Consulting Services Contract For the Development of A National REDD+ Strategy for Liberia

Final Report

Contract No.: FDA/FCPF/LN/DNRS/01/14

Submitted to the Forestry Development Authority
by LTS International Limited and NIRAS A/S

August 2016

This Final Report includes a set of technical annexes that present in more detail the three draft reports produced: forest cover and land use analysis (DR-2a), REDD+ strategy options (DR-2b) and the policy, legal and institutional framework analysis (DR-2c). The national REDD+ strategy (first draft), roadmap and consultation report are also included as annexes.

The complete set of reports can be found here:
https://www.dropbox.com/sh/7dukn7xv3siark1/AAD2xO3PZDiClrFZkerPvtu1a?dl=0

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Executive Summary

This Final Report was produced by LTS & NIRAS as part of the 'Consulting Services Contract For the Development of A National REDD+ Strategy for Liberia' commissioned by the Forestry Development Authority as part of its Readiness Preparation Proposal (R-PP) Implementation Grant from the Forest Carbon Partnership Facility. The main objective of the assignment was "to develop, in close coordination with the national climate change steering committee, the Ministry of Planning, the FDA and the Land commission, an integrated National REDD+ Strategy".

Forest cover and land use analysis

A detailed analysis of the area and quality of forest that is to be found in land allocated to particular land uses was conducted, with the full details on methods and analysis available in Technical Annex C. This was done to inform the development of a national REDD+ strategy for Liberia, in accordance with Forest Carbon Partnership Facility guidelines.

Up-to-date Land and forest cover data was obtained from the 2015 Metria & GeoVille land cover assessment commissioned by the FDA. Spatial data on land use in Liberia is largely limited to Government of Liberia concessions for forestry, agriculture and mining. Also available are data on the land area that the Government has designated for conservation, as Protected Areas. The land uses included in the analysis are:

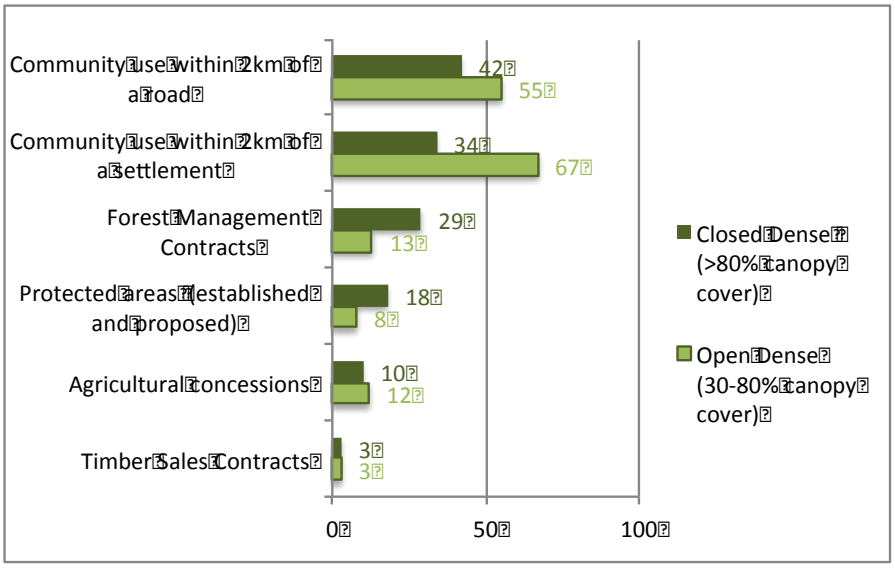
- Forestry concession; Forest Management Contracts (FMCs), Timber Sales Contracts (TSCs) and Community Forest Management Agreements (CFMAs)
- Agricultural concessions, including oil palm plantations and rubber plantation concessions
- Mining, including large scale mineral development concessions and small-scale "artisanal" mining.
- Protected areas, where forest is to be used primarily or exclusively for biodiversity conservation
- A variety of smallholder, subsistence uses of land at community level, including shifting agriculture, chainsaw logging ('pit sawing') and charcoal production.

Approximately 50% of the forest land in Liberia is allocated for commercial concessions or is designated for conservation as Protected Area. Most of the concession land is yet to be developed and most of the Protected Areas are yet to be established, so the

available land uses data is more of an indication of planned land use changes than a measure of current land use.

Community land uses, of which there are many types, affect the largest area of forest land. They are the principal land uses in the forest land that is not designated for commercial or conservation purposes. They also extend over the concession areas and proposed Protected Areas. The limited information available indicates that shifting agriculture, pit sawing and charcoal production are all significant drivers of deforestation and forest degradation:

- The area of forest land affected by shifting cultivation is estimated at over 30% of the >80% canopy cover forest and almost 70% of the 30-80% canopy cover forest.
- The pit sawing industry is estimated as affecting an area at least as large as the total area that is subject to logging concessions (25% of total forest).
- Charcoal production is estimated to affect at least a similar area of forest as pit sawing.



Percentage of forest associated with land uses in Liberia

Source: Rothe D, Golombok R, Lorenz K (2015) Geographical analysis of targeted landscapes: Liberia (Land Cover data from Metria & GeoVille land cover assessment, 2015).

Forestry concessions are the largest 'official' category of land use by area. If all existing and proposed forestry concessions were exploited this would affect approximately 25% of the total forest area. FMCs account for 29% of the most dense forest (>80% canopy cover). Furthermore, the scale and positioning of FMCs, often between Protected Areas or Proposed Protected Areas and covering large blocks of high canopy cover forest, suggests that they have a vital role to play in the conservation of forest carbon stocks.

The area of land cleared for oil palm plantation in the next 10-15 years is estimated at a maximum of 530,000 ha and is likely to be nearer 250,000 ha based on current industry plans. Palm oil is the largest of the industrial agriculture land uses, based on the maximum area that is permitted for development by concession agreements. It accounts for approximately 5% of the total forest area. The remaining land uses, in order of potential forest area affected, are Timber Sales Contracts (3% of total forest), Community Forestry Management Agreements (2%), Mining (2%) and then rubber and other plantations (1%).

The pace and scale of land use change on palm oil plantations over the next 10-15 years is expected to be substantial, and largely driven by the three largest concessions. The concession areas identified on the available national datasets include the majority of the land with greater than 80% forest cover. Since clearance of High Conservation Value (HCV) forest and High Carbon Stock (HCS) forest[1] is forbidden by the operating principles of all Roundtable on Sustainable Palm Oil (RSPO) members, the palm oil companies should avoid clearing this area and much of the 30-80% forest. The companies will either have to develop substantially less than the maximum permitted area, or seek suitable land elsewhere.

There is particular need to look closely are the areas that fall outside of private, Governmental and designated use as these are the areas could be considered most likely to be impacted by unregulated activities that cause deforestation and forest degradation. The "Non-Designated" include an estimated 78% of the population of Liberia and, although it does not account for the majority of high canopy forest cover (Forest >80%), approximately 3,906,168 ha in these Non-Designated areas are still categorized as forested land (>30% canopy cover)

Areas of particular note, identified through the work carried out in this study, should be the north of Sinoe County and central Gbarpolu County. There are large areas in both that are Non-Designed and are covered primarily by high density forest. These areas in Sinoe and Gbarpolu are identified as being suitable for both conservation and commercial forestry, leading to potential competition between these two land uses and potential conflict if either expand at the expense of communities who rely on forest resources.

[1] The threshold for what is defined as HCV and HCS forest in Liberia has not yet been defined but based on the area of >80% forest cover alone, around 43% of the Sime Darby concessions should not be cleared and 40% of the GVL concession. This leaves a large area of high canopy cover forest, over 200,000 ha for which the ownership and responsibility for management is very uncertain.

REDD+ Strategic Priorities and Options

The purpose of the REDD+ strategy is to guide Liberia in its efforts to reduce emissions from deforestation and forest degradation. The key questions the REDD+ strategy should address are:

1. What is the estimated carbon value of Liberia's forests and the potential value in terms of emission reductions from avoided deforestation and/or enhancement of carbon stocks?
2. What strategy options would be most effective to achieve emissions reductions from deforestation and forest degradation, considering:
   - Expected emission reductions;
   - Financial costs and benefits of the options, including opportunity costs;
   - Social and environmental costs and benefits; and
   - Barriers to implementation which affect the feasibility of interventions.

The REDD+ process does not prescribe a certain number of years that should be covered by a REDD+ strategy. However, a strategy should enable decision makers to prioritize the various REDD+ strategy options before them. A guide to what 'short-term' and 'long-term' means is given by the timescale envisaged for implementation of the 2014 bilateral agreement between the Governments of Liberia and Norway to cooperate on REDD+ and developing Liberia's agricultural sector.

National data on land use, deforestation rates and the causes of deforestation are limited but the evidence on some key points is clear enough to shape priorities for the REDD+ strategy:

- **An estimated 20% of Liberia's forested area was lost between 2000 and 2014.** The principal cause of this was small-scale commercial and subsistence land uses, particularly chainsaw milling of timber (pit sawing), charcoal production and shifting agriculture.

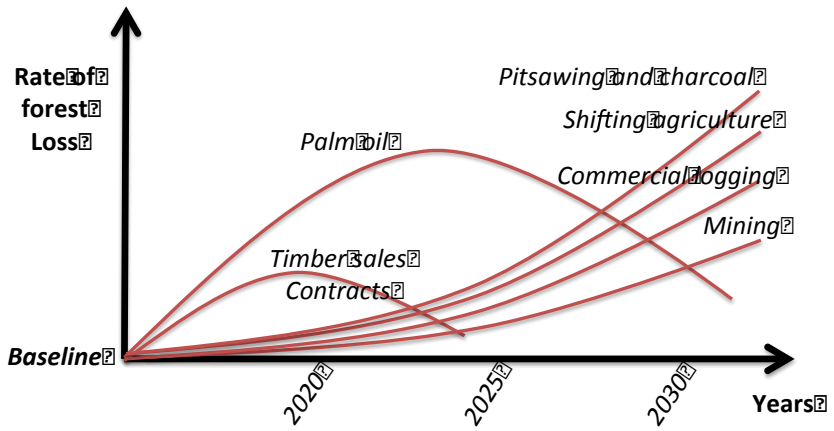
- **The threat to forest of these land uses will increase dramatically as population and consumption increases (projected doubling of population by 2050)** and the amount of land available to communities is roughly halved as large tracts have been designated as concessions.

- **Approximately 37% of all forested land in Liberia is contained within commercial concessions.** Concessions for palm oil are likely to be the most significant source of emissions from deforestation in the short term. More than

150,000 ha of land is likely be cleared for plantations in the next decade. The threats are substantial and include mining and other land uses included in the analysis.

- **The opportunities for conserving the carbon stocks in concessions are substantial.** The Protected Areas Network (PAN) could, if established and managed, conserve an additional 15-30% of the total forested area. Together, the land designated as Protected Areas and as Forest Management Contracts (FMC) contains approximately 50% of the most dense and most biodiverse forest.
- **Further opportunities lie in commercial concessions.** For example more than 40% of the land in the palm oil concessions is high carbon stock (HCS) and high conservation value (HCV) forest which should be conserved and not cleared, if international standards are followed.

The various direct drivers of deforestation and forest degradation can be divided into those that will produce a large increase of emissions in the short term and those that have an impact over the longer term. This is illustrated in the diagram below, which depicts the expected rate of forest loss over time associated with each of the main drivers. All are shown as starting from the same point, their current baseline. In reality some drivers will be causing more forest loss and emissions than others but there is insufficient data at national level to show the quantity of forest loss and emissions associated with each of the drivers and this will vary from place-to-place. Planned forest conversion for oil palm and Timber Sales Contracts is likely to result in a significant increase in emissions from forest in the next 5-15 years. Unplanned activities such as pit sawing, charcoal and shifting agriculture are likely to increase emissions more gradually but exponentially. The aim of REDD+ interventions is to alter this business-as-usual scenario so that the level of deforestation and forest degradation is reduced.



Expected trajectory of main drivers of deforestation

The strategic priorities for REDD+ that emerge from this evidence are presented in the table below.

Goal	Reduce emissions from deforestation and forest degradation and increase benefit sharing				
Strategic Priorities	*1. Reduce forest loss from pit sawing, charcoal production and shifting agriculture.*	*2. Reduce impact of commercial logging*	*3. Complete and manage a network of Protected Areas.*	*4. Prevent or offset clearance of high carbon stock and high conservation value forest in agricultural and mining concessions.*	*5. Fair and sustainable benefits from REDD+*
Strategy Options	1.1 Manage pit sawing (chainsaw logging) to reduce loss of forest. 1.2 Reduce impact of charcoal industry on forest through better regulation, improved efficiency and the development of alternatives energy sources. 1.3 Increase area and productivity of non-forest land under permanent food and cash crops, to reduce the expansion of shifting agriculture. 1.4 Locate services and new infrastructure development in non-forest and less-dense forest areas.1 1.5 Integrate hunting, artisanal mining and forest restoration into community-led livelihood and sustainable forest management practices.	2.1 Ensure that all industrial logging is practiced to high conservation standards, so that loss of forest and biodiversity is minimized. 2.2 Conserve and maintain areas of high conservation value within commercial forestry concessions, such as important wildlife corridors. 2.3 Review Timber Sales Contracts to ensure compliance with forestry laws and EIA standards and establish a strong presumption against further TSC contracts on dense forest and within 3km of Protected Area. 2.4 Prevent unregulated pit sawing and charcoal production in forestry concessions. 2.5 Manage commercial forestry in community forests to achieve sustainable logging standards as apply to FMCs.	3.1 Complete the Protected Areas Network and strengthen management to prevent forest degradation. 3.2 Expand the Protected Areas Network to conserve 30% of forest land. 3.3 Reduce pressure on Protected Areas from surrounding communities (using priority 1 measures). 3.4 Develop and implement land use plans at landscape scale, to integrate production and conservation.	4.1 Conserve HCS-HCV forest within agricultural concession areas, including developing and implementing a policy for the sustainable management of these conserved areas (using priority 1 measures) 4.2 Apply policy of conserving HCS-HCV forest to all agricultural concessions, including large private farms. 4.3 Ensure that mining result in zero-net deforestation, through mechanisms such as biodiversity offsets. 4.4 Locate future large-scale agriculture and mining concessions in less dense and non-forest areas.	5.1 Define carbon rights and develop policies and regulations for upholding these. 5.2 Establish benefit sharing mechanisms for REDD+, in harmony with those operating in the forestry, mining, agriculture and other relevant sectors. 5.3 Operate a robust monitoring, reporting and verification system for demonstrating reductions in emissions achieved through REDD+ policies.

Assessment of REDD+ strategy options

Consideration must be given to the economic efficiency of the strategic priorities and options described above and to their feasibility to be implemented. This section of the report includes a cost-benefit analysis, SESA and barriers analysis, with the former's findings below:

REDD+ Strategic Priority	CBA Findings
Strategic priority 1: Reduce shifting agriculture by increasing the area of land under permanent agriculture	Improved management of agricultural land will result in a clear net gain to farmers and investors. Additionally, agroforestry if implemented on degraded land has the potential to sequester carbon. Improved management of annual crops and related yield gains will contribute to reducing pressure on forests. However, considerable public sector investment will be required to change agricultural practices in Liberia.
Strategic priority 2: Maintain logging and other extractive forest uses at sustainable levels	Similar to forests in PA, sustainably managed forests can store a lot of carbon per hectare and retain many of the other values inherent to natural forest (e.g. biodiversity and watershed protection). Commercial forestry, however, does create revenues making it very suitable to private sector involvement both at small (CFM) and large scale (FMC). The financial burden on the government for implementation of SFM is considerably lower than forest conservation.
Strategic Priority 3: Complete and enforce a network of Protected Areas	Both carbon stock per ha and up-scaling potential are high, putting PAs high on the list of REDD+ strategy options. However, effective PAs in Liberia will be costly to establish and manage and do not collect revenues (other than potential REDD+ payments).
Strategic Priority 4: Develop industrial oil palm plantations in an environmentally and socially responsible way	Industrial oil palm developments can be beneficial for the country, provided that forest land and sensitive areas (e.g. near streams, wetlands) are excluded from development and that communities within the concession area truly benefit from the development be that as out-growers, through employment or in the form of community benefits. Communities should always retain enough farmland to ensure their livelihoods.
Other CBA findings include: • Potential REDD+ payments cannot not cover all investments and costs envisioned for REDD+. • REDD+ investments must be prioritized weighing the potential GHG emission reductions, cost of interventions and likely impact on the socio-economic development potential of Liberia. • Effectively managed protected areas can be very expensive. • Private sector will carry a large share of the financial burden of implementing SFM, in particular in terms of reducing annual allowable cut to a sustainable rate. • Agricultural intensification (including oil palm) increases profit per unit of land and can reduce the need for agricultural expansion if combined with effective land use planning and a better legal framework and its enforcement. • Community forestry is gaining increasing attention. However, it is not a panacea and lessons learned from African community forest management must be taken into account.	

Policy, legal and institutional framework

The policy, legal and institutional analysis in this report[2] provided a preliminary review of existing Liberian policies, legislation, and regulations to help ascertain Liberia's legal preparedness to proceed on the road to a full-fledged REDD+ program more broadly, and to implement the REDD+ strategy options proposed in the draft national REDD+ strategy specifically[3]. Currently, Liberian law does not address REDD+, nor has any such law been proposed. Thus, this assessment broadly asks the questions: can a REDD+ program – or key elements of such a program – be enacted under the existing Liberian legislative framework? If not, what are the key gaps, overlaps and challenges that must be addressed to enable Liberia to achieve its REDD+ goals?

This assessment concludes that certain aspects of REDD+ can, consistent with Liberian law, be implemented administratively without the need for new legislation. Other aspects of REDD+ will require either legal or regulatory amendments, and several of the issues identified also require policy direction. A REDD+ program enacted by way of a new law or legislative amendments would enable Liberia to design a comprehensive program and allow lawmakers to give clear guidance to implementing agencies, affected communities, the private sector, and other stakeholders. It would also provide greater confidence to donors and international investors. However, the legislative process is slow and resource-intensive and requires high levels of political support. **Regulatory reforms could provide a sound legal basis on a somewhat shorter timeframe**, but will require harmonization among key pieces of legislation and their implementing regulations. Finally, direction in the form of new policies, operational guidelines or codes of conduct, as enabled under existing regulations, could fill some critical gaps in existing planning criteria and processes. **Ultimately, it will be a political decision whether there is sufficient support to conclude new REDD+ legislation or to address the gaps and overlaps in the existing frameworks to provide legislative backing for REDD+ implementation in Liberia.**

Options are presented for REDD+ stakeholders to consider on: i) clarifying carbon rights; ii) structuring benefit sharing mechanism(s); and iii) assessing the existing institutional arrangements related to REDD+ implementation.

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[2] See Technical Annex F for the full report on the Policy, Legal and Institutional Framework Analysis (DR-2c)

[3] It is important to note that detailed review and revision of laws and regulations is being carried out through the EU Voluntary Partnership Agreement (VPA) project and is planned as a component of the Liberia Forest Sector Project (LFSP).

