

**SUMMARY REPORT OF SEIA AND HCV ASSESSMENT
RSPO NEW PLANTING PROCEDURES**

GOLDEN VEROLEUM (LIBERIA) INC. (GVL)

NEW PLANTING BLOCK 46,900 hectares
Kpanyan, Dugbe River and Jaede Statutory Districts,
Sinoe County, Southeastern Liberia.

PREPARED FOR:
GOLDEN VEROLEUM(LIBERIA) INC.
17TH. STREET & CHEESEMAN AVENUE
Monrovia, Liberia



GVL GOLDEN
VEROLEUM
LIBERIA



“Turning Africa Green”

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1. EXECUTIVE SUMMARY

Golden Veroleum Liberia is an investment of the Verdant Fund LP. Golden Agri-Resources Limited (GAR) is the principal investor in the Verdant Fund LP. GAR is, by hectares, the second largest oil palm cultivator in the world and listed on the Singapore Stock Exchange. Following assessment of the Liberian business climate and interest in investing in Liberia, the company entered into a 65 years concession agreement (option of renewal by the company) with the Government of Liberia for the leasing and conversion of ca. 220,000 hectares of land. The concession agreement provides for the Government and GVL to implement a social and community development program, which includes employee housing, education and medical care. Additionally, a Liberian smallholder program is in place to develop 100,000 acres (40,000 hectares) of oil palm in support of local Liberia oil palm farming initiatives. In support of biodiversity conservation in the country, GVL is under obligation to carefully preserve original (primary) forest and areas of high biodiversity, and sacred community lands located within its proposed project area. The ca. 220,000 hectares of concession covers the five counties of Sinoe, Grand Kru, Rivercess, River Gee and Maryland. The agreement was ratified and approved on September 1, 2010, published by authority of the Ministry of Foreign Affairs Monrovia, Liberia and subsequently printed on September 2, 2010.

As a result of the concession agreement acknowledging compliance to the Environment Protection and Management Law of Liberia (EMPL) and the Roundtable on Sustainable Oil Palm (RSPO), GVL committed to fulfilling these guidelines. On August 29, 2011 GVL became an RSPO member (membership number 1-0102-11-000-00).

GVL has earmarked an area covering 46,900 hectares of land for palm oil development in the near term (hereafter the Area of Interest, AOI; Figure 1). This development is referred to by GVL as the “TKN Project”. The AOI was selected based on its location, vegetation cover, invitation by local communities to grant land for the company’s operation and the suitability of the soil. Satellite images of the land area were also obtained, including aerial surveys to obtain a clear understanding of vegetation cover to avoid densely forested areas, primary forest and areas considered (a) to support High Carbon Stock (HCS), or (b) necessary for management to maintain one or more High Conservation Value (HCV). In accordance with RSPOs New Planting Procedures (NPP) requirements, NPP filings covering 12,000 ha in Butaw District and 8,000 ha in Kpayan District; 28,000 ha in Trenbo and Wedabo Districts; 37,981 ha in Garraway and Grand Cess Districts and 15,482 ha in Tarjuowon.

Additionally, prior to the NPP reports, ESIA reports covering 33,000 hectares of land area in Sinoe and 97,000 hectares of land areas in Grand Kru were also approved and certificated by the Environmental Protection Agency of Liberia (the Liberian Agency responsible for Environmental Clearance and Compliance). At present, + 28,000 ha of the + 46,900 ha in the AOI forming the basis of this NPP lies outside the 74,000 hectares that obtained EPA clearance. To account for this, an additional ESIA was conducted in March 2014 by Green Consultancy Inc.

for the TKN Project. In line with the requirements of the Environmental Protection Agency, the ESIA report has been reviewed internally by the EPA and subjected to broad stakeholder review and consultation from July 17-19, 2014; and permit issuance will be issued following the required 15 day waiting period after the joint stakeholders review. At present, the full 46,900 of TKN Project has therefore been formally assessed for ESIA (in two parts). HCV assessment was then conducted over this area.

The HCV assessment and report was carried out jointly by Green Consultancy Inc. and Daemeter Consulting. Daemeter provided supervisory and support functions, guiding assessment preparation and planning, and providing real-time support on-site and off-site during HCV assessment and data collection, public consultation, data analysis and interpretation, decision-making, development of management recommendations, and report writing. The report is co-authored by GreenCons and Daemeter in a new interactive report format designed by Daemeter to increase usability of HCV assessment reports.

Proposed GVL operations at TKN Project are in close proximity to high forest areas with biodiversity significance, some of which are designated as parks or proposed national parks. The project area itself, however, supports a mixture of different vegetation types including degraded land, agriculture mixed with patches of young bushes and isolated patches of secondary forest, open dense forest area, closed dense forest, mangrove vegetation, old and new towns and villages among others (Fig. 2). Most of the AOI land area lies in places where agriculture activities (shifting cultivation) have taken place in recent or distance past. Extraction of timber for logging activities and the periodic occurrence of open swamps creates a patchwork of non-forest areas and forested vegetation with young trees.

Topographically, the TKN AOI is mostly flat with some undulating hills. Areas around most streams are slightly steep, with sandy substrate underlying areas near wetlands and mangroves. There are scattered and fragmented forest areas outside the immediate boundary of the AOI, which does not form a part of an extending large landscape. It is not noted peat land in entire proposed areas.

The project area is drained by major surface water streams, which include the Dugbe, Plazon and the Sinoe Rivers. Most of the other streams and creeks provide these rivers with their continuous flow. Other streams and creeks overshadowed by critical vegetation include Shubo, kpon, Petu, kloh, Newala and Sabor.

Based on HCV assessment, the assessment area is determined to be either: Present, Likely present, potentially present, Unlikely present or Absent. For HCVs determined to be present within or neighboring GVL's AOI, management action must be taken to ensure the HCV is maintained or enhanced as plantation development moves forward. For those deemed potentially present, the precautionary approach can be used and management undertaken as if the HCV is present, or further survey work can be undertaken to determine with certainty whether the value is present.

2. SCOPE OF THE SEIA AND HCV ASSESSMENT

Organization Information and Contact Person

Company Name:	Golden Veroleum (Liberia) Inc.
Office Address:	17th Street, Villa Samantha (Beach Side), Sinkor Monrovia, Liberia
Nature of Business	Oil Palm
Project Location	Latitude: 5°12'N and 4°54' N Longitude: 9°3' W and 8°33' W
RSPO Membership №	29/08/2011, 1-0102-11-000-00
RSPO Membership Status	Ordinary
Contact Persons	Matti Karinen (Director) <i>matt.karinen@veroleum.com</i> , +231 88 669 1676 David Rothschild (Director) <i>david.rothschild@veroleum.com</i> , +231 88 644 8525

List of Legal documents, regulatory permits and property deeds related to the areas assessed as table below:

Table 1: List of Legal Documents and Regulatory Permits

List of Legal Documents	Issuing Institution	Date And Code Number
Government of Liberia and Golden Veroleum (Liberia) Inc. Ratified Concession Agreement	Republic of Liberia by Authority Ministry of Foreign Affairs Monrovia, Liberia	Approved September 1, 2010 and published and printed September 2, 2010
Business Registration Certificate	Ministry of Commerce and Industry	October 13, 2012/2013
Tax Identification Number	Ministry of Commerce and Industry	TIN – 426669005 (Oct 15, 2010)
TKN ESIA Permit (29,483 ha) (this area covers only the new area proposed for new planting which has not been permitted by the EPA)	Environmental Protection Agency of Liberia (EPAL)	(Certificate # pending EPA permit). Permit application being processed, with all steps completed. Development will not start until permit is obtained.
Import permit for plants or other goods governed by the Phytosanitary Regulation	Ministry of Agriculture (MOA)	NOES/RL/22/2011 March 23, 2011
Phyto-certificate	Ministere De L'Agriculture	000774 12/04/2011

	De L'Elevage Et De La Peche Benin	
Land Use Certificate	Minister of Agriculture, Minister of Lands, Mines & Energy, Minister of Justice, Judge of the Monthly And Probate Court Grand Kru County	1-2012 p 120-126
Reliance on other key document of authority nationally was also considered. Among these document include but not limited to the following:		
An Act Creating the Environment Protection Agency of the Republic of Liberia	Senate and House of Representative of the Republic of Liberia and published by authority Ministry of Foreign Affairs	November 26, 2002
The National Environmental Policy of Liberia	Senate and House of Representative of the Republic of Liberia and published by authority Ministry of Foreign Affairs	November 26, 2002
An Act Adopting the Environment Protection and Management Law of the Republic of Liberia	Senate and House of Representative of the Republic of Liberia and published by authority Ministry of Foreign Affairs	November 26, 2002
The New Forestry Reform Law	Senate and House of Representative of the Republic of Liberia	2006
An Act for the Conservation of the Forests of the Republic of Liberia	Senate and House of Representative of the Republic of Liberia	1953
Act Supplemental to "An Act for the Conservation of the Forest of the Republic of Liberia"	Senate and House of Representative of the Republic of Liberia	1957
An Act for The Establishment of A Protected Forest Areas Network and Amending Chapter 1 and 9 of The New National Forestry Law, Part II Title 23 of the Liberian Code Of Law Revise	Senate and House of Representative of the Republic of Liberia	2003
Draft Wildlife and Protected Area Management Law	Forestry Development Authority	2009
Draft Land Right Policy	Approved by the Land Commission	2013

