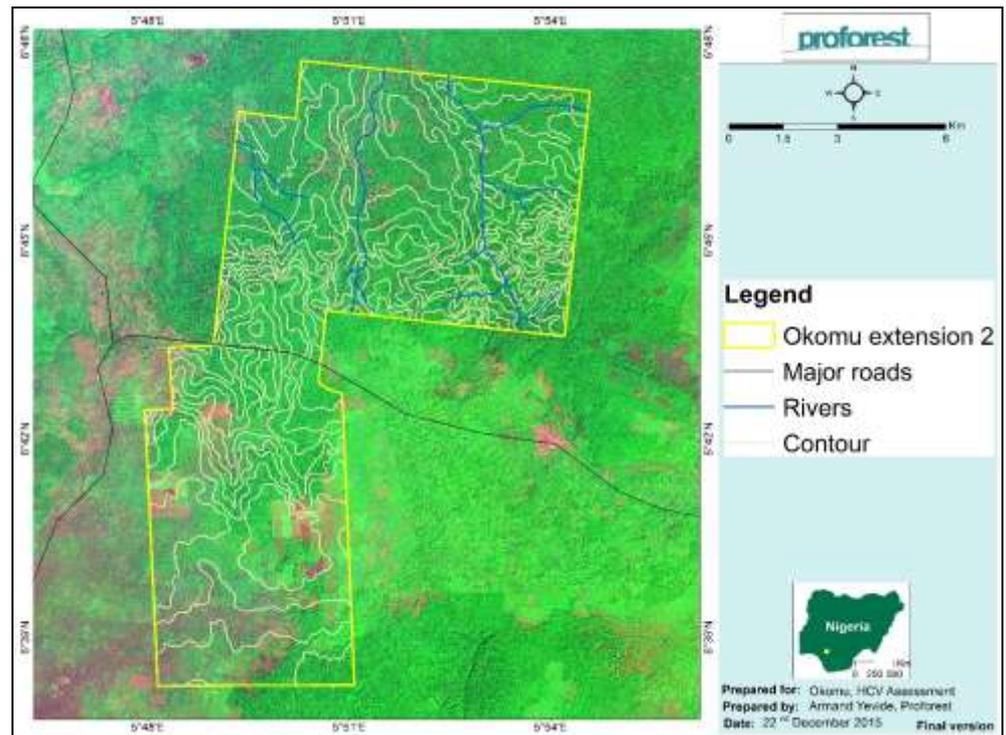


Figure 11: Topographic map showing the contours within the Okomu Extension 2

Protection of riparian vegetation and watersheds

Watershed protection is of critical importance given the relevance of rivers and streams in the area. Riparian vegetation protect 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 result in a marked decrease in the quality of the water bodies. By supporting aquifer recharge and maintaining stream flow, the riparian vegetation also ensure water quantity is maintained. **Thus, riparian vegetation and vegetation in watershed areas are all considered as HCV 4 for this assessment.** Where there are no riparian forests, the assessment recommends a minimum of 50 metre buffer on both sides northern section of the concession as shown in Figure 12 below.

Wildfires

The risk of critical fires is low given that the concession lies in the lowland moist forest zone of Nigeria which has a long rainy season but relatively short dry season. However it

has been demonstrated that even wet evergreen forests can be susceptible to wildfires when the right conditions are present. Though the findings of the consultations suggest that occasional fires are reported in the area and mainly as a result of land preparation for smallholder farming, wildfire is not deemed to be a major threat in the area and no parts of the concession can be considered as serving as a protective barrier against destructive wildfire.

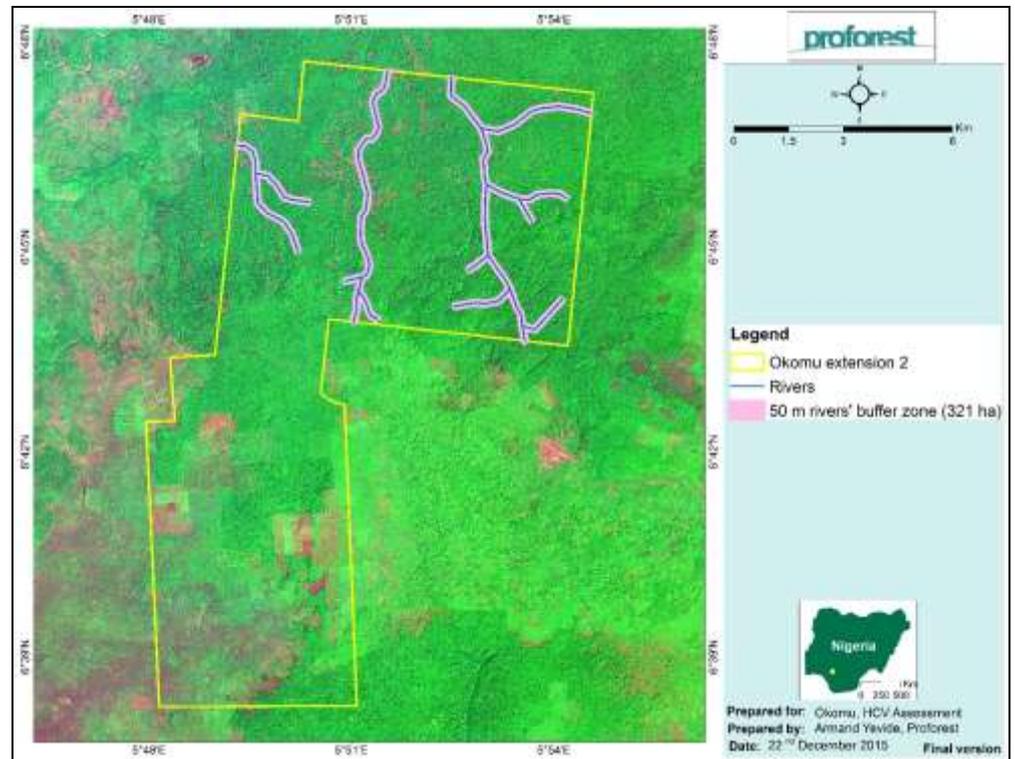


Figure 12: Map of the concession showing buffer zones along rivers and streams in the concession

5.5 HCV 5: Areas fundamental to meeting basic needs of local communities

Definition

HCV 5 areas are those that are fundamental to meeting basic needs of local communities (e.g. subsistence, health, etc.).

| HCV | Key question | Finding |
|-----|--|----------------|
| 5 | Does the Okomu Extension 2 concession contain areas that are fundamental to meeting the basic livelihood needs of the local communities, e.g. (subsistence, health, etc.)? | Present |

5.5.1 Identification and justification

An area is considered as HCV 5 when it is the source of basic needs in a situation where the majority of the local people or the poorest populations have no realistic alternative. This includes areas that are of essential importance for local communities as substantial and irreplaceable sources of food, medicines, fuel, household water and other basic needs. Where these goods and services are localised in a particular area within the natural

environment and where they serve as a crucial source of livelihood for the communities in situations where no realistic alternatives exist, these goods and services would be identified as HCVs and the areas needed for their maintenance set aside and managed appropriately.

Discussions

Protein source: hunting and fishing

The population of all the 10 communities which are located within 5 km from the concession boundaries indicated during the consultations that hunters in the communities carry out hunting and also set up traps and snares to catch a range of wild animals including grasscutters, deer, bush pig, porcupine, monkeys, antelope, etc. Although most of the communities indicated that fishing is not an important activity in the area, the people of Agbanikaka indicated that they carry out fishing activities in the Jemide River and that fish is an important source of protein. All the communities indicated that bushmeat from hunting and trap setting are generally consumed in the area, thus making hunting an important source of protein.

It should be emphasised at this stage that the local people explained that hunting activities are not localised and not confined in the concession. Most of the communities also indicated that although they do hunt generally in the landscape, hunting is not an important part of their livelihood given the rarity of game in the landscape. Local hunters from the communities along the Akure-Benin road indicated that their hunting ground includes the concession although hunting is not an important part of their activities and that converting the concession area to oil palm will not have any significant impact on hunting. Subsequently, no part of the concession was identified as HCV 5 for hunting purposes. **However, the Jemide River is considered HCV 5 for the important role as a source of protein for the people of Agbanikaka.** Note that all rivers that drain the concession and their riparian vegetation have also been considered as HCV 4.

Farming

Farming is the main pre-occupation of the people of the local population in the landscape. Both subsistence and commercial farming is carried out by the local people. Several food crops notably plantain, cassava, yam, maize and a variety of fruits including pineapple are grown by the local people. They also cultivate cash crops such as oil palm and cocoa. The people of the 5 communities to the eastern side of the concession indicated that they do not farm in the concession area because the concession is located about 5-10 km away from those communities and they consider that as far. They do farm within about a 3 km radius from their communities. The remaining 5 communities at the western side which lie between 2-3 km from the concession boundaries used to farm within the concession based on permission granted by the previous owners of the land, namely Iyaye Brothers and A and Hatman. They also intimated that they knew the land had been given to Iyaye by government and they were aware that they could be asked to vacate the land in the future and that moving out of the land was not a problem since they could farm within the 2-3 km stretch of land between their communities and the concession boundaries and also on the land to the western side of their communities. The main concern communities such as Agbanikaka and Odighi raised was that some farmers are still awaiting compensation for their crops and that they will move their farming activities to the available lands around their communities. Given that the consultation outcome suggests that using the land will not affect food crop production and the livelihood of the local

people. HCV 5 is considered absent purely on the basis of farming and food crop production as a source of livelihood.

Sources of water

All the communities except Irhue have boreholes most of them fitted with pumps and overhead tanks that serve as the main source of water for the community. There are no rivers close to Irhue and therefore the people travel as far as to Oke to buy water. None of the communities indicated that they depend on rivers that drain the concession as their main source of water for household use besides the use of water from the rivers and stream whiles in their farms.

Collection of NTFPs

The people of all the 10 local communities indicated that they do collect a range of NTFPs from the landscape although they consider that as insignificant part of their main activities. Only two communities (the people of Odighi and Umokpe) indicated that they collect parts of plant species such as Akuobisi, Okaa, Owewe, Iyin and Makore for medicinal purposes. They also collect docanuts (also called Ogbolo) and bitter cola from the landscape and in the concession where they indicated are generally found in the riparian forests. In fact, the people of Umokpe indicated that they do not travel that far to look for NTFPs in the concession area. However, they indicated that these are generally diffused in the landscape and there are no specific locations in the concession where these NTFPs are concentrated. They also indicated that due to intensive farming activities within the concession, these species are no longer common in the concession area.

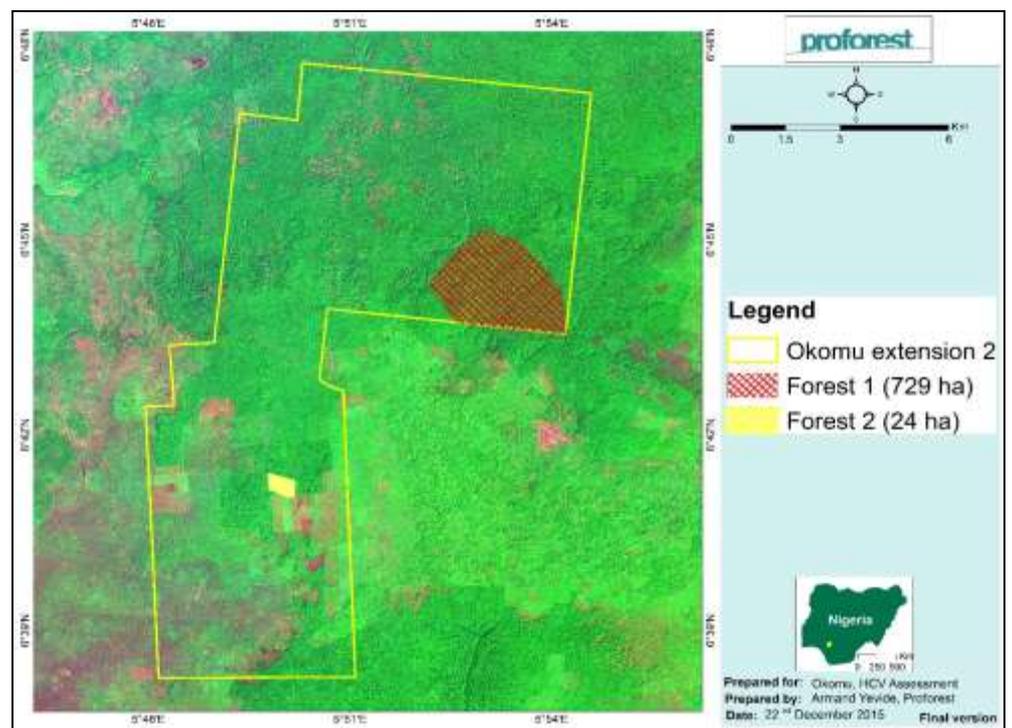


Figure 13: Map of the concession showing relative good forest areas considered as HCV 5

Based on the information gathered from the communities engagement particularly the Odighi community and the fact that the remaining forests in the landscape are fast disappearing and following the precautionary approach, the pockets of forests (specifically the one near the management quarters and to the north-east of the

concession) and riparian vegetation that could be a source of medicinal plants for the Odighi community and in future for all other communities in the landscape are considered as HCV 5 for this assessment. It is recommended that Okomu as part of the FPIC process will engage with the Odighi community to agree on which of the riparian forests they could collect parts of plants and trees for medicinal purposes.