Acronyms

ASM	Artisanal small-scale mining
BAU	Business-as-usual
BSM	Benefit Sharing Mechanism
CBA	Cost-benefit analysis
CFDC	Community Forestry Development Committees
CFMA	Community Forest Management Agreements
CLDMA	Community Land Development and Management Authority
CRL	Community Rights Law
COP	Conference of Parties
ENNR	East Nimba Nature Reserve
EPA	Environmental Protection Agency
EPO	Equatorial Palm Oil
ERPA	Emissions Reduction Purchase Agreement
ESMF	Environmental and Social Management Framework
FAPS	Food and Agriculture Policy and Strategy
FCPF	Forest Carbon Partnership Facility
FDA	Forestry Development Authority
FFI	Fauna & Flora International
FGRM	Feedback and Grievance Redress Mechanism
FLEGT	Forest Law Enforcement, Governance and Trade
FMC	Forest Management Contracts
FPIC	Free, Prior and Informed Consent
GHG	Greenhouse gas
GVL	Golden Veroleum
HCS	High Carbon Stock
HCV	High Conservation Value
IPCC	Intergovernmental Panel on Climate Change
LEITI	Liberia Extractive Industries Transparency Initiative
LFI	Liberia Forest Initiative
LFSP	Liberia Forest Sector Project

LRP	Land Rights Policy
MDA	Mineral Development Agreement
MEL	Mineral Exploration License
MOPP	Maryland Oil Palm Plantations
MRV	Measurement, Reporting and Verification
NFMS	National Forest Management Strategy
NFRL	National Forest Reform Law
NGO	Non-Governmental Organizations
NPV	Net Present Value
PA	Protected Area
PAN	Protected Area Network
PPA	Proposed Protected Area
PUP	Private Use Permits
REDD+	Reducing Emission from Deforestation and Forest Degradation (with sustainable management of forests, conservation of forest carbon stocks and enhancement of forest carbon stocks)
REL/RL	Reference Emissions Level / Reference Level
RIL	Reduced Impact Logging
R-PIN	Readiness Program Idea Note
R-PP	Readiness Preparation Proposal
RSPO	Roundtable on Sustainable Palm Oil
RTWG	REDD+ Technical Working Group
SESA	Strategic Environment and Social Assessment
SFM	Sustainable Forest Management
SIS	Safeguards Information System
TSC	Timber Sales Contract
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
VPA	Voluntary Partnership Agreement

Contents

Tables

Figures

1. Context of REDD+ in Liberia

1.1 Liberia's REDD+ readiness preparations

Liberia first engaged in the REDD+ readiness process in 2007 when the national REDD+ Technical Working Group (RTWG) was established. The RTWG was the institutional platform for stakeholders to engage in the preparation of the Readiness Program Idea Note (R-PIN), which was submitted to the World Bank-led Forest Carbon Partnership Facility (FCPF) in May 2008[4]. This was followed by the draft Readiness Preparation Proposal (R-PP), submitted in 2011 and finalized in April 2012.

From 2012, the FDA and Environmental Protection Agency (EPA) have led work to develop and complete the REDD+ readiness phase of the FCPF process. The preparation of a REDD+ strategy is just one of several required outputs from the readiness phase, the others being[5]:

- Definition of a Reference Emissions Level/Reference level (REL/RL)
- Design of a Measurement, Reporting and Verification system (MRV).
- Preparation of an Strategic Environmental and Social Assessment (SESA) and Environmental and Social Management Framework (ESMF)
- Establishment of a Feedback and Grievance Redress Mechanism (FGRM)

1.2 Deforestation and strategic priorities

National data on land use, deforestation rates and the causes of deforestation are limited but the evidence on some key points is clear enough to shape priorities for the REDD+ strategy:

- An estimated 20% of Liberia's forested area was lost between 2000 and 2014.
- The principal cause of this was small-scale commercial and subsistence land uses: chainsaw milling of timber (pit sawing), charcoal production and shifting agriculture.

[4] Details and documents on Liberia´s engagement in the REDD+ process may be found on the FCPF website, which also provides materials, guides, publications and other resources: https://www.forestcarbonpartnership.org/liberia

[5] FCPF (2013) A guide to the FCPF readiness assessment framework. June 2013

- The threat to forest of these land uses will increase dramatically as population and consumption increases (projected doubling of population by 2050) and the amount of land available to communities is roughly halved as large tracts have been designated as concessions.
- Approximately 37% of all forested land in Liberia is contained within commercial concessions. Concessions for palm oil are likely to be the most significant source of emissions from deforestation in the short term. More than 150,000 ha of land is likely be cleared for plantations in the next decade. The threats are substantial and include mining and other land uses included in the analysis.
- The opportunities for conserving the carbon stocks in concessions are substantial. The Protected Areas Network (PAN) could, if established and managed, conserve an additional 15-30% of the total forested area. Forestry (logging) concessions cover almost 30% of the total forest area. If managed sustainably, as national law intends, much of the carbon held by this forest will be retained. Together, the land designated as Protected Areas and as Forest Management Contracts (FMC) contains approximately 50% of the most dense and most biodiverse forest.
- Further opportunities lie in commercial concessions. For example more than 40% of the land in the palm oil concessions is high carbon stock (HCS) and high conservation value (HCV) forest which should be conserved and not cleared, if international standards are followed.

The strategic priorities for REDD+ that emerge from this evidence are:

1. Reduce emissions from deforestation and degradation by supporting the sustainable use of forest resources by communities, addressing shifting agriculture, charcoal production, pit sawing in particular.
2. Sustainably manage commercial forestry, to reduce impact of logging in areas conceded (or proposed) as Forest Management Contracts, Community Forest Management Agreements (CFMA) or other designations where commercial forestry may occur.
3. Conserve forest carbon stocks by completing and managing a network of Protected Areas, including existing and Proposed Protected Areas and proposed conservation priority areas.
4. Reduce emissions from deforestation by protecting high carbon stock and high conservation value forest in agricultural and mining concessions.

The vital role of forest as a source of food and income for the majority of Liberians, and the potential for conflict over rights to forest resources, means that great care must be taken to safeguard social interests. Thus a fifth strategic priority is:

5. Fair and sustainable benefits from REDD+. This is primarily about distributing the benefits from emission reductions fairly and investing REDD+ income in activities that can become self-sustaining.

1.3 Scope of this report

The purpose of this report is to present a synthesis of the range of studies – under this assignment – that provide the rationale and foundation for the national REDD+ strategy (first draft) and roadmap. The Final Report includes a set of technical annexes that present in more detail the three draft reports produced: forest cover and land use analysis (DR-2a), REDD+ strategy options (DR-2b) and the policy, legal and institutional framework analysis (DR-2c). The national REDD+ strategy (first draft), roadmap and consultation report are also included as annexes.

In this report…

Section 2 summarizes the forest cover and land use analysis conducted to analyze the area and quality of forest in Liberia that is to be found in land allocated to particular land uses.

Section 3 forms the basis and rationale for Liberia's national REDD+ strategy. It contains: i) a summary of the strategic pillars; ii) the REDD+ strategy options under each strategic pillar; and iii) a summary of the assessments conducted on the REDD+ Strategy Options (including cost-benefit analysis, SESA and barriers analysis).

Section 4 of this report provides a preliminary review of existing Liberian policies, legislation, and regulations to help ascertain Liberia's legal preparedness to proceed on the road to a full-fledged REDD+ program more broadly, and to implement the REDD+ strategy options proposed in the draft national REDD+ strategy specifically.

Section 5 summarizes the Roadmap and next steps for formal approval of the strategy.

2. Forest Cover and Land Use Analysis

A detailed analysis of the area and quality of forest that is to be found in land allocated to particular land uses was conducted, with the full details on methods and analysis available in Technical Annex C. This was done to inform the development of a national REDD+ strategy for Liberia, in accordance with Forest Carbon Partnership Facility guidelines.

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The study enables a distinction to be made between those land uses that pose a short-term threat to forests, and those that have a longer-term impact. The major palm oil concession holding companies aim to clear land and establish plantations within the next 10-15 years. TSCs, although a relatively small area, allow forest to be completely cleared. Pit sawing and charcoal production are also immediate priorities for the REDD+ Strategy because they already have a significant impact and can be quickly scaled-up. They require relatively little capital investment and the activity is effectively un-regulated.

2.1 Land use change in Liberia

2.1.1 Protected Areas

There are three existing Protected Areas in Liberia: East Nimba Nature Reserve (ENNR), Sapo National Park and Lake Piso Multi-Use Protected Area. There are also 10 Proposed Protected Areas (PPA) around Liberia, two of which are coastal/wetland and the rest being terrestrial (Figure 1). The existing Protected Areas (PA) total approximately 263,215 hectares (ha) (Figure 1), accounting for approximately 3% of the land area in Liberia.

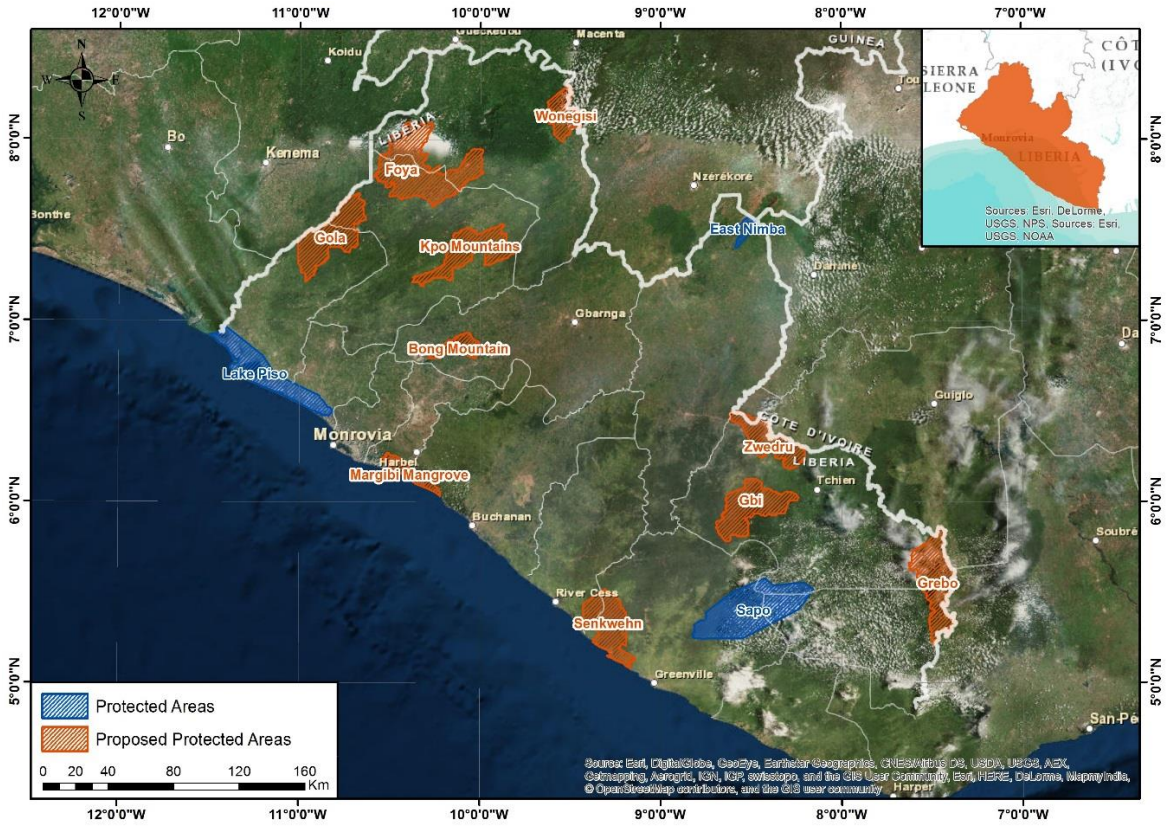

Figure 1 – Location of existing and Proposed Protected Areas in Liberia.

The largest PPA is Foya, in the Foya District – one of six Districts located in Lofa County, in the North-West of Liberia – is almost twice as large as Gola, the second largest Proposed Protected Area. These PPAs are located in the North-West and South-East of Liberia and are mainly intended as National Parks. The total proposed area would amount to an additional 756,431 ha of protected land, approximately 8% of the land area in Liberia.

The Proposed Protected Areas are largely in areas of high canopy cover forest, with an estimated 94% of the land cover being categorized >80% canopy cover and 71% in the >80% category. A total of 200 ha of urban and rural settlement areas were identified, representing 0.03% of the total Proposed Protected Area.

2.1.2 Forestry concessions

Following the lifting of United Nations (UN) timber sanctions in 2006, there has been a strong push by the Liberian Government and some donors to grant logging concessions. By 2012, almost two million hectares of land – approximately 20% of the total land area of Liberia – had been allocated for forestry concessions of various kinds.

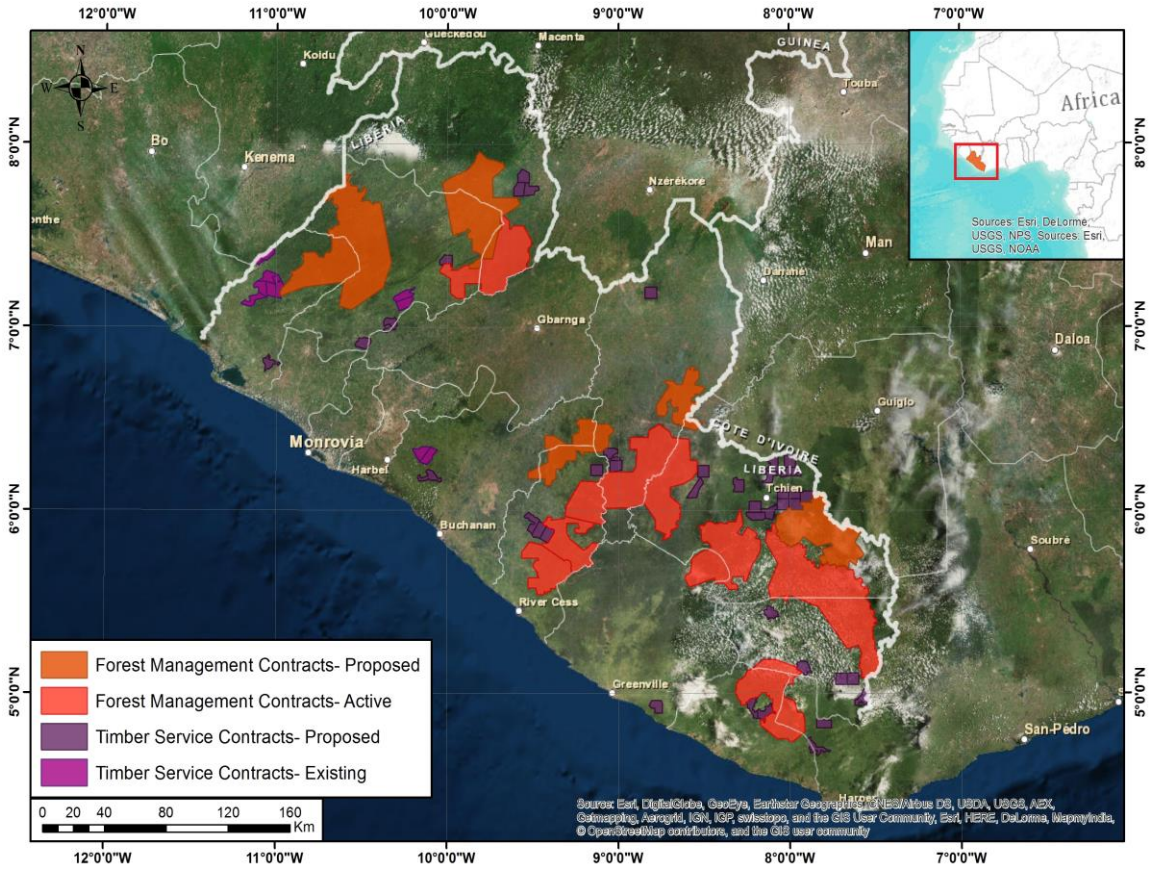

Figure 2 – Existing and proposed Forest Management Contracts and Timber Sale Contracts

A total of over one million hectares of land in Liberia is currently under an active Forest Management Contract[6]. ** In addition, FMC concessions are proposed for a further area of over 700,000 ha, totaling a potential area of over 1.7 million ha for all FMCs. This represents a significant proportion of the country: 11% conceded as FMC and a further 7% proposed for such use. **The land cover under these active and proposed FMC concession is mostly high canopy cover forest; an estimated 71% of proposed FMCs and 76% of active FMCs are classified as Forest >80%.

Furthermore, the scale and positioning of FMCs – often between Protected Areas or Proposed Protected Areas and covering large blocks of high canopy cover forest – suggests that they should be an important part of the REDD+ strategy. If managed appropriately they may link and maintain large contiguous blocks of the highest carbon and biodiversity value forest. Conversely, if forest degradation and eventual deforestation occurs in FMC areas,

[6] An FMC license is issued (under Section 5.3 of the National Forestry Reform Law) for exploitation of forest areas over 5,000 ha on state owned land. FMCs are meant to be managed on a sustainable basis, to conserve tree cover and ensure future supplies of timber.

either directly through logging or through uses associated with roads and population growth, then a diminished and fragmented forest landscape will result.

Existing and proposed Timber Sales Contracts (TSC) cover 3% of the total forest area in Liberia, the majority of which is high canopy cover (>80%) forest. Timber Sale Contracts (TSC) allow for the complete clearance of an area of forest and the conversion of the land to agriculture or some other land use. Although the area of land under TSCs is small compared to the area under FMCs, the impact of TSCs on Liberia's forest emissions – and hence, REDD+ performance – is potentially large because they could result in substantial deforestation in a short period.

The land cover under commercial Community Forestry Management Agreements[7] consists mainly of forested area, with an estimated 60% of the total commercial CFMA area being classed as forest >80%. Similarly, conservation CFMA have an estimated 73.6% of the area classed as forest >80%.

Commercial forestry activity on land designated for community forestry is, in principle, subject to the same policy and regulations as commercial forestry on FMCs. In practice, this is untested. The number of applications for CFMAs received by FDA has increased considerably over the past few years and the Land Rights Act currently before the Liberian Parliament is expected to strengthen community rights to own and use land over which they previously had customary or traditional rights. It is possible that large areas of land currently allocated as FMC will be re-designated as CFMA, if communities establish their rights to the land under the incoming legislation.

Private Use Permits (PUP) were issued illegally during the period 2010-2012 and all of these have subsequently been suspended or cancelled[8,9]. The former PUPs were included in this analysis because they indicate the scale and location of land for which there is pressure to create commercial logging arrangements between companies and the land owning communities (Figure 3). Most of the illegal PUPs were on land that is customarily owned by communities, even if they tend not to hold land title deeds. They therefore indicate the extent to which CFMAs may expand if community ownership rights are

[7] Community Forestry Management Agreements (CFMA) are a form of government-granted concession that gives communities prescribed user rights to the forest.

[8] Yiah, J.W. (2012). Transforming Decision Making about Natural Resources in Liberia. Sustainable Development Institute.

[9] De Wit, P. (2012). Land Rights, Private Use Permits and Forest Communities. Land Commission of Liberia, EU Project FED/2011/270957.

established for all or most of this forest and if the CFMA process allows these to go forward for either commercial or conservation land use.