Location Map



Figure 1: Location of Proposed New Planting – TKN Project in Liberia

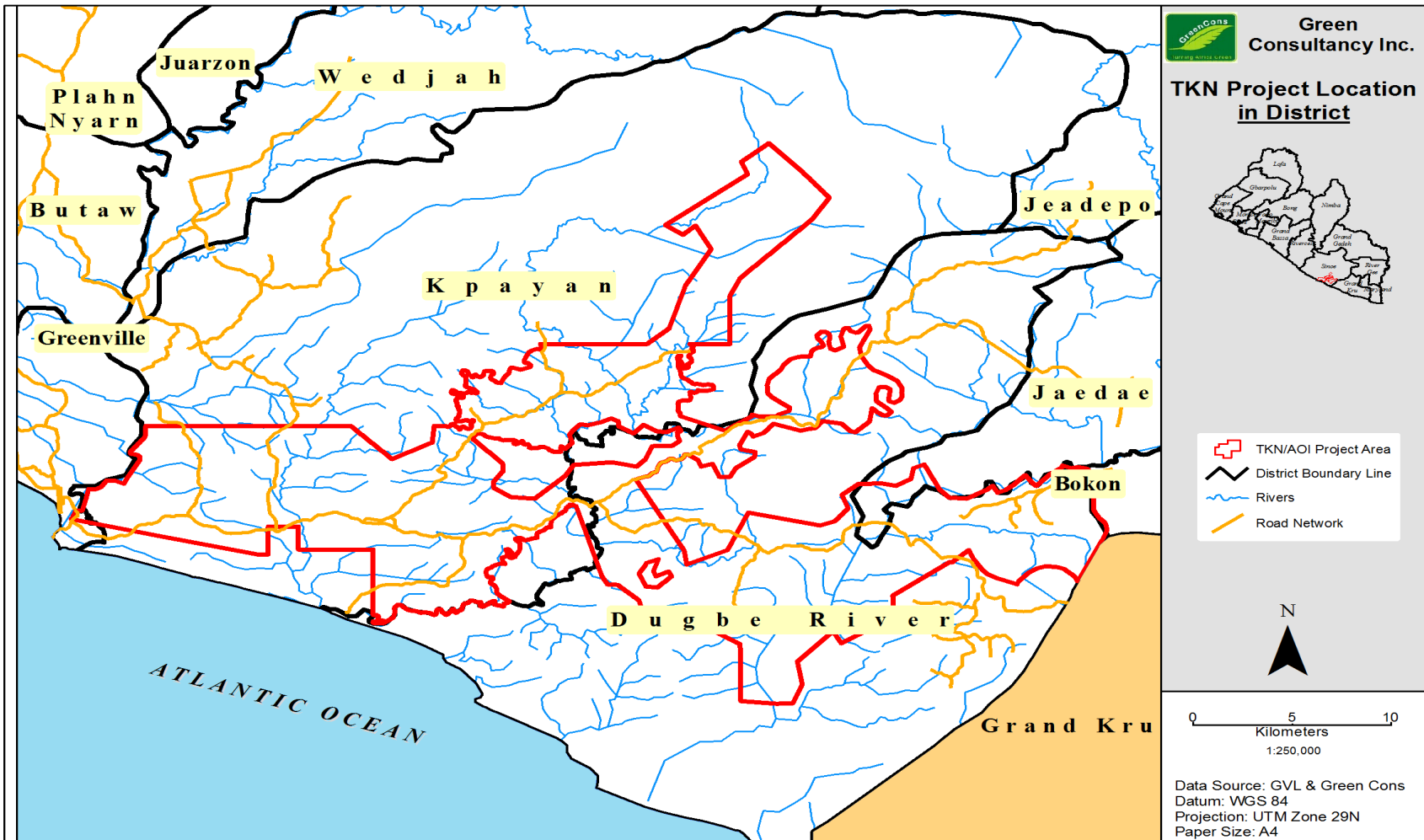


Figure 2: Location of Proposed New Planting – TKN Project in Sinoe County

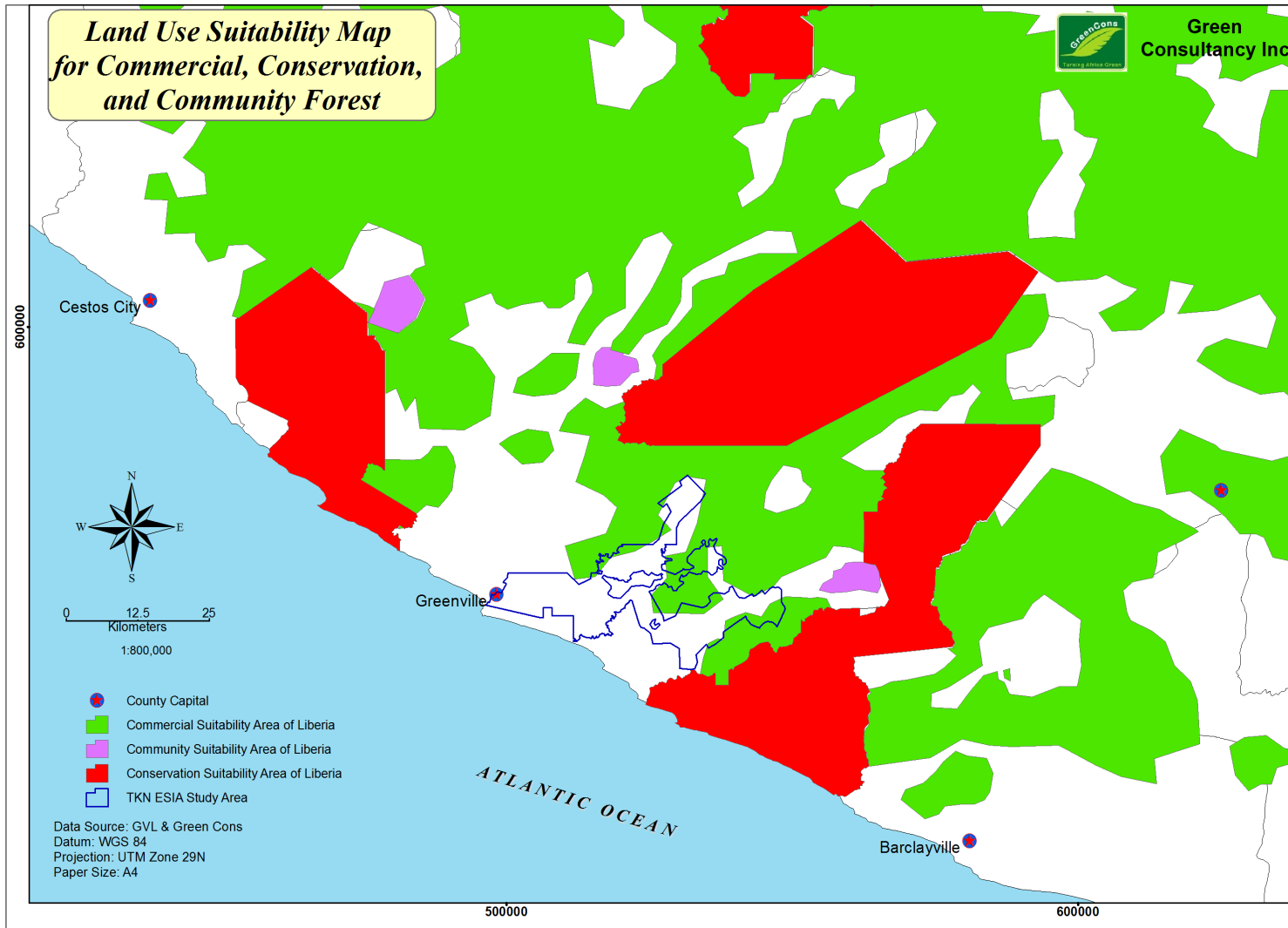


Figure 3: AOI in Relation to FDA Land Use Suitability Categories

Area of New Plantings and Time-plan for New Plantings

GVL aims to commence planting in 2014, and carry out planting over a three year period. Planting will be carried out with targets of 7,000 ha land preparation and 7,000 ha of planting each year (see table below), subject to adjustment based on community MOUs and final planning. Palm seedlings for the planting sites are already being cultivated on previous nursery site in Kpanyan district. The entire area where the nursery site is located has since been permitted by the EPA and covered under New Planting Procedures which included HCV assessment for 8,000 ha in Kpanyan District.

Table 2: Time Plan for New Planting

GVL Block Area (Ha)	Left out of Planting (Ha)		Net area of cultivation of palm oil (forecast)	Activity (ha)	2014	2015	2016	Future	Total
Gross Area: 46,900 hectares*)	HCV/riparian zone/old town	8,960	Concession area	Land Preparation	7,000	7,000	7,000	9,340	30,340
	Road & other infrastructure	1,200		Planting	7,000	7,000	7,000	9,340	30,340
	Nursery	200	Out-Growers Area	Land Preparation	0	1,400	1,400	3,400	6,200
				Planting	0	1,400	1,400	3,400	6,200
			Total	Land Preparation	7,000	8,400	8,400	11,000	36,540
	Total	10,360		Planting	7,000	8,400	8,400	11,000	36,540

**) Note: This total area includes 29,483 ha under a new EPA permit area and areas within an existing + 74000 ha area already permitted by the EPA)*

At present no clearing to facilitate planting has commenced. In line with the RSPO guidelines and procedures, clearing is expected to commence upon certification and approval of NPP related reports and completion of FPIC processes. Within three years, approximately 20% (approximately 5,800 Ha) of the planned planting area will be developed for communities as part of an out grower program, as per the Concession Agreement. The exact areas will be decided upon further consultations and agreement with the respective communities.

Communities in the AOI have been actively engaged and consulted regarding GVL's development plans. The entire development

processes, including the RSPO process flow chart and extent of local community involvement required for the management of HCVs within the project area has been communicate with local communities in the proposed development areas. To date, every community and town has enthusiastically consented to use of their customary land by the company for oil palm cultivation and have all willingly agreed to work in cordial harmony with the company. To solidify this understanding, GVL and communities have been revising drafts of MOUs between GVL and communities detailing the overall agreement to allow oil palm development and associated obligations of each party.

3. ASSESSMENT PROCESS AND PROCEDURES

Assessors and their Credentials

The assessment covered evaluation of local community needs and characteristics by qualified social survey specialists, paired with experts in the survey of flora and fauna, conservation, and soil classification. Biodiversity assessments were carried out by taxonomic specialists for reptiles, amphibian, large and small mammals, birds and fishes. Surveys were conducted within every vegetation type of the project area including intact forest vegetation outside but adjacent to the immediate boundary of the project area. Surveys were also conducted for soil identification and profiling, and GIS were used for HCV identification, demarcation and mapping purposes. The assessment was conducted by two independent firms, Green Consulting (GreenCons) and Daemeter Consulting. The list of specialist members of the team and their roles in the assessment is presented below.

Green Consulting Assessment Team

Solomon P. Wright, MSc – Team Leader

Solomon holds an MSc in Regional Science and a BSc (Cum-Laude) in General Forestry. He also holds a certificate in Integrated Environmental Management by IAIA is certified by the EPA of Liberia as a Professional Environmental Evaluator and is a RSPO Approved HCV Assessor. Solomon has conducted ESIA's in every part of Liberia on different projects, led several HCV assessments and associated reporting, and conducted and participated in local and international trainings. Solomon was the team leader for this assessment and specifically responsible for HCV assessment planning, team management, HCV identification and demarcation, recommendations and report writing.

Abraham T. Tumbey Jr. , MSc – Co-team Leader and Social Assessment

Abraham has an MSc (honors) in Regional Science and a BSc in Biology/Chemistry. He also holds a Certificate in Social Impact Assessment is an EPA Certified Professional Environmental Evaluator and is an RSPO Approved HCV Assessor. Abraham has conducted a number of ESIA and HCV assessments in Liberia. He has also conducted environmental training and work in Liberia and abroad. For this assessment he worked alongside the HCV assessment team in his dual role as the ESIA team leader and HCV field team oversight.

Jerry Garteh, MSc – Birds and Herptofauna

Jerry Garteh holds an MSc in Biodiversity Conservation and a BSc in Biology. Jerry has extensive experience in conducting Important Bird Area activities in Liberia and abroad, ecological surveys, amphibian and reptiles surveys, and camera trapping. For this assessment, Jerry surveyed birds, reptiles and amphibians and was responsible for reporting on survey findings, species conservation statues and associated management recommendations for these

taxonomic groups.

Menladi M. Lormie, BSc – Mammal Specialist

Menladi M. Lormie has BSc in Forestry. Menladi is a small and large mammal specialist. She has participated in local and international trainings and assessments of this taxonomic group, including a nationwide chimpanzee and large mammal survey. She possesses practical knowledge and understanding in the identification of chimpanzees. Menladi was responsible for assessing small and large mammals for this assessment.

Sanco Lysander, MA – Social Scientist

Sanco Lysander holds an MA in Peace Studies and a BA in Sociology and Anthropology. He has extensive experience conducting social impact assessments for community related projects. He has also conducted many research projects geared towards understanding communities and their way of life. Sanco was responsible for the socioeconomic data collection and assessment within the project area.

Isaac Smith, BSc – Soil Scientist

Isaac Smith holds both a Diploma and BSc in soil science and plant nutrition. He has worked in the agriculture sector for over eight years and has been involved in integrated agriculture programs for many multilateral agencies. Isaac was responsible for the classification and analysis of soil samples collected during this survey.