5.6 HCV 6 Areas critical to local communities' traditional cultural identity

Definition

An area is considered to be HCV 6 if it contains any resource or value that is considered to play critical socio-cultural or religious function. This may include areas that are set aside as sacred forest or sacred trees and serving as the *home to deities or ancestors*. These areas are also known as sacred groves in some countries. In Nigeria, some patches of forest/natural vegetation may be considered as 'evil' and are generally set aside from all forms of intrusion and conversion - the belief being that any person who intrudes into such areas would bring a curse to himself and the community as a whole. Additional customs that may qualify as HCV 6 in Nigeria include:

- Sacred/totem animal or plant species that are thought to contain spirits or the soul of the community and should not be killed or disturbed,
- Intangible taboos such as *taboo days* on which no entrance into the forest or farms is permitted. These may be one day of the week set aside on which the *gods* and *ancestors* rest; a particular day within the year for religious festivities or random days that are dictated by the *oracles* for the performance of traditional or religious rites.

| HCV | Key question | Finding |
|-----|---|---------|
| 6 | Cultural values. Sites, resources, habitats and landscapes of global or national cultural, archaeological or historical significance, and/or of critical cultural, ecological, economic or religious/sacred importance for the traditional cultures of local communities or indigenous peoples, identified through engagement with these local communities or indigenous peoples. | Present |

5.6.1 Identification and justification

Sites of national or global importance

Sites of national and global importance include archaeological, UNESCO World Heritage and cultural heritage sites and all other similar sites of national importance. The findings of the desk-based research, consultations with state and local organisations as well as with the communities and field investigations suggest that no such site exists within the boundaries of or adjacent to the concession.

Sites of local cultural/traditional or religious importance

Almost all the communities within 5 km from the boundaries of the concession indicated that they have some of traditional and spiritual sites. However, only 3 of the 10 communities indicated that their sacred and spiritual sites are contained within the

concession area. These are Odighi, Odigwetue and Uhiere. Communities' sacred sites are located outside of the concession largely because the concession was previously government reserved land which the local people were prevented from all forms of use and therefore did not find it prudent to perform traditional rites in areas where they are not allowed to use by law. As seen in Figure 14 below, the three spiritual or sacred sites (Survival tree for the people of Uhiere, the Odighi for the people of Odigwetue and Odighinoba for the people of Odighi) have been considered as HCV 6 and dully mapped. It should be noted that Odighi and Odighinoba are located at a common place but worshipped at different times of the year (September by the people of Odigwetue and in December by the people of Odighi. The two communities perform their traditional rites at the same site in the concession but at different times of the year. The people of Odigwetue perform their rites in September of every year while that of Odighi is held in December of each year. The Table below provides a brief outcome of communities' consultation findings on their traditional use of the concession area

Table 4: Communities consultations outcome on traditional use of the concession area

| Name of community | Name of Local Government | GPS Coordinate | Estimated population ² | Meeting attendance | Participatory mapping (Yes/No) and summary of outcome |
|-------------------|--------------------------|-----------------------------|-----------------------------------|--------------------|--|
| Agbanikaka | Ovia North-East | N: 06.78307 E: 005.77759 | 2,300 | 50 | (Yes): No traditional use area or sacred site on the land except fishing from the Jemide River and other smaller streams. The only community where the people indicated that fishing from Jemide River is an important part of their livelihood |
| Owan | Ovia North-East | N: 06.75913 E: 005.76883 | 3,000 | 19 | (Yes): No traditional use area or sacred site in the concession. |
| Odigwetue | Ovia North-East | N: 06.67078 E: 005.76792 | 4,500 | 42 | (Yes): The Odighi sacred site located in the swamp forest area in the concession. Coordinates (N: 06.67527°; E: 005.82841°) |
| Uhiere | | N: 06.73241 E: 005.78685 | 2,000 | 14 | (Yes): Sacred site with a Survival tree planted at the site. Coordinates of the site are tree (N: 06.70071°; E: 005.81967°) |
| Odighi | Ovia North-East | N: 06.64304 E: 00576465 | 3,000 | 81 | (Yes): Odighi has Odighinoba in the swamp forest area. It is in the same place as the sacred site of Odigwetue. Coordinates (N: 06.67519°; E: 005.82841°) |
| Irhue | Ovia North-East | N: 06.69116 E: 005.93642 | 1,500 | 15 | (Yes). No traditional use area or sacred site in the concession area |
| Oke | Uhumwode | N: 06.70121 E: 005.89911 | 4,000 | 11 | (Yes). No traditional use area or sacred site in the concession area |
| Ekpan | Uhumwode | N: 06.72056 | 1,500 | 20 | (Yes). No traditional use area or sacred site in the concession area |

² Socio-economic and SIA Final report, Okomu Extension 2 by Foremost Dev Services, Nigeria

| | | | | | |
|--------|-----------|-----------------------------|-------|----|--|
| | | E: 005.94443 | | | |
| Umokpe | Uhunmwode | N: 06.74311 E: 005.95637 | 1,200 | 22 | (Yes). No traditional use area or sacred site in the concession area |
| Orhua | Uhunmwode | N: 06.77128 E: 005.98474 | 2,500 | 17 | (Yes). No traditional use area or sacred site in the concession area. |

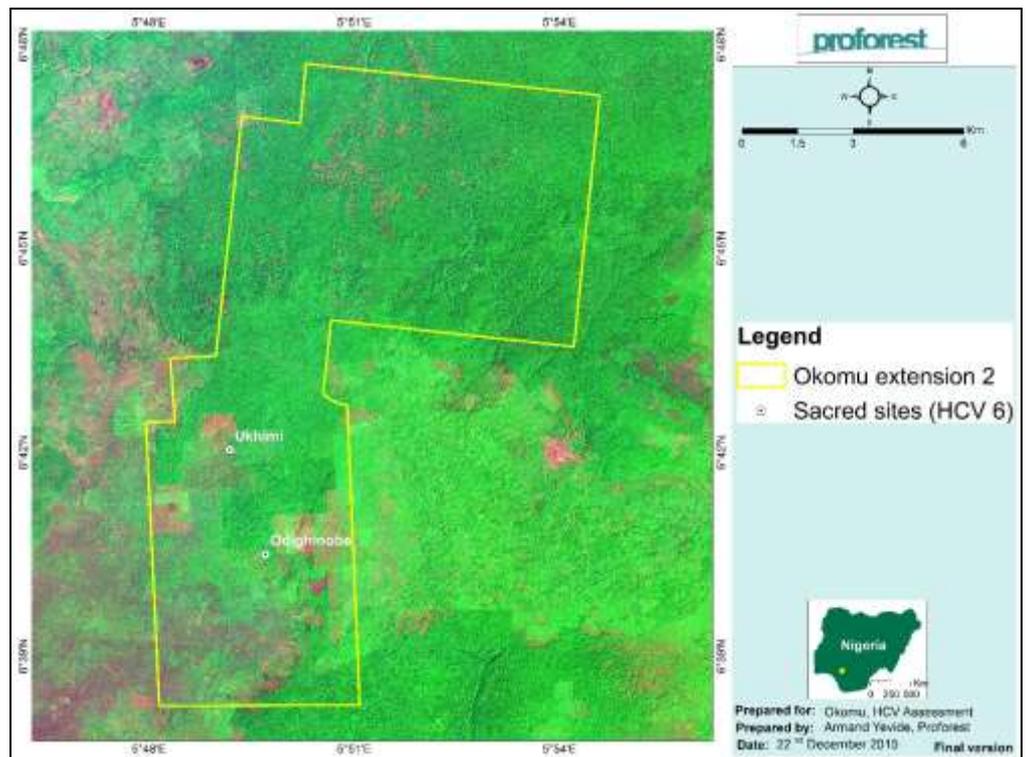


Figure 14: Map of the concession showing locations of the two sacred sites identified as HCV 6

5.7 Stakeholder consultations

Consultative meetings were held with different stakeholder groups to present the findings from the assessment, find out their concerns relating to the findings, and solicit their input into the recommendations for managing the identified HCVs/HCV areas. Consultative meetings were held at the offices of each stakeholder group while those of the communities were held at either community Town Halls or the forecourt of the chief's house in each community. The key concerns raised, recommendations, and the response of the assessment team are summarised in Table 5 below. Summary consultation notes can be found in Annex 2 of this report.

Table 5: Summary of outcome of stakeholder consultations

| Name of Stakeholder | Date of consultation | Comments/concerns raised | Assessors response |
|----------------------------------|---------------------------|--|--|
| Mr Friday Oriakhi Director of | 23 rd Oct 2015 | The Ministry of Environment has raised concerns on the transfer of the Certificate of Occupancy from Iyaye | The two issues on transfer of C of O and |

| | | | |
|---|---------------|---|--|
| Forestry | | Brothers to A & Hatman and then to Okomu and that the ministry expects the current right holder to engage with the ministry to address the concerns. It is also believed that the size of land originally granted to Iyaye is not the same size as what Iyaye transferred to A & Hatman and now to Okomu. There are issues on compensation payments to affected farmers. Besides, these two issues, the Ministry has no other concern on Okomu operating on the land | the compensation to affected farmers will be communicated to Okomu so the company can address the issues appropriately. Okomu's response was that the ministry has not informed them of this concern. |
| Mr M. I. Anogie, Director of Agriculture Services, Ministry of Agriculture and Dr Albagun | 23rd Oct 2015 | Mr Anogie indicated that the Ministry has no issue with Okomu operating on the land apart from expecting the company to operate responsibly, respecting workers and communities' rights. | Okomu intends to certify its operations so it is expected that social issues will be taken seriously. |
| Mrs Itohan Obayagbona (Permanent Secretary) | 23rd Oct 2015 | The Permanent Secretary for Agriculture emphasised that her outfit expects Okomu to be environmentally and socially responsible. She expressed concern that the ministry has some challenges with Okomu on payment of inspection, grading and licensing fees but those have nothing to do with their current operations at Extension 2 and that the Ministry has no issue with the company operating at Ext 2. The Permanent Secretary requested information on RSPO. | Information on RSPO including website were provided. |
| Mr Stephen Igbinoba, Senior Accountant. Uhumwode Local Government | 23rd Oct 2015 | The Senior Accountant of the LGA explained that they expect Okomu to operate responsibly, by ensuring that they comply with all state and Federal laws including timely payment of taxes and fees and contributing to local development. They requested for more information on RSPO and indicated that the LGA would like to follow RSPO requirements and also to monitor Okomu's operations to understand how they perform and how RSPO can help improve on their operational practices. | Okomu has committed itself to comply with all Federal, state and local laws and therefore it is expected that they will genuinely comply with them. Okomu explained that the company officials met with the Chairman of the Local Government in June 2014. |
| Mrs Rita Uwaka, Project Officer, Environmental Rights Action/Friends of Earth-Nigeria | 23rd Oct 2015 | No specific concerns for the new concession but she expressed concern on Okomu's use of military security system which according to her poses threats to local population not counting on extensive security checks that local people who commute to and from their villages suffer at the hands of the military security at the company's check-points. ERA is also concerned that Okomu is gradually grabbing lands in the state and that if care is not taken, the process will cause shortage of land for food crop farming in the state. If Okomu indeed intends to be certified under the RSPO, then it's | The lead assessor explained that ERA's concerns the use of militarised security and that on land acquisition that has the potential to cause shortage of land for local people will be communicated to the management of Okomu. Okomu's response was |

| | | | |
|--------------------------|-------------------------|---|--|
| | | important that they improve on their current business practices, adopt better practices that provides respect and dignity to their workers, communities and also operating in an environmentally responsible manner. No major specific issue raised against Extension 2 except that they expect the company to ensure fair compensation to all farmers who have been displaced economically. | that the security personnel are not from the military and that they have the same powers as the local police who help to ensure law and order and also protect the general plantation. |
| Neighbouring communities | July, Sept and Nov 2015 | Major issues raised are compensations for crops that will be affected by the proposed oil palm development, responsible development including protection of rivers and streams that drain the concession. They also expect Okomu not to expand beyond the current concession as further expansion of large scale oil palm in the future may affect available farmlands for local use. Those communities with sacred sites in the concession also requested that Okomu operates in a way that does not affect their sacred sites and their access to those sites | The lead assessor explained that Okomu has committed to responsible development of its operations and that the company may live to those commitment. They were advised to approach the company management should they have any concern with the operations |

6 HCV Management and Monitoring

This section includes assessment of the actual and potential threats to HCVs identified in the assessment area, management recommendations to ensure the maintenance or enhancement of HCVs present in the concession. The section also provides monitoring recommendations which Okomu is expected to adopt for evaluating the effectiveness of the HCV management recommendations over time.

6.1 Threat assessment

Threats to identified HCVs in the concession were assessed through direct field observations of activities in and around the HCV areas, consultations with relevant stakeholders, local communities and community groups. These were supplemented with previous experience of the assessment team in the area, the assessment team's knowledge of palm oil plantation development, and reports of previous studies undertaken in the area including the biodiversity survey.