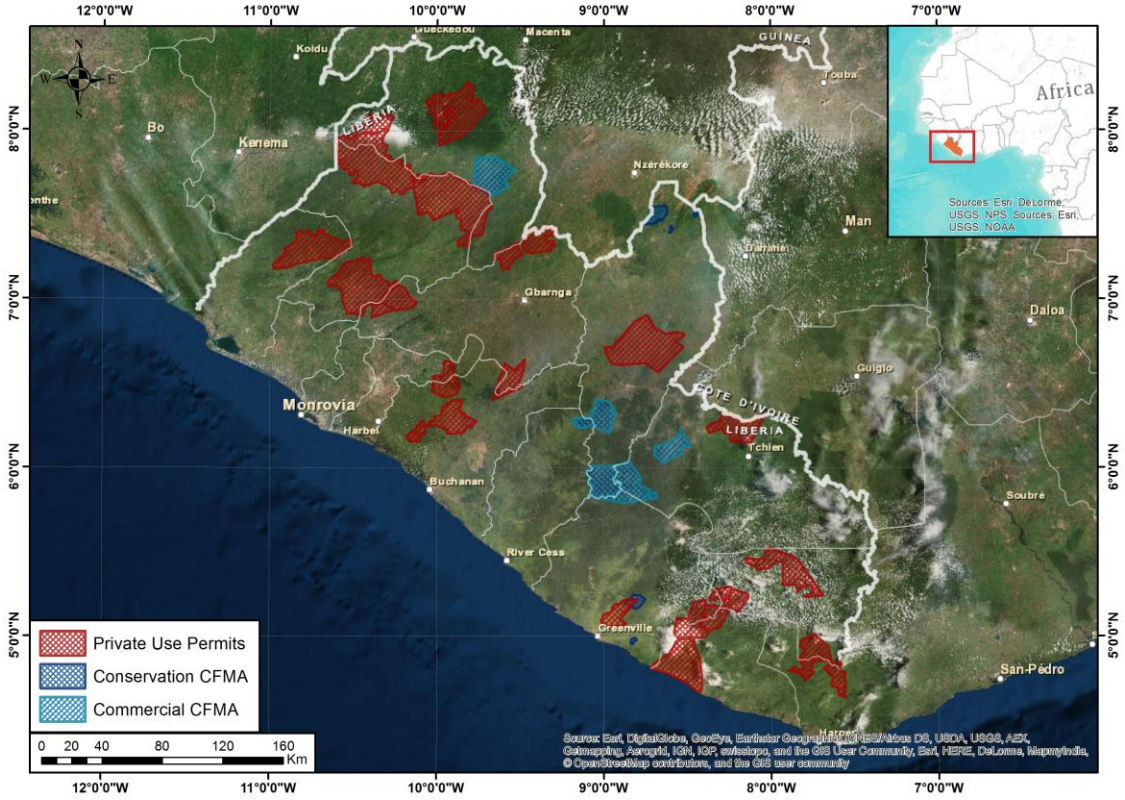

Figure 3 - Private Use Permits and CFMA areas in Liberia

2.1.3 Agricultural concessions

Amongst Liberia's rich natural resources, palm oil production is considered by the Government of Liberia to be one of the most important industries for future economic development. Since 2009, four international palm oil companies[10] have been granted concessions for palm oil production on 620,000 ha of land. After timber, this makes palm oil the second largest industrial land use in Liberia, and reflects ambitions for the country to become one of the main palm oil producers in the world.

The area of land cleared for oil palm plantation in the next 10-15 years is estimated at a maximum of 530,000 ha and is likely to be nearer 250,000 ha based on current industry plans (Figure 4). This includes a maximum of approximately 352,000 ha of forest

[10] These concessions are operated by four oil palm companies: Sime Darby, Golden Veroleum (GVL), Equatorial Palm Oil (EPO), and Maryland Oil Palm Plantations (MOPP).

(30-80% and >80 Forest canopy cover classes) and a minimum of 160,000 ha[11] of forest that will be cleared.

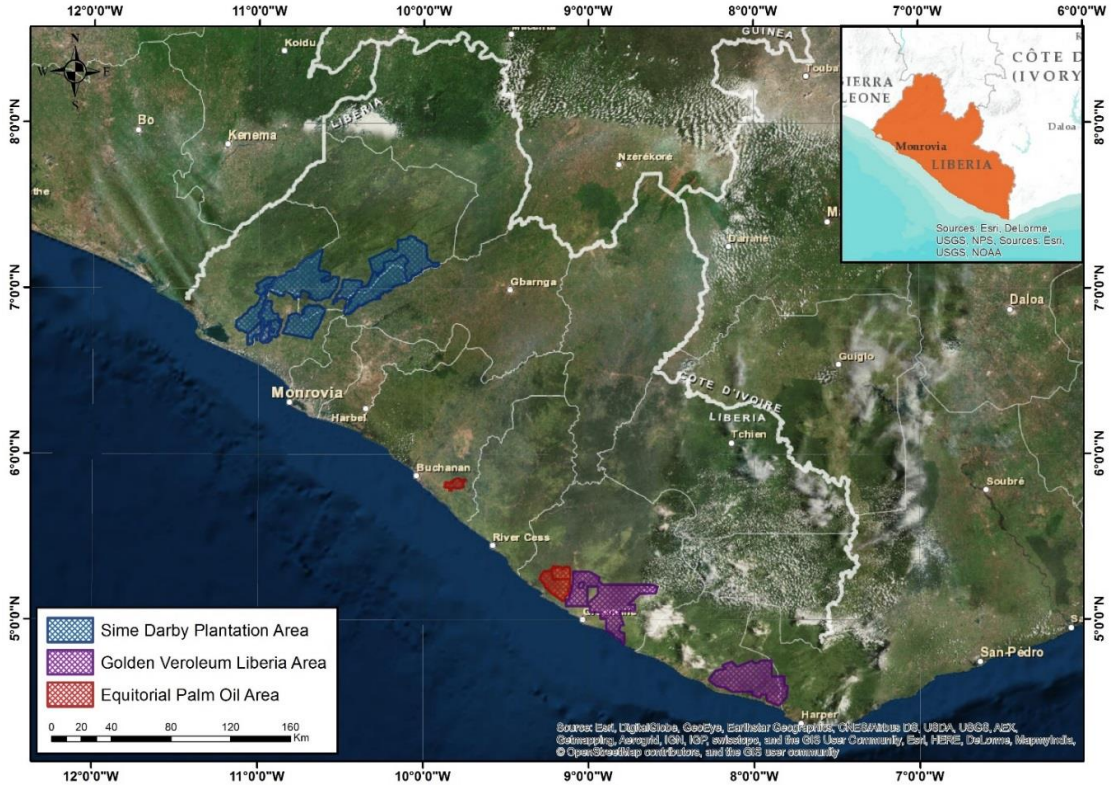

Figure 4 – Major oil palm concession areas in Liberia

The concession areas identified on the available national datasets include the majority of the land with greater than 80% forest cover. Since clearance of High Conservation Value (HCV) forest and High Carbon Stock (HCS) forest[12] is forbidden by the operating principles of all Roundtable on Sustainable Palm Oil (RSPO) members, the palm oil companies should avoid clearing this area and much of the 30-80% forest. The companies will either have to develop substantially less than the maximum permitted area, or seek suitable land elsewhere. This is allowed within the terms of the concession agreements.

The amount of land that will actually be cleared and developed for oil palm plantation is unclear. Only a minority of the land conceded for palm oil has been developed to date.

[11] This estimate is based on an expected minimum of 250,000 ha of new plantation land, minus the 90,000 ha of 'non-forest' land that is available for development within the concession areas.

[12] The threshold for what is defined as HCV and HCS forest in Liberia has not yet been defined but based on the area of >80% forest cover alone, around 43% of the Sime Darby concessions should not be cleared and 40% of the GVL concession. This leaves a large area of high canopy cover forest, over 200,000 ha for which the ownership and responsibility for management is very uncertain.

GVL has started with 56,000 ha out of a maximum area permitted for planting of up to 260,000 ha. Sime Darby had planted only 1,190 ha of its 264,000 ha, permitted plantable area by 2012. EPO's 89,000 ha concession area includes former palm oil plantation and so already has 10,000 ha under production. The fourth company, MOPP, with a total concession of 15,000 ha, had rehabilitated 1,500 ha of former plantation and planted 500ha of new palm oil by 2012[13].

The pace and scale of land use change on palm oil plantations over the next 10-15 years is expected to be substantial, and largely driven by the three largest concessions. Existing smallholder palm oil production is unlikely to expand and clear forest rapidly because of the sector's limited ability to invest. The maximum plantable area for the three large concessions, allowed by their concession agreements, is approximately 530,000 ha. In addition, Sime Darby and GVL are obliged by the terms of their concession agreement to develop a further area of 80,000 ha. The minimum area that is likely to be planted is approximately 250,000 ha[14].

Compared to the palm oil concessions, the rubber and other plantations have much lower forest cover. This reflects the fact that they are established plantations and so have already been substantially cleared of natural forest. Having been neglected during the war years, large areas of these plantations have recently been cleared for re-planting. Thus, approximately 65,816 ha, 37% of the total area, falls under the Grassland land cover class. The second largest area is Forest 30% - 80%, covering 24.1% of total area. This is followed by Bare Soil at 14.2% of the total area. Only 7% of the plantation land is classed as forest >80 canopy cover.

2.1.4 Mining concessions

Large scale mining of iron ore was a major export earner for Liberia in the past and has become so again in the post-conflict period, with the re-starting of iron ore extraction in the Nimba Hills by ArcelorMittal in 2011. Liberia has rich mineral resources – including iron ore, gold, and diamonds – and mining is expected to become a major industry and driver of economic development. The country has sufficient reserves to join the top ten iron producers in the world. At least six iron ore concession agreements have been signed with a total estimated investment value of $13 billion[15].

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[13] African Development Bank (2012) Maryland Oil Palm Plantation Project: Summary of the ESIA

[14] Based on 100,000 ha for GVL and Sime Darby, 50,000 ha for EPO, based on the likely area of HCV/HCS and what is known about the plans of the companies

[15] Columbia University CICR (2010) Smell no taste: The social impact of foreign direct investment in Liberia.

Mining is identified as a potentially important cause of deforestation in various publications, including the Liberia Readiness Preparation Proposal (R-PP). This is largely based on the extent of Mineral Exploration Licenses (MEL) which have been granted over 4.6 million ha of land, near half the total land mass of the country. On this basis, mining has been described as amongst the greatest threats to forests and wildlife[16]. Artisanal and small scale mining is also practiced extensively across Liberia, although the environmental impacts of informal mining at a national level are not well known.

The current area of actual mining operations is relatively small compared to agriculture and logging concessions. Immediate deforestation occurs only in the area actually being mined, which will typically be a smaller area than the actual concession. For the purpose of estimating areas of likely change in forest cover, this report uses Class A licenses as the basis for estimating the forest area immediately threatened, and Mineral Development Agreements (MDA) as the basis for the likely scale of the industry in the next 10-15 years. **The Class A license data indicates that approximately 137,200 ha of forest is threatened by mining** (using 30-80% and >80% forest classes) (Figure 5). An estimate of the future area affected by mining is given by the MDAs which amounts to an additional 200,800 ha of forest.

In addition to the formal mining sector, there are an estimated 100,000 artisanal miners operating in Liberia[17]. The area affected by their operations is unknown, as is the impact on forest, although recent studies suggest that, individually, artisanal mines have a minor effect on biodiversity and tropical forests but a significant cumulative effect. More information is provided in Section 2.1.5 below.

[16] USAID (2013) Liberia climate change assessment

[17] WWF (2012) Artisanal and small-scale mining in and around protected areas and critical ecosystems: Liberia case study report. Report by Dr. Rob Small.

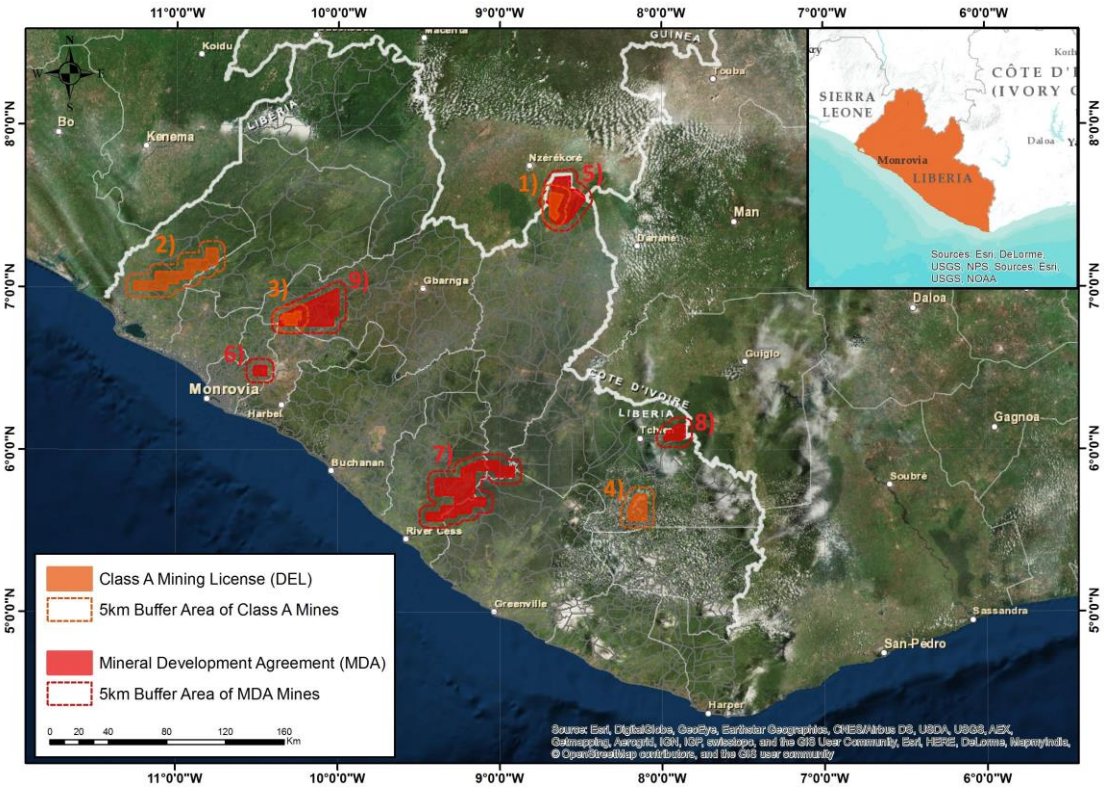

Figure 5 - Mining and Mineral Development Licenses in Liberia

Although the area of forest directly cleared for mining is relatively small, the industry may result in deforestation and forest degradation of areas surrounding the mine because of the economic activity and population growth that accumulates around these operations. For this reason, the REDD+ strategy is informed by analysis of the area within a five kilometer buffer of the mining concessions, on the assumption that land use within this area is heavily influenced by the mining business. In the short-to-medium term it is likely that the indirect effect of mining is more significant in REDD+ terms; in other words, mines attract workers and raise local income and consumption levels which results in an enhanced level of degradation, caused by increased community use of the forest in the surrounding landscape[18].

[18] The evidence from Liberia on the indirect impact of mining operations is limited to specific cases; for example the iron ore mine of Arcelor Mittal Liberia in northern Nimba County will have a total footprint (forest clearance) of approximately 1,475 ha. The biodiversity conservation program funded as an offset scheme aims to reduce degradation across a much larger area; encompassing the East Nimba Nature Reserve (11,550 ha.) and a wider landscape of approximately 84,500 ha.

2.1.5 Non-designated areas

Although a large area of land and forest has been designated or conceded for forestry, agriculture, mining or Protected Areas, approximately 43% of Liberia's forest land remains un-designated for any specific land use[19]**.** The largest block of this non-designated land lies in the central belt of Liberia, stretching from the capital Monrovia northwards to the counties of Bong and Nimba, and to the borders with Guinea and Ivory Coast. This is the most heavily populated and least forested part of the country and it is serves the role of a 'Growth Corridor' in Liberia's economic development strategy (Figure 6).

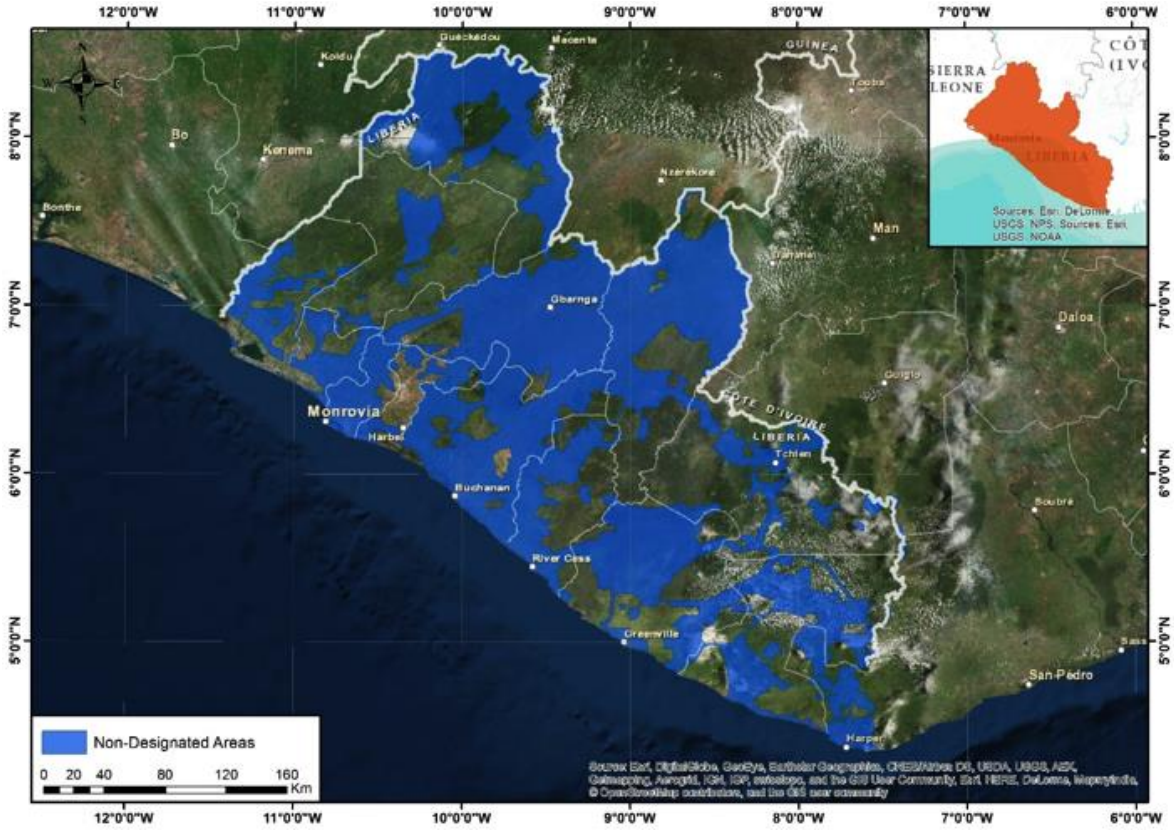

Figure 6 - Areas outside of designated concessions

Overall, the land outside of concessions is less densely forested than the concession lands. It contains approximately 31% of >80% Forest compared to the total national figure of 45% of land covered by >80% Forest. Nonetheless, the area outside of government concessions contains large blocks of high canopy forest cover in the South-East, West and

[19] The 43% figure is derived from the following estimates: Total forest = 6,575,765 ha. Total forest in non-concession areas = 2,849,140 ha.