Patrick Garteh, Forest Technician - Botanist

Patrick Garteh holds a Forest Technician Certificate in Renewable Natural Resources. He is employed as the botanist and instructor at the Forestry Training Institute (FTI) responsible for all flora (higher and lower plants, including shrubs) identifications, classifications and national and international conservation status. Patrick has conducted flora inventory in Liberia and other West African countries and botanical surveys of medicinal plants and NTFP. He has vast theoretical and practical knowledge in dendrology, and served as the botanist for this assessment.

George Allison, BSc - Forester

George Allison has a BSc in Forestry. He has worked with many ecological project involving demarcating and mapping sensitive ecological zones and has assisted in the many ESIA's. He has also participated in a number of environmental training. For this assessment, George was responsible for the identification and mapping of vegetation zones and DBH measurements during field surveys.

Patrick Jallah - Wetland Assessor

Patrick Jallah holds a certificate in tree identification, and has extensive practical experience in this field. He has also conducted a number of ecological studies and ground and surface water assessments. For this assessment, Patrick was responsible for identification and mapping of all wetlands within the project area.

Adonis Zuweh, Jr. (Project Marine Biologist)

Adonis Zuweh Jr. is a current fishery observer at the Bureau of Fishery, Ministry of Agriculture, Republic of Liberia. He has been through method of fish survey including offshores on shores surveys. J. Adonis Zuweh, Jr. has conducted Fishery surveys along the coastal lines of West Africa and the gulf of Guinea. Adonis was responsible for fishery biodiversity assessment conduct within the GVL AOI. Adonis holds a BSc. Degree in General Forestry from the University of Liberia.

Daemeter Consulting Assessment Team

Gary Paoli, PhD

Gary is co-founder and Director of Research and Project Development at Daemeter Consulting. Gary holds a PhD in Biology from the University of Michigan in the USA. Gary has conducted research on the ecology of lowland rain forests in Sumatra and Kalimantan, studying influences of soil and geology on species composition and ecosystem dynamics, as well as the development of novel biodiversity survey methods. He is a specialist on trees in the Dipterocarpaceae, and a leading expert in the identification and management of High Conservation Value (HCV) areas. Gary also leads Daemeter's established program in research, training and outreach with diverse stakeholder groups to promote sustainable palm oil. Gary co-led the national initiative to revise the HCV Toolkit for Indonesia, completed in 2008, and has authored numerous peer-reviewed publications and public domain reports on biodiversity and sustainability. Gary is an RSPO approved HCV lead assessor and botanist. For this assessment Gary provided overall leadership and direct support through each stage of the implementation process.

Betsy Yaap, MSc

Betsy is a Daemeter Associate and independent consultant focusing on High Conservation Value (HCV) assessments; peer review and mentoring for oil palm and pulp fiber developments; assessing development risks for HCV and third-party certification compliance (RSPO and FSC); and compliance verification with the Equator Principles in mining. She is an RSPO approved HCV lead assessor and mammal specialist. Prior to starting her PhD in Conservation Biology at James Cook University, Australia in 2010, Betsy was a senior consultant at Daemeter. Her PhD research focuses on biological corridors and landscape connectivity for large mammals in Indonesia and Costa Rica. She holds a masters degree in Tropical Environmental Management from Charles Darwin University in Australia and a BA in Anthropology from the University of Colorado, Boulder, USA. For this assessment, Betsy was responsible for overall project implementation and collaboration with Green Consulting on assessment planning, interpretation and development of management recommendations, and reporting.

Assessment methods

The assessment covered evaluation of local community needs and characteristics by qualified

specialists, paired with experts in the survey of flora and fauna conservation, and soil classification. Methods included GIS, direct field surveys/observation, focus group discussion, regional and local level stakeholder meetings and community town hall consultations.

The overall methodology for the assessment included pre-field, field and post-field assessments, in addition to specialized methodologies executed by the discipline specialists. The overall goal of the study was educate and ensure that the local communities within the new planting block fully understand the essence of planned studies, obtain consent of the local communities to identify all High Conservation Values within the TKN areas, and then to inform national and local stakeholders the results of the surveys.

Pre-field Assessment

Full maps of the area, including shape files, were requested from GVL. These shape files were overlaid with forest cover and vegetation shape files obtained from the FDA. The information obtained from these documents were analyzed and circulated to national stakeholders including NGOs with focus in the areas of study. A notice of intent of GVL to cultivate such areas was also circulated to the stakeholders. A desk study and review of the project area covering other studies or reports from the project area was conducted and also requested from GVL. Website information on the large landscape covering the project area was also accessed in order to understand the vegetative nature of the terrain.

Field Assessment

- Vegetation Verification
- Flora Identification
- Fauna Assessment
- Birds Watching and Survey Ornithologist
- Reptile and Amphibians Survey
- Fish Survey

Post Field Assessment

- Data analysis and interpretation
- Preparation of draft report
- Public consultation
- Report peer review

Social Economic survey

The data collection techniques used during the social assessment included focal group discussions, key informant interviews and field observations.

Focus Group Discussions

Focus group discussions were used to collect primary data. The focus group discussions were intended to grasp information from community about their history, community profile, livelihoods activities, resources accessibility, constraints and problems, local institutions, relation with other forest users and existing conflicts.

Key Informant Interview

Key informants interviews were used whereby; informal interviews and discussions with the village chief and elders, some government officers, and other resource persons in the area were conducted.

Field Observation

This method was used gather additional information from field observations in each of the study communities Observations covered factors such as availability and quality of infrastructure such as roads, schools, health care and community project, traditional use of resources, illegal activities, poaching etc. were taken into consideration.

Qualitative questionnaires were developed for both focus group discussion and individual interviews to meet the above objectives. Focus Group Discussions and interviews were held in a total of 32 communities located within and outside the project area. Participants in the focus group meetings included local authorities, natural resource users (farmers and hunters), petit traders, motorcycle riders etc. Some permanent stakeholders and individuals were also interviewed to establish and authenticate the engagement process and other vital information on the proposed project areas.

Questionnaires were used to collect data from households. The total sample size for the household surveys was 100 households, or 670 individuals, including 307 males and 363 females. The questionnaire was sub-divided into sections designed for measuring the following points: demography and livelihood activities, household size, income level, primary livelihood options, expenditure, education, health etc.

Focus group discussions were used to collect data on a cross section of community members including chiefs, elders, women groups, farmers, teachers, hunters, farmers, fisherman, herbalist, motor bike riders etc. Twenty one focus group meetings were held. The focus group discussions were intended to collect information from communities about their history, community profile, livelihoods activities, resources accessibility, constraints and problems, local institutions, relation with other forest users and existing conflicts. The focus group discussions were organized in a form of a deliberative forum where the research teams ask the questions to the residents and several answers were given which were then deliberated upon to obtain the most reliable answers. The focus group discussions took place either during early morning or in the evening period so that large numbers of the residents could attend before or after returning from their daily activity and each lasted from one hour-thirty minutes to two hours. The deliberations were

in English and interpreted in the local language (Kru).

Additionally, meetings were scheduled with national and local leaders including community based organizations and other national and international NGOs. The meetings were geared to listen to their concerns and seek their recommendation especially as it relates to the management and monitoring of HCVs. It focused on land acquisition; land used planning, labor issues, conservation issues and the management and usage of land in and around forest vegetation. All the information gathered from these institutions was meant to guide and inform the team toward making decision in the Field Assessment Phase. Minutes from these meetings were recorded as firsthand information from these institutions prior to the findings.

Stakeholder consultation (stakeholders contacted, consultation notices and dates)

Local stakeholder authorities were consulted prior to the meetings with local communities. These consultations centered on discussion of the project, the terms of reference for ESIA and HCV studies and permission from the local authorities in order to engage with local communities. Several key questions were put to the stakeholders regarding the project and project area, and development of the region. In addition, the stakeholders were free to raise any issue they deemed relevant to the development. The following people were contacted.

Table 3: Stakeholders Contacted

Person Contacted	Position/Contact	Summary of general issue raised
Hon. J. Milton Teahjay	County Superintendent Tel: 0886616500	There is a need to develop a comprehensive land use plan for Liberia with the participation of different sectorial agencies and land users
Hon. Alphonsus Wiah ¹	Statutory District Superintendent Tel: 0886708916	
Jacob T. Kofa	Paramount Chief Matro Chiefdom	Stakeholders want to have access to the draft and final reports of ESIA and HCV reports
Peter Kun	Paramount Chief Lower Tartweh Chiefdom	
T. Milton Swen	Secretary General Community Development Committee, Karquepo	The local EPA would monitor the project at every level and ensure that the requirements set by the EPA are upheld
Jamor Dweh	General Town Chief Tummoxville/Weasuah Kwiatou	GVL should ensure that local people fully understand the project before signing any MOU
Bartee Togba	Chairman Dugbe Statutory District	
Othello G. Tugbeh	Township Commissioner	Stakeholders are concerned about the
Patricia Kartoh	Clan Chief	

¹ Also serves as Acting Superintendent for Dugbe River District

Person Contacted	Position/Contact	Summary of general issue raised
Peter Tugbe	Paramount Chief	proximity of the project area to important biodiversity reserves and wants the current distance of the proposed project area to be extended
Morris Togba	Acting Paramount Chief Titiyen	
Joseph B. Joploh	Clan Chief Swenpon	GVL should collaborate with FDA in the management of biodiversity corridors around the project area
Othello Dugbeh	Clan Chief GBC	
Stephen S. Gongeh	Head Inspector EPA Tel: 0886467745	
T. Carranda Kargou	OIC Kabada Clinic; Kabada	
Philemon F. Gonotee	OIC Tubmanvilllinic	
Sackoh Tweh	County Interpreter	
Toby Nyemah	Paramont Chief, Central and Upper Tartweh	

Following completion of pre survey consultations, and based on permission to conduct the surveys, the following villages were surveyed by FGD and/or household interviews from February 25 to March 28, 2014 to complete the surveys:

Table 4: Stakeholders Interviewed

No	Name	No	Name
1	Banneh Old/New	17	Petatruken
2	Bedioh	18	Popoh Mission
3	Blue Barrack	19	Quaeteh
4	Borteh	20	Seethum
5	Gmankan	21	GBC
6	Jarpiah	22	Nyanpoh Barrack
7	Karquekpo	23	Kpowein
8	Kitu	24	Kabada
9	Klowen	25	Seethum Juayen
10	Mama Creek	26	Sutuzon
11	Netreen	27	Tityyen
12	Kulawine Junction	28	Tubmanville
13	Nuklue	29	Tugbaken
14	Nyannue	30	Wotoe
15	Nyeasuah	31	Weatuzon
16	Panama	32	Kwitatuzon

Main questions discussed and issues raised during local meetings were as follows:

- When will the project commence?
- How many persons will be employed?

- How will infrastructure development be allocated?
- Will towns that offer more land have more infrastructures?
- What support will GVL offer for small holders?
- Will GVL pay salaries and operation cost for the smallholders plantations?
- What percentage of land will be offered for smallholders?
- What if communities willfully decide to over social HCV areas?
- Who determines the rate for compensation?
- What benefits of compensation will communities get for offering their land to GVL?
- What is the role of GreenCons since they are not employed by GVL or GOL?
- What happens if one community in the district decides to reject GVL?
- GVL should engage with communities on a communal level
- Will development be allocated at the district level?