Table 6: Threats to identified HCVs in the concession

| HCV | Brief description of value present in assessment area | Main threats |
|-----|--|--|
| 3 | Rare, threatened or endangered ecosystems: The swamp forest located within | The swamp forest does not only have unique bio-ecological dynamics and species but also it is the home to the sacred sites of two communities, Odighi and Odigwetue. The swamp forest must therefore be maintained/conserved. There is |

| | |
|--|--|
| <p>the southern half of the concession</p> | <p>no current threat but potential threats to the swamp forest include:</p> <p><u>Plantation agrochemical use</u></p> <p>Oil palm plantation development involves the use of agrochemicals (herbicides, pesticides, etc.). These chemicals, if applied close to the swamp in large quantities, or if not applied and disposed of properly, could pollute the water in the swamp which may have significant impact given that the water is stagnant. The chemical pollution could destroy aquatic life in the swamp. In order to avoid this potential threat, it is recommended that Okomu delineates and set up a minimum of 50 metre buffer around the swamp forest and also to ensure agrochemicals are not applied close to or within the set buffer zone.</p> <p><u>Conversion to farmland and plantation, land preparation and road construction</u></p> <p>The swamp forest is not likely to be converted for farming purposes given the amount of stagnant water it contains throughout the year This explains why the swamp area remained intact even though all the surrounding vegetation was converted for farming prior to Okomu taking over the land. However, if not adequately delineated and protected, it could suffer considerable damage during land preparation and road construction by Okomu field workers. This could reduce its extent and function. The swamp forest must be appropriately shown on all operational maps and workers trained to avoid any activity beyond the boundaries of its buffer.</p> |
| <p>4 Ecosystem services including:</p> <ul style="list-style-type: none"> • Critical water catchment areas required to maintain continuous flow of water to serve local communities • Riparian vegetation protecting water bodies against erosion, maintaining water quality of rivers and streams | <p><u>Potential threats</u></p> <ul style="list-style-type: none"> • Logging: Logging within the swamp and the riparian vegetation if not checked, would reduce the vegetation cover. This would reduce the capacity of the swamp to moderate stream flow, stabilize the terrain, reduce river bank erosion, regulate runoff, trap sediments and promote infiltration of sediment-borne nutrients and pesticides. This would affect the water quality of water in major rivers and streams such as the Jemide, Owan etc that drain the concession. • <u>Conversion during plantation land preparation and road building:</u> If due care is not taken, riparian vegetation could be converted during plantation land preparation. If this happens it will reduce the potential of riparian vegetation to moderate stream flow, stabilize the terrain, reduce river bank erosion, regulate runoff, trap sediments and promote infiltration of sediment-borne nutrients and pesticides). The water could also be polluted as a result of the use of agrochemicals on the farms and could have adverse health implication for communities who occasional depend on the river. • <u>Plantation agrochemical use:</u> Use of agrochemicals could potentially cause pollution of water bodies that drain the concession. This could have health implications for communities downstream who occasionally depend on the river for fish and for water for household use. |
| <p>5 Basic community needs including: hunting, fishing and NTFP collection in the riparian forest as well as Water supply to communities</p> | <p>Potential threats include:</p> <ul style="list-style-type: none"> • Loss of water sources for both household use and on farm • Loss of access to fishing by the people of Agbanikaka • Loss of access to NTFPs such medicinal plants and Doka nuts popularly called "Ogbolo" |
| <p>6 Areas critical to local communities' traditional</p> | <p>Damage or conversion of the sacred sites will lead to</p> <ul style="list-style-type: none"> • Loss of access of the local population to their spiritual and cultural sites |

- cultural identity:
- Potential loss of traditional and cultural identity
 - The survival tree
 - The sacred site at the swamp forests

6.2 HCV Management Recommendations

Given the level of degradation of the original forest cover of this concession and the fact that there are no biological features considered significant at the national or regional level beside the swamp and the riparian forests, and the fact that significant part of the concession is already farmland, it is recommended that this concession can be converted **with some appropriate management strategies for maintaining areas with exceptional conservation values. The concession can therefore be converted into oil palm plantation with the exception of the HCVs and HCVs management areas described in this report.**

Subsequently, this section presents recommendations for managing the identified high conservation values in the concession, should Okomu go ahead to convert the concession. It must be emphasised that whiles HCV 1 was considered absent two species, the White-Throated Monkey and the African Grey Parrot which are listed on the IUCN Redlist as Vulnerable species were identified in the concession. Also a Tree Pangolin which is listed as Near Threatened was identified in the concession. Whiles the individual numbers if these species do not make the areas HCV 1, it is strongly recommended that Okomu takes steps to strictly disallow hunting of these there species and any other HCV 1 species in the concession.

Table 7 below provides an outline of HCV management and monitoring recommendations that Okomu must adopt and implement together with the HCV implementation plan in Annex 3 of this report.

Table 7: HCV management recommendations

| HCV | Threats | Management recommendations | Monitoring recommendations |
|-----|---|---|--|
| 3 | <ul style="list-style-type: none"> • Conversion of the swamp forest • Cutting of trees in the swamp forest • Pollution of the swamp • Dumping of waste including chemical in the swamp forest | <ul style="list-style-type: none"> • Exclude the swamp forest from all conversion activities • A buffer zone of 50 m be set around the current extent of swamp forest area. There should be no production activities including oil palm in the buffer. However, it is recommended that the buffer zone is planted with native tree species • No production activates must be allowed in the swamp forest • Prepare appropriate SOPs for effective management of the swamp forest. | <ul style="list-style-type: none"> • Regular monitoring of the swamp forest areas • No application of agrochemicals within the swamp forest buffer zone • Review of effectiveness of SOPs at least yearly |
| 4 | <ul style="list-style-type: none"> • Loss of riparian forest during land clearing • Loss of riparian forests due to over-exploitation | <ul style="list-style-type: none"> • Prepare SOPs that recognise all set-aside areas including riparian vegetation and ensure those areas are properly mapped and precluded from conversion activities • Buffering of all rivers and streams. Set-aside buffer of 100 m on each side for big | <ul style="list-style-type: none"> • Regular sampling from rivers and streams for testing • Regular monitoring of riparian vegetation, watersheds and riparian forest areas • Avoid application of |

| | | | |
|---|---|--|--|
| | <ul style="list-style-type: none"> of NTFPs Loss of water quality and quantity due conversion of watersheds and riparian vegetation Loss of potable water supply downstream Pollution from agrochemical use | <p>rivers (width >20m), 50 m buffer for medium rivers (20>width> 5m) and 20 m buffer for all small rivers and streams (width not more than 5m). Measurements must be average of widest sections of all rivers and streams. Any flood plains should also be maintained and buffered and considered HCV 4.</p> <ul style="list-style-type: none"> All riparian vegetation identified must be precluded from conversion activities All other forest areas, such as the one behind the Management Quarters, must be precluded from conversion No application of agrochemicals within 100 metres from rivers and streams including perennial ones No planting on steep slopes above 20° Land preparation/Road construction team trained to implement erosion control measures | <p>agrochemicals in riparian vegetation and watershed areas</p> <ul style="list-style-type: none"> Review of effectiveness of SOPs at least yearly |
| 5 | <ul style="list-style-type: none"> Pollution of water bodies from agrochemicals Loss of aquatic biodiversity including fish Reduced water quality due to erosion and siltation Loss of NTFPs including medicinal plants | <ul style="list-style-type: none"> Adopt and implement recommendations on buffering of rivers and streams Ensure that land preparation and operational staff are aware of buffer zone recommendations Prepare SOPs for all operations including land preparation Signage all buffers and conservation areas and integrate this into SOPs Ensure all set-aside areas including riparian forests are appropriately mapped and operational staff trained to be aware and to avoid conversion of those areas Agree with local communities on controlled collection of NTFPs | <ul style="list-style-type: none"> Include regular monitoring of buffer zone areas and periodic monitoring of boundaries of all set-aside areas in general operational monitoring systems Regular review of the effectiveness of SOPs implementation Regular testing of water samples from rivers and streams that drain the concession assess pollution levels |
| 6 | <ul style="list-style-type: none"> Clearing of sacred and shrine sites Loss access due to restrictions on movement through the plantation | <ul style="list-style-type: none"> Okomu to prepare SOPs that include how HCV 6 areas in the plantation will be managed Agree with communities on what activities are allowed within the sacred site management areas Okomu to allow the people of Odighi, Odigwetue and Uhiere unconditional access to their shrine and sacred sites. A written agreement clearly establishing access routes and any related issues should be created and signed by the Okomu and the relevant communities. | <p>A simplified HCV monitoring system/protocols in collaboration with the local communities</p> |

7 Synthesis

7.1 Summary of findings and recommendations

Table 8: Tabular presentation of HCV findings

| HCV | Definition | Present | Potentially present | Absent |
|-----|--|---------|---------------------|--------|
| 1 | Species diversity. Concentrations of biological diversity including endemic species, and rare, threatened or endangered (RTE) species that are significant at global, regional or national levels. | | | |
| 2 | Landscape-level ecosystems and mosaics. Large landscape-level ecosystems and ecosystem mosaics that are significant at global, regional or national levels, and that contain viable populations of the great majority of the naturally occurring species in natural patterns of distribution and abundance. | | | |
| 3 | Ecosystems and habitats. Rare, threatened, or endangered ecosystems, habitats or refugia. | | | |
| 4 | Ecosystem services. Basic ecosystem services in critical situations, including protection of water catchments and control of erosion of vulnerable soils and slopes. | | | |
| 5 | Community needs. Sites and resources fundamental for satisfying the basic necessities of local communities or indigenous peoples (for livelihoods, health, nutrition, water, etc...), identified through engagement with these communities or indigenous peoples. | | | |
| 6 | Cultural values. Sites, resources, habitats and landscapes of global or national cultural, archaeological or historical significance, and/or of critical cultural, ecological, economic or religious/sacred importance for the traditional cultures of local communities or indigenous peoples, identified through engagement with these local communities or indigenous peoples. | | | |

The Okomu Extension 2 concession which is located in the BC 12 of the former Owan North Forest Reserve is generally suitable for sustainable oil palm development purely from the Edo State Government's land development agenda of conversion of badly degraded forest reserves for agriculture use and high conservation values perspectives. This is largely because the concession, although used to be part of a forest reserve, has been badly degraded and thus has been de-reserved by the Edo State Government for agriculture purposes. Thus, the use of the concession for oil palm plantation fits well with the State Government's land use plans for the landscape. Secondly, the concession area does not host significant concentrations of species of global, regional, national or local importance. It also does not form part of any large landscape forests. However, it is home to HCV 3, 4, 5 and 6. It also hosts insignificant numbers of species of conservation importance such as the white-throat monkey. The HCVs identified and low numbers of species of conservation importance identified in the concession can be appropriately managed within the frame of a sustainable oil palm development which adheres to RSPO requirements. Subsequently, recommendations have been provided for Okomu to adopt and implement to ensure the HCV 3, 4, 5 and 6 contained within the concession are adequately protected.

HCVs 3 and 4

Monitoring of the effectiveness of management of the swamp forest, step slope and riparian areas, and the Jemide River should have five main components:

- I. Evaluating the system for operational compliance with Okomu's SOPs on buffer zone design and implementation,
- II. Operational compliance with agrochemical management, and
- III. Adopting and evaluation of Zero Cutting Policy: OOPC must adopt and implement a strict Zero Cutting (SZC) policy in all buffer zones and conservation areas, except where it is absolutely necessary for road or bridge construction across a watercourse. This includes no cutting of trees or movement of heavy machinery within buffer zones, as well as no felling of trees toward buffer zones when required during nearby land clearing. In particular, land preparation team must be trained to clear vegetation including tree felling in parallel to buffer zones or away from them to avoid any damage to the buffer zones.
- IV. In order to ensure that OOPC operations in the site does not cause erosion from steep slopes, the company needs to put in place, implement and monitor a clear slope clearing policy. This should include:-
 - No planting on steep slopes (above 20°)
 - Gentle slopes (15-20°) - Need to put in place erosion prevention measures
 - Cover crops, terracing, windrowing, road planning, etc.
 - Undulating terrain (0-15°) - suited for planting without much erosion control interventions
- V. Direct evaluation of water quality. The latter should include:
 - Measurements of water quality before land conversion and periodically after operations have started, as required by the Edo State Environmental Protection Agency and the RSPO;
 - Interview-based evaluations of local peoples' views on water quality at minimum twice a year (just before and after the rainy season). This should be done with the people of Agbanikaka, Owan, Uhiere, Odigwetue, Odighi and Oke. OOPC should have a system to address any complaint in a timely manner.

Data on water quality should be compared to the baseline values collected during the environmental impact assessment to assess any changes. In order for Okomu to effectively implement the environmental management and monitoring recommendations detailed in this assessment, it is highly recommended that Okomu staff and workers are appropriately trained. The Environmental Manager of Okomu should ensure delineating buffer zones on the ground, monitoring that they have been respected during and after conversion activities.

- Chemical environmental safety may be controlled through standard good practice measures (e.g., ISO system).
- Where possible, Okomu should carry out survey of fauna and flora species in the swamp forests to establish baseline of species present in the swamp forests
- Periodic fauna surveys should be carried out within the riparian vegetation and where possible in the swamp forests. The data could be compared to the results from the fauna survey undertaken during this assessment and the baseline survey in the swamp forests.
- Data on logging activities in the swamp and the riparian vegetation should be recorded and compared periodically to measure the effectiveness of protection

measures. A response plan should be prepared to address illegal logging in a timely manner whenever this is identified

HCV 5

The outcome of the community consultations, including the participatory mapping, identified significant variation in how the different communities depend on natural resources within the concession area. While the communities to the eastern side of the concession generally do not depend on it, those in the western side has very low to moderate use of the natural resources, such as medicinal plants, in the concession area. It is recommended that Okomu engages with the communities in the western side to agree on how they could access the natural resources within the concession sustainably. Whatever Okomu agrees with the communities must be consistent with the Federal and State legal and regulatory requirements.

HCV 6

It is recommended that Okomu engages and agrees with the three communities who have sacred sites within the concession on how they could access their sacred sites and perform their rituals without any hindrance.

Protecting few numbers of white-throated monkeys and pangolin in the concession

The main threats to the few individuals of the white-throated monkeys and the pangolin identified in the recommended set-aside patchy forest area near the management quarters and in the riparian vegetation are hunting and habitat loss from both logging and land conversion. It is thus recommended that the forest near the management quarters is set-aside as a strict conservation area where no production activities including NTFP collection is allowed. There should be tree cutting or logging in this forest. Additionally, Okomu should avoid this forest from all plantation development activities including road construction. These measures at avoiding further fragmentation of this 24 ha forest area. It is also recommended that Okomu carries out annual species population surveys of individuals of white-throat monkeys and pangolins as well as all other species. The company should constitute regular monitoring of this forests including periodic assessment of its quality.