North-West of the country and, considering all forested land, contains approximately 57% forested (30-80% and >80% Forest canopy cover classes).

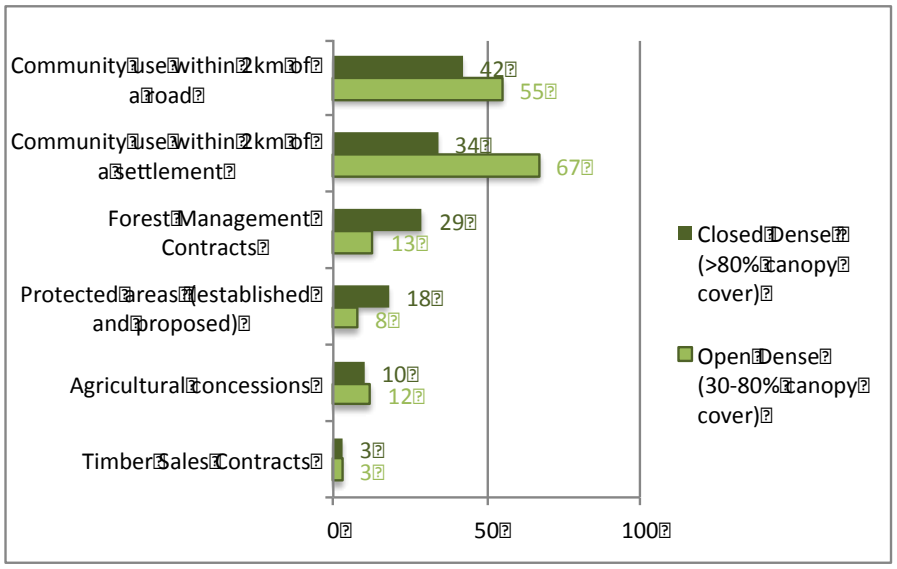

Figure 7 - Percentage of forest associated with land uses in Liberia

Source: Rothe D, Golombok R, Lorenz K (2015) Geographical analysis of targeted landscapes: Liberia (Land Cover data from Metria & GeoVille land cover assessment, 2015).

Although not designated for a particular land use, the 'non-concession land' is used in a variety of ways by communities, smallholders and transitory people. The scale and location of these various uses is not known. There is no national land use plan or land use inventory covering the non-concessions land uses, so by default it is land allocated for development. Work has started under the Land Commission to prepare a land use and land ownership inventory for Monrovia and for some of the other major towns, but this has yet to extend to rural areas.

The fact that there is less forest remaining in the non-concession area suggests that the level of use and pressure on remaining forest is relatively high. This pressure and the variety of land uses evident at community level is not confined to 'non-concession' areas. Communities also live in all the concessions and use the forest for shifting agriculture, hunting, artisanal mining, charcoal production and numerous other activities. Communities are also using land within the Protected Area Network.

Based on proximity to settlements and proximity to roads, land use by communities and smallholders accounts for the largest proportion of forested land in Liberia. The overall pattern of remaining forest cover in Liberia supports this finding: the blocks of high canopy forest cover that remain are furthest from roads and settlements. The degradation of

forest that has occurred previously can be considered largely a result of this smallholder activity, given that large-scale use of land for logging, palm oil and other concessions started only recently in this period and on a minority of the land area that is permitted for development.

The following small-scale land uses are further examined in the Forest and Land Use Analysis Draft Report (DR-2a):

Shifting cultivation and other community-level uses of the forest

- **Over 50% of the total land in Liberia is used for shifting cultivation**, according to figures cited in the R-PP and based on a previous (2004) land classification study. This included extensive and intensive shifting agriculture as two distinct land use categories and associated them with 19% and 33% of total land use, respectively.[20]
- **The national policy is to move towards settled agriculture, particularly in the low lying coastal belt.** There has been a particular emphasis on lowland swamp rice production and this has captured a large proportion of international donor support to the food and farming sector. Commercial farming of rice and other cash crops (cocoa, rubber and coffee) was all but abandoned during the conflict, it being estimated that less than 10% of agricultural land was being cultivated by 2003[21].

Chainsaw milling (pit sawing)

- **The domestic industry of felling and milling logs by chainsaw (known as 'pit sawing') expanded in the post-conflict period.** Prior to that, it was a marginal industry largely based on the use of forest residues from the large scale, concession-based operators. The ending of the export-logging industry with the 2003 UN Security ban on timber exports (lifted in 2006) – and the cancelling of historic logging concessions in that same year – created a vacuum which was rapidly filled by the informal chainsaw milling industry. In effect, all domestic timber comes from chainsaw milling; an illegal and largely ungoverned activity, hence data on the scale and impact of the industry are scarce.
- By the FDA's estimates in 2009, **the informal chainsaw milling industry was possibly as large as the entire potential formal forestry sector.** The seven forestry concessions allocated at that time estimated that the maximum annual cut to allow a

[20] The accuracy of these figures is likely to be low because of the inherent difficulties of identifying specific land uses from satellite imagery. Furthermore, shifting agriculture involves a rotation of clearance, cropping and then abandonment and regrowth. The measurement of the area of forest affected, and how it is affected, is therefore very complex.

[21] EPA (2012) Initial National Communication of Liberia – citing figures from a UNFFAO study in 2003.

sustainable 25-year rotation would be around 220,000 m^3. In other words, **pit sawing production is up to three times greater than the maximum potential output of the existing forestry concessions**[22].

- Based on these estimates, and recognizing that pit sawing is effectively unregulated, **it is reasonable to estimate that pit sawing is a more significant cause of forest degradation and deforestation than logging on forestry concessions.**

Charcoal production

- **Like pit sawing, charcoal production probably represents a greater driver of forest degradation and deforestation than the formal forestry sector, but its informal nature makes it difficult to accurately estimate.** Charcoal use in Monrovia was estimated to be around 4.1 million bags of 25 kg in 2010[23], which is estimated to be four to five times greater than the maximum annual sustainable harvest from the formal forestry sector. Despite the value of the charcoal industry, production, trading and consumption are almost entirely unregulated. The FDA operates a rudimentary licensing system for transporters but recognizes that they do not have effective control or monitoring at present[24].
- **As alternative energy sources are slow to develop and urban populations grow, it is likely that charcoal demand and consumption will increase or at least continue at its current level.** Substantial international assistance is going into Liberia's energy sector, which was entirely destroyed during the war. However, by 2010 less than 1% of Monrovia's population was connected to a public electricity grid and practically none of the rural population[25].

Artisanal mining

- **A study of artisanal and small-scale mining (ASM) in 2009 estimated that 100,000 people were engaged in the activity nationally, but gave no indication of the area of forest affected.**
- **ASM was found to be occurring in and around Sapo National Park – the flagship Protected Area in Liberia – and other Proposed Protected Areas.** The case of Sapo provides an indication of the scale and impact of ASM in Liberia.

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[22] Shearman (2009) Liberian forest cover and timber projections. Report commissioned by Green Advocates, Monrovia.

[23] Van der Plas (2011) Liberia: Project Identification. Sustainable Charcoal Supply Chain.

[24] Rothe (2012) Improving access to sustainable wood energy in Liberia. Project Identification Fiche for EU.

[25] World Bank (2011) Options for the development if Liberia's energy sector

- **The impacts of ASM on forest at a national scale is unknown and will be sporadic and mobile, according to where the next 'gold rush' of diamond finds occurs.** The available evidence suggests it is not a major driver of deforestation and forest degradation.

Population in Non-Designated Areas

- **Areas that are outside of designated areas are extremely vulnerable to land use change as there is comparatively little control or enforcement on land use, particularly when it comes to extracting timber and other forest commodities.** Most of Liberia's rural population is dependent on these forests and their various products and ecosystem services as they play an important role as a safety net for vulnerable and marginalized people. The forest areas in close proximity to large populations and roads are especially threatened by clearance and forest degradation from agriculture, pit sawing, charcoal production and other forest uses.
- **The total population of lands outside of the designated areas equates to an estimated 3.3 million people.** This amounts to about 78% of the total estimated population of Liberia for 2015, over 4.2 million people. There is a large area of high canopy forest cover that is either close to a settlement area or is relative close to Primary/Paved roads and hence is more vulnerable.
- **Community-level use of forested land as described above is likely to increase significantly as the population increases and as levels of productivity and consumption increase during the time period that Liberia moves from a post-conflict nation to an aspiring middle-income country.** At the same time, the land available to communities and smallholders for subsistence and commercial uses is diminishing substantially. Although the large area of forest land under concession for forestry, agriculture of mining currently accommodates community use, this will decrease as the concessions become more developed and more strictly controlled by the main operators. The resulting 'squeeze' of increasing forest use into a decreasing area is likely to accelerate the community-level drivers of deforestation and forest degradation.

2.2 Land use suitability modelling

In Section 2.1, current and potential land use were considered in terms of the areas designated by government for specific land uses and how this relates to forest cover. Because the commercial concessions and the Protected Areas are mostly undeveloped, they give an indication of future land use pattern.

An alternative way of predicting future land uses based on underlying factors such as population, distance from roads and topography was undertaken by updating a 2006 land use suitability modelling exercise which was done under the Liberia Forest Initiative.[26]

2.2.1 Forest conservation suitability

The Nebel *et al.* (2006) study considered distance from roads, within or near high canopy forests and near the Atlantic Ocean the most important factors in defining areas that are most suitable for conservation. The existing Protected Areas were also considered always suitable for conservation. The weights and relative ranks for the layers were developed by Conservation International, through regression analysis, correlated to biological diversity data from Fauna and Flora International (Figure 8).

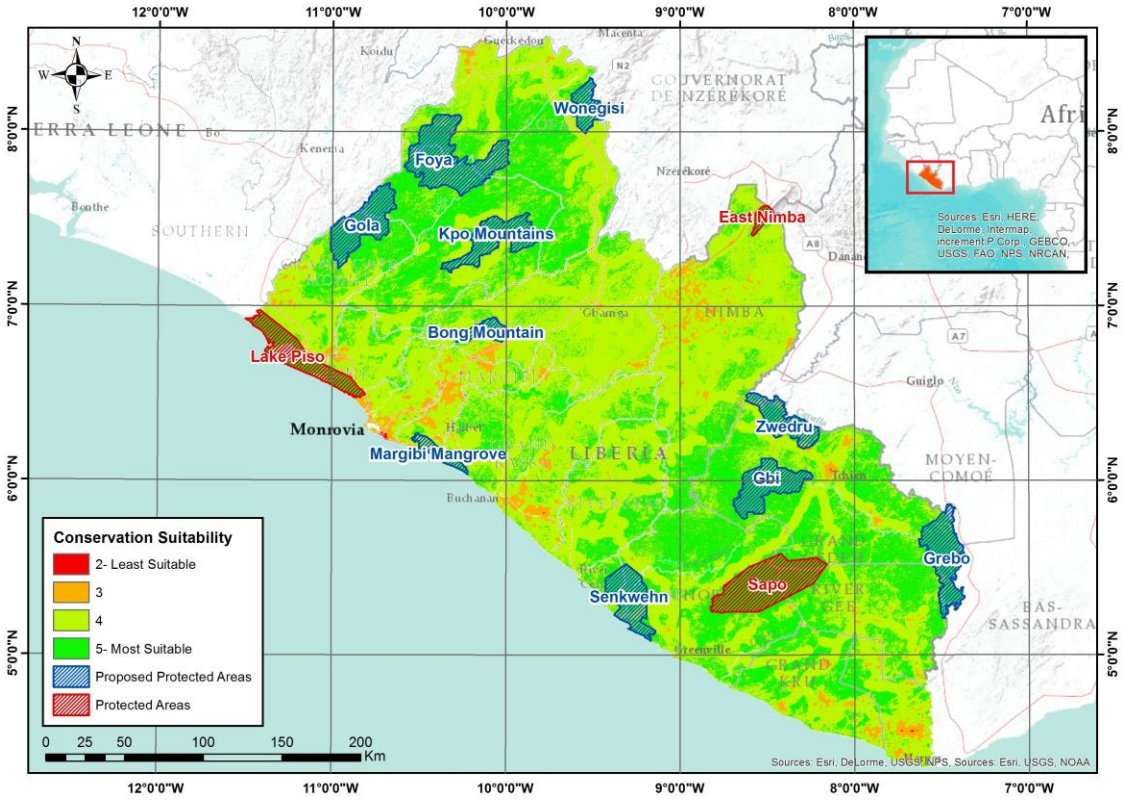


Figure 8 - Conservation suitability model output (1 - Most suitable; 5 - Least suitable)

2.2.2 Commercial forestry suitability

The areas that were considered most suitable for commercial forestry are low in population, have a high canopy forest cover and have good road access. Existing Protected Areas and

[26] The lack of detailed national biophysical data means that only a limited number of suitability factors can be modelled. The results are therefore "high-level" and should be seen as no more than indicative.

areas that have a slope greater than 30% were designated as always unsuitable for commercial forestry. Other parameters were considered in the study as model variables but not used in the final outputs. Weights and relative ranks were developed by the Liberia Forest Initiative (LFI) Commercial Forestry stakeholder group for the work carried out (Figure 9).

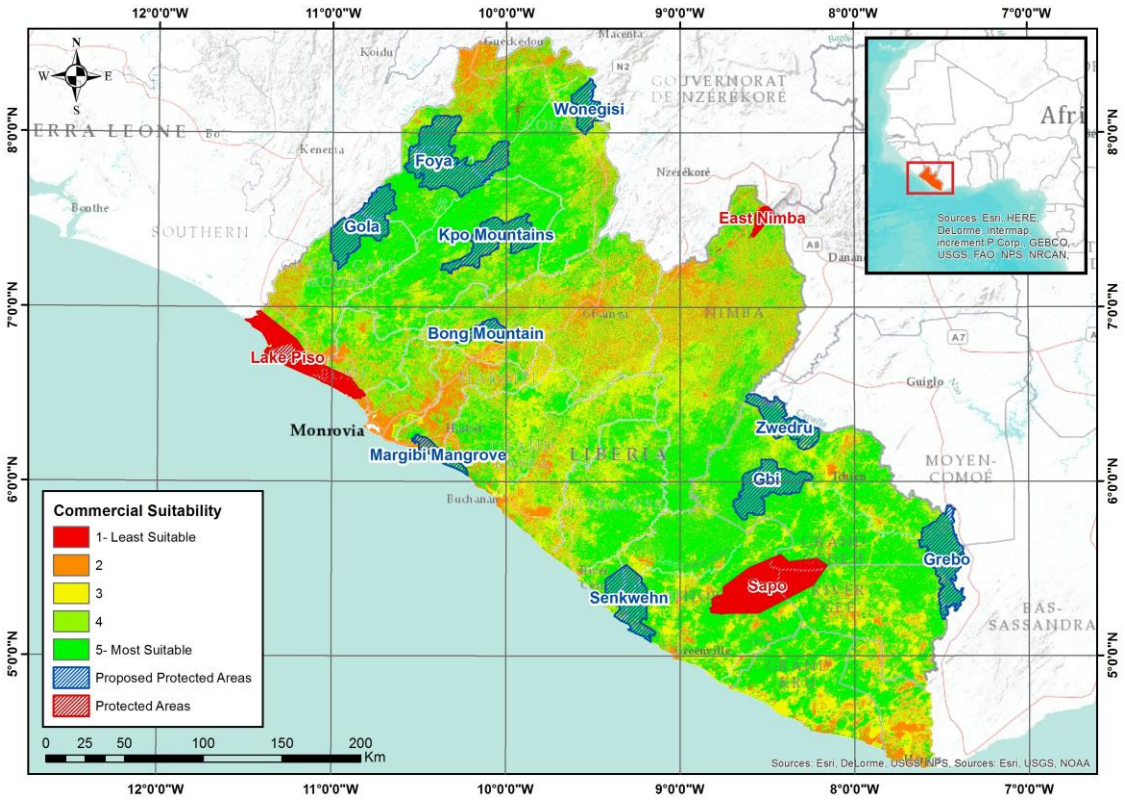


Figure 9 - Commercial suitability model output (1 - Most suitable; 5 - Lease suitable)

2.2.3 Community forestry suitability

The areas that were deemed most suitable for community forestry were those that have a moderate population, a mixed forest and agriculture land cover and are near roads and settlements. The Protected Areas were also designated as always unsuitable for community forestry. The layers used and the weighting allocated to them was developed and decided upon by the Liberia Forest Initiative's Community Forestry stakeholder group, the layers used were allocated equal weighting and considered of equal importance (Figure 10).

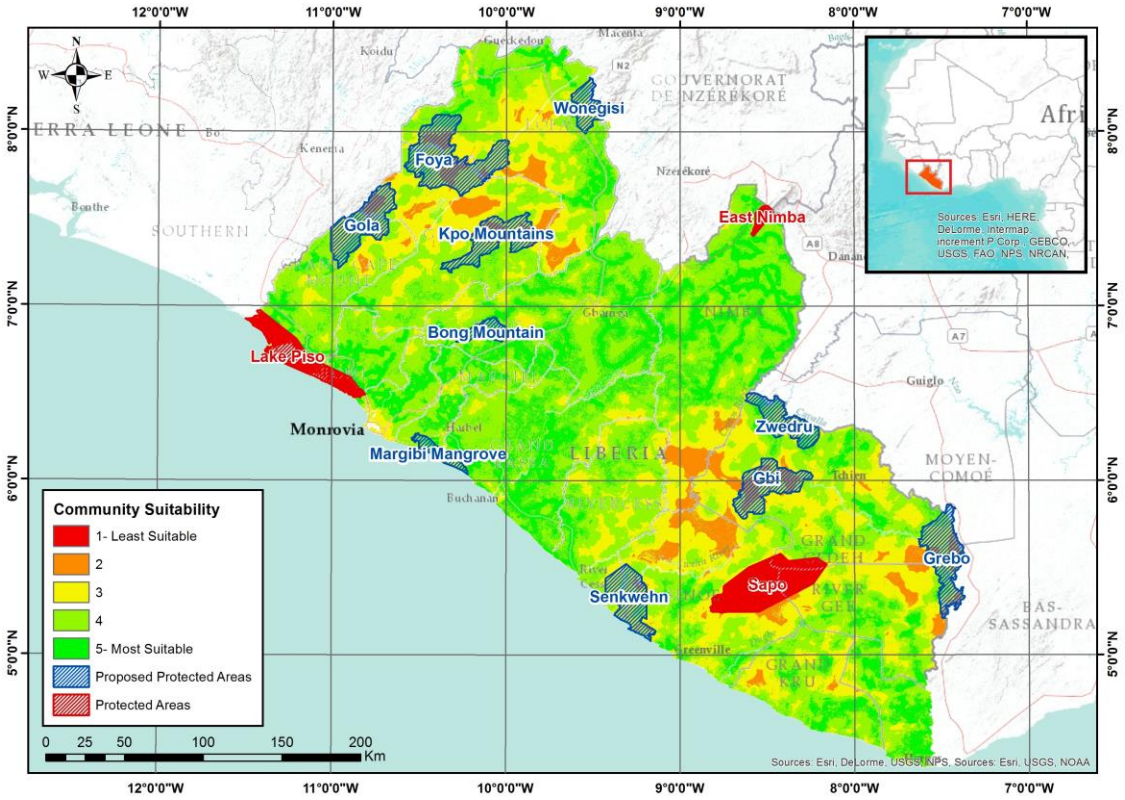


Figure 10 - Community forestry suitability model output (1 - Most suitable; 5 - Lease suitable)

2.2.4 Combining the 3C model results

It is clear from the results that there is a large amount of overlap in suitability of land uses, particularly in those areas that are both designated for Conservation and Commercial, as well as Conservation and Community uses; both have an estimated overlap of over 2.4 million ha (Figure 11). The areas that indicate suitability for all three of land uses – Community, Commercial and Conservation – accounts for the largest overlapping area, totaling over 3.6 million ha of the total area within Liberia.