National Multi Stakeholders Meeting

National level stakeholders meetings involved key government agencies and other organizations. Meetings were held from February 16, 2014 to 2 April 2014, and then again during 17-25 July 2014. These meetings were held during pre-field assessment, during field assessment and post-field assessment. The meetings were meant to inform national and local stakeholder of plans to conduct ESIA and HCV within the TKN project area; educate and ensure that the project is fully understood via presentation of documentation and maps of the project, and to solicit concerns and recommendations. Summary of main contacts and issues discussed during initial consultations are as follows:

Table 5: Stakeholders Meeting Involved Key Government Agencies and Other Organizations

Agency/Organization	Name/Contact of Participant	Date
Environmental Protection Agency of Liberia 4th Street/Tubman Blvd., Sinkor Monrovia, Liberia http://www.moa.gov.lr	Mr. Jerry Toe Manager-Compliance & Enforcement Environmental Protection Agency 0880662516 Earl Neblett ozoneepal@gmail.com +231 886 546 345 Albert Donnie albertdonnie@yahoo.com +231 886 960 274	02/21/14

	<p>Varney L. Conneh clvarney68@yahoo.com +231 653 1029 + 231 777 531 029</p>	
Issue raised		
<p>The local EPA would monitor the project at every level and ensure that the requirements set by the EPA are upheld. The consultant should consult broad-based stakeholders and note their input in the final reports.</p>		
<p>Forest Development Authority Whein Town Mt. Barcllay P.O. Box 10-3010 1000 Monrovia, 10 Liberia http://www.fda.gov.lr</p>	<p>Mr. Jerry G. Yonmah Acting Manager-Protected Area Network Forestry Development Authority Tel:+231886462564 Email: yonmah1968@yahoo.com</p> <p>Mr. Edward G. Gbaintor Manager-Wildlife Management Tel:+231886782273</p> <p>Madam Comfort Tweh-Sakui Awareness & Education Officer comfortsakui@fda.gov.lr</p>	<p>02/21/14</p>
Issue raised		
<p>FDA is concern about the proximity of the project area to important biodiversity reserves and wants the current distance of the proposed project area to be extended.</p>		
<p>Ministry of Agriculture Libsuco, Old LPRC Road Somalia Drive, Gardnersville 1000 Monrovia, Liberia http://www.moa.gov.lr</p>	<p>Hon. Chea B. Garley Assitant Minister-Technical Services Ministry of Agriculture Tel:+231886574465 cheabrowngarleysr@yahoo.com</p>	<p>03/07/14</p>
Issue raised		
<p>Farmers sustaining losses from project communities should be fairly compensated based on FPIC and MOA criteria. The local community areas for farming should be considered as GVL engages in her operation or food security will be a problem for the people living around the concession</p>		
<p>Ministry of Internal Affairs Capitol Hill http://www.mia.gov.lr</p>	<p>Hon. Joseph Jangar Assistant Minister-Culture & Customs Affairs Ministry of Internal Affairs Tel:+231886512055 Wiliam Jallah Director Culture & Customs Affairs 0886110447</p>	<p>03/17/14</p>
Issue raised		
<p>All areas of cultural values should be identified and excluded from the development areas in consultation with the local people. The tradition of the communities should be respected at all</p>		

times.		
Ministry of Labor UN Drive, Monrovia	Hon. Neto Zarzar Lighe Deputy Minister-Manpower Planning & Human Resource Development Ministry of Labor Tel:+231886556399	02/08/14
Issue raised		
GVL should ensure fair labor practice and encourage workers to form their labor unions There should be adequate facilities for employees' health and sanitation.		
Ministry of Health Congo Town	Mr. Dehwehn Omarly Yeabah Director-Department of Environmental & Occupational Health Tel: +231886669906 Email: doyeabah@yahoo.com	02/13/14
Issue raised		
There should be provision for safe drinking water, sanitation facilities and personal protective equipment for all workers. GVL should ensure that chemicals and waste are managed properly through a documented system.		
Land Commission Goodridge Building Jllah 8th Town Road, Sinkor Monrovia, Liberia	Dr. Cecil T. O. Brandy Chairman Ctob51@yahoo.com +231 697 2111	02/13/14
Issue raised		
There is a need to develop a comprehensive land use plan for Liberia with the participation of different sectorial agencies and land user. GVL should ensure that local people fully understand the project before signing any MOU.		
Society for the Conservation of Nature of Liberia www.scnlib.net http://www.lc.gov.lr	Michael Garbo Executive Director Tel:+0886573612 +231 697 2111	03/20/14
Issue raised		
There should be buffer zones between project area and protected areas. Forest areas should be avoided to encourage fauna connectivity between forests.		
Forest cry Liberia RLJ Hotel Junction, Paynesville	Mr. Dickson Chowolo Executive Director Tel:+231886593292	04/2/14
Issue raised		
No primary forest should be converted for oil palm		
Fauna and Flora International Congo Town http://www.fauna-flora.org/explore/liberia	Dr. Nouhou Ndam Chief Technical Advisor Tel:+0886765087 REDD+ Project Advisor Josh Kempinski	02/21/14 03/20/14
Issue raised		
Stakeholders should have access to the draft and final reports of ESIA and HCV reports		

Concern about data on species distribution within and around study area.

Forest classification should be clearly defined

All forested areas should be exempted from development to allow for species connectivity

4. ESIA AND HCV ASSESSMENTS

4.a Summary of ESIA (SEIA) Assessment Finding

The social and environmental assessment amongst other things considers the following:

Population and demography

The population of the study area is generally young. 51.8 percent of females and 48.2 percent of males are eighteen, or younger. Very few people were reported to be aged more than 70. The average age for males, and females were 21.4 and 19 respectively which is slightly higher than the country median age (18 for males, and 18.3 for females).

Dynamics and Ethnic Structures

The ethnic composition of the population in the study area is dominated by the Krus with small elements of other Liberia tribes including Greebos, Bassa Mano, Gio and Kpelle. The largest settlement in the Dugbe River area is Karquekpo, while Tubmanville is the largest settlement in Kpanyan. Jaede is only represented in the concession by a small town called Titiyen, which has a population of 950 residents. In general, settlements in the project area range from tiny hamlets of thatched huts to larger settlements of corrugated roofs and mud-plastered houses.

Life in these communities is far from simple. Each village is connected through a variety of crucial linkages with other villages, the section, clan and the larger district. The section appears to be the central of traditional identity.

Land Administration, Tenure and Use

Land is regulated based on customary rules that are administered by tribal authorities. Land is seen as a common/collective resource belonging to the larger clan or district. This ownership status is further divided into sub-units of individual towns or villages. Individual members and families have usufruct rights, dependent upon occupancy or use.

In the project area, the concept of communal ownership of land is the land tenure system that is being used to acquire land. There are no legal titles to land in the area.

The project area has been a subject of logging activities since the 60s. Most of these activities were interrupted by the civil conflict in the early parts of the 90s. Logging resumed again after the war and stopped by 2005, however traces of logging including roads, landing sites and left over logs are seen in many areas. The land use activity currently persisting in the area is rain-fed farming/shifting agriculture system; with rice, cassava and vegetable cultivated using customary methods and materials. The majority of the land observed not under cultivation is secondary vegetation, with patches of primary forest in the north and northeast of the project area. Based on the FDA land use characterization, the area can be considered as areas suitable for commercial agriculture.

Education

There are only six (6) junior high schools in the entire district with few elementary schools. Some of the schools have one to two teachers that are not on payroll and will have to do other things for sustenance resulting to their irregular absence from the class room. The average school going child is 6 yrs. Most female at the ages of 13 and above is either with child, married or co-habiting. Those completing the elementary level will have to travel to Tubmanville, Karquekpo, Kabada, Banneh New Town or Greenville to further their secondary education. For those whose parents cannot afford the cost of living in these communities will have to discontinue.

Old towns

Many of these abandoned towns still possess some local value. For instance, the graves of prominent elders and chiefs are located in these areas. In some cases, artifacts and cultural items associated with the foundation of the town resides in the old towns. Additionally, trees belonging to some members of the towns are left behind by the former inhabitants. Hence overtime community members relate to their old towns to pay respect to their forefathers or to access items left behind. Unless otherwise authorized by the communities, old towns are sensitive areas that need to be set apart from the developed areas for the plantation.

Natural Resources Usage

All around the world, people depend on the environment in different ways to meet their basic needs and earn an income. In Liberia, some 70% of the population live in rural areas and are directly dependent on forests for their subsistence. Amongst the rural population, more than 70% rely on agriculture for livelihood.

During the FGD in the TKN, residents have indicated that they have been utilizing the natural resources within the area from one generation to another. Most, if not all of the natural resources which the resident utilizes have been sourced from within the project area. There are many points of usage for each community within their own lands.

The use of these resources is mainly for subsistence purposes, with some limited amount of income generation activities particularly palm oil, farina and bush meat. The trees in the surrounding forest are used for the provision of building materials since most of the buildings are constructed using wood or wood related products. Fishing and hunting are done at a subsistence basis;

Community Infrastructure

Few residents enjoyed good access to public facilities while in many remote communities facilities are lacking. Residents of communities like Tubmanville, Kabada, Panama, Karquekpo and Bannah enjoyed relatively good access to these public facilities, whereas households living in the remote parts such as Seethum, GBC, Juaryen and West Point generally had many constraints in accessing public facilities. In many areas villagers are required to walk up to 3

hours to get to the nearest clinic. This results in some villagers relying on medicinal plants for the treatment of illness such as rashes, running stomach, sore etc. The sources of medicinal plants are diverse and widespread including wetlands, pioneering plants species in agriculture degraded areas, parts of forest trees (barks, roots and leaves). Schools in the entire study area are limited to primary schools. Hence, school kids who pass to the secondary level will either migrate to Greenville to pursue their education or remain in the villages as drop-outs.

Evaluation of Positive Social Impacts

Employment opportunities

The TKN project is expected to employ more than 2,000 persons at a rate of 1 job for every 5-6 ha developed. The project will provide jobs for semi-skilled and unskilled labor. During the constructional phase both skilled and unskilled labor will also be hired. The current profile of the community would suggest that most of the youth can only be taken on to undertake unskilled work. During the construction stage, they will therefore provide most of the casual labor.

The local community will be considered in the first instance before migrants. A special effort will be made to provide training in various apprenticeship positions for the trainable youth. This is a positive impact of the project and will go to develop the local community directly.

The proposed project will also provide employment avenues to local contractors/consultancy companies to carry out various project activities such as estates construction, water and electricity provision for estates and offices among others. These will create job opportunities for the local firms.

Improved Local/National Economy

In addition to the direct employment, the project will result in increased trade due to the increased need for goods and services within the communities. Regular monthly earnings for laborers and artisans will give a boost to the local economy. Their purchasing power will be greatly enhanced and members of the community will be in a good position to plan their personal and family lives better. Several thousands of dollars are expected to be pumped into the local economy in the form of payment of workers' salaries. Building and construction materials like sand will be obtained locally. Cement will be purchased from Monrovia and Greenville. The purchase and use of such materials will impact positively on the local as well as the national economy. The deduction of both workers and corporate taxes will enhance the national economy.

Improved Institutional/National Revenue

This project is expected to accrue revenue for the state through levies and taxes applied on the crude palm oil production and tax deductions from workers' salaries and contractor fees. Some government agencies will charge fees which will increase the revenue base of the institution.

Improved Roads and Communications Infrastructure

The project is expected to make a contribution towards social development including feeder

roads upgrading and maintenance within the project catchment. The project is also expected to open up the area through road construction to link the communities and the project site. The project will create incentive for the population in the area to increase. This will provide opportunity for mobile communication and local community radio stations to emerge.

Evaluation of the Negative Social Impacts

Land Acquisition/Ownership Issues

The project could face land acquisition conflicts if satisfactory due diligence and subsequent purchasing/renting arrangements are not made with the identified land owners at the commencement of the project.