7.2 Cross-cutting management recommendations

Training and capacity building

For Okomu to effectively implement the recommendations contained in this report and RSPO best practice requirements, the company's workers and staff will need to be adequately trained to implement the recommendations in practice. It is essential that trainings for field staff and workers include elements on the identified HCVs and the company's plans for managing and maintaining these HCVs. Field staff should also be trained to read and use GPSs and interpret GIS maps to be able to effectively implement protection measures on the ground. In order to avoid potential destruction or clearance of the identified social HCVs, these areas have been mapped. We therefore recommend that Okomu prepares SOPs that will guide implementation of field activities. Training must also cover basic RSPO requirements.

Community engagement

The fringe communities in Okomu Extension 2 concession generally welcome the project although they also have some concerns particularly on compensations for affected crops. In order to address these concerns, it is recommended that Okomu heightens its community engagement efforts in order to obtain the buy-in and support of the people who can affect or could be affected by the company's operations. Given that the effective management of the HCVs identified in the concession will depend in part on the co-operation of the local communities, it is strongly recommended that the company will include discussions on HCV related issues during its community engagement processes.

Contributing to local development: Given the potential negative impact from the conversion of the concession into oil palm plantations, particularly its implications on local people's access to NTFPs, it is important that Okomu develops and implements community development plans in consultation with the local people to ensure that there is a net positive impact of the company's operations on local population and communities.

Concluding recommendations

The following concluding recommendations are made based on the outcome of the community and other stakeholder consultations.

- Okomu should strengthen its community engagement process.
- Collaborate with the previous use right holder of the concession, A & Hatman to address the concerns on crops compensations that the people of Odighi, Agbanikaka, Owan and Odigwetue raised during the consultations
- Engage and negotiate with local communities for example Agbanikaka for the people's access to the concession for fishing and collection of NTFPs;
- Agree with the communities on how they will access their sacred sites and respect whatever may be agreed upon. Also, Okomu should discuss the request made by the people of Uhiere and Odigwetue on the company constructing a one-room structure at the sacred sites where they will perform their annual rituals given that the vegetation that provides then cover during their annual rituals at the sites that have been cleared by Okomu, and
- Adopt and implement RSPO requirements on communities' relations and sharing of information with fringe communities

8 HCV Management area map

The Figure 15 below shows the location of all the HCVs and their management areas within Okomu Extension 2 concession. It also provides indication of total HCV management areas for all the HCV 3, 4, 5 and 6 that were identified.

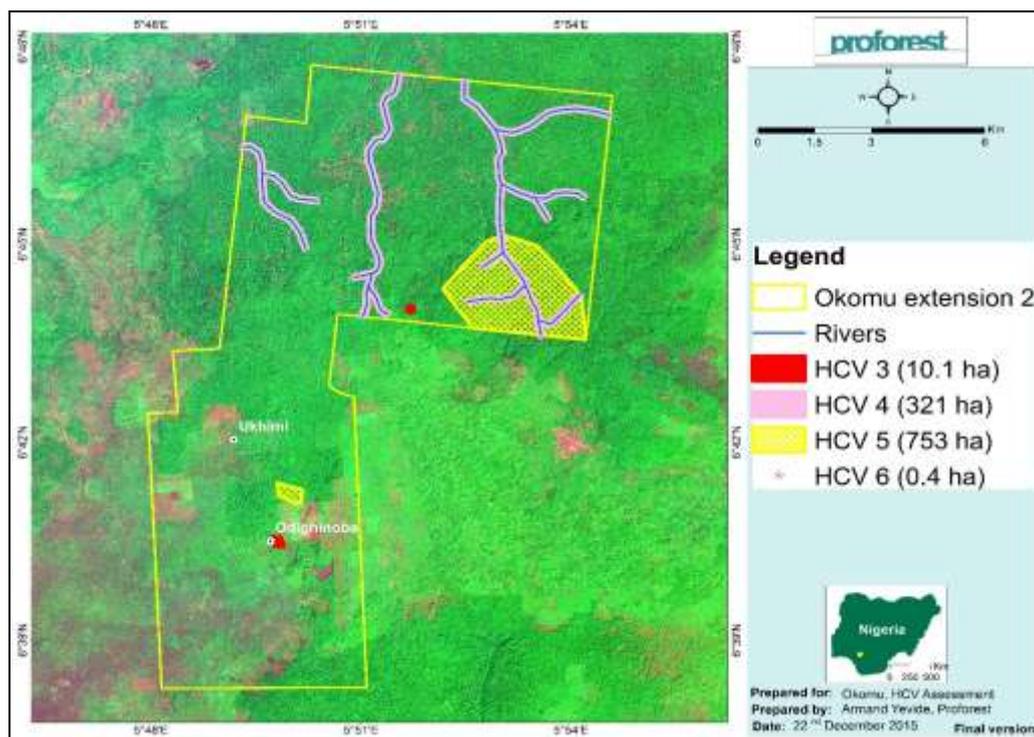


Figure 15: Location of all HCVs and their management areas in the concession

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Annexes

Annex 1: CVs of assessment team members

Abraham Baffoe

Current position: *Associate Director, Proforest, UK since January 2010.*

Qualifications: *MSc, Forestry and Environmental Economics. Louisiana State University, Baton Rouge, USA. 2008-2009: Certification, Implications for Sustainable Forest Management and Timber Export Trade from Ghana (funded by the ITTO).*

Postgraduate Certificate. Natural Resources Management Economics. Wageningen University and Agricultural Centre, Netherlands, 2001

BSc Hons. Forestry. Kwame Nkrumah University of Science and Technology, Kumasi, Ghana. 1996.

Expertise:

Forest ecology, biodiversity conservation, social forestry and hydrology: Extensive experience and knowledge on forest ecology, species identification and forest hydrology. Several years of experience in forest biodiversity assessment and monitoring including practical experience in managing watershed projects. Decades of experience working with local populations on sustainable management and use of community natural resources.

HCV: Have worked with HCVs since 2001. This has included leading tens of HCV assessments for forestry and agricultural commodity production companies in many countries in Africa, including Ghana, Liberia, Gabon, Nigeria, Zambia, and Ethiopia. Have also provided several HCV trainings since 2005 and been a facilitator and co-author of the Ghana National Interpretation of the HCV Toolkit in 2006.

Sustainable agriculture and forestry: Over 18 years' experience with the environmental and social sustainability issues of which 13 years have been with the oil palm sector. Have extensive experience with the RSPO, having led several baseline assessments of oil palm operations against the RSPO standards and having been part of RSPO National Interpretations for Ghana.

Fieldwork: Over a decade of experience of fieldwork with the tropical rainforests of West Africa, having worked as the Afforestation Manager of a leading timber company in Ghana from 1996 and as the WWF West Africa Forest Programme Manager.

Nana Darko Cobbina

Current Position: Senior Project Manager, Proforest Ghana since January 2013.

Qualification: MSc. Environmental Resources Management, October 2011, College of Engineering, Kwame Nkrumah University of Science & Technology (K.N.U.S.T), Kumasi, Ghana

BSc. Natural Resources Management, July 2003, Institute of Renewable Natural Resources, K.N.U.S.T

Expertise: Social forestry, community development, forest management and biodiversity conservation.

HCV: Involved in HCV since 2006. Consultant in Ghana's National interpretation of the global HCVF toolkit. Has experience in undertaking (including providing management and monitoring recommendations) and evaluating (within the context of forest management certification) HCV assessments in Ghana, Liberia, Cameroon and Nigeria.

Sustainable agriculture and forestry: Many years of involvement in the implementation and monitoring of social and environmental aspects of sustainable palm oil and forestry production. Carried out numerous (over 20) FSC forest management assessments (since 2006) and several RSPO baseline assessments (since 2013) in Ghana, Liberia and Nigeria.

Fieldwork: Nearly a decade working leading and supporting the implementation of several biodiversity conservation projects (at Friends of the Earth, Care and Christian Aid) with a focus on social aspects and community involvement. Extensive experience in providing practical support to timber companies in Ghana to address social gaps in their efforts to achieve FSC certification.

Dr Sedami I. Armand Yevide

Current Position: Project Manager, Proforest Ghana since July 2015.

Qualification: PhD in Natural Resources Management, University of Abomey-Calavi, Benin, Oct 2011

MSc. Master Degree in Natural Resources Management, University of Abomey-Calavi, Benin, February 2009

Agronomist Engineer Degree in Natural Resources Management (Water and Forests, Fishing and Wildlife), University of Abomey-Calavi, Benin, December 2007

General Agronomy Certificate, University of Abomey-Calavi, Benin, July 2006

Expertise: Outstanding knowledge in Natural Resources Management with special focus on Forestry and Agroforestry

Good skills in management of data collectors and in analysing and synthesizing big data

Proficient in Geographic Information System (GIS) and Statistics

Armand's background is in agronomy, natural resources management especially ecology, forestry and agroforestry, in species distribution modelling under climate change scenarios, in long-term ecosystem monitoring, and in social network analysis. He has worked as consultant for the "Institut National de la Statistique et de l'Analyse Economique (INSAE)" on the dynamic of cash crop chains (Cashew, Sugar cane, Pineapple and Tabaco) in Benin. Additionally, he has more than 5 years of experience teaching undergraduate students in many private and public universities in Benin.

Armand holds a PhD in Natural Resources Management and spent about 2 years as post doctor at the Institute of Remote Sensing and Digital Earth (RADI) working for the United Nations Environment Programme-International Ecosystem Management Partnership (UNEP-IEMP) under the Chinese Academy of Science's International Young Scientist Programme. He has a number of scientific publication on the ecology, dynamic, productivity and tree growth modelling of natural and man-made forests, ethnobotany, biodiversity and ecosystem monitoring network with a special focus on Africa. Armand is fluent in French and English, and has basic communication skill in Chinese. He is currently a Project Manager in the Proforest Africa regional office.

Dr Emmanuel Danquah (this will be inserted in the final report)

Current position:

Head of Department and Senior Lecturer/Ecologist at the Department of Wildlife and Range Management, FRNR, KNUST

Qualifications:

PhD Wildlife and Range Management, KNUST, Ghana 2012
MPhil Wildlife and Range Management, KNUST, Ghana 2003
BSc Hons. Zoology; Dip Education, UCC, Ghana 1997

Expertise:

Interdisciplinary background with extensive experience in biodiversity assessments in HCVs and natural resources management since 2005. Focal project countries in Africa are Ghana, Cote d'Ivoire, Burkina Faso, Togo, Liberia, Guinea, Sierra Leone, Senegal, Gambia, Nigeria, Cameroun, Kenya and Uganda. Recent areas of research include biodiversity monitoring in HCV assessments of oil palm, rubber and teak plantations; environmental impact assessments of natural resource-based projects; green economies in biosphere reserves; endangered species management; assessment of birds and mammals in protected areas, protected areas governance; indigenous people and conservation, and traditional knowledge in natural resource management. Has over 25 peer reviewed papers to his credit.

Membership:

Member of the International Union for Conservation of Nature (IUCN) - World Commission on Protected Areas (WCPA), IUCN Species Survival Commission (SSC) - African Elephant Specialist Group (AfESG), IUCN World Commission on Biodiversity and Protected Areas Management (BIOPAMA), International Union of Forest Research Organizations (IUFRO) - International Council from Africa Region (Ghana), United Nations Educational, Scientific and Cultural Organization (UNESCO) - Man and Biosphere (MAB) National Committee of Ghana (AfriMAB), Society for Conservation Biology (SCB), American Society of Mammalogists (ASM) and the Ghana Institute of Professional Foresters (GIPF).

Joseph Ugbe

Current position: Higher Forest Superintendent, Cross River State Forestry Commission. January 2008 to date.

Qualifications: MSc. Forestry Economics and Management, University of Calabar, Nigeria, 2014

B.Sc. Forest (Hons) Forestry and Wildlife Resources Management, University of Calabar, 2005

Expertise

Forest and wildlife assessment: Joseph has several years of experience working with the Cross River State Forestry Commission (CRSFC). He has more than 10 years of experience working as the research expert in both wildlife and plants with special focus on aquatic species. Joseph has experience assessing herpetofauna including as the expert for HCV assessment for Wilmar concessions in Cross River State in 2012. For this assessment, Joseph worked with the flora survey team while being responsible for assessing the herpetofauna in the concessions.

HCV: Joseph has participated in several HCV assessment undertaken by Proforest in the Nigeria including in Edo and Cross River States. He has also participated in two HCV trainings conducted by Proforest.

Akomaye Ashikem

Current position: Forest Officer, Cross River State Forestry Commission

Qualifications: Diploma in Forestry, 1998.

Expertise

Forest inventory: Ashikem has several years of experience working with the Cross River State Forestry Commission (CRSFC) as Forest Officer responsible for forest inventories. He has more than 10 years of experience in biodiversity assessment especially in monitoring economically valued tree species in the forests of Cross River State. For this assessment, Ashikem was responsible for conducting an inventory of plants in the assessment area.

HCV: Ashikem has participated in several HCV assessment undertaken by Proforest in the Nigeria including in Edo and Cross River States. He has also participated in two HCV trainings conducted by Proforest.