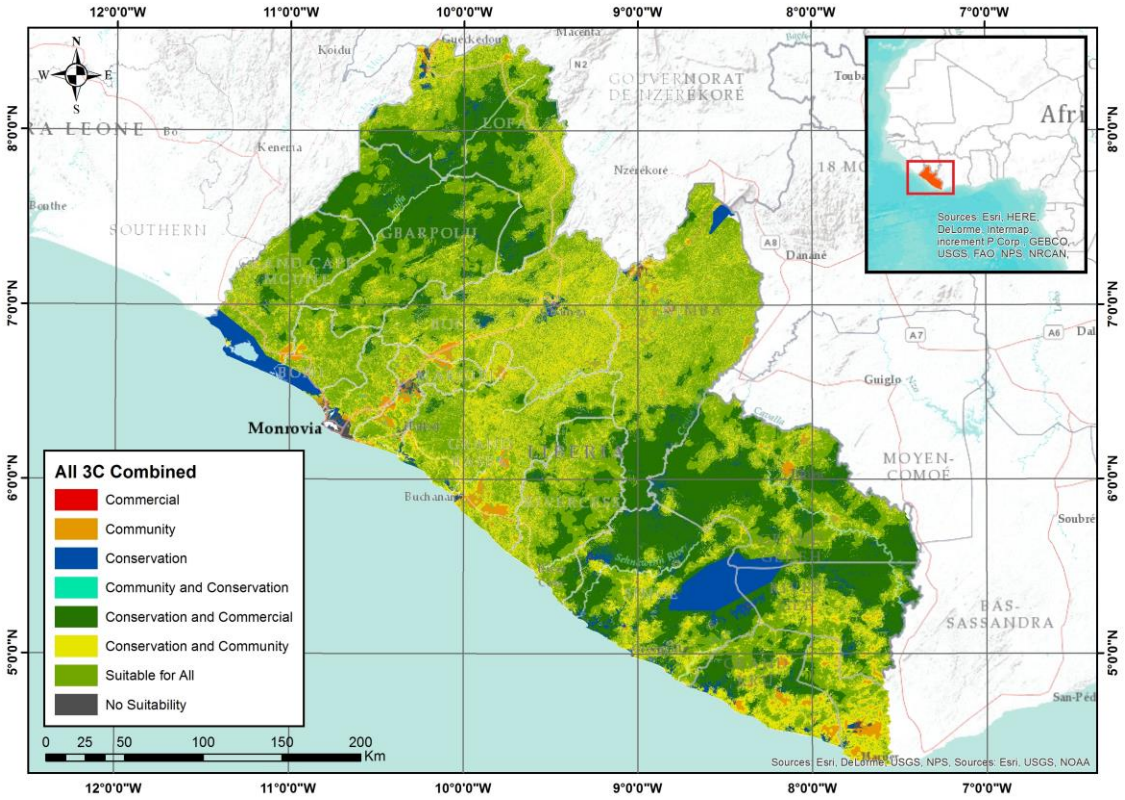


Figure 11 - Combined output for the 3C suitability layers

2.3 Conclusions from Forest Cover and Land Use Analysis

The land cover analysis carried out under this study provides insight into sectors that have been identified as the main drivers of deforestation and degradation in Liberia, namely:

- **Forestry:** commercial logging and chainsaw logging;
- **Agriculture:** shifting cultivation and plantations/permanent agriculture;
- **Energy:** charcoal production
- **Mining:** mineral extraction.

Community land uses affect the largest area of forest land. They are the principal land uses in the 43% of the total forest land that is not formally designated by the Government of Liberia for commercial or conservation purposes. Community land uses, of which there are many types, extend also over the concession areas (most of which are to be developed) and even intrude into Protected Areas (most of which are yet to be established).

There are no robust data with which to quantify the different community land uses. The information that is available does however indicate that shifting agriculture, pit sawing and charcoal production are all drivers of deforestation and forest degradation that threaten a larger area of forest.

- Based on the area of land that is easily accessible to settlements, a rough estimate of the area of forest land affected by shifting cultivation is 34% of the >80% canopy forest and 67% of the 30-80% canopy forest.
- Based on the volume of timber that is thought to be consumed by the pit sawing industry, it can be estimated that this affects an area at least as large as the total area that is subject to FMC logging concessions (24% of total forest).
- The volume of timber consumed for charcoal production is estimated at around double that by pit sawing, but a significant (if unknown) proportion of this comes from by-product timber cleared from rubber plantations that are being replanted, or new agriculture plantations that are being cleared. A rough and possibly conservative estimate of the area of forest affected by charcoal production is therefore the same as that for pit sawing; in other words, it is greater than the area affected by all existing and proposed logging concessions.

Forestry concessions are the second largest category of land use by area. If all existing and proposed FMCs were exploited this would affect 24% of the total forest area. FMCs account for 29% of the most high canopy forest cover (>80% canopy cover). Furthermore, the scale and positioning of FMCs, often between Protected Areas or Proposed Protected Areas and covering large blocks of high canopy forest cover, suggests that they should be an important part of a REDD+ strategy.

Palm oil is the third largest land use, based on the maximum area that is permitted for development by concession agreements. It accounts for 5% of the total forest area.

The remaining land uses, in order of potential forest area affected, are Timber Sales Contracts (3% of total forest), Community forestry agreements (2%), Mining (2%) and then rubber and other plantations (1%) (Figure 12).

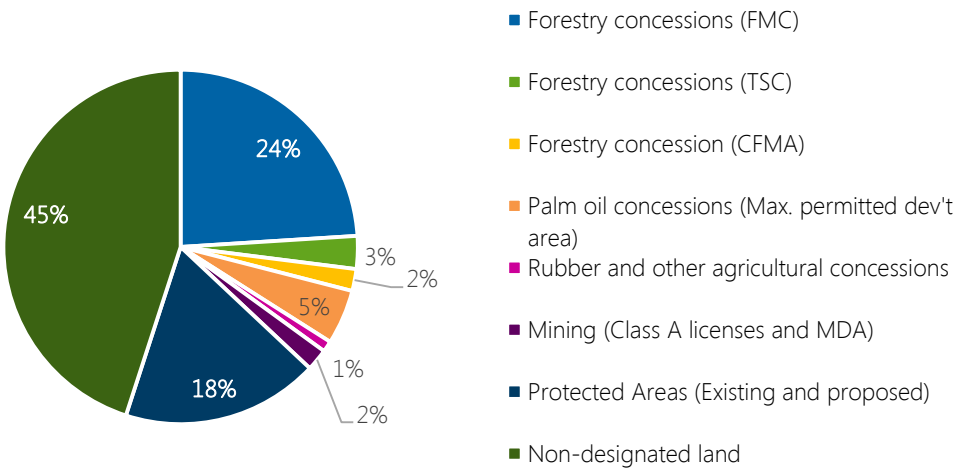


Figure 12 - Percentage of the total forest area in Liberia associated with designated land uses

There is particular need to look closely are the areas that fall outside of private, Governmental and designated use as these are the areas could be considered most likely to be impacted by unregulated activities that cause deforestation and forest degradation. The "Non-Designated" include an estimated 78% of the population of Liberia and, although it does not account for the majority of high canopy forest cover (Forest >80%), approximately 3,906,168 ha in these Non-Designated areas are still categorized as forested land (>30% canopy cover).

Areas of particular note, identified through the work carried out in this study, should be the north of Sinoe County and central Gbarpolu County. There are large areas in both that are Non-Designed and are covered primarily by high density forest. These areas in Sinoe and Gbarpolu are identified as being suitable for both conservation and commercial forestry, leading to potential competition between these two land uses and potential conflict if either expand at the expense of communities who rely on forest resources.

Mineral extraction is a growing industry in Liberia with increased exploratory work, particularly for gold and iron ore. It is clear from the analysis work that significant areas of high canopy forest cover fall within the surrounding areas of mining localities.

The population analysis work in the areas that are under Proposed Protected Areas status indicated that some – such as Margibi Mangrove and Bong Mountain – are surrounded by large populations and are therefore more vulnerable to encroachment and deforestation and forest degradation.

3. REDD+ Strategy Options

Liberia is participating in a global initiative to address climate change by reducing emissions from deforestation and forest degradation (REDD+). An evidence-based and inclusive national REDD+ strategy allows participating countries to set out how they will achieve a reduction in emissions from forest degradation and loss. This and other preparations for REDD+ in Liberia are guided by a process of 'REDD+ Readiness' that is supported and assessed by the Forest Carbon Partnership Facility, administered by The World Bank.

Along with the REDD+ Strategy Options Draft Report[27], this chapter forms the basis and rationale for Liberia's national REDD+ strategy. It contains: i) a summary of the strategic pillars; ii) the REDD+ strategy options under each strategic pillar; and iii) a summary of the assessments conducted on the REDD+ Strategy Options (including cost-benefit analysis, SESA and barriers analysis).

Purpose of REDD+ strategy

The purpose of the REDD+ strategy is to guide Liberia in its efforts to reduce emissions from deforestation and forest degradation. The key questions the REDD+ strategy should address are:

1. What is the estimated carbon value of Liberia's forests and the potential value in terms of emission reductions from avoided deforestation and/or enhancement of carbon stocks?
2. What strategy options would be most effective to achieve emissions reductions from deforestation and forest degradation, considering:
    - Expected emission reductions;
    - Financial costs and benefits of the options, including opportunity costs;
    - Social and environmental costs and benefits; and
    - Barriers to implementation which affect the feasibility of interventions.

During its recent past, Liberia's natural resources were used to fuel conflict rather than development. Liberia has since taken steps to break with this past and establish a natural

[27] See Technical Annex D for the full detailed report on the REDD+ Strategy Options.

resource economy that supports equity and sustainability. Therefore, the REDD+ strategy should also address two further questions:

i) How will the benefits from emission reductions be distributed fairly?
ii) How can REDD+ policies and measures help Liberia to establish a low-carbon economy that is sustainable in the long term?

Timescale for the REDD+ Strategy

The REDD+ process does not prescribe a certain number of years that should be covered by a REDD+ strategy. However, a strategy should enable decision makers to prioritize the various REDD+ strategy options before them. A guide to what 'short-term' and 'long-term' means is given by the timescale envisaged for implementation of the 2014 bilateral agreement between the Governments of Liberia and Norway to cooperate on REDD+ and developing Liberia's agricultural sector. The Liberia Forest Sector Program (LFSP) that resulted from this agreement will be the main vehicle for implementing REDD+ in Liberia. It consists of three overlapping phases.

- The first 'preparation' phase is to support the completion of Liberia's REDD+ Readiness activities by approximately 2017-2018 (complementing the FCPF).
- The second 'transformation' phase is from 2015 to 2020 and is to establish the plans, the institutional capacity, the legal and policy framework, the monitoring and reporting processes, and the social and environmental safeguards required to implement REDD+.
- The third phase is 'contributions for verified emissions reductions'. This would use a results-based benefit sharing mechanism that rewards Liberia for independently verified emissions reductions with financial contributions, channeled through the World Bank and to support a low carbon development path.[28] The stated intention is to begin this phase in 2018, yet there is no fixed end-point.

Thus, 'short term' for the REDD+ strategy can be taken to be the period up to 2025, within which REDD+ strategy options should be implemented and delivering results.

Geographical focus

The geographical scope of the REDD+ strategy is national and as such it serves as a comprehensive and unifying guide to REDD+ activities in Liberia. Likewise, the Reference Level will be defined first and foremost at a national level.

[28] Letter of intent between the Government of the Republic of Liberia and the Government of the Kingdom of Norway on "cooperation of reducing greenhouse gas emissions from deforestation and forest degradation (REDD+) and developing Liberia's agricultural sector" New York, 23 September 2014.

Depending on the activity, the implementation of REDD+ may occur either nationally or sub-nationally. There has been growing consensus at international REDD+ meetings that a landscape approach to REDD+ – also known as 'Jurisdictional REDD+' – is most effective for achieving the desired impact in a permanent way by addressing drivers of deforestation and forest degradation 'outside of the forest'.[29] The Liberia Forest Sector Project, which will be the main vehicle for preparing an emissions reduction capability in Liberia, has adopted this landscape approach by targeting several landscapes where there is a concentration of high carbon-value forest and threats to that forest.

The national REDD+ Strategy needs to recognize the emerging jurisdictional approach to REDD+ implementation in Liberia, by placing sub-national activities in the context of overall national priorities and strategy options. This is what is termed a 'nested' approach: local action within a national strategy and reporting framework.

3.1 Drivers of deforestation and forest degradation

There is a lack of evidence with which to quantify and fully understand drivers of deforestation and forest degradation in Liberia. Research to fill this gap will be an important part of Liberia's work on REDD+ readiness and implementation going forward.

The available evidence does however provide some basis for assessing and prioritizing drivers. The analysis of forest cover in relation to land uses summarized above produces a number of findings which help in this respect. These are drawn together in terms of:

a) Which drivers are most significant in terms of forest area?
b) Which drivers are most significant in terms of emissions?
c) Which drivers will have most impact on forest cover and emission levels in the short-term?

3.1.1 Drivers affecting the largest area of forest

Community land uses affect the largest area of forest land. They are the principal land uses in the 43% of the total forest land that is not formally designated by the Government of Liberia for commercial or conservation purposes. Community land uses, of which there are many types, extend also over the concession areas (most of which are to be developed) and even intrude into Protected Areas (most of which are yet to be established). The information

[29] Fishbein, G and Lee, D (2015) Early lessons from Jurisdictional REDD+ and low emissions development programs. The Nature Conservancy and World Bank Group. Arlington January 2015

that is available indicates that shifting agriculture, pit sawing and charcoal production are all drivers of deforestation and forest degradation that threaten a larger area of forest:

- Based on the area of land that is easily accessible to settlements, a rough estimate of the area of forest land affected by shifting cultivation is 34% of the >80% canopy forest and 67% of the 30-80% Forest.
- Based on the volume of timber that is thought to be consumed by the pit sawing industry, it can be estimated that this affects an area at least as large as the total area that is subject to FMC logging concessions (24% of total forest).
- The volume of timber consumed for charcoal production is estimated at around double that by pit sawing, but a significant (if unknown) proportion of this comes from by-product timber cleared from rubber plantations that are being replanted, or new agriculture plantations that are being cleared. A rough and possibly conservative estimate of the area of forest affected by charcoal production is therefore the same as that for pit sawing; in other words, it is greater than the area affected by all existing and proposed logging concessions.

Forestry concessions are the second largest category of land use by area. If all existing and proposed FMCs were exploited this would affect 24% of the total forest area. FMCs account for 29% of the most dense forest (>80 canopy cover). Furthermore, the scale and positioning of FMCs, often between Protected Areas or Proposed Protected Areas and covering large blocks of dense forest, suggests that they are an important part of a REDD+ strategy.

Palm oil is the third largest land use, based on the maximum area that is permitted for development by concession agreements. It accounts for 5% of the total forest area. The remaining land uses, in order of potential forest area affected, are Timber Sales Contracts (3% of total forest), Community forestry agreements (2%), Mining (2%) and then rubber and other plantations (1%).

3.1.2 Drivers of deforestation and forest degradation resulting in the greatest emissions

The area of forest affected by drivers of deforestation or forest degradation does not directly equate to the level of emissions. For example, a large area experiencing gradual forest degradation could result in fewer CO_2 emissions than a smaller area that is completely cleared, assuming that both areas have the same carbon stocks.

Of the drivers reviewed above, two in particular are stronger potential causes of substantial deforestation. The first is oil palm because the recent concessions are large and are heavily forested. The development of plantations will likely result in the clearance of between a minimum of 160,000 ha of forest, and a possible maximum of 352,000 ha of

forest. The second is Timber Sales Contracts because they involve the complete clearance of forest. Existing and proposed TSC cover 190,000 ha or 3% of the total forest area in Liberia. The majority of this is dense (>80% cover) forest.

Together, conversion for palm oil plantations and Timber Sales Contracts may amount to approximately 500,000 ha of forest; a similar area to that which was deforested between 2000 and 2014. Historic trends indicate that a roughly equal amount of deforestation has occurred from the >80% forest as from the 30-80% Forest. The area of dense forest in Liberia is large and the carbon stock for this dense forest is much higher, therefore drivers that result in the deforestation of >80% Forest are more important in terms of causing greenhouse gas (GHG) emissions.

Taking into account the higher carbon stock of the dense forest lost to small-scale activities, the emissions attributable to deforestation from community land use will probably be substantially higher than that from conversion to palm oil plantation. It is therefore reasonable to assume that the principal driver of deforestation of the dense forest has been community-level small-scale uses; notably shifting agriculture, pit sawing and charcoal production.

3.1.3 Drivers with greatest short-term impact on forest cover

The various direct drivers of deforestation and forest degradation can be divided into those that will produce a large increase of emissions in the short term and those that have an impact over the longer term. This is illustrated in Figure 13, which depicts the expected rate of forest loss over time associated with each of the main drivers. All are shown as starting from the same point, their current baseline. In reality some drivers cause more forest loss and emissions than others but there is insufficient data at national level to show the quantity of forest loss and emissions associated with each. Also, this will vary from place-to-place. Planned forest conversion for oil palm and Timber Sales Contracts is likely to result in a significant increase in emissions from forest in the next 5-15 years. Unplanned activities such as pit sawing, charcoal and shifting agriculture are likely to increase emissions more gradually but exponentially. The aim of REDD+ interventions is to alter this business-as-usual scenario so that the level of deforestation and forest degradation is reduced.