Livelihood Issues

A possible impact on livelihood is the loss of the agricultural labor force. If this occurs it will be a local impact in the concession area, but could foreseeably occur at a larger, regional level as knowledge of the potential employment opportunities at the plantation is likely to become widespread. It is anticipated that the impact is most likely to occur as a one-off during construction and the early stages of operation when recruitment and hence job expectations will be at their highest. Land uptake by the project, in-migration and the increased demands of local products as a result of the plantation workforce may result in an insufficient supply of locally available goods and hence result in inflationary impacts on the local economy. The inflation in the cost of staple food is likely to reduce the communities in the concession area's ability to purchase staple foods.

Community Values

The establishment of the plantation dwelling can compromise community and social values; crime, use of alcohol and disagreeable behavior by workers are all problems that can arise. The introduction of these workers together at the project area has the potential to create some social concerns. There is the potential for an increase in criminal activities, and abuse of alcohol as a result of additional income. In addition, since the workers will be housed at the same campsite there is the potential for conflicts through disagreements. Recreational activities such as sports will also be promoted by the company. Every effort must be made by the company to ensure that it does not promote alcoholism.

Increase in volume of traffic: there may also be project infrastructure and project activities which cause safety risks. This may increase the potential for accidents. Transportation of Fresh Fruit Bunches (FFB) to the palm oil mills and of the oil palm to the port, respectively, by tractor and Lorries and the workers' transportation vehicles, will impact the traffic activities by generating dust and noise pollution.

Receiving Water Quality Deterioration and Change in Local Hydrology

The construction activities may impact water quality of the rivers, streams and creeks due to the release of suspended sediments through erosion and release of contaminants associated with the

sediments. Leaching of agrochemicals, runoff, sewage and hydrocarbon contamination can affect water and cause significant impacts on local communities' sources of domestic water supply.

Noise Nuisance

Noise levels recorded at sampling points within the communities of the project area never exceeded 50 decibels. The prevailing sound environment throughout the area is considered almost totally by sounds of nature.

- Increased noise levels are expected from:
- Machinery use during vegetation clearance;
- Movement of heavy duty vehicles; and
- Operations of earthmoving equipment.

Solid Waste Management Issues

The removal of vegetation and construction spoils can be a nuisance and create insanitary conditions and aesthetic problems. These include:

- The agrochemicals: (Fertilizers, Pesticides, Insecticides, fungicides, etc);
- The hydrocarbon products for the generators, cars, tractors and lorries, etc., such as diesel fuel, oil and grease, lubricants, etc; and
- Spillage prevention.

Sanitation Problems

Pressure on the weak sanitation systems in the communities will increase the use of open pit latrines and bushes. This means people may come in direct contact with rivers and streams, which can lead to faecal contamination. Limited access to clean water and poor sanitation include diarrheal diseases which can lead in severe cases to cholera outbreaks. These diseases present a high risk to vulnerable persons such as children or those with pre-existing health conditions.

Aesthetics and Visual Intrusion

The removal of vegetation leaving bare land for certain periods during the construction stage may affect the visual sensibilities of the local inhabitants in and around the project area.

Occupational Health and Safety Issues

Occupational health and safety issues associated with the proposed project construction include:

- Exposure of workers to excessive noise, vibrations and dust;
- Accidents in the use and handling of chemicals, equipment and machinery;
- Injury to the body during the use and handling of chemicals, equipment and machinery;

- Injury due to fires in clearing vegetation and burning wastes etc;
- Illness caused by exposure to wastes and effluents;
- Injury due to snake, insect, rodent or dog bites etc;
- Malaria, and water based diseases, in proximity to river systems and impounded water; and
- Increased risk of social and communicable diseases through the immigration of construction workers from outside the local community.

Issues relating to Cultural Sites

There is potential that areas available for cultural practices and graveyards might reduce or be lost. It is important to note that local people's connection to their sacred site is critical to their livelihood and existence.

Health and Safety

Workers health and safety can be impacted during the operation of the project. The major impacts are:

- Risk of accidents from the operation of heavy-duty machines;
- Exposure to excessive noise and fumes from the operation of machines;
- Exposure to vector borne diseases;
- Increase in community injuries and fatalities due to road traffic accidents;
- Deterioration of community health due to exposure to contaminated water supply; and
- Deterioration of community health due to degradation of air quality.

4.b Summary of HCV Assessment Finding

The HCV assessment of the area was meant to identify, demarcate and map areas of high conservation value including conflict areas. These processes were achieved by means of site assessment, consultation with local communities and stakeholders and random but strategic transect walk points across the proposed blocks. The draft National Interpretation HCV toolkit for Liberia, the Global HCV Toolkit and the HCVRN Common Guidance (2013) were instruments used for the identification of HCVs under this section. Heaviest reliance was placed on the HCV toolkit for Liberia.

Biological Environment

Sinoe County covers approximately 3,860 square miles (10,000 km²), with a coastline of 86 km, and annual rainfall of 80-85 inches. The natural vegetation for most of Sinoe is evergreen rain forest, except along the coast where mangrove and isolated savannah grasslands also occur (Sinoe CDA, 2008-2012). As noted above, three vegetation types predominate the project area:

- **Agricultural Degraded Farmlands & Secondary Habitats:** vegetation with forest species which grow immediately after clearing associated with subsistence agriculture by the local through their crop rotation cycle. Forest of this nature can reach up to 20m with surprising rapidity but has a noticeable absence of large trees (< 30cm in diameter).
- **Late Secondary Forest (+ 20 years):** this forest resembles the primary forest except it does not possess the large trees (>30 metres high and >75cms wide) which have been removed either by commercial or local scale logging. These forests contain many of the same species as associated with primary forests.
- **Primary Forest:** these are either closed or open dense forest where most or all of the principle characteristics and key elements of a native ecosystem are still present with little or no evidence of human disturbance or clear felling, and where the population is low to allow for limited disturbance of the natural condition

The vegetation cover of TKN in Sinoe has been affected by large-scale logging, slash and burn agriculture, mining and scattered human settlements. Several swamps and wetlands are scattered throughout the area reflecting local hydrological characteristics, and mangroves are concentrated near the coast.

HCV Assessment Highlights

HCV 1.1 Protected Areas

HCV 1.1 refers to areas that have been legally gazette as protected areas and meet IUCN's protected area categories. These include:

- National Parks IUCN Category II (e.g., Sapo National Park)
- Strict Nature Reserve IUCN Category IA

- Nature Reserve (e.g., East Nimba Reserve)
- Cultural Sites
- Game Reserves
- Wetlands of International Significance (e.g., RAMSAR)
- The Gola Transboundary Peace Park
- Proposed protected areas

Only two such areas are present in the direct vicinity of the AOI: Sapo National Park (IUCN Category II) and the proposed Grand Kru-River Gee National Park (GKRG). Based on desktop studies by GVL and GreenCons using GIS data from the GoL, consultation with environmental NGOs and field verification (site visit and community interviews), the AOI does not overlap with Sapo NP, nor does it overlap with Grand Kru-River Gee National Park (GKRG), although the latter is nearby (c. 500 m). Exact boundaries will need to be demarcated prior to development. The FDA requires a 3-km buffer around proposed protected areas. As such, the 3 km buffer zone will extend into the southern boundary of the AOI. Oil palm development should not take place in this 3 km buffer zone, which is required to maintain HCV 1.1 as described in map below:

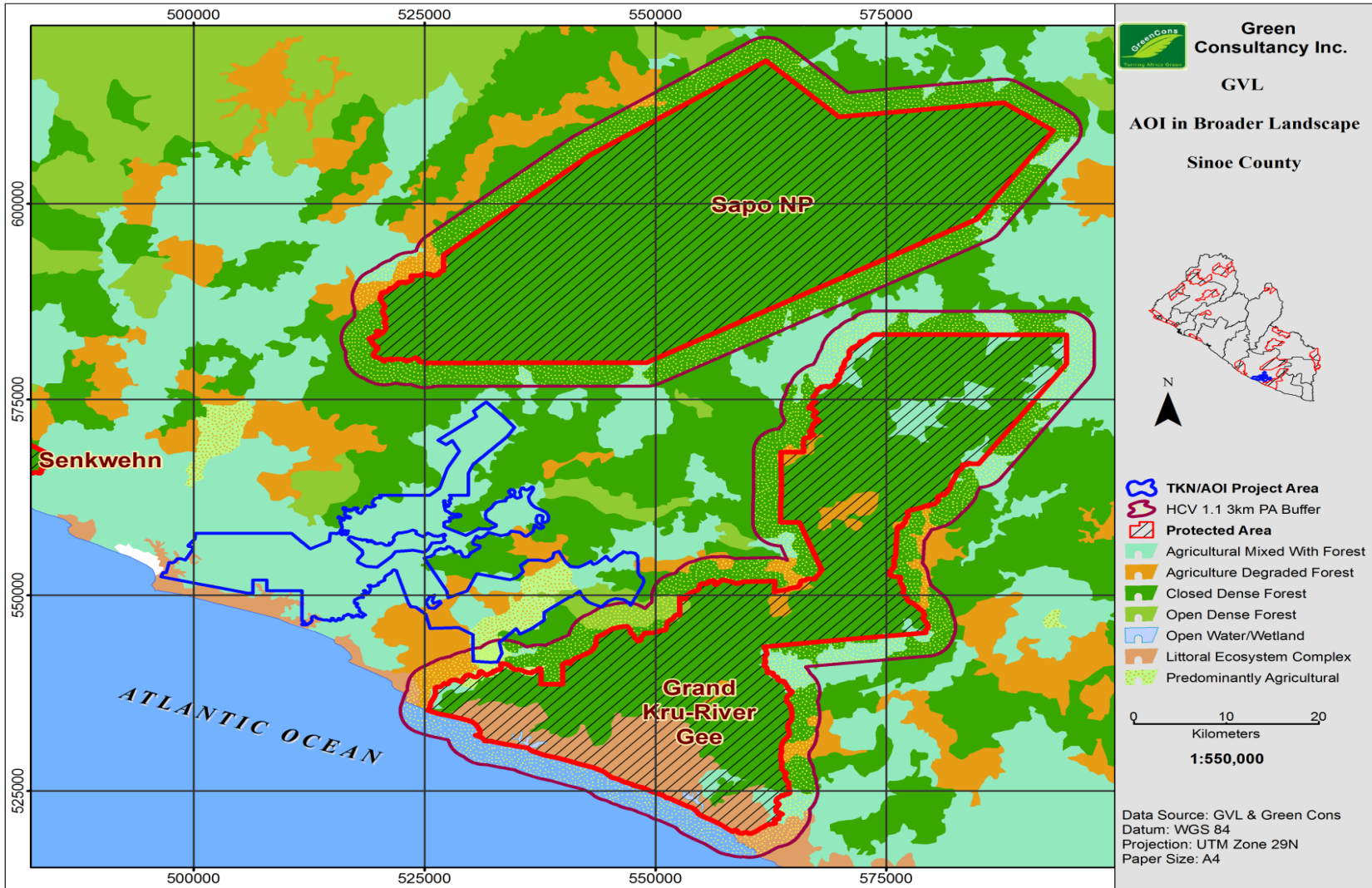


Figure 4: HCV 1.1 Map
depicting Sapo National Park and the proposed Grand Kru-River Gee National Park, each with a 3 km buffer zone.
The GKRG buffer overlaps the AOI in the south east of the AOI.