Annex 2: Summary of communities’ consultation notes

| Community/ stakeholder | No. of person attended | Perception or concerns of host communities | Assessors response |
|------------------------|------------------------|--|--|
| Odigwetue | 42 | <p>People of the community were farming on the land prior to the land being handed to Okomu and that about a third of farmers from the community who lost their crops have not been compensated as promised by A & Hatman. If Okomu cannot help ensure they are compensated, then the company should start providing development support to the community. They were, however, grateful that Okomu has graded community roads and have sent two people from the community for skills acquisition training and also in the process of constructing a borehole for the community. They were not happy that Okomu has felled the big Bombax tree under which rituals are performed at their sacred site at the swamp forest area. In place of the tree, the people asked that Okomu build a one room structure at the shrine site where the people can perform their rituals. The people believe that there are no forest left on the land and that there are no places for special use. They insisted that Okomu intervene to ensure farmers who lost their crops are compensated. Land for farming is becoming scarce as western side of the community is not fertile. Their only sacred site in the swamp area of the concession has been mapped. According to the people, Okomu has felled the big Bombax tree under which rituals are performed at the sacred site. In place of that they request Okomu to build a one room structure where the people can perform their rituals every September. Annual rituals are performed with a native cow, she-goat, tortoise, coolants, and yam.</p> | <p>The issue of unpaid compensations to affected farmers will be communicated to Okomu. The assessor assured the farmers that Okomu will discuss this issue with H & Hatman so they can work with the communities to agree on amicable settlement. The assessor also informed them that their request for one a room structure to replace the Ceiba tree that has been felled will also be communicated to Okomu for action.</p> |

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| | | <p>Sacrifices are performed by killing the animals, praying to drive evil spirits and ask the gods for good development every September after first yam harvesting of the year.</p> | |
| Uhiere | 14 | <p>The people Uhiere indicated that they believe the project will bring development and jobs to the areas and therefore welcome the project and that they do not have any negative perception about the company and that they support the project although they also intimated that the project will affect availability of farmlands. The people of this community have a sacred site where they planted a survival tree called Ukhimi. This tree was planted to pave way for the former company (Iyaye) to establish camps in the concession and to ask the gods of the land to allow married people to have intimacy at the camp. The sacred site is worshiped in January of every year. They requested that Okomu ensures that their survival tree called Ukhimi (<i>Newbouldia laevis</i>) which was planted to pave way for the former company to establish camps on the land so that married people living the camp have intimacy is not destroyed. Their other sacred site at Abumeri stream is outside of the concession (located between the community and the concession boundary although the stream passes through the concession. They requested that Okomu builds a small structure (one room) for the elders at the location of the survival tree where elders can sit and perform rituals every year. They believe there is no forest left and therefore no NTFP in the concession area. They also explained that hunting is not important for the people of Uhiere. They were grateful that Okomu has provided the community with a borehole that is serving as the main source of water for the people of the community.</p> | <p>The assessor requested that as a company wanting to operate in line with the RSPO requirements, there is no doubt that Okomu will not protect their sacred site. The request for a one-room structure to serve as centre for spiritual activities will also be communicated to the management of Okomu.</p> |
| Owan | 19 | <p>Okomu officials have never visited the Owan community since taken over the land from A & Hatman and that the elders and the local population were concerned about this and expect the company to improve on its relations with the people of Owan. They however, indicated that they have good perception about Okomu and that they believe Okomu’s operations will be beneficial to the people of the community in terms of employment and community development support. Not against the project and that they want the project to benefit the community. Compensation for the people of Owan who were farming on the land were not paid appropriately because Owan farmers were placed under Uhiere under the pretext and claim by Uhiere people that they gave land in the concession to the people of Owan and that the land belongs to the people of Uhiere. They indicated that they have no sacred/ traditional site on the land but they fear that their main source of water which is</p> | <p>The assessor informed them that their concern on Okomu not visiting the company will be communicated to the management of Okomu for action to be taken. They were also assured that the assessment will provide recommendations for Okomu to adopt for the protection of all rivers and streams that drain the concession including the Owan River which they consider as an</p> |

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| | | Owan River may be polluted by Okomu’s operations. They collect NTFPs such as Udara and Ogbolo which is used for soup is collected from the forest in the concession. Ogbolo is diffused in the landscape and are also found in areas outside of the concession. | important river to them. |
| Odighi | 81 | Okomu has promised the community with jobs but the company has not honoured this promise. There was a strong concern that some farmers of the community who had their farms in the concession area were not paid compensations as they were made to believe. There was also allegations that equal compensation rate was not applied to all farmers and that some farmers were paid higher rate for same unit area of land and crops than others and that members of the community claimed they have documented evidence for this allegation. They believe that although Okomu was not directly responsible for payment of compensation, the company should intervene having inherited the access from A & Hatman. They however, indicated that they have no issue with Okomu using the land for oil palm development but will expect that Okomu operates responsibly respecting the local people, protecting the environment, providing jobs as promised and contributing to community development efforts through Corporate Social Responsibility. The community has a special area in the swamp forest in the concession which is a sacred site for the community. This shrine is called Odighinoba. Traditional rituals are performed in December of every year using cow to appeal to the gods of the land and ancestors to have mercy on the people of the community, ask for forgiveness and also driving away bad spirit from the community. There are no special areas in the concession where NTFPs are collected because the forests of the land have already been destroyed. However, people collects parts (bark and leaves) of Akuobisi, Makore, Okaa, Owewe, Iyin and other species that have medicinal properties. | The lead assessor responded that their concerns on unpaid and discrepancies in compensations paid will be communicated to the management of Okomu for further action to be taken. The people of Odighi were also assured that the team will ensure Okomu exclude they only areas with forest cover from conversion activities so that those tree species they depend on for medicine can continue to be available to them. They were also informed that appropriate recommendations based on their inputs will be given to Okomu to adopt for implementation to ensure their sacred site is protected. |
| Oke | 11 | The people of the community are concerned that Okomu started work before the HCV assessment started. The enquired whether they can complain to RSPO if Okomu does not treat the community in a way that is required by the RSPO standard. The people of Oke generally believe that having Okomu operating on the land is a good idea which they hope will contribute to bringing development to the area and that they expect Okomu to engage constructively with the community, provide jobs, and support community development including connecting the community to the national grid. The people explained that the community has no shrine or sacred site in the concession and that although | The assessor explained that Okomu started operations before making the decision to ensure their operations complies with RSPO requirements and this explains why they started their operations just before the HCV assessment commenced. The teams |

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| | | <p>there several sacred areas in the community, they are located closed to the community and not in the forest. However, in performing the annual rituals, they go to the forest part of the concession to collect parts of traditional trees for the performance of rituals. The species of trees used include Oka, Iroko, Akobisi, Makore, Gbolosheshe and Egbeda. No special area in the concession for NTFP collection. The community depends on River Jemide which flows through the concession. It is forbidden for people of the community to kill and eat fish from the river. This is because the people consider them sacred and that the people of Oke serve the fish in the river.</p> | <p>also responded that their recommendations on Okomu to engage constructively with the fringe communities will be communicated to the management of Okomu. They were further assured that recommendations will be given to Okomu to preserve and protect any forest area in the concession.</p> |
| Umokpe | 22 | <p>After the introduction and explanation of the mission of the visit to the Enogie and the people of the community, the people wanted to know whether Okomu is also prospecting for land in the community. After the explanation by the assessment team lead, the people indicated that the Okomu concession does not include their traditional land. However, given that the community is in the landscape and that the project will impact on them or they may affect the project, they requested that Okomu engages with them. The Enogie indicated that custom demands that management of Okomu should have visited him at his palace to officially introduce the company and their operations to him prior to starting operations on the land but unfortunately, no member of Okomu's management has visited him and that the first time he has encounter with officials of Okomu is our visit for the HCV consultation. He requested that Okomu provides the community with copies of their operational map and relevant documents. The perception of the Enogie and the people of Umokpe is that having Okomu operating in the area is a good idea and one which has the potential to provide job opportunities and subsequently contribute to the development of the area and the people but added that this could only happen if the company operates responsibly, respecting the people of the area and engaging with them constructively. The people indicated that the community has several shrines but those are closer to the community and not in the land that has been given to Okomu. Major NTFPs collected include dakanuts, (Ogbolo) cola and bitter cola but these are collected outside the land given to Okomu as it is far from their community.</p> | <p>This question on land prospecting by Okomu was responded by taking the people through a participatory mapping exercise where map of the landscape showing the concession (black edged) and the 10 communities in the landscape was shown to the people.</p> |
| Orhua | 17 | <p>After the introduction and explanation of the mission of the visit to the Odionwere and the people of the community, the people wanted to know whether Okomu is also prospecting for land in the community. They also indicated</p> | <p>This question was responded by taking the people through a participatory mapping</p> |

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| | | <p>that having acquired that land, they do not expect Okomu to acquire any additional land in the area that affect their traditional land but should the company decide to so in the future, they expect the company to first seek their consent before going to the state government for any Certificate of Occupancy. The people indicated that Okomu has never visited them since starting operations in the area. However, they welcome the company to the area and that they would like the company to honour community’s invitations by nominating representatives to attend community meetings. The people of the community believe that Okomu’s presence in the area will be beneficial to the communities in the landscape but for this to happen, Okomu must demonstrated commitment to operate responsibly both environmentally and socially whiles engaging constructively with the people of the area. The community people indicated that they have several shrines but none s in the land given to Okomu</p> | <p>exercise where map of the landscape showing the concession (black edged) and the 10 communities in the landscape was shown to the people. After the explanation by the assessment team lead, the people indicated that the Okomu concession does not include their traditional land.</p> |
| Ekpan | 20 | <p>After the introduction and explanation of the mission of the visit to the Odionwere and the people of the community, the people wanted to know whether Okomu is also prospecting for land in the community. They indicated that they expect the company to support the community in its developmental efforts and also help provide employment opportunities to the people of the community. However, they were concerned that Okomu may neglect the community given that their operations are not on the community’s traditional land. They indicated that the community has been visited twice by people from Okomu. The people indicated that they very much welcome Okomu into the area and that they believe that the company will bring development and jobs to their community. However, they cautioned that Okomu should seek further land in the area for oil palm development so that the available land can be used for food crop production. The community people indicated that they have two shrines but these are located nearer the community and outside of the land granted to Okomu</p> | <p>This question was responded by taking the people through a participatory mapping exercise where map of the landscape showing the concession (black edged) and the 10 communities in the landscape was shown to the people. After the explanation by the assessment team lead, the people indicated that the Okomu concession does not include their traditional land.</p> |
| Irhue | 15 | <p>After the introduction and explanation of the mission of the visit to the Odionwere and the people of the community, the people wanted to know whether Okomu is also prospecting for land in the community. After the introduction and demonstration to the people that Okomu has taken over Iyaye land and not any other land, the people of the community indicated that Okomu is very much welcome to the former Iyaye concessions but also explained that should Okomu decides to extend its operations to Irhue area, then the company must first</p> | <p>This question was responded by taking the people through a participatory mapping exercise where map of the landscape showing the concession (black edged) and the 10 communities in the landscape was shown to</p> |

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| | | <p>inform the people of Irhue and seek the consent of the traditional authorities before even making attempts to seek title at Benin. They are happy that Okomu has come to the area and that they expect the company to support community development efforts in the area of potable water provision. Water is the main problem of the people of the community because there are no rivers around the community and that the people of the community travel to Oke to buy water for household use. They also indicated that the people of the community do not farm or conduct any activity on the land given to Okomu since it's far from the community (about 5km away). The people indicated that the community have a shrine but this located near the community and outside of the land given to Okomu</p> | <p>the people. After the explanation by the assessment team lead, the people indicated that the Okomu concession does not include their traditional land.</p> |
| Agbanikaka | 50 | <p>The assessment team was welcomed into the community by the Elderly man of the community (Whose title by tradition is Odionwere). The assessment lead provided a brief introduction and the mission of the visit to the Odionwere and the people of the community. The lead assessor took the people through a participatory mapping exercise where map of the landscape showing the concession (black edged) and the 10 communities in the landscape was shown to the people. After the explanation by the assessment team lead, the people indicated that the Okomu concession although was a forest reserve, the people of the area were farming on the north-western corner of the land. They expressed concern about non-payment of compensation to the farmers of the community who had farms on the land although A & Hatman requested them to submit names of farmers affected for compensation. When informed that compensation for farms was the responsibility of A & Hatman and not Okomu, the people explained that since Okomu was taken over the assets of A & Hatman, it is in the interest of Okomu to ensure due compensations are paid by A & Hatman to those who compensations are due. Given that compensations have not been paid to farmers of the community, the leaders of the community sent a petition to the State Government in February 2015 to complain about Okomu and A & Hatman on non-payment of compensation to affected farmers. They also complained that Okomu does not engage with the community and that the company officials have visited only once since the company started its operations. They also complained that although they are aware that other communities in landscape have been supported by Okomu with social amenities, no such support has been given to Agbanikaka. However, they indicated that they welcome Okomu to the area. However, they indicated that they welcome the company only when they have the</p> | <p>The assessor explained to them that their concerns on unpaid compensations to affected farmers will be communicated to the management of Okomu for action to be taken. On their concerns on development support, the team leader explained that this is corporate social responsibility which is not obligatory. However, as a company committed to RSPO requirements, Okomu will be committed to supporting local development without discrimination and that the leaders of the community should engage with Okomu constructively on development assistance.</p> |

intention to operate responsibly both socially and environmentally. Apart from farming, the people of the community are fishers and they usually fish in the Ojemida River and other smaller rivers in the landscape. They indicated that there are no NTFPs apart from Ogbolo which is also scattered in the landscape. They have no shrine in the concession.