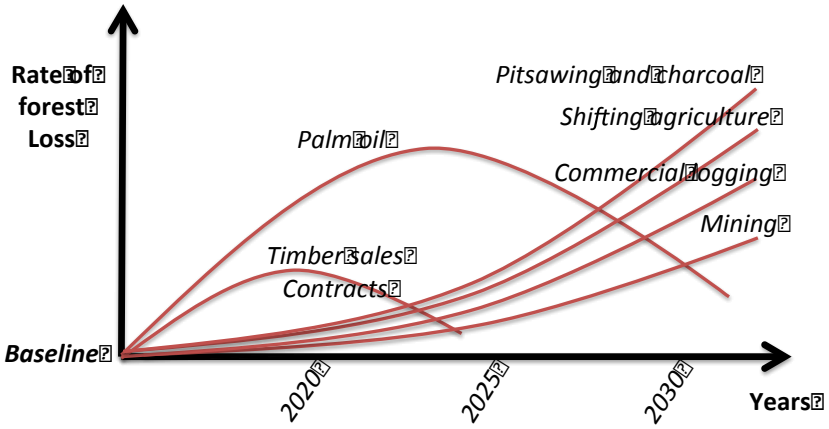


Figure 13 – Expected trajectory of main drivers of deforestation

Table 1 - Main direct drivers of deforestation and forest degradation in Liberia and their expected impact

Palm oil conversion	The major palm oil concession-holding companies aim to clear land and establish plantations within the next 10-15 years. No major new palm oil concessions are expected although palm oil and other plantation crops are likely to expand on private estates and, possibly, community land.
Timber Sales Contracts	Although most TSCs have the status of 'proposed', rather than 'active', once fully approved the forest within can be completely cleared. It is possible, however, that the TSCs that have not been felled will lapse and remain uncleared.
Pit sawing and charcoal production	These forest uses already have a significant impact and can be quickly scaled-up as they require relatively little capital investment. Access to the resource is also particularly easy in the short-term because of lack of regulation of these activities in non-designated land, in forestry concessions and in Proposed Protected Areas. Increased prosperity could cause a rapid increase in demand, as could illicit export to neighboring countries.
Shifting agriculture	Although rising population and prosperity is creating a strong demand for new farm land, the labor and capital investment required to clear new areas, especially of dense forest, is high for communities/smallholders. The complex land ownership and tenure system that prevails in Liberia also acts as a brake on the expansion of shifting agriculture into new areas. In areas where shifting agriculture is already pervasive, it is already a major driver of deforestation and is likely to have an increasing impact on forest.
Commercial logging	Logging operations are not yet fully up to scale and impact on forest should be gradual as extraction rates should be kept at or close to sustainable limits. The road construction that accompanies forest operations will open up the forest to small scale land uses but the effect of this in terms of deforestation and forest degradation is likely to become visible after a decade or more. The extent of commercial forestry and associated forest loss may increase if there is the expected shift from company concessions to logging in community forests.
Mining	There are few mines currently operating and the pace of expansion of the industry is currently slow because of low commodity prices. It takes some years for exploration and mineral development licenses to progress into actual mining operations so a significant number of new mines are unlikely to appear within a decade. There is insufficient data to judge the current and potential impact of small scale artisanal mining.

3.2 Strategic pillars

Because Liberia is a heavily forested country, the priorities amongst the eligible REDD+ activities should be conserving the carbon stocks that exist, reducing deforestation and degradation, and sustainable management of forests. The strategic priorities for Liberia's REDD+ strategy and the rationale for these is set out below (Table 2).

Table 2 - Proposed REDD+ strategic priorities for Liberia

Priority 1: Reduce forest loss from pit sawing, charcoal production and shifting agriculture. Shifting agriculture, charcoal production and pit sawing is practiced widely across Liberia, including in proposed Protected Areas. The pattern of forest loss visible today is largely a result of these small-scale commercial and subsistence use of forests. These uses can be expected to increase dramatically as population and consumption increases. Approximately 70% of the total forested area is vulnerable to deforestation and forest degradation from subsistence and small-scale uses. Pit sawing and charcoal production probably consume more timber than commercial logging. Restricting the expansion of pit sawing, charcoal production and shifting agriculture, particularly into >80% canopy cover forest, is therefore a priority.
Priority 2: Reduce impact of commercial logging FMCs cover approximately 24% of the total forest area and almost 30% of the most dense forest. They are located in areas of high carbon stock and biodiversity. They lie between Protected Areas and are therefore important for maintaining wildlife corridors and large forest blocks. There is a relatively well-developed policy and regulation for sustainable forestry but limited practical implementation. Standards and monitoring procedures are being strengthened, particularly through the Voluntary Partnership Agreement (VPA). It is likely that some FMCs may become Community Forest Management Agreements (CFMAs) under the pending Land Rights Act. The application of same standards in CFMAs is therefore important.
Priority 3: Complete and manage a network of Protected Areas Completion of the Protected Area Network (PAN) would protect around 18% of the total forested land in Liberia (forest canopy cover ≥30%). The policy and regulatory framework for implementing the PAN and enforcing conservation measures is already in place. Currently, only 3% of forest land is protected by established Protected Areas and even in these the capacity to enforce conservation laws is very limited. The PAN as currently proposed falls short of the commitment to conserve 30% of all forested land that is made in the 2006 Forestry Reform Law. The addition of other Protected Areas as a longer-term measure would achieve this 30% commitment and make an important contribution to REDD+.

Priority 4: Prevent or offset clearance of high carbon stock and high conservation value forest in agricultural and mining concessions.

Palm oil plantations are the most immediate and significant potential source of emissions from deforestation. The amount of forest land that is permitted for development (i.e. clearance) is equivalent to 5% of the total national forested area. Deforestation should be limited to less dense forest by Roundtable on Sustainable Palm Oil (RSPO) standards for conservation of High Carbon Stock (HCS) and High Conservation Value (HCV) forest. Even if this is achieved, the forest set aside is highly vulnerable to forest degradation and eventual deforestation from small-scale use. Pressure on forest will grow as jobs and incomes from the plantation increase local population and consumption, and as communities are displaced from plantation land.

Priority 5. Fair and sustainable benefits from REDD+

Because of the way in which Liberia's natural resources were used to fuel conflict rather than development, and because of the steps that Liberia has taken to break with this past and establish a natural resource economy that supports equity and sustainability, the REDD+ Strategy should also prioritize strategy options for distributing REDD+ benefits fairly, and for investing REDD+ income so that the benefits are sustainable.

Enhancement of forest carbon stock is judged to be less of a priority, at least in the short-term, because Liberia has more forested land that it can conserve compared to deforested land that it could reforest. However, the potential for reforestation and afforestation exists and pilot projects to test this option should form part of the REDD+ strategy. Reforestation was conducted by the FDA in the pre-conflict era, with commercial forest plantations and experimental wood fuel plots. These were destroyed during the conflict but small projects to explore the possibility of restoration have already been started. In parts of Liberia, such as Northern Lofa, where there are substantial deforested areas that have become unproductive savannah, there is the potential to experiment with forest enhancement on a larger scale.

The importance of Protected Areas was highlighted in Chapter 2. The proposed Protected Areas Network covers a large proportion of the national forest land and almost a fifth of the >80% forest that holds the highest carbon stock. To be eligible for REDD+, the inclusion of Protected Areas must bring clear 'additionality'; in other words, it must enable conservation that would not have happened anyway. There are strong grounds for Protected Areas being eligible in the case of Liberia. A small minority of the proposed Protected Area Network is actually protected by legislation. Enforcement of conservation laws is very limited therefore existing and Proposed Protected Areas are threatened by the drivers of deforestation and forest degradation described in this report. There is ample evidence from satellite imagery and from local projects that existing and Proposed Protected Areas are being encroached

and degraded. Protected Areas therefore represent the main strategy for conserving conservation stocks.

3.3 REDD+ strategy options

Goal	Reduce emissions from deforestation and forest degradation and increase benefit sharing				
Strategic priorities	*1. Reduce forest loss from pit sawing, charcoal production and shifting agriculture.*	*2. Reduce impact of commercial logging*	*3. Complete and manage a network of Protected Areas.*	*4. Prevent or offset clearance of high carbon stock and high conservation value forest in agricultural and mining concessions.*	*5. Fair and sustainable benefits from REDD+*
Strategy Options	1.1 Manage pit sawing (chain saw logging) to reduce loss of forest. 1.2 Reduce impact of charcoal industry on forest through better regulation, improved efficiency and the development of alternatives energy sources. 1.3 Increase area and productivity of non-forest land under permanent food and cash crops, to reduce the expansion of shifting agriculture. 1.4 Locate services and new infrastructure development in non-forest and less-dense forest areas[1]. 1.5 Integrate hunting, artisanal mining and forest restoration into community-led livelihood and sustainable forest management practices.	2.1 Ensure that all industrial logging is practiced to high conservation standards, so that loss of forest and biodiversity is minimized. 2.2 Conserve and maintain areas of high conservation value within commercial forestry concessions, such as important wildlife corridors. 2.3 Review Timber Sales Contracts to ensure compliance with forestry laws and EIA standards and establish a strong presumption against further TSC contracts on dense forest and within 3km of Protected Area. 2.4 Prevent unregulated pit sawing and charcoal production in forestry concessions. 2.5 Manage commercial forestry in community forests larger than 1,000 ha.[4] to achieve sustainable logging standards as apply to FMCs.	3.1 Complete the Protected Areas Network and strengthen management to prevent forest degradation 3.2 Expand the Protected Areas Network to conserve 30% of forest land. 3.3 Reduce pressure on Protected Areas from surrounding communities (using priority 1 measures). 3.4 Develop and implement land use plans at landscape scale, to integrate production and conservation.	4.1 Conserve HCS-HCV forest within agricultural concession areas, including developing and implementing a policy for the sustainable management of these conserved areas (using priority 1 measures) 4.2 Apply policy of conserving HCS-HCV forest to all agricultural concessions, including large private farms. 4.3 Ensure that mining result in zero-net deforestation, through mechanisms such as biodiversity offsets. 4.4 Locate future large-scale agriculture and mining concessions in less dense and non-forest areas.	5.1 Define carbon rights and develop policies and regulations for upholding these. 5.2 Establish benefit sharing mechanisms for REDD+, in harmony with those operating in the forestry, mining, agriculture and other relevant sectors. 5.3 Operate a robust monitoring, reporting and verification system for demonstrating reductions in emissions achieved through REDD+ policies.

3.4 Assessment of REDD+ strategy options

The strategic priorities and strategy options described above come from analysis of land use and forest cover and stakeholder consultations that indicates the most effective way to achieve REDD+ objectives. Consideration must also be given to the economic efficiency of the strategy options and to their feasibility to be implemented, given the strengths and weaknesses of Liberia's institutions and regulatory framework. REDD+ strategy options must also be inclusive of safeguards on environmental and social issues. An appraisal of the REDD+ strategy options was conducted, applying three forms of assessment:

- Cost-benefit analysis (CBA)
- Feasibility analysis
- Strategic environmental and social assessment (SESA)

3.4.1 Cost-benefit analysis

The cost-benefit analysis[30] of REDD+ includes different aspects which have to be considered in parallel:

- The scale of implementation (e.g. area to be covered by, or farmers to be included in REDD+ activities)
- The likely emission reductions resulting from different land management practices (a function of scale of land use change and difference in carbon stock per unit of land between the two land uses)
- The opportunity cost of the land user as an indication for the level of effort required to change land management practices in order to reduce emissions
- Environmental and socio-economic benefits/impacts of REDD+ implementation (e.g. impact on biodiversity, employment and macro-economic development) and
- The implementation cost, e.g. creating an enabling environment for sustainable land management.

The potential scale of the different land uses to be covered by REDD+ is indicated in Table 3. The biggest land use with significant carbon stock is forest without any protection or management status (2.9 million ha), followed by areas used extensively for agriculture

[30] See Technical Annex E for the full detailed cost-benefit analysis report.

(shifting cultivation with long management cycles) with 1.9 million ha. Both are threatened by deforestation and degradation.

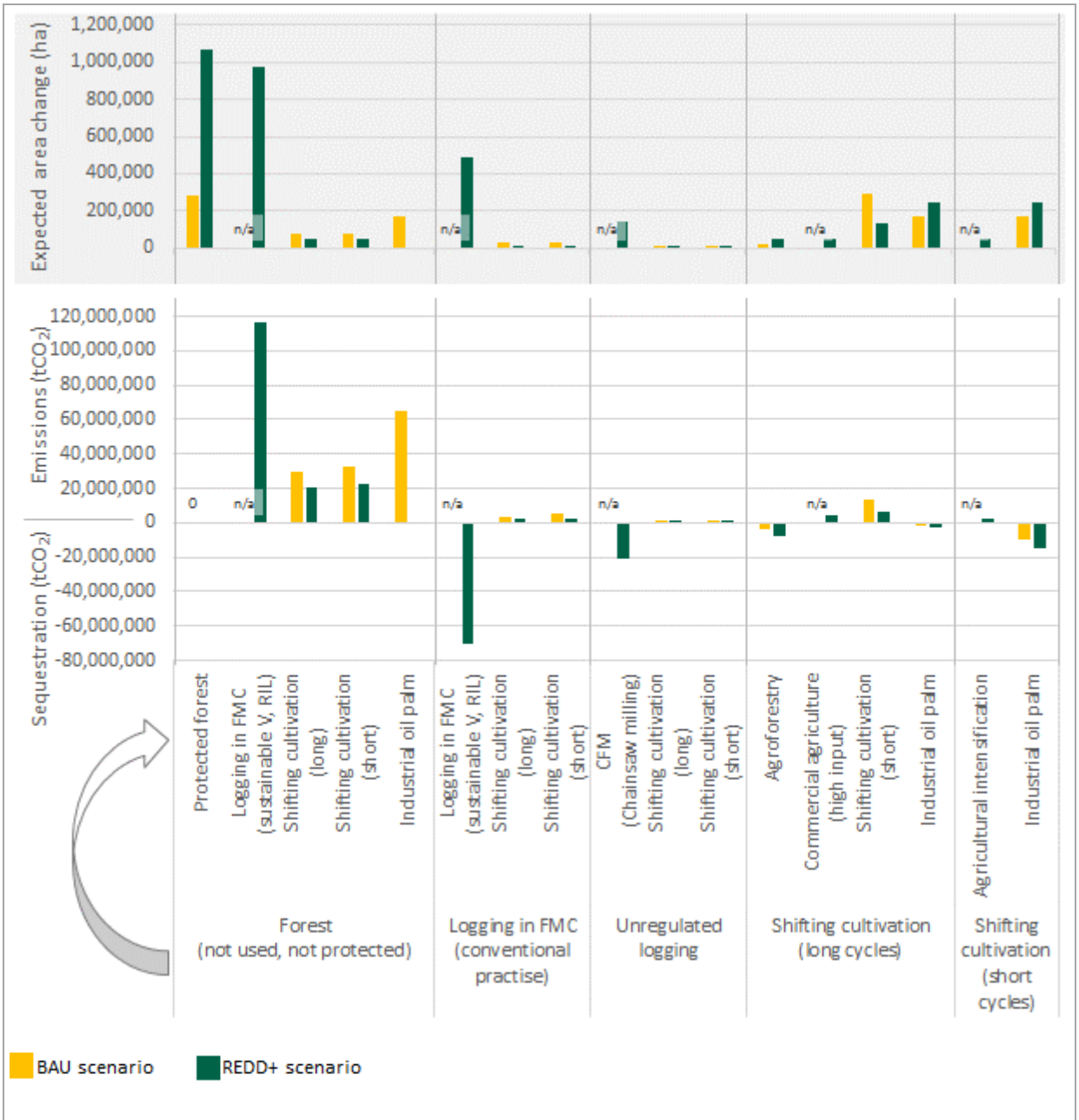
Table 3 - Land uses under business-as-usual and REDD+

Land use	Business-as-usual	REDD+
Protected Areas	The existing 3 PAs will remain protected areas with similar management activities and intensity. Encroachment of the protected areas for livelihood activities, artisanal mining and others continues, leading to conflict, deforestation and forest degradation.	Management of existing PAs will be intensified; incl. alternative livelihood measurements in nearby communities and additional PAs (see R-PP) will be gazetted. ➢ Deforestation and degradation will be reduced.
Commercial logging	Logging takes place in concessions granted by government and on community controlled land. Logging standards in concession areas do not always conform to international best practice. In community forests logging standards are not applied. Many small scale logging business (chain saw millers) exist. They are largely unregulated and harvest in all forest types. Poor logging standards cause significant damage to residual stands and the amount of timber harvested exceeds the rate of regrowth. As a result forests are severely degraded and/or eventually converted to other land uses.	Commercial logging in concessions is further formalized. Companies adjust volume harvested per ha to rate of growth and apply Reduced Impact Logging (RIL). Community forests are formalized, and use similar standards to the above for commercial forestry. Alternatively communities can decide to protect forests allowing only very limited use of forest resources. Chainsaw millers are regulated and have to work according to minimum standards and cannot operate in formal logging concessions. Control of volume harvested is linked community forest plans. ➢ Deforestation and degradation will be reduced. ➢ Forestry will remain a profitable sector beyond one contract period.
Charcoal production	Charcoal production is frequently linked to clearing land for agriculture and replanting of rubber plantations, but likely takes place as a primary income generating activity in forests as well, contributing to forest degradation. Production and trade is not regulated. Charcoal is the main energy source for Liberia's urban population; it can be assumed that consumption will increase in line with the growing urban population.	REDD+ activities may seek to limit the impact of charcoal production on forests remaining forests by regulating access (e.g. linked to community forest management). The use of better charcoal production technologies can increase conversion efficiency, reducing wood consumption. More efficient end user technologies can reduce overall consumption and alternative sources of energy can replace charcoal and fuel wood ➢ Degradation will be reduced.
Agro-forestry	Agroforestry crops such as cocoa create little income due to sub-optimal stocking, old trees, very limited use of inputs and the	With the aim to diversify livelihoods and provide alternative income for subsistence farmers currently relying on shifting

Land use	Business-as-usual	REDD+
(example cocoa)	poor quality produced. Market access is difficult. Little incentive exists to sustain agroforestry crops or invest into new ones/intensification; rather farmers rely on shifting cultivation converting more forest to agricultural land (see below).	cultivation cocoa production is intensified applying modern management practices, using better varieties and inputs, and creating value addition and marketing structures. ➢ Yield and profitability increase. Farmers have higher income from smaller land areas reducing the need for shifting cultivation and deforestation. Permanent agroforestry systems sequester carbon.
Shifting cultivation	The majority of farmers use shifting agriculture. Population growth leads to conversion of new forest areas and shortening cultivation cycles resulting in decreasing productivity. Subsistence farming is a major driver of deforestation.	A shift to permanent agriculture is encouraged, using better agricultural practices and inputs; raising yield and income and reducing the need to expand agriculture to forested areas. ➢ Deforestation will be reduced.
Rubber (smallholder farmers)	Rubber used to be an important cash crop for small and medium sized farmers. Plantations were overexploited during the conflict, are often very old and are now often unproductive. Prices for natural rubber are very low, leaving little incentive to rejuvenate existing plantations or invest in new ones.	The future of smallholder rubber in Liberia is not clear. Therefore, rubber was not a focus of the REDD+ CBA.
Oil palm	Farmers grow the local Dura variety dispersed on agricultural land or in small lots producing oil from the fruit for the local market. Several hundred thousand hectares of oil palm concessions, incl. out-grower schemes are planned. Concessions are expected to contribute significantly to deforestation.	Smallholder farmers will continue to grow oil palm for local consumption but also become part of the industrial supply chains. Conversion of existing agricultural land and forests to oil palm will take into consideration HCS and HCV areas and exclude them from conversion. Sufficient agricultural land and forest for community use is set aside as well. ➢ Deforestation will be limited to low carbon stock land cover types.
Permanent agriculture (food crops, example rice)	Rice is grown in different systems. Most common is cultivation of upland rice in shifting cultivation. Inland swamps are used for lowland rice and are partly irrigated.	Intensification of the existing systems to increase yield and income per unit of land. ➢ Reduced need for shifting cultivation and deforestation.