HCV 1.2 - Concentrations of rare, threatened or endangered species

HCV 1.2 species are present in the AOI for all taxonomic groups sampled – plants, mammals, birds, reptiles, amphibians, and fish – but were generally present in “significant” concentration in better quality forest located adjacent to the AOI. Key areas for protecting concentrations of HCV 1.2 species are:

- Forest areas (land cover categories HK 1-3 in the land cover map), especially in areas that are contiguous with large forest blocks connecting to Sapo NP and the proposed GKRG NP.
- Degraded areas whose conversion would risk the integrity of large forest areas if they were developed – Areas 5, 6, 2b, and 7 (all in the east of the AOI)
- Rivers and riparian forests
- Wetlands
- Mangrove forests (precautionary measure as mangroves were not surveyed)

The chimpanzee is an HCV 1.2 species of particular concern in the AOI and surrounding landscape. Although better chimpanzee habitat is located in forests adjacent to the AOI, signs of this species were detected in the “young scrub” (BM) land cover category in the west and south of the AOI. Rapid Biodiversity Assessments of these areas will be necessary prior to development. It is assumed that BM areas will have reduced chimpanzee concentrations (frequency of use) than in neighboring forests. Nonetheless, these areas likely make up part of a home range for a local population of chimpanzees and biodiversity offsets may be appropriate in neighboring habitat to compensate for lost habitat of this HCV 1.2 species.

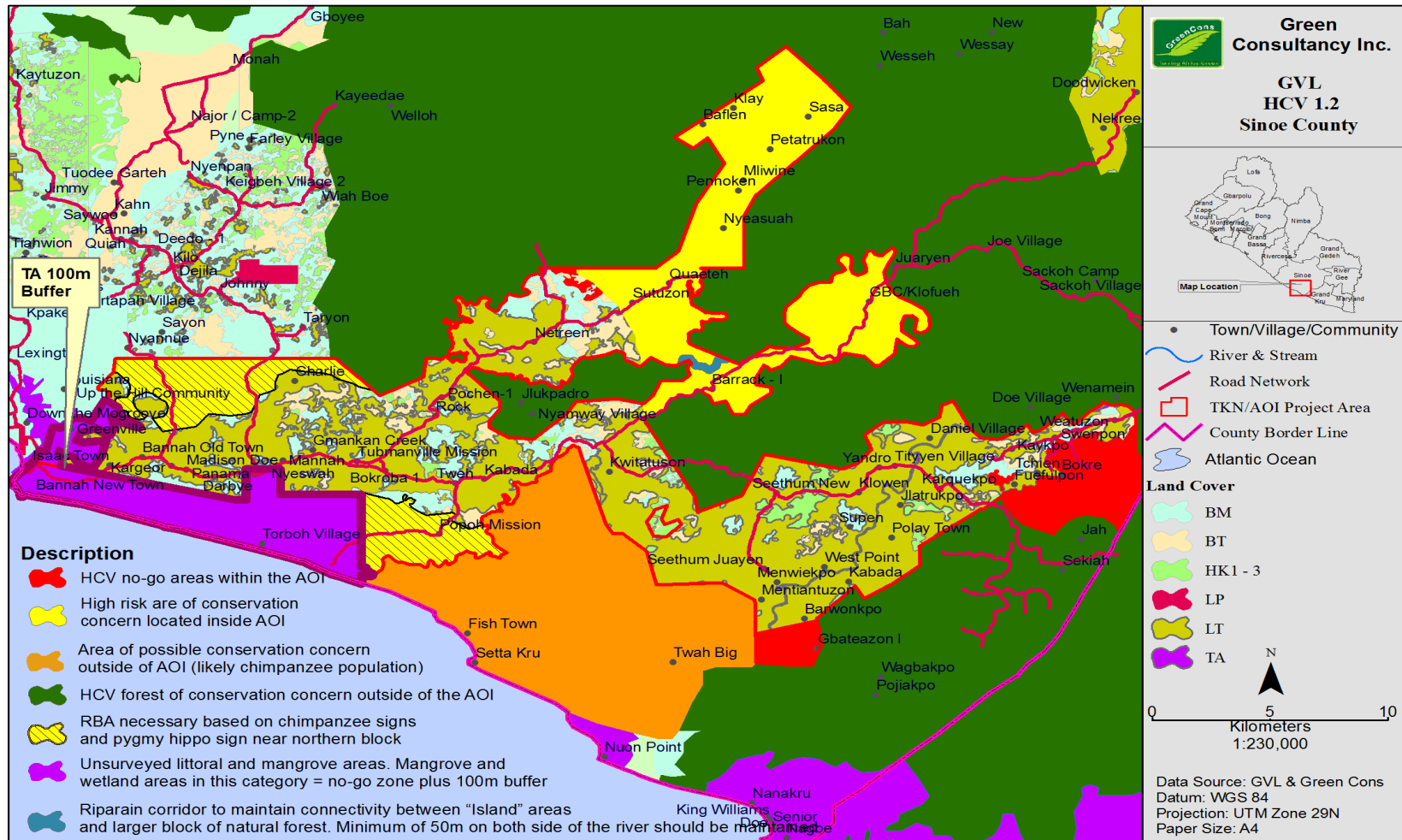


Figure 5: HCV 1.2 Map

Note that in addition to the riparian corridor colored blue in the map, the large green "island" area in the center of the AOI will be connected to the northern block of forest by HCS forests (Map 14). The actual riparian corridor width will be determined by species that the area is being managed for –initially identified for high concentrations of red river hogs.

HCV 1.3 - Concentrations of endemic species

An area will have potential HCV 1.3 present according to the HCV national Toolkit for Liberia if there are concentrations of species endemic at national, regional or continental (Africa) scales. The Mount Nimba, Cestos-Sankwein River Shed, Lofa-Mano and Sapo National Park areas contain many endemic species. These four areas are among the 14 centers of plant endemism within the Upper Guinea Hotspot².

According to World Conservation Monitoring Center, IUCN, FAO, NBSAP, Liberia has a total of 111 endemic plants, mammals, birds, reptiles, amphibians, molluscs, fishes and other invertebrates, 90 of which are threatened. The list includes one bird, one mollusk, two reptiles, four amphibians and 103 plants. Of these, only one tree species, *Tetraberlina tubmaniana*, was identified during the survey. Other trees are considered potentially present, but not yet confirmed.

HCV 1.4 - Critical temporal concentrations of species

The Liberian Toolkit states that HCV 1.4 concentrations are typically found where feeding or breeding resources are concentrated, or where shelter or refuge from climate change such as flooding and drought are found. HCV 1.4 areas include the total area responsible for ensuring that such seasonal or temporal shelter maintain its refuge significance. Example of HCV 1.4 areas include hills, mangroves swamps, water holes found at high elevations during the dry season, and flowering and fruiting trees as temporary ground for large and small mammals, including insects.

No critical temporal congregations of species were documented during field surveys, which included interviews with local communities. This said, precautionary measures would support conserving mangroves and other wetlands for potential temporal congregations of birds, especially since mangroves were not surveyed. Mangroves and wetlands are already recommended for protection in HCV 1.2 and 1.3, as well as other HCVs, and therefore won't be added here.

HCV 2 – Landscape Level Ecosystems and Mosaics

The Liberian Toolkit sets a minimum threshold of 50,000 ha for HCV 2 landscapes.

An HCV 2 landscapes is present in the forest block connected to Sapo National Park and the proposed GKRG National Park. Based on FDA 2004 land cover data, this landscape level forests measures approximately c. 445,000 ha (Map 27). For site level delineation, all forests areas classified as high density forest (HK3) or medium density forest (HK2) that are contiguous with this HCV 2 forest block are considered HCV 2 and should be maintained. As such, some small areas of HCV 2 forest are located inside the AOI in the north and east. These overlap with HCV

² Liberia's National Biodiversity Strategy and Action Plan, p.39

1 areas already identified for protection.

HCV 3 – Endangered ecosystems and habitats

The draft HCV Toolkit for Liberia states that no detailed ecosystem classification for Liberia were available to the working group during the drafting of the NI, but suggested the following as HCV 3, to include montane forest, lowland forest, mangrove forest and all wetlands of international significance especially those of the RAMSAR sites.

HCV 3 is present in the AOI and adjacent areas in the form of high-density lowland forests, mangrove forests and wetlands. For lowland forests, forest cover classified as HK 3 (dense forest) in land cover and any contiguous areas classified as HK 2 (medium density forest) should be maintained as HCV 3 areas. It is noted that all forest areas surveyed had previous disturbance, and none fit the pure ‘primary’ category, but based on threat level nationally and locally, HK 3 and adjacent HK 2 warrant HCV 3 status.

Mangroves will need to be maintained and buffered by at least 100 m of natural vegetation. Large mangrove swamps are found near the town of Worteh and around the towns of Nyanue, Worteh, Sarkoh and Wisseh. The mangrove swamps stretch as far as toward Greenville. Due to unclear land cover mapping on the southern border of the AOI, littoral zones have been mapped pre-cautionary as wetlands. Field surveys will be necessary to identify the actual boundary and 100 m buffer mark.

Non-mangrove wetlands that are (1) inundated year-round, or (2) inundated seasonally and associated with water courses are considered HCV 3 areas as well. Boundaries of these wetlands should be mapped with communities, maintained and buffered 100 m of natural vegetation to protect them from potential impacts by plantation operations and run off.

Other seasonally inundated wetlands should be visited and discussed with communities to decide the value and uniqueness of the ecosystem. If there is question as to the value or uniqueness of the ecosystem, a wetland specialist should be brought in to evaluate the area and determine HCV 3 status. All wetland areas identified during field surveys have been mapped as potential HCV 3 areas for further investigation by the company prior to any development.