3: HCV implementation plan

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

| Objective | HCV ref | Action required | Timeline | Monitoring measures/expected results |
|---|-------------------|---|----------|---|
| Maintaining water quality and the HCVs it supports | | | | |
| Protection swamp and riparian areas | 3 and 4 | 50 m buffering of the swamp forest in the southern half of the concession The swamp area is a rare ecosystem which provides refuge for wildlife and also provides water catchment services in maintaining water quality of the Jemide and Owan which the people of Agbanikaka and Owan depend occasionally for water. It is therefore classified as HCVs 3 and 4 | | Set aside buffer zones included in GIS database for the swamp forest and all other rivers and streams as HCVs 3 and 4 |
| | 3, 4, 5 and 6 | Accurate mapping of all HCVs 3, 4, 5 and 6 and their management areas in the concession should be carried. | | Availability of accurate maps of all HCVs management areas |
| | HCV 3, 4, 5 and 6 | Designation of a responsible person for all "HCVs" to provide training and ensuring that field workers adhere to management recommendations for HCV areas | | Availability of trained lead person for the protection and management of identified HCV management areas |
| Protection of swamp and riparian forests and riparian areas | 3, 4 and 5 | Environmental and land preparation teams trained to delineate appropriate buffer recommended in this report on both sides of all rivers and streams prior to land conversion. Also trained to be able to avoid conversion of all identified riparian vegetation. Okomu | | Evidence of training and understanding of buffer zones and all set-aside areas management and monitoring |

| Objective | HCV ref | Action required | Timeline | Monitoring measures/expected results |
|-----------------------------|------------|---|----------|--|
| | | should also replant any buffer zone that has been cleared irrespective of whether the clearing was done by Okomu or prior to Okomu taking over the concession | | recommendations and requirements. Buffer zones and riparian forests are in place and respected |
| | | Land preparation teams are provided with maps of areas identified as protected areas | | |
| | | Land preparation teams are trained to carry out land conversion laterally to buffer zones and riparian forest areas to avoid having it destroyed by falling trees and shrubs. | | No or minimal impact on buffer zones and riparian forests |
| | 3, 4 and 5 | Regular monitoring to ensure that buffer zones and riparian forests requirements are respected If buffer zones and riparian forests are not respected, corrective actions must be taken immediately | | Corrective actions record |
| Erosion control | 3 and 4 | HCV/environmental management team are trained to implement and respect erosion control measures including avoiding clearing and planting on slopes above 20° | | Training records and proof of application of required measures |
| | | Conversion team/Road construction team trained to implement erosion control measures | | Training records and application of measures in practice |
| | | Cleared vegetation is windrowed | | Evidence of windrowed in the field |
| | | Road soak ways are built depending on downslope of road being constructed | | Frequency/slope |
| | | Silt pits are built to avoid sediments being discharges into the marshy areas Roads and potential discharge points should be monitored for marshy areas and roads. | | |
| Monitoring of water quality | 4 | Adopt Before-After-Control-impact design to monitor potential impact of operations on all water bodies. Annual water quality testing for major rivers and all other rivers that are sources of water for host communities. | | Sampling and testing results |
| | | Regular meetings (twice a year at minimum) with the host communities on control and prevention of water pollution and addressing any complaints from local communities | | Minutes of meetings |
| | | SOP in place for Corrective/Preventive action | | Documented SOP |

| Objective | HCV ref | Action required | Timeline | Monitoring measures/expected results |
|---|---------|--|----------|---|
| | | to be taken in case of degradation of water quality | | |
| Respect and Maintain local populations basic needs | | | | |
| Implementing Community consultation process | 6 | Recruit a responsible Community Liaison Officer | | Position filled with an individual who speaks the local language and accepted by the neighbouring communities |
| | | Okomu should define its community engagement/consultation process and engage competent professional to undertake fringe communities' engagement/consultations | | SOP |
| | | Discuss and negotiate with the host communities, appropriate consultation processes including frequency of community meetings | | Community representative list |
| | | Define conflict resolution procedures with local communities | | SOP |
| | | Negotiate HCV management areas following Okomu community consultation process | | 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 | | Minutes of meetings |
| Conversion operation | | | | |
| | N/A | Land conversion operations shall start during the dry season unless there are compelling reasons to do so during a rainy season | | Records on starting dates for land preparation and all major operations |
| | N/A | Land conversion should be planned in a way that it start away from the protected areas, forested areas, and riparian areas and move gradually towards these areas to allow wildlife to disperse into potential habitat | | |
| Implement recommendation in the field | | | | |
| | N/A | Designation of a responsible person for monitoring the field implementations of HCV management recommendations | | |

Annex 4: List of tree species found in the concession and those threatened in Nigeria

List of species found in the concession

| | Family | Genus | species |
|----|---------------|----------------|----------------|
| 1 | Leguminosae | Afzeli | africana |
| 2 | Fabaceae | Albizia | adianthifolia |
| 3 | Fabaceae | Albizia | lebbeck |
| 4 | Fabaceae | Albizia | zygia |
| 5 | Euphorbiaceae | Alchornea | cordifolia |
| 6 | Clusiaceae | Allanblackia | floribunda |
| 7 | Apocynaceae | Alstonia | boonie |
| 8 | Leguminosae | Amphimas | pterocarpoides |
| 9 | Annonaceae | Anonidium | mannii |
| 10 | Lamiaceae | Anthocleista | djalonensis |
| 11 | Annonaceae | Anthocleista | vogelii |
| 12 | Moraceae | Antiaris | africana |
| 13 | Balanitacea | Balanites | wilsoniana |
| 14 | Leguminosae | Baphia | nitida |
| 15 | Fabaceae | Baphia | pubescens |
| 16 | Fabaceae | Berlinia | confusa |
| 17 | Sapindaceae | Blighia | sapida |
| 18 | Sapindaceae | Blighia | unijigata |
| 19 | Malvaceae | Bombax | buonopozense |
| 20 | Leguminosae | Brachystegia | kennedy |
| 21 | Euphorbiaceae | Bridelia | grandis |
| 22 | Burseraceae | Canarium | schwienfurthii |
| 23 | Miliaceae | Carapa | procera |
| 24 | Ulmaceae | Celtis | zenkeri |
| 25 | Malvaceae | Ceiba | pentandra |
| 26 | Sterculiaceae | Cola | gigantea |
| 27 | Malvaceae | Cola | millenii |
| 28 | Lecythidaceae | Comretodendron | macrocarpus |
| 29 | Burseraceae | Dacryodes | klaineana |
| 30 | Leguminosae | Daniella | ogea |
| 31 | Agavaceae | Dracaena | arborea |

| | | | |
|----|------------------|--------------------|------------------|
| 32 | Euphorbiaceae | Drypetes | chevalier |
| 33 | Arecaceae | Elaeis | guineensis |
| 34 | Meliaceae | Entandrophragma | utile |
| 35 | Moraceae | Ficus | asperifolia |
| 36 | Moraceae | Ficus | exasperata |
| 37 | Moraceae | Ficus | mucoso |
| 38 | Moraceae | Ficus | sur |
| 39 | Apocynaceae | Funtumia | elastica |
| 40 | Guttiferae | Garcinia | kloa |
| 41 | Guttiferae | Garcinia | mannii |
| 42 | Lamiaceae | Gmelina | arborea |
| 43 | Leguminosae | Gossweilerodendron | balsamiferum |
| 44 | Simaroubaceae | Hannoa | klaineana |
| 45 | Clusiaceae | Harungana | madagascariensis |
| 46 | Leguminosae | Havea | brasiliensis |
| 47 | Samydaceae | Homalium | africana |
| 48 | Irvingiaceae | Irvingia | gabonensis |
| 49 | Irvingiaceae | Klainedoxa | gabonensis |
| 50 | Ochanaceae | Lophira | alata |
| 51 | Miliaceae | Lovoa | trichillipides |
| 52 | Euphorbiaceae | Macaranga | barteri |
| 53 | Euphorbiaceae | Macaranga | spinosa |
| 54 | Moraceae | Milicia | excelsa |
| 55 | Fabaceae | Millettia | griffoniana |
| 56 | Fabaceae | Millettia | thonningii |
| 57 | Rubiaceae | Mtragyna | stipilosa |
| 58 | Rubiaceae | Morinda | lucida |
| 59 | Moraceae | Musanga | cecropioides |
| 60 | Moraceae | myrianthus | arboreus |
| 61 | Rubiaceae | Nauclea | diderrichii |
| 62 | Bignoniaceae | Newbouldia | laevis |
| 63 | Chrysobalanaceae | Parinari | congensis |
| 64 | Chrysobalanaceae | Parinari | excelsa |
| 65 | Leguminosae | Parkia | bicolor |
| 66 | Rubiaceae | Pausinystalia | macroceras |
| 67 | Guttiferae | Pentadesma | butryacea |
| 68 | Fabaceae | Pentaclethra | macrophylla |
| 69 | Fabaceae | Piptadeniastrum | africana |
| 70 | Anisophylleaceae | Poga | Oleosa |
| 71 | Anacardiaceae | Pseudospondias | microcarpa |
| 72 | Sterculiaceae | Pterygota | macrocarpa |
| 73 | Fabaceae | Pterocarpus | mildbraedii |
| 74 | Fabaceae | Pterocarpus | osun |

| | | | |
|----|------------------|-----------------|----------------|
| 75 | Fabaceae | Pterocarpus | santalinioides |
| 76 | Myristicaceae | Pycnanthus | angolensis |
| 77 | Euphorbiaceae | Ricinodendron | heudelotii |
| 78 | Rubiaceae | Rothmannia | hispida |
| 79 | Burseraceae | Santara | trimera |
| 80 | Caesalpinioideae | Senna | saimea |
| 81 | Bignoniaceae | Spathodea | campanulata |
| 82 | Anacardiaceae | Spondias | mombin |
| 83 | Myristicaceae | Staudtia | stipitata |
| 84 | Olacaceae | Strombosia | pustulata |
| 85 | Guttiferae | Symphonia | globulifera |
| 86 | Apocynaceae | Tabernaemontana | pachysiphon |
| 87 | Combretaceae | Terminlia | superba |
| 88 | Moraceae | Treculia | obovoidea |
| 89 | Sterculiaceae | Triplochiton | scleroxylon |
| 90 | Euphorbiaceae | Uapaca | heudelotii |
| 91 | Euphorbiaceae | Uapaca | staudtii |
| 92 | Annonaceae | Uvariastrum | elliottianum |
| 93 | Annonaceae | Uvariastrum | insculptum |
| 94 | Asteraceae | Vernonia | amygdalina |
| 95 | Verbenaceae | Vitex | furruginea |
| 96 | Rubiaceae | Zanthoxylum | gilletii |
| 97 | Rubiaceae | Zanthoxylum | zanthoxyloides |
| 98 | Asteraceae | Vernonia | amygdalina |

List of endemic and threatened flora species in Nigeria (Borokini, 2014).

| | Plant name | Family | Life form | Natural distribution in Nigeria | IUCN Category |
|---|---|------------------|-----------|--|---|
| 1 | <i>Begonia salisburyana</i> Irmsch. | Begoniaceae | Herb | Okomu National Park (Edo State), Oban Division, Cross River National Park (Cross | |
| 2 | <i>Berlinia hollandii</i> Hutch. & Dalz. | Caesalpiniaceae | Tree | Itu (Akwa Ibom State); Oban Division, Cross River National Park (Cross River State). | Endangered on the IUCN Redlist |
| 3 | <i>Cassipourea eketensis</i> Bak. f. | Rhizophoraceae | Tree | Oban Division, Cross River National Park (Cross River State), Eket (Akwa Ibom State) | Critically Endangered on the IUCN Redlist |
| 4 | <i>Cola gigas</i> Bak. f. | Sterculiaceae | Tree | Oban Division, Cross River National Park (Cross River State) | Vulnerable on the IUCN Redlist |
| 5 | <i>Cola glabra</i> Brenan & Keay | Sterculiaceae | Tree | Akure FR, Owena FR (Ondo State) | Vulnerable on the IUCN Redlist |
| 6 | <i>Cryptosepalum diphylum</i> Duvign | Caesalpiniaceae | Tree | Ukpon River FR, Ekang river, Obubra (Cross River State) | Endangered on the IUCN Redlist |
| 7 | <i>Dactyladenia dichotoma</i> (De Wild) Prance and F. White | Chrysobalanaceae | Tree | Eket (Akwa Ibom State) | Critically Endangered on the IUCN Redlist |

| | | | | | |
|----|--|-----------------|-------|---|---|
| 8 | <i>Ixora nigerica</i> subsp. <i>nigerica</i> Keay | Rubiaceae | Shrub | Ndealichi FR, Ukpon River FR, (Cross River state) | It is listed as vulnerable in IUCN Redlist |
| 9 | <i>Monodora unwinii</i> Hutch. & Dalz. | Annonaceae | Tree | Unwin (Edo State) | Vulnerable on the IUCN Redlist |
| 10 | <i>Napoleonaea lutea</i> Bak. f. ex Hutch. & Dalz. | Lecythidaceae | Tree | Eket (Akwa Ibom State) | Critically Endangered on the IUCN Redlist |
| 11 | <i>Agelaea pilosa</i> G. Schellenb [Syn: <i>Agelaea pentagyna</i> (Lam.) Baill.] | Connaraceae | Shrub | Usonigbe FR, Sapoba FR (Edo State); Degema (Rivers State); Ikom (Akwa Ibom state) | |
| 12 | <i>Anthocleista obanensis</i> Wernham | Loganiaceae | Liana | Sapoba FR (Edo State); Eket (Akwa Ibom State); Oban Division, Cross River National Park (Cross River State) | |
| 13 | <i>Napoleonaea reptans</i> Bak. f. ex Hutch. & Dalz. | Lecythidaceae | Shrub | Eket (Akwa Ibom State) | Critically Endangered on the IUCN Redlist |
| 14 | <i>Piptostigma giganteum</i> Hutch. & Dalz. | Annonaceae | Tree | Oban Division, Cross River National Park (Cross River State) | Vulnerable on the IUCN Redlist |
| 15 | <i>Scaphopetalum parvifolium</i> Bak. f. | Malvaceae | Tree | Obutong road, Oban Division, Cross River National Park (Cross River State) | Vulnerable on the IUCN Red List of Threatened Species |
| 16 | <i>Synsepalum glycydora</i> Wernham | Sapotaceae | Tree | Oban Division, Cross River National Park (Cross River State); Degema (Rivers State) | Vulnerable on the IUCN Red List of Threatened Species |
| 17 | <i>Talbotiella eketensis</i> Bak. f. | Caesalpiniaceae | Tree | Eket (Akwa Ibom State), Degema (Rivers State) | Endangered on the IUCN Red List of Threatened Species |
| 18 | <i>Xylopia talbotii</i> Exell. | Annonaceae | Tree | Oban Division, Cross River National Park (Cross River State); Eket (Akwa Ibom State). | Vulnerable on the IUCN Red List of Threatened Species |