The **combination of scale in terms of area potentially affected** (i.e. converted from one land use to another – planned or unplanned) **and resulting emissions or emission reductions** is shown in Figure 14 for the BAU and REDD+ scenarios. For example:

- If converting currently unprotected forest to oil palm an amount of carbon disproportionate to the comparatively small area converted is emitted.
- If allowing sustainable forest management on an area five times as big as forest land converted to oil palm less than half as many emissions will be released while many qualities inherent to forests (carbon, biodiversity and watershed protection) will be retained.
- If current unsustainable logging practices are changed to more sustainable ones (FMC; CFM) GHGs will be sequestered.
- The case is similar for the expansion of agroforestry systems, although the area concerned is very small.
- Last but not least agriculture (incl. oil palm) can be intensified on already degraded land and will result in very few emissions per ha and, if implemented correctly, reducing pressure on forests.



The upper figure shows likely land use changes over the next two decades assuming business as usual. Changes which will likely occur with REDD+ only are marked with n/a. The lower bar chart shows the associated emissions or removals, i.e. combine carbon stock change (tCO_2/ha) with the anticipated scale of land use changes. GHG emissions have positive values and GHG removals negative values.

Figure 14 - Land use change and related emissions for BAU and REDD+ scenarios for Liberia

The **opportunity cost** for the five land use changes/avoided land use changes which result directly in removals or emission reductions is shown in Figure 15. The opportunity cost of emissions avoided or GHG sequestered is an indication for the level of effort required to change land management practices in order to reduce emissions.

Expanding the protected area network and changing timber harvesting practices to more sustainable ones will result in additional costs/foregone economic benefits to the land user,

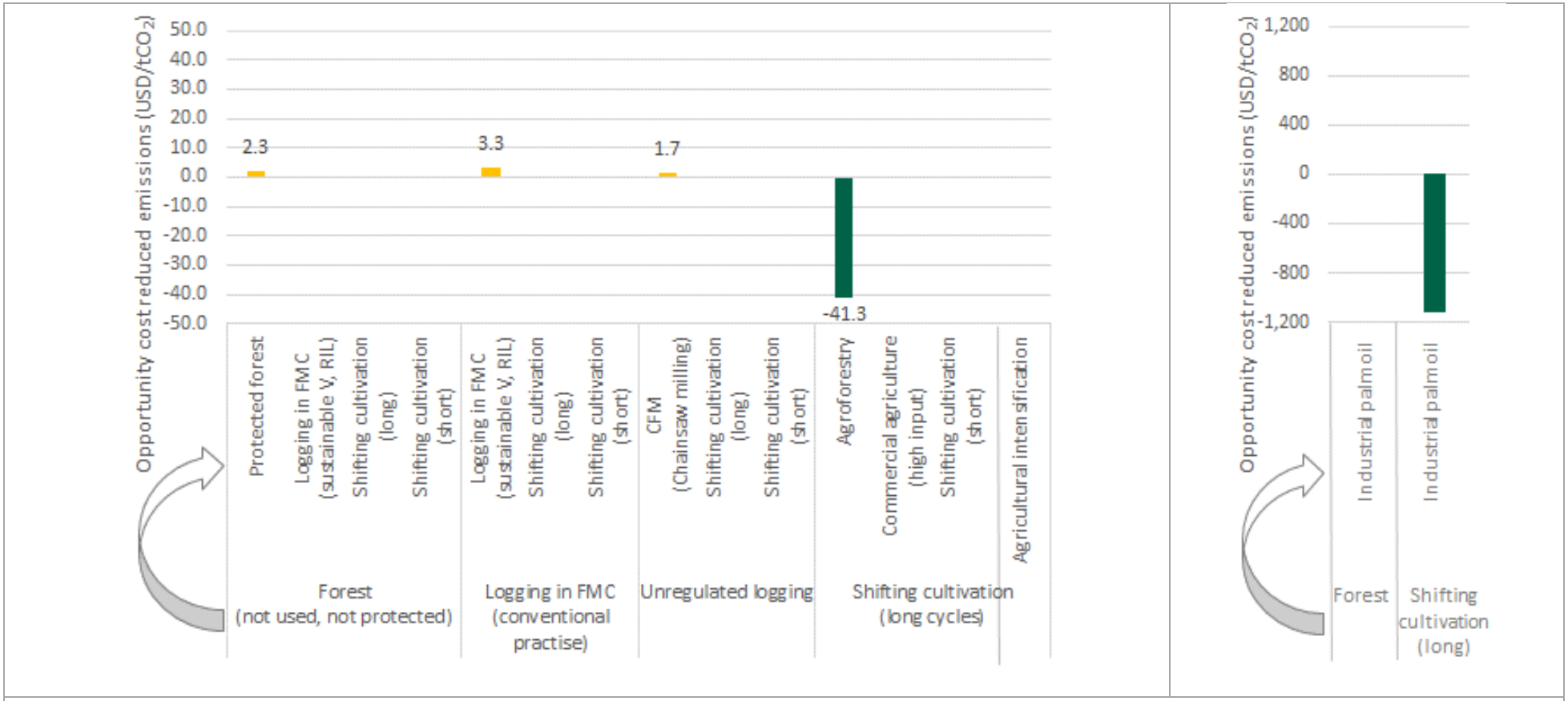
i.e. emitting CO_2 in a business as usual setting would be profitable to the land user. To avoid doing so will result in additional costs/foregone economic benefits. This barrier can be overcome by passing on the cost directly to the state (e.g. for protection in form of PAs), by providing incentives (e.g. tax reductions for sustainably harvested timber) and stronger regulations and enforcement thereof.

In contrast, agroforestry with permanent tree crops, but also the establishment of oil palm plantations on degraded land, will sequester carbon and increase the financial benefit to the land user – a win-win situation. However, the negative opportunity cost is dependent on the creation of an enabling environment such as providing access to inputs, financial and technical services for smallholder farmers and e.g. investment ready land for oil palm concessions.

Other measures, such as allowing formalized sustainable logging in primary forest not covered through the protected area network (FMC, CFM) and intensification of agricultural uses on already degraded land will contribute to reducing deforestation by attributing a tangible value to forests and by reducing pressure on forests respectively. Neither activity will reduce emissions directly, hence, they are not included in Figure 15.

The **environmental impact of REDD+,** such as conserving biodiversity and protecting of water resources will be highest in undisturbed ecosystems. However, land uses retaining some of the original ecosystem structures (e.g. forestry and extensive agriculture) also retain part of their protective function. Positive **socio-economic changes** would result from the sustainable intensification of agroforestry and agriculture. Developments in agroforestry and agricultural can benefit in particular the rural population.

The estimated REDD+ **implementation cost** over 25 years is 1.7 billion USD (see Table 5). The establishment and maintenance of PAs alone is estimated to cost 750 million USD, constituting over 40% of the total cost. On a per hectare basis Sustainable Forest Management (SFM) is the most attractive option with an estimated annual cost of < 10 USD/ha. Regulated access to forests for timber production will give these forests a certain status of protection while generating revenues. Interventions targeting the agriculture sector are comparatively expensive with annual costs in the range of 30 USD/ha but are highly complementary to forest conservation and have the potential to contribute to the economic development of Liberia.



The values presented combine the opportunity cost per ha (NPV) for REDD+ land management practices with the carbon stock change per ha (tCO_2). Values are only provided for land use changes that directly result in reduced emissions.

Bars in yellow indicate that implementing the land management comes at a cost to the land user (or in other words emitting CO_2 would be profitable), which means doing so will require incentives and regulation. Bars in green (negative values) indicate that the land management practice is profitable to the land user, i.e. will require little incentive. The opportunity cost for agroforestry are influenced by REDD+ activities such as providing access to inputs, financial and technical services, regulations and enforcement thereof. However, the cost of implementing these measures is not part of the opportunity cost calculation.

Figure 15 - Opportunity cost of avoided emissions in the REDD+ land use change scenario

Comparison of land use change options

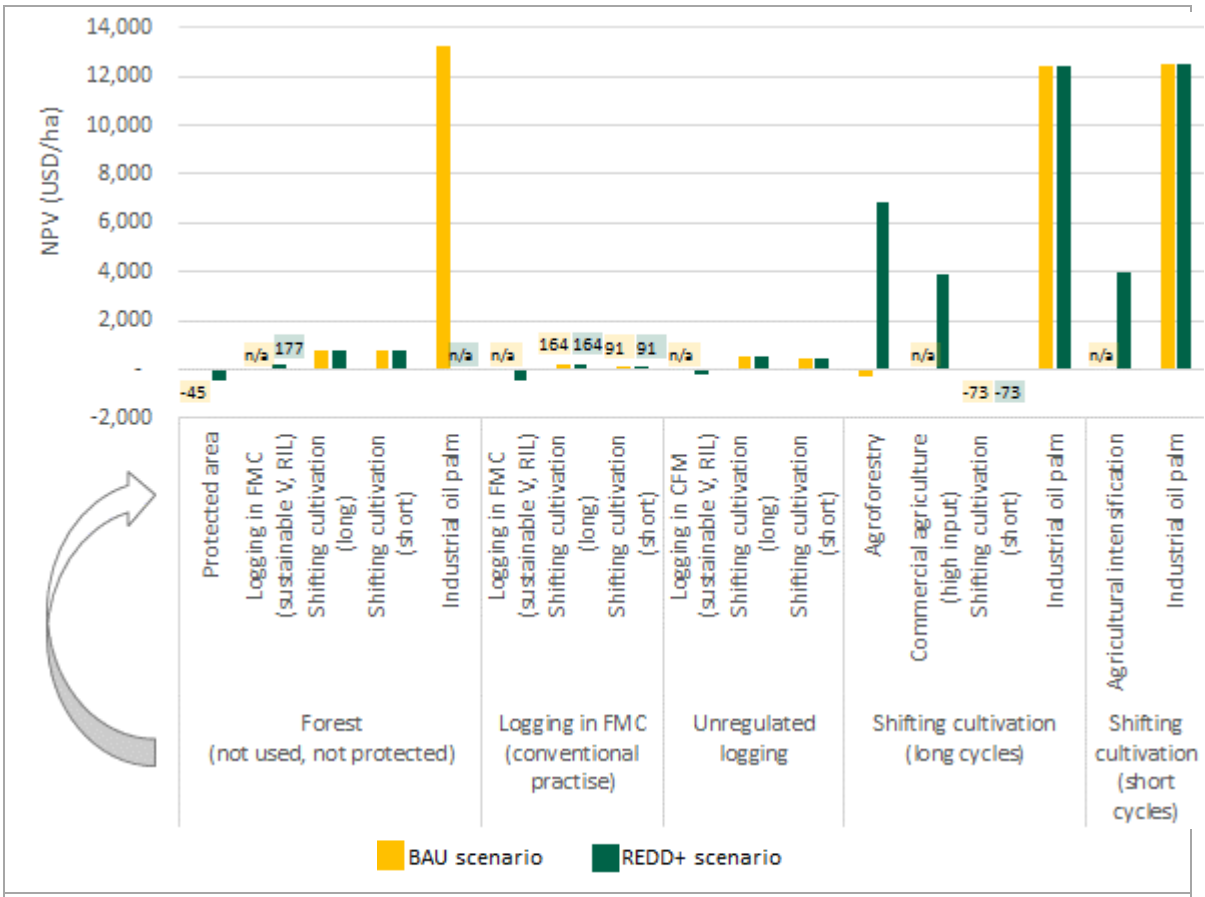
The economic impact of changing land use or management is shown in Figure 16. Land use changes where the difference between the new land use and the former land use is positive are beneficial to the land user, i.e. have a positive opportunity cost. If the difference is negative the change would come at an economic cost to the land user.[31]

- Under BAU all land use changes from forest to some form of agriculture have positive opportunity cost as the Net Present Value (NPV) for forestry is comparatively low.
- The shift from unsustainable forest uses to more sustainable ones comes at a cost to the land user. That is logging companies and chain saw millers will be allowed to harvest less timber per hectare and must apply Reduced Impact Logging (RIL) reducing the profitability of their businesses – while ensuring continued timber use for future generations.
- To protect forest, convert shifting cultivation into permanent agroforestry/agriculture[32], or reduce the time until returning to the same plot of land come as a cost to the land users in the BAU scenario, i.e. are not attractive to the land user.
- The incentive to change from other land uses to industrial oil palm plantations is particularly high,[33] with a positive opportunity cost of more 12,500 USD/ha.
- If agricultural extension and rural financial services and inputs are available (REDD+ scenario) agroforestry and intensive agriculture become attractive.

[31] For example changing from shifting agriculture with long cycles to shorter cycles will result in lower yields and lower income. The change does not make sense from an economic point of view but may happen anyway due to population growth and reduced land availability.

[32] Example cocoa: currently farmers have very limited access to inputs, technical advice and poor access to markets. As a result yields and prices per kg cocoa are low, making cocoa farming less profitable than shifting agriculture. Refer to section **Error! Reference source not found.** for details.

[33] Industrial oil palm refers to oil palm monocultures being part of or linked to oil palm concessions.



Bars reflect the change in profitability if changing from one land use to another for the BAU and REDD+ scenarios. Profitability is expressed the difference in NPV calculated over a period of 25 years at discount rate of 15%.

Not all land use changes apply in both scenarios. These are shown as n/a.

A switch to oil palm is always highly profitable to the land user. Harvesting of timber in currently unused forest is more profitable under BAU than REDD+, as less timber is harvested in the latter. A change from the currently unsustainable harvesting practices to sustainable practice will result in reduced benefit to the logging companies/chainsaw millers. A shift from shifting cultivation to permanent agroforestry or agriculture become profitable only in the REDD+ scenario – where inputs, finance and technical services are available.

Figure 16 - Net-present value for BAU land REDD+ scenarios

Implementation costs

Implementation cost is defined as costs related to the direct implementation of REDD+ activities; but also includes creating an enabling environment for the implementation of activities contributing to REDD+ by government, civil society and the private sector. An overview of possible measures for the four strategies included in the CBA is provided in Table 4. Cost assumptions for these activities are provided in Technical Annex E.

Table 4 - REDD+ implementation measures considered for the Cost-Benefit Analysis

Strategy	Activities
a) Complete and enforce a network of Protected Areas	• Formulate guidance and rules on compensation for foregone use (also applies for CFMA conservation forests) • Design and implement compensation / alternative livelihood projects • Increase FDA capacity
b) Maintain logging and other extractive forest uses at sustainable levels	• Adjust taxation / fee regulations • Design rules and guidance for SFM and RIL • Formalize, regulate and train chainsaw millers • Design regulations for commercial use and conservation forestry for community forests • Provide legal, technical, managerial guidance and assistance to communities, chainsaw millers and concessionaires • Enforcement
c) Reduce shifting agriculture by increasing the area of land under permanent agriculture	• Improve access to finance, access to inputs (availability and e.g. subsidies) and access to markets • Increase value adding activities • Provide technical assistance on modern agricultural practices and conservation agriculture
d) Develop industrial oil palm plantations in an environmental and socially responsible way	• Implement international/national standards for conservation of HCS and HCV forest. • Establish the set-aside HCS/HCV forest as conserved areas, with associated protected area planning and management activities. • Provide incentives and alternative livelihoods to communities in and around plantations to relieve pressure on set-aside forest.

Implementation costs depend on the scale of implementation; i.e. how many households will be targeted or how big an area will be covered by the REDD+ activities. The potential scale in terms of area was derived from the most recent land cover assessment (GeoVille, 2015) and land use as identified above.

The estimated REDD+ programmatic cost over 25 years is 1.7 billion USD (see Table 5). The establishment and maintenance of PAs alone is estimated to cost 750 million USD, constituting over 40% of the total cost.

On a per hectare basis sustainable forest management (SFM) is the most attractive option with an estimated annual cost of < 10 USD/ha. Regulated access to forests for timber production will give these forests a certain status of protection while generating revenues. Interventions targeting the agriculture sector are comparatively expensive with

annual costs in the range of 30 USD/ha but are highly complementary to forest conservation and have the potential to contribute to the economic development of Liberia.

Table 5 - REDD+ program cost and potential emission reductions

Strategy	Area		Program cost1		Average annual emission reductions1
	thousand ha		million USD	USD/ha*a	t CO_2/a
a) Complete and enforce a network of Protected Areas	Current area	200	750	24	Annual: 800,000 Total: 20,000,000
	Additional area	1,000			
b) Maintain logging and other extractive forest uses at sustainable levels	Current	1,000	520	9	Annual: 1,600,000 Total: 40,000,000
	New	1,300			
c) Reduce shifting agriculture by increasing the area of land under permanent agriculture	Agroforestry tree cash crops	90	95	21	Supporting emission reductions in a) and b); Carbon sequestration may be possible
	Commercial food crop production	200	340	34	
d) Develop industrial oil palm plantations in an environmental and socially responsible way	Current	30	5	12	Carbon sequestration may be possible if oil palm is developed on non-forest land only
	Additional area[2]	400			
Total	Forests	3,500	1,710	N/A	60,000,000
	Agriculture	**720**			

[1] Program cost and emission reductions are calculated for a timeframe of 25 years (common length for concession agreements). Annual cost per ha will be higher to begin with, and then gradually reduce with improving management standards and capacities, and additional areas included in the activities.

[2] Only ca. 75% of the total concession area are expected to be developed into oil palm plantations.

Potential REDD+ benefits

The CBA results are largely dictated by estimates of private profit and changes in carbon stocks / CO_2 emissions. However, the implementation of REDD+ can create other benefits which tend to be 'non-market' benefits and therefore are hard to measure. Nonetheless these can be important to the overall weighing of net benefits and the public good. Environmental benefits other than climate change mitigation are, for example, the conservation of biodiversity and protection of soil and water resources. Examples for socio-

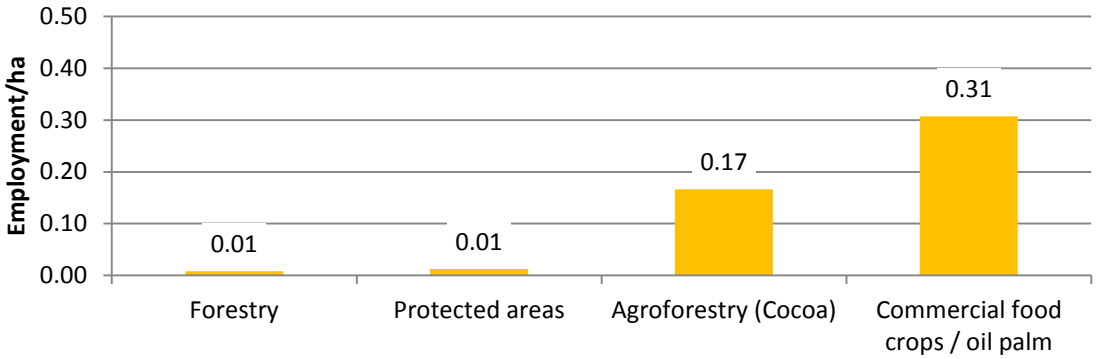
economic benefits are climate change adaptation, economic development and improving food security.

Conversion of currently not utilized forest areas will result in net emissions. However, these can be reduced significantly by giving forests a protected status either as PA or in form of logging concessions (e.g. FMC and CFM) thus reducing deforestation. The financial net-benefit of REDD+ is difficult to quantify, given that costs are highly dependent on the selected strategy and scale of implementation. Currently the scale for results-based payment for emission reductions is limited (e.g. FCPF Carbon Fund, German REDD+ Early Mover Program and Norway). Assuming a price of USD 5/t CO_2 (as in the Emissions Reduction Purchase Agreement (ERPA) with Costa Rica and currently paid by the FCPF Carbon Fund) the implementation of Protected Areas as well as sustainable forestry at full scale is likely to result in a substantial net-cost (Table 6), even when lowering the average management costs for PAs considerably. However, in particular investments in sustainable forestry will ensure continued benefits from forests for the country for future generations; therefore, the combination of PA with forestry (e.g. as buffer around PAs) should be explored.