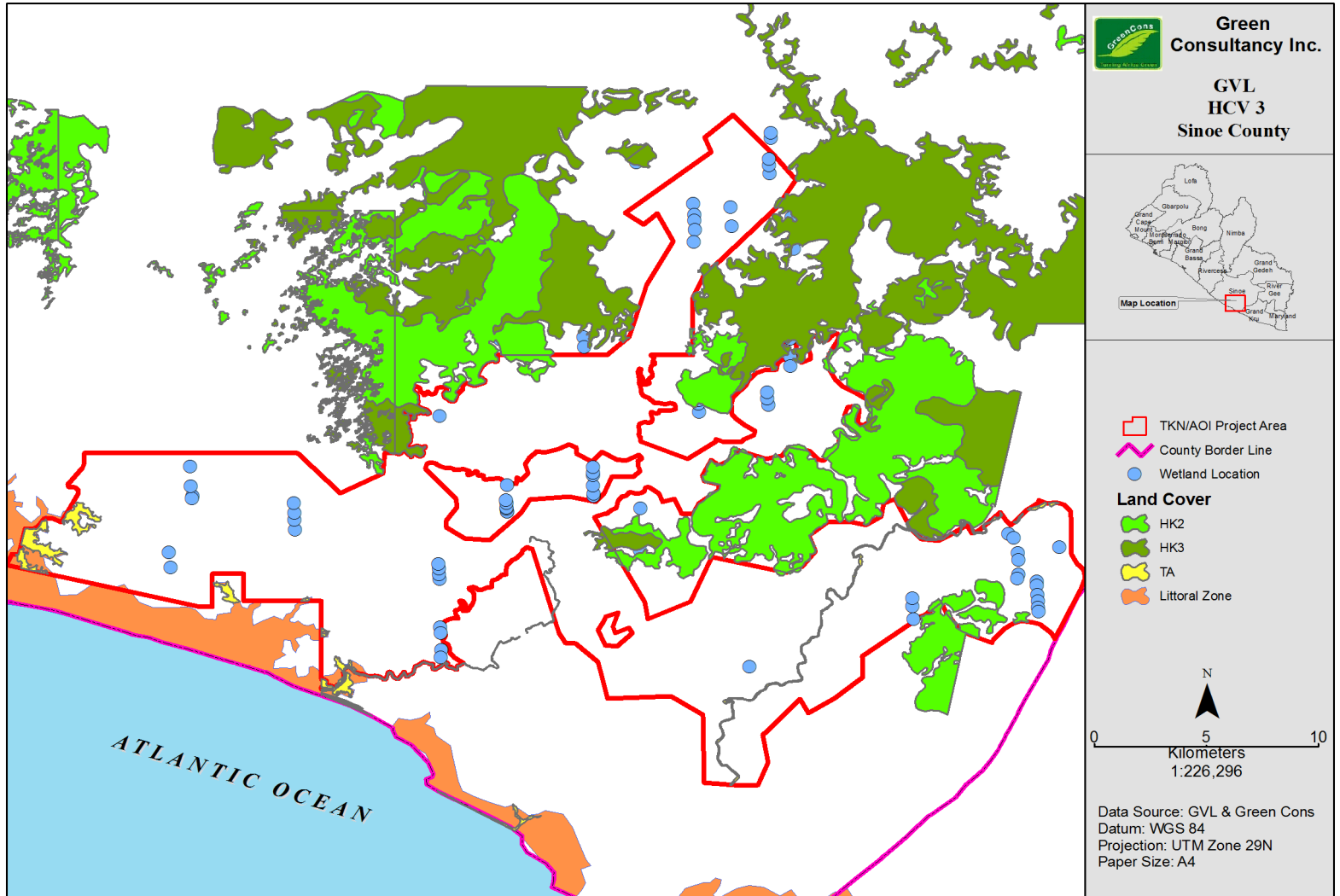


Figure 6: HCV 3 Map
 depicting ecosystems in the AOI that are naturally rare, have become rare due to historical processes, or threatened by present or future processes. This includes HK3, HK2 when adjacent to HK3, wetlands and littoral zones (including mangroves). HCV3 is extremely limited in extent within the AOI

HCV 4.1 - Area critical to water catchments

Towns within the project area depend on flowing streams and rivers for a number of usages including drinking, bathing, washing, fishing and means of transport using the canoe or rift. The vegetation around and along these water bodies are generally untouched by local inhabitants, allowing it to give protection to their water from severe sunlight, protection from runoff during heavy rains, shade for resting among others. Additionally, more than forty different swamps and marshy areas, also important for regulating hydrology, were recorded along the different transects.

- Riparian forest buffers of natural vegetation are HCV 4.1 and should be maintained or, where absent and reestablished.
- Wetlands, including mangroves, are HCV 4.1 and will need to be maintained and buffered as described in HCV 3.
- Upstream forests at the headwaters of rivers are also considered HCV 4.1

Table 6: Recommended Riparian Buffer Width

Stream/River Width	Min. Buffer Width
>40m	50m
20m – 40m	40m
10m – 20m	20m
5m – 10m	10m
3m – 5m	5m
<3m	-

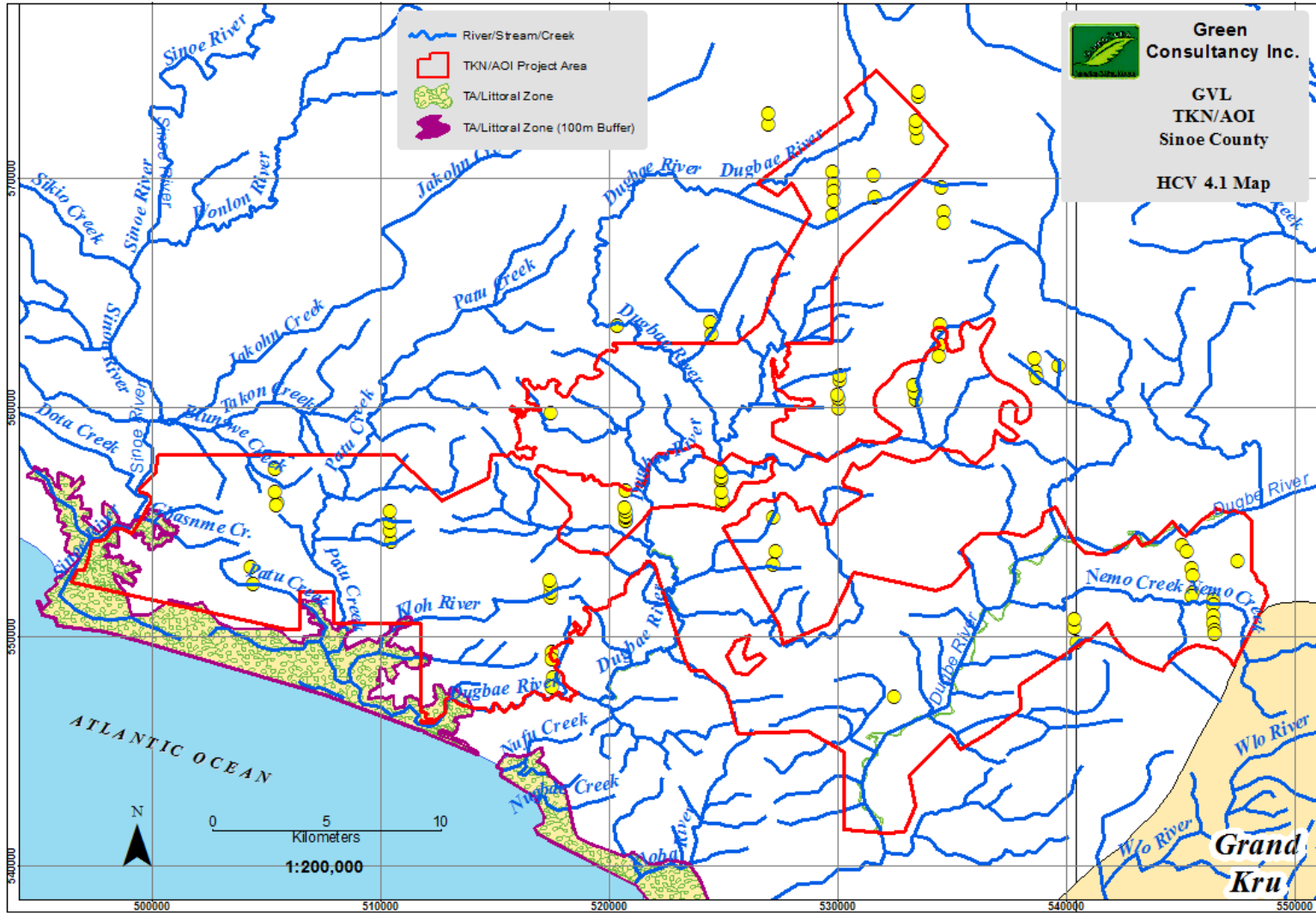


Figure 7: HCV 4.1 Map, with buffers required along rivers and littoral zone.

HCV 4.2 - Area of critical erosion control

For HCV 4.2, the Liberian HCV Toolkit emphasizes areas where consequences could potentially be severe for loss of productive land or ecosystems, and damage to or loss of human life. It states that conversion of forest on steep slopes should be avoided, with steep slopes to be defined by national and local regulations, based on the nature of soils and rainfall regimes. It states that steep slopes can vary from 25 – 35 degrees.

Isolated steep slopes are present in the AOI, defined as slopes greater than 25 degrees. This is a precautionary measure (selecting the lowest of the 25-35 range in the Liberian Toolkit) based on the high level of community vulnerability and dependency on environmental services from the natural landscape and healthy ecosystem functioning. Leading oil palm experts and best practices often set the maximum slope at 20 degrees, which can be further considered by GVL for practical and precautionary reasons.

Terracing is also an important feature of soil protection. The Yayasan Sabah Forest Management Area soil protection protocol in Malaysia recommends that slopes over 12° be terraced to prevent soil erosion. Based on RSPO in Indonesia, a more conservative 10° could be used and should be considered by GVL.

Riparian buffers, as described in HCV 4.1, will also be essential to preventing erosion. For this, SOPs typical of best practices in oil palm plantation management will be necessary, for example, to establish ground cover quickly after land clearing and develop roads in accordance with best practices to prevent erosion.



Figure 8: HCV 4.2 Map
 depicting slope across the AOI. Areas that are 12-25 degrees in slope (yellow) should be terraced,
 while areas >25 degrees in slope (red) should not be planted. Areas in green are relatively low risk for erosion.

HCV 4.3 - Area critical for fire prevention

This HCV is considered **UNLIKELY PRESENT**

HCV 5 - Areas fundamental to meeting the basic needs of local communities.

The Liberian Toolkit considers the following as indicators of HCV 5:

- Area where human settlements are located close to the forest
- Regions with high unemployment rates and lack of alternative livelihood options
- Inaccessible/remote communities
- Absence of livestock raising/animal husbandry
- Traditional practices of hunting/fishing
- Fishing (for internal consumption as well as for sale) in coastal forests
- Traditional hunter-gatherer communities

Some or all of the communities in the AOI trigger these indicators. Though some communities in the AOI are still heavily reliant on hunting and gathering, they also farm.

- Community consultations revealed the following HCV 5 areas:
- Farmlands
- Old towns (towns previously inhabited and now abandoned, but still maintaining fruit trees and other cash crops)
- Swamps and wetlands which containing a large portion of the NTFPs used by communities
- Rivers and riparian vegetation
- Hunting grounds