Annex 5: Mammal species identified in the concession

5 A: Species of small mammals identified in the major landuse types in the concession.

| Common Name | Scientific Name | Land-use Type | | | | | IUCN Status |
|----------------------------|---------------------------|---------------|--------|----------|--------|----------|-------------|
| | | Oil palm | Forest | Riparian | Fallow | Cropland | |
| INSECTIVORES | SORICOMORPHA | | | | | | |
| Shrews | Soricidae | | | | | | |
| Nigerian Shrew | <i>Crocidura nigeriae</i> | 2 | 1 | 0 | 4 | 6 | LC |
| | | | | | | | |
| RODENTS | RODENTIA | | | | | | |
| Murid Rats and Mice | Muridae | | | | | | |

| Common Name | Scientific Name | Land-use Type | | | | | IUCN Status |
|--------------------------|----------------------------|---------------|--------|----------|--------|----------|-------------|
| | | Oil palm | Forest | Riparian | Fallow | Cropland | |
| Multimammate Rat | <i>Mastomys natalensis</i> | 1 | 0 | 0 | 3 | 6 | LC |
| Rufous-bellied Rat | <i>Lophuromys sikapusi</i> | 0 | 0 | 0 | 2 | 5 | LC |
| Black Rat | <i>Rattus rattus</i> | 2 | 0 | 1 | 2 | 12 | LC |
| Pygmy Mouse | <i>Mus minutoides</i> | 1 | 0 | 0 | 4 | 6 | LC |
| Three-striped Mouse | <i>Hbyomys trivirgatus</i> | 1 | 0 | 0 | 2 | 5 | LC |
| Number of signs | | 7 | 1 | 1 | 17 | 40 | |
| Number of species | | 5 | 1 | 1 | 6 | 6 | |

5B: Species of rodent (and hares) identified in the major landuse types in the concession.

| Common Name | Scientific Name | Land-use Type | | | | | IUCN Status |
|---------------------------|----------------------------------|---------------|--------|----------|--------|----------|-------------|
| | | Oil palm | Forest | Riparian | Fallow | Cropland | |
| RODENTS | RODENTIA | | | | | | |
| Squirrels | Sciuridae | | | | | | |
| Ground Squirrel | <i>Xerus erythropus</i> | 5 | 0 | 0 | 12 | 8 | LC |
| Fire-footed Rope Squirrel | <i>Funisciurus pyrropus</i> | 4 | 2 | 4 | 1 | 0 | |
| Red-leg Sun Squirrel | <i>Heliosciurus rufobrachium</i> | 3 | 3 | 3 | 0 | 0 | LC |
| African Giant Squirrel | <i>Protoxerus stangeri</i> | 2 | 2 | 1 | 0 | 0 | LC |
| | | | | | | | |
| Anomalures | Anomaluridae | | | | | | |
| Beecroft's Anomalure | <i>Anomalurus beecrofti</i> | 0 | 2 | 0 | 0 | 0 | LC |
| | | | | | | | |
| Porcupines | Hystricidae | | | | | | |
| Brush-tail Porcupine | <i>Atherurus africanus</i> | 6 | 8 | 4 | 2 | 2 | LC |
| | | | | | | | |
| Cane Rats | Thryonomydae | | | | | | |
| Marsh Cane Rat | <i>Thryonomys swinderianus</i> | 6 | 2 | 0 | 16 | 11 | LC |
| | | | | | | | |
| Pouched Rats | Cricetomyinae | | | | | | |
| Giant Gambian Rat | <i>Cricetomys gambianus</i> | 4 | 5 | 1 | 12 | 14 | LC |
| | | | | | | | |

5C: Carnivorous species identified in the main landuse types in the concession

| Common Name | Scientific Name | Land-use Type | | | | | IUCN Status |
|-------------|-----------------|---------------|--------|----------|--------|----------|-------------|
| | | Oil palm | Forest | Riparian | Fallow | Cropland | |
| | | | | | | | |

| Common Name | Scientific Name | Land-use Type | | | | | IUCN Status |
|----------------------------|----------------------------------|---------------|--------|----------|--------|----------|-------------|
| | | Oil palm | Forest | Riparian | Fallow | Cropland | |
| <u>CARNIVORES</u> | <u>CARNIVORA</u> | | | | | | |
| Mongoose | <i>Herpestidae</i> | | | | | | |
| Slender Mongoose | <i>Herpestes sanguineus</i> | 0 | 2 | 0 | 0 | 0 | LC |
| Cusimanse | <i>Crossarchus platycephalus</i> | 2 | 4 | 0 | 2 | 0 | LC |
| Marsh Mongoose | <i>Atilax paludinosus</i> | 2 | 2 | 5 | 2 | 0 | LC |
| | | | | | | | |
| Genets and Civets | <i>Viverridae</i> | | | | | | |
| Blotched Genet | <i>Genetta servalina</i> | 2 | 3 | 2 | 2 | 0 | LC |
| African Civet | <i>Civettictis civetta</i> | 0 | 4 | 2 | 0 | 0 | LC |
| | | | | | | | |
| African Palm Civets | <i>Nandininae</i> | | | | | | |
| African Palm Civet | <i>Nandinia binotata</i> | 1 | 2 | 0 | 0 | 0 | LC |
| | | | | | | | |
| Scaly Ant-eaters | <i>Pholidota</i> | | | | | | |
| Tree Pangolin | <i>Phataginus tricuspis</i> | 0 | 2 | 0 | 0 | 0 | NT |
| | | | | | | | |
| | | | | | | | |
| Number of signs | | 7 | 19 | 9 | 6 | 0 | |
| Number of species | | 4 | 7 | 3 | 3 | 0 | |

5D: Species of ungulates identified in the different landuse types in the concession

| Common Name | Scientific Name | Land-use Type | | | | | IUCN Status |
|--------------------------|------------------------------|---------------|--------|----------|--------|----------|-------------|
| | | Oil palm | Forest | Riparian | Fallow | Cropland | |
| <u>UNGULATES</u> | <u>UNGULATA</u> | | | | | | |
| Pigs | <i>Suidae</i> | | | | | | |
| Red River Hog | <i>Potamochoerus porcus</i> | 0 | 6 | 12 | 0 | 0 | LC |
| | | | | | | | |
| Bovids | <i>Bovidae</i> | | | | | | |
| Bushbuck | <i>Tragelaphus scriptus</i> | 6 | 4 | 1 | 11 | 8 | LC |
| | | | | | | | |
| Antelopes | <i>Antelopinae</i> | | | | | | |
| Maxwell's Duiker | <i>Cephalophus maxwellii</i> | 0 | 5 | 2 | 0 | 0 | LC |
| | | | | | | | |
| | | | | | | | |
| Number of signs | | 6 | 15 | 15 | 11 | 8 | |
| Number of species | | 1 | 3 | 3 | 1 | 1 | |
| | | | | | | | |

5E: Species of ungulates identified in the different landuse types in the concession

| Common Name | Scientific Name | Land-use Type | | | | | IUCN Status |
|--------------------------|------------------------------------|---------------|--------|----------|--------|----------|-------------|
| | | Oil palm | Forest | Riparian | Fallow | Cropland | |
| PRIMATES | PRIMATES | | | | | | |
| Monkeys | Cercopithecoidea | | | | | | |
| Lowe's (Mona) Monkey | <i>Cercopithecus (mona) lowei</i> | 0 | 4 | 2 | 0 | 0 | LC |
| White-throated Monkey | <i>Cercopithecus erythrogaster</i> | 0 | 2 | 1 | 0 | 0 | VU |
| | | | | | | | |
| Prosimians | Strepsirhni | | | | | | |
| Potto | <i>Perodicticus potto</i> | 0 | 3 | 1 | 0 | 0 | LC |
| Demidoff's Galago | <i>Galagoides demidoff</i> | 0 | 4 | 1 | 0 | 0 | LC |
| | | | | | | | |
| | | | | | | | |
| Number of signs | | 0 | 13 | 5 | 0 | 0 | |
| Number of species | | 0 | 4 | 4 | 0 | 0 | |

5E: Herpetofauna species identified in the various landuse types in the concession sign

| Common Name | Scientific Name | Land-use Type | | | | | IUCN Status |
|-----------------------------|------------------------------|---------------|--------|----------|--------|----------|-------------|
| | | Oil palm | Forest | Riparian | Fallow | Cropland | |
| REPTILES | REPTILIA | | | | | | |
| Crocodyles | Crocodylidae | | | | | | |
| Dwarf crocodile | <i>Osteolaemus tetraspis</i> | 0 | 0 | 2 | 0 | 0 | VU |
| | | | | | | | |
| Tortoises | Testudinidae | | | | | | |
| Serrate Hinge-back tortoise | <i>Kinixys erosa</i> | 0 | 1 | 2 | 0 | 0 | |
| | | | | | | | |
| Monitors | Varanidae | | | | | | |
| Nile Monitor | <i>Varanus niloticus</i> | 0 | 0 | 5 | 0 | 0 | LC |
| | | | | | | | |
| Snakes | Squamata | | | | | | |
| Gaboon Viper | <i>Bitis gabonica</i> | 0 | 1 | 0 | 1 | 0 | DD |
| Jameson's Mamba | <i>Dendroaspis jamesoni</i> | 0 | 1 | 0 | 0 | 0 | LC |
| Forest Cobra | <i>Naja melanoleuca</i> | 0 | 1 | 0 | 1 | 0 | DD |
| Royal Python | <i>Python regius</i> | 1 | 0 | 2 | 0 | 0 | LC |
| | | | | | | | |
| | | | | | | | |

| AMPHIBIANS | AMPHIBIA | | | | | | |
|---------------------------|----------------------------|---|---|----|---|---|----|
| Toads | Bufoidea | | | | | | |
| Toads | Amietophrynus maculatus | 0 | 1 | 2 | 0 | 0 | LC |
| | | | | | | | |
| Frogs | Anurans | | | | | | |
| Crowned Bullfrog | Hoplobatrachus occipitalis | 0 | 1 | 0 | 0 | 0 | LC |
| Forest Tree Frog | Leptopelis hyloides | 0 | 0 | 2 | 0 | 0 | LC |
| Moist Lowland Forest Frog | Phrynobatrachus alleni | 0 | 1 | 1 | 0 | 0 | NT |
| Moist Lowland Forest Frog | Ptychadena longirostris | 0 | 0 | 1 | 0 | 0 | LC |
| | | | | | | | |
| | | | | | | | |
| Number of signs | | 1 | 7 | 17 | 2 | 0 | |
| Number of species | | 1 | 7 | 8 | 2 | 0 | |
| | | | | | | | |

Annex 6: Birds identified in the concession

Bird species identified in the various landuse types in the concession

| Common Name | Scientific Name | Land-use Type | | | | | IUCN Status |
|--------------------------|---------------------------------|---------------|--------|----------|--------|----------|-------------|
| | | Oil palm | Forest | Riparian | Fallow | Cropland | |
| Herons and Egrets | Ardeidae | | | | | | |
| Grey Heron | <i>Ardea cinerea</i> | 0 | 0 | 3 | 0 | 0 | LC |
| Cattle Egret | <i>Bubulcus ibis</i> | 6 | 0 | 0 | 0 | 0 | LC |
| | | | | | | | |
| Birds of Prey | Accipitridae | | | | | | |
| Palm-nut Vulture | <i>Gypohierax angolensis</i> | 3 | 0 | 0 | 0 | 0 | LC |
| Harrier Hawk | <i>Polyboroides typus</i> | 0 | 2 | 0 | 1 | 0 | LC |
| Black-shoulder Kite | <i>Elanus caeruleus</i> | 0 | 3 | 2 | 0 | 0 | LC |
| African Goshawk | <i>Accipiter tachiro</i> | 0 | 3 | 0 | 0 | 0 | LC |
| Black Kite | <i>Milvus migrans</i> | 0 | 4 | 0 | 1 | 0 | LC |
| African Hobby | <i>Falco cuvierii</i> | 0 | 2 | 1 | 0 | 0 | LC |
| Lizard Buzzard | <i>Kaupifalco monogrammicus</i> | 0 | 3 | 0 | 1 | 0 | LC |
| | | | | | | | |
| Francolins | Phasianidae | | | | | | |
| Ahanta Francolin | <i>Francolinus achantensis</i> | 4 | 2 | 1 | 1 | 0 | LC |
| | | | | | | | |
| Finfoots | Heliornithidae | | | | | | |
| African Finfoot | <i>Podica senegalensis</i> | 0 | 0 | 2 | 0 | 0 | LC |