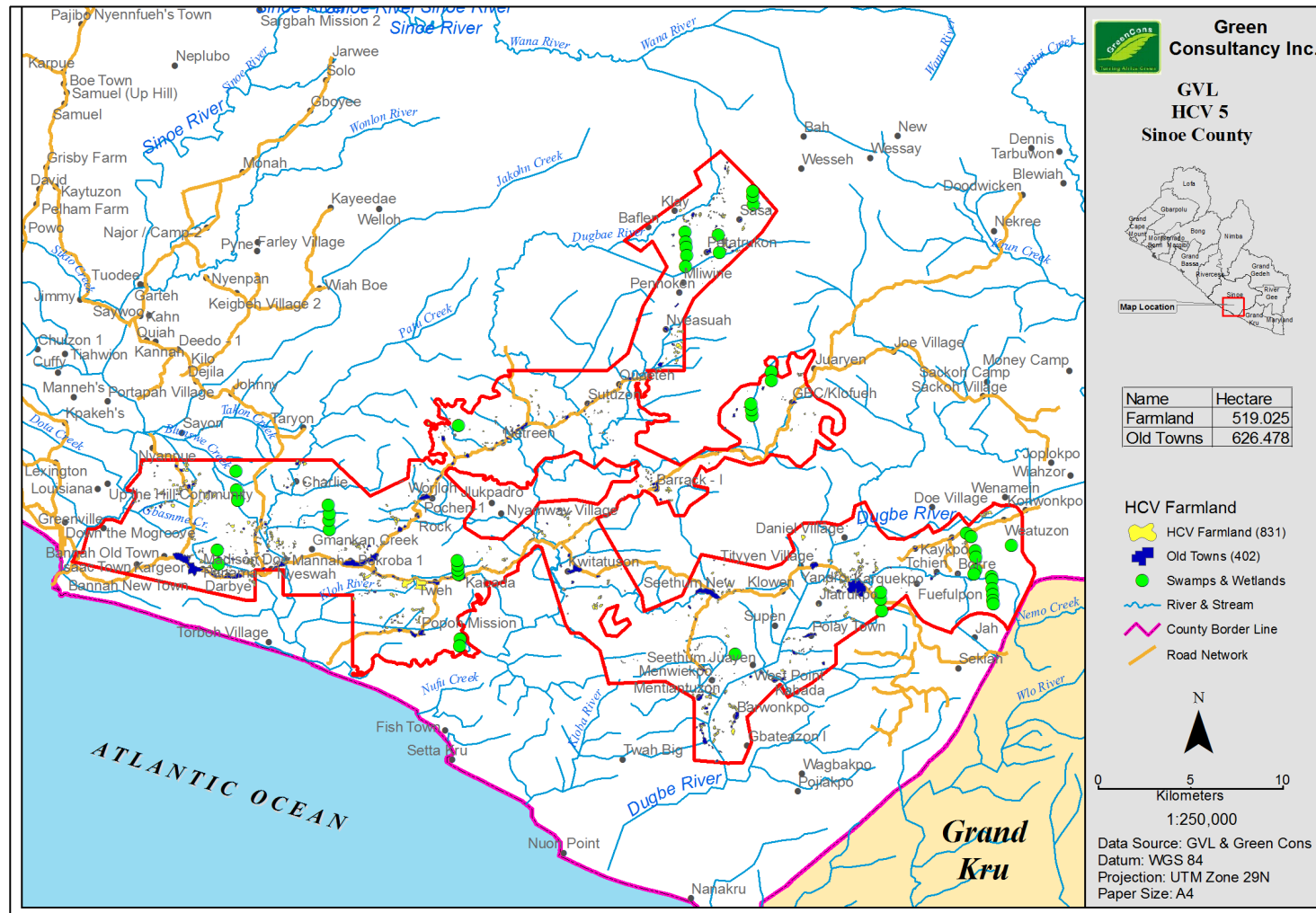


Figure 9: HCV 5 Map depicting farmlands, old towns, and wetlands with confirmed HCV 5 values. These have been mapped definitively through a participatory mapping effort led by GVL. Additional important forest areas and hunting grounds will need to be mapped definitively GVL in coordination with communities and avoided by GVL

HCV 6 - Areas critical to cultural identity (values)

In reference to the TKN AOI, there are burial grounds in every town. Sacred sites and sacred objects were also identified. Communities also pay great tribute to their “old towns” as it bears the gravesites of the town’s founding fathers. Sacred sites and objects remain when these old towns are abandoned. For instance, the towns of Behdloh, Panama, Karquekpo, Sutuzon, Wotoe, Nitreen, Pochen, Borteh and Nyannue were towns found to have sacred forest. These identifications were made possible as a result of the communities granting access to the team. In some instances, communities stated that these sites do exist, but they could not be shown to strangers. The identification of these HCV6 sites was carried out using participatory mapping with the communities.

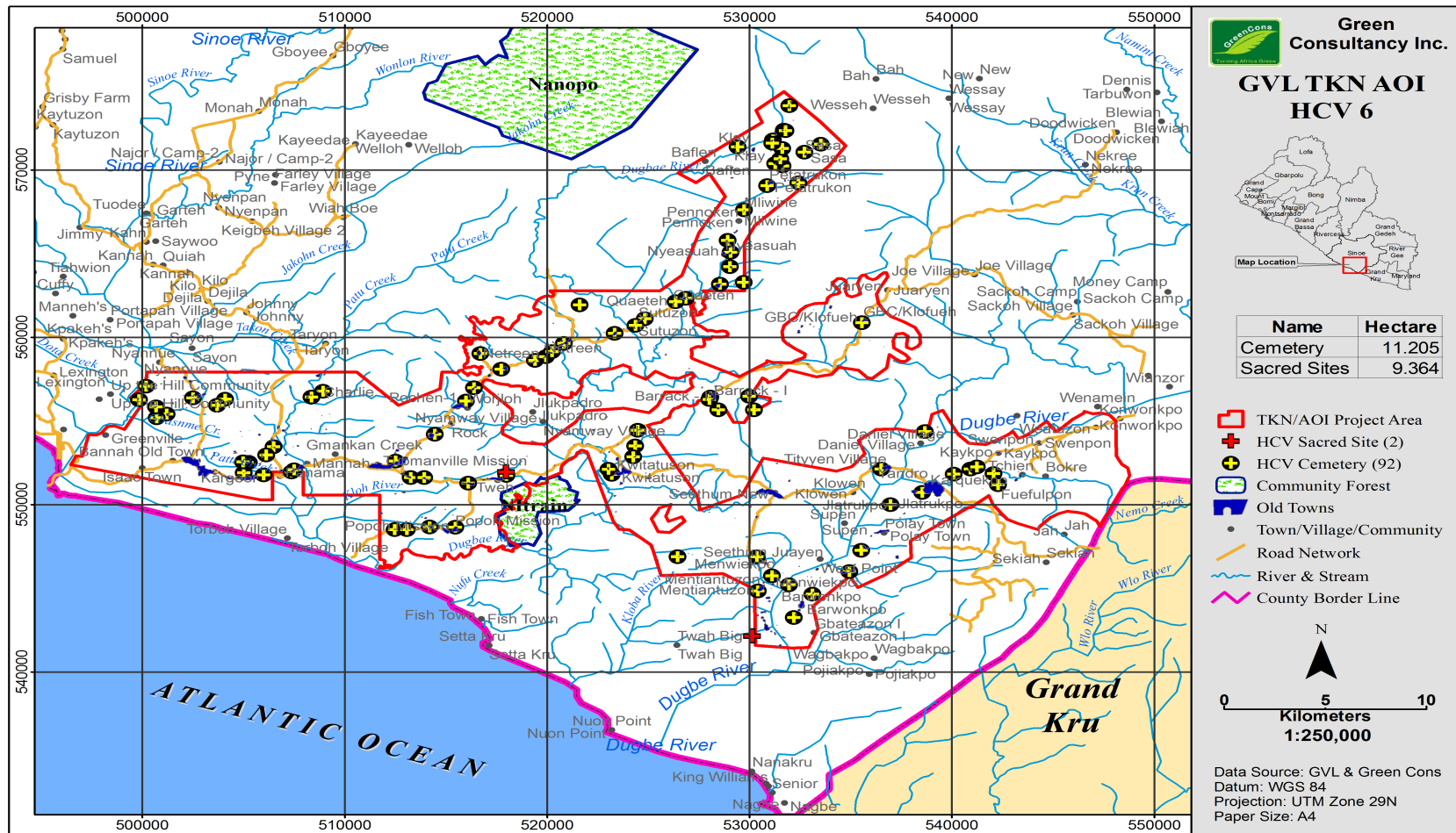


Figure 10: HCV 6 Map depicting sacred sites, cemeteries, community forests, and old towns documented during the assessment. Not all sacred forests (e.g., those in Behdioh, Panama, Karquekpo, Sutuzon, Wotoe, Nitreen, Pochen, Borteh and Nyannue) are displayed on this map and will need to be geo-positioned and mapped by GVL in collaboration with communities

Combined HCV areas as described in map below:

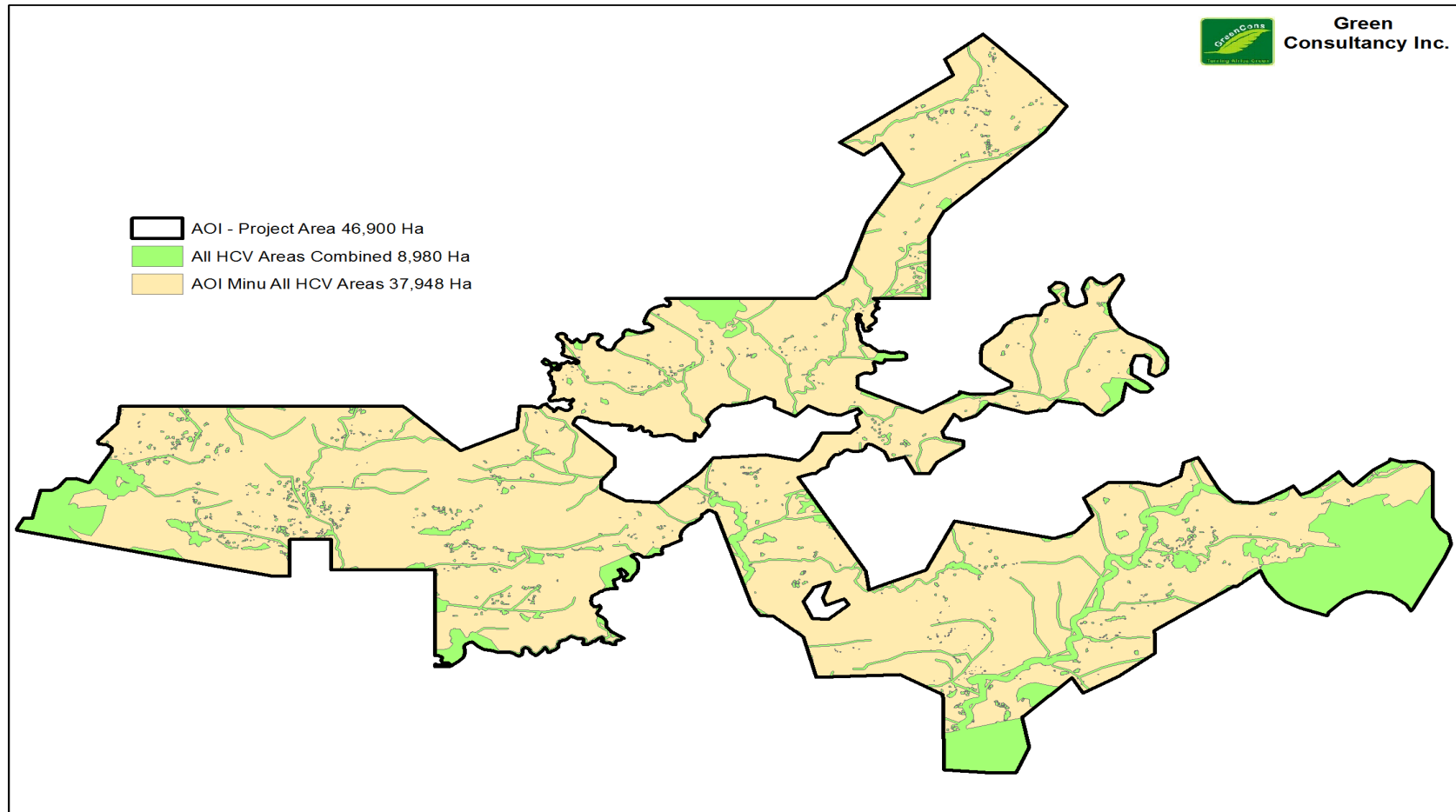


Figure 11: Combined HCV Area

5. INTERNAL RESPONSIBILITY

Formal signing off by assessors and company

Herein is the Summary of the SEI Assessment and HCV report of 40,600 hectares TKN AOI located in the districts of Kpanyan, Dugbe River and Jaede Statutory Districts, Sinoe County in Southeastern Liberia. This has been accepted by the Management of GVL for strict adherence to the RSPO Principle and Criteria of the New Planting Procedure.

On behalf of the Approved Assessors



Solomon P. Wright MSc
Green Consultancy Inc.
August 2014



Gary Paoli, PhD
Daemeter Consulting
August 2014

Management of GVL



Matt Karinen
Director – GVL