| Common Name | Scientific Name | Oil palm | Forest | Riparian | Fallow | Cropland | IUCN Status |
|---|----------------------------------|----------|--------|----------|--------|----------|-------------|
| Pigeons and Doves Columbidae | | | | | | | |
| Green Fruit Pigeon | <i>Treron calvus</i> | 0 | 2 | 1 | 1 | 1 | LC |
| Blue-headed Dove | <i>Turtur brehmeri</i> | 0 | 1 | 0 | 0 | 0 | LC |
| Tambourine Dove | <i>Turtur tympanistria</i> | 0 | 4 | 2 | 1 | 0 | LC |
| Blue-spot Dove | <i>Turtur afer</i> | 0 | 1 | 1 | 0 | 0 | LC |
| Bronze-naped Pigeon | <i>Columba iriditorques</i> | 0 | 1 | 0 | 1 | 0 | |
| Red-eyed Dove | <i>Streptopelia semitorquata</i> | 0 | 2 | 1 | 0 | 2 | LC |
| Parrots Psittacidae | | | | | | | |
| African Grey Parrot | <i>Psittacus erithacus</i> | 0 | 5 | 0 | 0 | 0 | VU |
| Turacos Musophagidae | | | | | | | |
| Blue Plantain-eater | <i>Corythaeola cristata</i> | 0 | 3 | 2 | 0 | 0 | LC |
| Green Turaco | <i>Tauraco persa</i> | 0 | 1 | 0 | 0 | 0 | LC |
| Swifts Apodidae | | | | | | | |
| Mottled-throated Spinetail | <i>Telecanthura ussheri</i> | 1 | 3 | 0 | 1 | 0 | LC |
| African Palm Swift | <i>Cypsiurus parvus</i> | 6 | 0 | 0 | 1 | 0 | LC |
| Common Swift | <i>Apus apus</i> | 3 | 5 | 0 | 3 | 2 | LC |
| Little African Swift | <i>Apus affinis</i> | 7 | 5 | 0 | 2 | 0 | LC |
| Cuckoos & Coucals Cuculidae | | | | | | | |
| Black Cuckoo | <i>Cuculus clamosus</i> | 0 | 1 | 1 | 0 | 0 | LC |
| Klaas Cuckoo | <i>Chrysococcyx klaas</i> | 0 | 2 | 0 | 0 | 0 | LC |
| Didric Cuckoo | <i>Chrysococcyx caprius</i> | 1 | 4 | 3 | 0 | 0 | LC |
| Yellowbill | <i>Ceuthmochares aereus</i> | 0 | 1 | 0 | 0 | 0 | LC |
| Senegal Coucal | <i>Centropus senegalensis</i> | 5 | 2 | 4 | 8 | 6 | LC |
| Black Coucal | <i>Centropus grilli</i> | 1 | 2 | 0 | 1 | 0 | LC |
| Kingfishers Alcedinidae | | | | | | | |
| Blue-breast Kingfisher | <i>Halcyon malimbica</i> | 1 | 0 | 3 | 0 | 0 | LC |
| Woodland Kingfisher | <i>Halcyon senegalensis</i> | 0 | 2 | 2 | 0 | 0 | LC |
| African Dwarf Kingfisher | <i>Ceyx lecontei</i> | 0 | 0 | 5 | 0 | 0 | LC |
| Malachite Kingfisher | <i>Alcedo cristata</i> | 0 | 0 | 4 | 0 | 0 | LC |
| Bee-eaters Meropidae | | | | | | | |
| Blue-headed Bee-eater | <i>Merops muelleri</i> | 0 | 2 | 0 | 1 | 0 | LC |
| White-throated Bee-eater | <i>Merops albicollis</i> | 0 | 1 | 3 | 0 | 1 | LC |

| | | | | | | | |
|-----------------------------|-----------------------------------|-----------------|---------------|-----------------|---------------|--------------------|--------------------|
| Little Bee-eater | <i>Merops pusillus</i> | 0 | 4 | 0 | 0 | 0 | LC |
| Rollers | <i>Coraciidae</i> | | | | | | |
| Blue-throated Roller | <i>Eurystomus gularis</i> | 0 | 2 | 0 | 0 | 0 | LC |
| Broad-billed Roller | <i>Eurystomus glaucurus</i> | 0 | 5 | 0 | 0 | 0 | LC |
| Common Name | Scientific Name | Oil palm | Forest | Riparian | Fallow | Cropland | IUCN Status |
| Hornbills | <i>Bucerotidae</i> | | | | | | |
| Allied Hornbill | <i>Tockus fasciatus</i> | 0 | 4 | 0 | 0 | 0 | LC |
| Pied-casqued Hornbill | <i>Ceratogymna subcylindricus</i> | 0 | 6 | 0 | 0 | 0 | LC |
| Black-casqued Hornbill | <i>Ceratogymna atrata</i> | 0 | 2 | 0 | 0 | 0 | LC |
| Tinkerbirds | <i>Capitonidae</i> | | | | | | |
| Naked-faced Barbet | <i>Gymnobucco calvus</i> | 0 | 2 | 0 | 0 | 0 | LC |
| Yellow Tinkerbird | <i>Pogoniulus subsulphureus</i> | 0 | 1 | 3 | 0 | 0 | LC |
| Lemon Tinkerbird | <i>Pogoniulus bilineatus</i> | 0 | 2 | 0 | 0 | 0 | LC |
| Woodpeckers | <i>Picidae</i> | | | | | | |
| Gabon Woodpecker | <i>Dendropicos gabonensis</i> | 0 | 1 | 1 | 0 | 0 | LC |
| Grey Woodpecker | <i>Dendropicos goertae</i> | 0 | 2 | 0 | 0 | 0 | LC |
| Swallows | <i>Hirundinidae</i> | | | | | | |
| House Martin | <i>Delichon urbicum</i> | 1 | 2 | 0 | 1 | 0 | LC |
| White-throated Blue Swallow | <i>Hirundo nigrita</i> | 0 | 1 | 1 | 0 | 0 | LC |
| Babblers | <i>Timaliidae</i> | | | | | | |
| Blackcap Illadopsis | <i>Illadopsis cleaveri</i> | 0 | 2 | 2 | 0 | 0 | LC |
| Pale-breasted Illadopsis | <i>Illadopsis rufipennis</i> | 0 | 1 | 0 | 0 | 0 | LC |
| Brown Illadopsis | <i>Illadopsis fulvescens</i> | 0 | 2 | 1 | 0 | 0 | LC |
| Common Name | Scientific Name | Oil palm | Forest | Riparian | Fallow | IUCN Status | |
| Wagtails and Pipits | <i>Motacillidae</i> | | | | | | |
| African Pied Wagtail | <i>Motacilla aguimp</i> | 2 | 3 | 0 | 0 | LC | |
| Yellow Wagtail | <i>Motacilla flava</i> | 0 | 1 | 1 | 0 | LC | |
| Yellow-Throated Longclaw | <i>Macronyx croceus</i> | 0 | 2 | 0 | 0 | LC | |
| Bulbuls | <i>Pycnonotidae</i> | | | | | | |
| Little Greenbul | <i>Andropadus virens</i> | 1 | 1 | 0 | 1 | LC | |
| Slender-billed Greenbul | <i>Andropadus gracilirostris</i> | 0 | 3 | 0 | 0 | LC | |
| Simple Leaf-love | <i>Chlorocichla simplex</i> | 0 | 2 | 0 | 0 | LC | |

| | | | | | | |
|-------------------------|-----------------------------------|---|---|---|---|----|
| Swamp Palm Bulbul | <i>Thescelocichla leucopleura</i> | 2 | 5 | 1 | 1 | LC |
| Icterine Greenbul | <i>Phyllastrephus icterinus</i> | 0 | 1 | 0 | 0 | LC |
| Grey-headed Bristlebill | <i>Bleda canicapilla</i> | 1 | 1 | 0 | 2 | LC |
| Common Bulbul | <i>Pycnonotus barbatus</i> | 0 | 2 | 3 | 4 | LC |
| | | | | | | |
| Sunbirds | Nectariniidae | | | | | |
| Collared Sunbird | <i>Hedydipna collaris</i> | 0 | 2 | 1 | 0 | LC |
| Little Green Sunbird | <i>Anthreptes seimundi</i> | 0 | 3 | 0 | 1 | LC |
| Olive Sunbird | <i>Cyanomitra olivacea</i> | 0 | 1 | 2 | 0 | LC |
| Blue-throated Sunbird | <i>Cyanomitra cyanoaema</i> | 0 | 2 | 0 | 0 | LC |
| Buff-throated Sunbird | <i>Chalcomitra adelberti</i> | 0 | 2 | 1 | 2 | LC |
| Olive-bellied Sunbird | <i>Cinnyris chloropygius</i> | 0 | 4 | 4 | 0 | LC |
| Copper Sun-bird | <i>Cinnyris cupreus</i> | 0 | 3 | 1 | 0 | LC |
| Superb Sunbird | <i>Cinnyris superbus</i> | 0 | 1 | 0 | 0 | LC |

| Common Name | Scientific Name | Oil palm | Forest | Riparian | IUCN Status |
|------------------------------|----------------------------------|----------|--------|----------|-------------|
| Thrushes & Robins | Turdidae | | | | |
| Forest Robin | <i>Stiphornis erythrothorax</i> | 0 | 2 | 0 | LC |
| Brown-chested Alethe | <i>Alethe poliocephala</i> | 0 | 1 | 0 | LC |
| African Thrush | <i>Turdus pelios</i> | 0 | 0 | 2 | LC |
| | | | | | |
| Warblers | Sylviidae | | | | |
| Grey-backed Cameroptera | <i>Cameroptera brachyura</i> | 0 | 1 | 1 | LC |
| Yellow-browed Camaroptera | <i>Cameroptera superciliaris</i> | 1 | 1 | 0 | LC |
| Olive-green Camaroptera | <i>Cameroptera chloronota</i> | 0 | 3 | 1 | LC |
| Rufous-crowned Eremomela | <i>Eremomela badiceps</i> | 2 | 2 | 4 | LC |
| Green Crombec | <i>Sylvietta virens</i> | 0 | 2 | 2 | LC |
| Green Hylia | <i>Hylia prasina</i> | 0 | 3 | 2 | LC |
| Cisticola | Cisticolidae | | | | |
| Red-faced Cisticola | <i>Cisticola erythroptus</i> | 0 | 1 | 0 | LC |
| Short-winged Cisticola | <i>Cisticola brachypterus</i> | 0 | 2 | 1 | LC |
| | | | | | |
| Weavers | Ploceidae | | | | |
| Village Weaver | <i>Ploceus cucullatus</i> | 0 | 0 | 0 | LC |
| Yellow-mantled Weaver | <i>Ploceus tricolor</i> | 0 | 0 | 0 | LC |
| | | | | | |
| Flycatchers | Muscicapidae | | | | |
| Forest Flycatcher | <i>Fraseria ocreata</i> | 0 | 2 | 0 | LC |
| White Forest Flycatcher | <i>Fraseria cinerascens</i> | 0 | 1 | 1 | LC |

| | | | | | |
|-----------------------------|--------------------------------|---|---|---|----|
| Cassin's flycatcher | <i>Muscicapa cassini</i> | 1 | 1 | 0 | LC |
| Dusky-blue Flycatcher | <i>Muscicapa comitata</i> | 0 | 3 | 2 | LC |
| Paradise Flycatcher | <i>Tersphone viridis</i> | 1 | 1 | 0 | LC |
| Common Wattle-eye | <i>Platysteira cyanea</i> | 0 | 1 | 0 | LC |
| | | | | | |
| Waxbills and Finches | Estrildidae | | | | |
| White-breasted Negro-finch | <i>Nigrita fusconota</i> | 0 | 1 | 0 | LC |
| Chestnut-breast Negro-finch | <i>Nigrita bicolour</i> | 0 | 1 | 0 | LC |
| Grey-Headed Negrofinch | <i>Nigrita canicapillus</i> | 1 | 2 | 1 | LC |
| Blue-billed Weaver-finch | <i>Spermophaga haematina</i> | 0 | 2 | 0 | LC |
| Orange-cheeked Waxbill | <i>Estrilda melpada</i> | 0 | 1 | 4 | LC |
| Lavender Fire-finch | <i>Estrilda caerulescens</i> | 2 | 3 | 0 | LC |
| Black-and-white Mannikin | <i>Lonchura bicolour</i> | 0 | 1 | 0 | LC |
| Bronze Mannikin | <i>Lonchura cucullata</i> | 0 | 1 | 2 | LC |
| Flower-pecker Weaver-finch | <i>Parmoptila woodhousei</i> | 0 | 5 | 0 | LC |
| | | | | | |
| Starlings | Sturnidae | | | | |
| Forest Starling | <i>Onychognathus fulgidus</i> | 0 | 1 | 0 | LC |
| Splendid Starling | <i>Lamprotornis splendidus</i> | 0 | 1 | 0 | LC |
| | | | | | |
| Orioles | Oriolidae | | | | |
| Western Black-headed Oriole | <i>Oriolus brachyrhynchus</i> | 0 | 1 | 1 | LC |
| Black-winged Oriole | <i>Oriolus nigripennis</i> | 0 | 1 | 0 | LC |
| | | | | | |
| Drongos | Dicuridae | | | | LC |
| Helmet-shrikes | Prionopidae | | | | |
| Red-billed Helmet-shrike | <i>Prionops caniceps</i> | 0 | 3 | 0 | LC |
| | | | | | |
| Bush-shrikes | Malaconotidae | | | | |
| Sabine's Puffback | <i>Dryoscopus sabinii</i> | 0 | 1 | 0 | LC |
| | | | | | |
| Crows | Corviidae | | | | |
| Pied Crow | <i>Corvus albus</i> | 0 | 0 | 0 | LC |
| | | | | | |
| Sparrows | Passeridae | | | | |
| Grey-Headed Sparrow | <i>Passer griseus</i> | 0 | 0 | 0 | LC |
| | | | | | |
| Whydahs | Viduidae | | | | |
| Pin-Tailed whydah | <i>Vidua macroura</i> | 1 | 2 | 4 | LC |
| | | | | | |
| Guinea Fowls | Numididae | | | | |
| Helmented Guinea Fowl | <i>Numida meleagris</i> | 0 | 2 | 0 | LC |

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