Table 6 - Potential REDD+ benefits

		Protected areas	Forestry
Emission reductions	Million tCO_2	20	40
Implementation cost	Million USD	750	520
REDD payments USD/tCO_2 $5	Million USD	100	200
Net-deficit	Million USD	- 650	- 320

Socio-economic change is measurable as, for example, part of the population gainfully employed, per capita income, agricultural yield, and number of food secure households; but is influenced by a variety of factors going well beyond REDD+ measures such as population growth and development of markets. Significant gains in yield and subsequently economic success can be generated by improving agriculture standards and creating an enabling environment. Thus, in the long term (government) investments into agriculture will be paid back in the form of tax revenues and reduced need for aid in rural areas. A comparison for the potential gain in employment is presented in Figure 17 as number of people employed in a given land use. Both forest conservation and large scale commercial forestry employ few people in comparison to smallholder agroforestry cash crops such as cocoa, which require approximately 17 people per 100 ha, and food crops which employ about twice as many again (assuming modern agriculture but not mechanized).



Employment stated is for improved management. Employment in agriculture includes self and informal employment. Land management relies on manual labor rather than mechanized systems.

Figure 17 - Employment generated in different land uses (Karsenty, 2007)

Environmental benefits can be quantified in terms of number of species or area of ecosystems preserved and area of watersheds protected (erosion, pollution); but are difficult to quantify in economic terms as – apart from very few exceptions – no markets for these services exist. Biodiversity and protection of water resources will be highest in undisturbed ecosystems. However, land uses retaining some of the original ecosystem structures (e.g. forestry and extensive agriculture) also retain part of their protective function. In the case of the above mentioned land uses high carbon stocks can thus be linked to protective function. However, the correlation does not apply to single species plantations such as rubber, oil palm and timber species such as pine and eucalyptus.

Conclusions from the Cost-benefit analysis

Strategic priority 1: Reduce shifting agriculture by increasing the area of land under permanent agriculture

Improved management of agricultural land will result in a clear net gain to farmers and investors. Additionally, agroforestry if implemented on degraded land has the potential to sequester carbon. Improved management of annual crops and related yield gains will contribute to reducing pressure on forests. However, considerable public sector investment will be required to change agricultural practices in Liberia.

Strategic priority 2: Maintain logging and other extractive forest uses at sustainable levels

Similar to forests in protected areas, sustainably managed forests can store a lot of carbon per ha and retain many of the other values inherent to natural forest (e.g. biodiversity and

water shed protection). Contrary to PAs, commercial forestry does create revenues making it very suitable to private sector involvement both at small (CFM) and large scale (e.g. FMC). Additionally, the financial burden on the government for implementation of sustainable forest management is considerably lower than forest conservation.

Strategic Priority 3: Complete and enforce a network of Protected Areas

Both carbon stock per ha and up-scaling potential are high, putting PAs high on the list of REDD+ strategy options. However, effective PAs in Liberia will be costly to establish and manage and do not collect revenues (other than potential REDD+ payments).

Strategic Priority 4: Develop industrial oil palm plantations in an environmentally and socially responsible way

Industrial oil palm developments can be beneficial for the country, provided that forest land and sensitive areas (e.g. near streams, wetlands) are excluded from development and that communities within the concession area truly benefit from the development be that as out-growers, through employment or in the form of community benefits. Communities should always retain enough farmland to ensure their livelihoods.

Recommendations for REDD+ strategy development

- **Potential REDD+ payments cannot not cover all investments and costs envisioned in the REDD+ Strategy.** Additionally, funding sources to meet these costs cannot, at this stage, be fully identified. The bi-lateral agreement with Norway for results-based payments provides one important source, and income from voluntary carbon credit schemes are likely within the next five years, although on a small scale. Accordingly, the potential REDD+ payments can only be seen as a trigger for a REDD+ friendly development pathway for the forestry and agricultural sectors, rather than the sole means to it.
- **REDD+ investments must be prioritized weighing the potential GHG emission reductions, cost of interventions and likely impact on the socio-economic development potential of Liberia.** For example sustainable forest management comes at low public cost (but high private sector cost) and can generate substantial GHG emission reductions in comparison to e.g. agriculture. Stimulating agroforestry crops as an alternative to shifting cultivation requires significant public expenditure but also creates multiple benefits – contributing to reduced deforestation and carbon sequestration and economic development in rural areas.
- **Effectively managed protected areas can be very expensive.** Cost efficiency can be improved by concentrating PAs on large areas. Wherever possible alternative revenue streams (e.g. biodiversity) should be identified.

- **Sustainable forest use can be a mechanism for forest protection.** SFM should be seen as an alternative and/or complementary approach to PAs, with the combination likely being less costly. However, if SFM is to have a protective function it must be supported by better regulations, enforcement and alternative livelihoods for people relying on forests (similar to PAs).
- **Private sector will carry a large share of the financial burden of implementing SFM, in particular in terms of reducing annual allowable cut to a sustainable rate.** To support the transition from current logging practices to more sustainable ones, more and better evidence regarding the impact of different logging practices on long term sustainability of forestry must be generated.
- **Agricultural intensification (including oil palm) increases profit per unit of land and can reduce the need for agricultural expansion** if combined with effective land use planning and a better legal framework and its enforcement.
- **The burden on REDD+ finance can be reduced by increasing reliance on private sector** in the outreach to farmers.
- **Community forestry is gaining increasing attention.** However, it is not a panacea and lessons learned from African community forest management must be taken into account. Considerable investment in capacity development will be required and a simple but effective standard for CFM must be developed.
- Lastly, the scenarios presented here must be constantly revised and adapted as new/more information becomes available as a basis for adjustments to the REDD+ strategy.

3.4.2 Feasibility analysis

Barriers to REDD+ implementation were examined along with the policies and measures that would be required to overcome these barriers. The purpose was to assess the feasibility of implementing the REDD+ strategy options. The assessment is based on information gathered during fieldwork in Liberia and consultations with organizations in the natural resource management and land use sectors. Particular attention was paid to institutional and governance barriers because financial and investment barriers have already been considered in the cost benefit analysis, while environmental and social barriers are discussed in the following section on the Strategic Environmental and Social Assessment.

Issues such as institutional capacity, governance and land tenure tend to be cross-cutting; potentially affecting the various strategy options in similar ways. The feasibility analysis therefore begins with the two basic types of intervention that are applicable to the REDD+ strategy options:

1. Providing alternative livelihoods and fostering economic development in communities to reduce their dependence on destructive uses of forests;
2. Effectively planning, regulating and enforcing the use of forest resources in the country.

Incentives and regulation, often referred to as "carrots and sticks" are the basic levers available to effect change.

Main barriers to changing livelihood practices

Agricultural alternatives to extensive shifting agriculture include developing more intensive and higher yielding cultivation on permanently farmed land. The main example of this in Liberia that is already promoted by national agricultural policy and supported heavily by international donors is the development of lowland "swamp" rice farming. As highlighted in the CBA, this is an expensive option and requires considerable technical and other support. Despite donors spending $35-50 million USD per year on rice farming, a review of the effectiveness of agricultural expenditure led by the World Bank in 2013 concluded that there had been no detectable increase in yield per hectare or land productivity[34].

Promoting tree cash crops (cocoa, oil palm, rubber) amongst smallholders is also a popular option that reflects current practices and which can provide a good mix of profitability and forest cover, according to the CBA analysis. It can reduce dependence upon subsistence agriculture and increase the profitability of land.

A third possibility, again well-recognized in the agricultural sector, is to increase the productivity of the existing farming practices. Through the use of artificial fertilizers or natural soil and nutrient enhancement methods, clearings in the forest can be cultivated for longer. This allows a longer time for the forest to re-establish (and sequester carbon) in the abandoned clearings. There is some experience of conservation agriculture in Liberia at project level, including a REDD+ pilot project in the Wonegizi[35] Proposed Protected Area and in the biodiversity conservation program for the East Nimba Nature Reserve36.

Non-agricultural alternatives include support for micro- and small businesses (trading, services and manufacturing) and the formalizing of industries such as pit sawing and charcoal production to improve productivity and sustainability. Improved technology can

[34] Orlowski et al (2012) Liberia: Agricultural sector public expenditure review, January 2013.

[35] Rothe (2015) Wonegizi Community-based REDD+ Project Plan Vivo Project Validation. Report to Fauna & Flora International, April 2015

[36] Arcelor Mittal (2015) Annual Report: Biodiversity programme for East Nimba Nature Reserve

improve the efficiency of production – e.g. portable sawmills or more efficient charcoal kilns. The use of land for charcoal and firewood lots can relieve pressure on natural forest.

Such strategy options, which aim to change land use practices by encouraging alternative forms of livelihood, typically face the following barriers in Liberia:

Lack of access to capital	• Absence of a national agricultural development bank • No access to commercial agricultural microcredit • Very limited access to entrepreneurial microcredit • Limited or no ability to provide loan collateral
Lack of experience with new techniques and business in farmers and rural communities	• Lack of organized agricultural, forestry and charcoal business institutions providing capital (or inputs) and technical know-how to farmers, pit sawyers or charcoal burners

Possible actions to overcome these barriers to livelihood alternatives are to:

- Stimulate access to rural and agricultural credit, e.g. by making low-interest, patient capital available to lenders and re-introducing a state-owned agricultural development bank
- Support rural capacity building on technical and business know-how by businesses and Non-Governmental Organizations (NGO)
- Fiscally support agricultural companies working on out-grower models (while safeguarding farmers' development opportunities)

These are all familiar types of development interventions, which highlights the importance of 'mainstream' agricultural and rural development to the achievement of REDD+ objectives. The scale of funding and the level of outreach and technical support that is available in mainstream agricultural and development projects is much greater than that which the forestry and conservation sectors alone can apply.

General economic development, the growth of jobs opportunities, services and infrastructure in less forested and more populated areas may similarly play an important role in relieving pressure on forests. In most cases, REDD+ financial support should be targeted at applying agricultural and development support for particularly forest-dependent communities, but in some cases, the most effective strategy may be to target places and markets that are outside the forest area but which create the demand for its products. For example, most charcoal is consumed in urban areas, so efforts to reduce consumption or shift to alternative sources should be aimed at urban rather than forest areas.

Barriers to the better regulation of forests

Conservation of carbon stocks – by establishing sustainable logging practices in forestry concessions, by completing the Protected Areas network and by conserving high carbon stock forest in palm oil concessions – requires a strong regulatory framework and an effective relationship between communities, government and industry.

Regulatory framework

Much progress has been made in the regulatory framework for forestry and environmental management in Liberia in the past decade. This is supported strongly by international donors, initially US-led through the Liberian Forestry Initiative and now driven particularly by the bilateral agreement between Liberia and Norway and the EU-funded Voluntary Partnership Agreement. From this experience there is a good understanding of the strengths of the regulatory framework and the remaining weaknesses. Necessary laws – or legislative amendments – are yet to be developed, there is no national policy and law governing carbon rights, nor is there a carbon accounting system, forest inventory or National Forest Monitoring system.

Implementation of policies and enforcement of laws

Existing forest laws are not always followed at national level – e.g. granting of logging concessions – or enforced on the ground – e.g. protection of Protected Areas. The challenges to forest governance in Liberia are well documented[37]. Yet good governance is essential for the integrity of the National Forest Monitoring System that is a vital component of a national REDD+ program. Liberia's progress with establishing the laws, systems and institutions for the verification of legal logging (the FLEGT-VPA) is important in terms of establishing a framework that is relevant to REDD+.

Although forestry reform laws and policies tended to be developed in isolation in the past, this is increasingly less case now. For example, the preparation of the incoming national Land Rights Act prompted some adjustment to the regulations for the Community Rights with Respect to Forest Land law which preceded it. Similarly, the land inventory and dispute resolution procedures in the new Land Rights Act will set the framework for how this is to be done within the forestry sector and REDD+. The REDD+ strategy must therefore be outward looking and aware of the wider policy context.

[37] Making the Forest Sector Transparent Liberia VPA Transparency Gap Assessment 2012. SDI Global Witness. Liberia: Assessment of key governance issues for REDD+ implementation through application of PROFOR forest governance tool, funded by FCPF-World Bank, 2013

The technical and financial capacity in the bodies with a central role to play in land use planning, including FDA, EPA, Ministry of Land Mines and Energy and Ministry of Public Work is limited. There is a lack of budget for the recruitment and retraining of staff and technical knowledge/experience on forest inventories, forest management plans, Reduced Impact Logging (RIL) etc. is also limited.

There is also political opposition to the suspension or review of logging concessions, and to the expansion of Protected Areas. Consequently, the passage of legislation to establish each Protected Area is very slow.

The companies, communities and individuals who work in pit sawing and charcoal production are not collectively organized, and therefore difficult to engage. The 'barriers to entrance' to both industries are very low, especially for charcoal production, and they are therefore livelihoods on which poor and marginalized sections of society depend. Large and small companies generally benefit from the lack of regulation and so are likely to oppose regulation, and will seek the support of political representatives.

Liberia's experience of REDD+ pilot projects

Fauna & Flora International (FFI) implemented a community-based REDD+ pilot project from 2010 to 2014, funded by the Norwegian development agency, NORAD. The key objective was to establish two REDD+ demonstration sites through agreement with communities. After several years of failed attempts to do this in communities surrounding Sapo National Park in Sinoe County, the project succeeded with communities adjacent to the Protected Area of Lake Piso (South-West Liberia) and the Proposed Protected Area of Wonegizi (North-Western border with Guinea).

An evaluation of the project concluded that under the prevailing conditions in Liberia, REDD+ projects with forest-dependent communities could only be established in Protected Areas or areas designated as such.[38] Outside of these areas, where commercial interests in logging, oil palm, rubber and other extractive industries are intense and under regulated, the uncertain benefits of REDD+ could not compete.

The experience of this project, as well as almost ten years of community forestry work sponsored by USAID, is that community-based conservation is difficult, expensive and very time consuming. Nonetheless, the vital progress achieved towards a visible demonstration of REDD+ in practice and the valuable lessons learned point to the importance of continuing - and greatly expanding - the level of practical implementation of REDD+ activities. **It**

[38] Rothe (2013) Final evaluation of the Bridging the Divide Project of REDD Demonstration projects in Liberia. Report to FFI, December 2013.

suggests that a 'learning by doing' approach should be a core feature of Liberia's REDD+ strategy.

3.4.3 Strategic Environmental and Social Assessment (SESA)

Based on results of the SESA, potentially negative impacts of REDD+ options on environmental and social issues are described in Table 7, along with the positive contribution that REDD+ strategy options could potentially make to these issues.

Table 7 – Potential impact of REDD+ strategy options on environmental and social priorities

Social and Environmental priority issues, by type	Potential negative impacts of REDD+ strategy options	Potential positive contribution of REDD+ strategy options
A. Biophysical –		
A.1 Climate Change		REDD+ strategy options all have a positive impact on climate-change related issues.
A.2 Biodiversity Conservation		Positive impact on biodiversity conservation issues.
A.3 Water and Soils	Agricultural intensification results in water and soil pollution (e.g. through use of inputs such as pesticides)	Other policy options aimed at conservation of carbon stocks with have positive impact on soil and water quality.
A.4 Governance	Pressure for establishment of protected areas and for control of land uses such as pit sawing and charcoal could aggravate lack of stakeholder involvement.	The policy options and strategy as a whole will contribute to the "mainstreaming" of forest conservation and to the strengthening of institutions.
B. Micro-economic		

Social and Environmental priority issues, by type	Potential negative impacts of REDD+ strategy options	Potential positive contribution of REDD+ strategy options
B.1 Food security, Livelihoods and development potential	Policy options that constrain or discourage shifting agriculture and other forest-using practices (e.g. expansion of Protected Areas) may increase food insecurity if development of alternative livelihoods for affected communities is not achieved. Restrictions on charcoal production and pit sawing may reduce employment and incomes of poorest and most marginal people (landless, displaced people, women in subsistence economy)	REDD+ payments are a potentially significant source of funding to support alternatives to logging and other sources of income which degrade the forest resources that communities rely upon. Measures to increase productivity and develop alternative livelihoods may reduce dependence of shifting agriculture and improve food security and incomes.
B.2 Land	(as above): Restrictions on charcoal production and pit sawing may reduce employment and incomes of poorest and most marginal people (landless, displaced people, women in subsistence economy)	
B.3 Community cohesion	Changes to land use and distribution of REDD+ benefits could damage community cohesion if done without consent and unfairly.	
B.4 Governance	If not distributed fairly, REDD+ benefits could be a source of conflict.	Measures to achieve REDD+ strategy options support the strengthening of governance arrangements at all levels.
C. Macro-economic issues		

Social and Environmental priority issues, by type	Potential negative impacts of REDD+ strategy options	Potential positive contribution of REDD+ strategy options
C.1 Revenues (foreign)	The imposition of higher standards and tighter controls on logging operations will reduce short-term profitability to private operators and potentially revenue to government.	The scale of potential REDD+ payments is better known as a result of the bilateral REDD+ agreement with Norway. Improved forest management will improve the long-term viability and revenue-generating capability of the industry.
C.2 Supplies and Services for domestic market	Greater regulation of the pit sawing and charcoal sectors will result in increased prices for urban and rural consumers.	
C.3 Jobs	Stronger regulation of forestry is likely to suppress activity and hence employment. If REDD+ measures to improve community livelihoods and services are focused on densely forested area, they may result in increased population and hence increased pressure on forest.	Spending of REDD+ income on education, health, enterprise creation etc. will increase employment. A sustainable forestry sector offers long-term employment opportunities.
C.4 Governance (accountability and transparency)	Changes to land use and the introduction on REDD+ payments could increase land use conflicts unless done with consent and with a fair allocation of benefits and costs.	REDD+ policy options aim to improve governance of the forestry and related sectors and will include measures to improve regulation, transparency and enforcement.

4. Policy, Legal and Institutional Framework

The analysis in this report[39] provided a preliminary review of existing Liberian policies, legislation, and regulations to help ascertain Liberia's legal preparedness to proceed on the road to a full-fledged REDD+ program more broadly, and to implement the REDD+ strategy options proposed in the draft national REDD+ strategy specifically[40]. Currently, Liberian law does not address REDD+, nor has any such law been proposed. Thus, this assessment broadly asks the questions: can a REDD+ program – or key elements of such a program – be enacted under the existing Liberian legislative framework? If not, what are the key gaps, overlaps and challenges that must be addressed to enable Liberia to achieve its REDD+ goals?

This assessment concludes that certain aspects of REDD+ can, consistent with Liberian law, be implemented administratively without the need for new legislation. Other aspects of REDD+ will require either legal or regulatory amendments, and several of the issues identified also require policy direction. A REDD+ program enacted by way of a new law or legislative amendments would enable Liberia to design a comprehensive program and allow lawmakers to give clear guidance to implementing agencies, affected communities, the private sector, and other stakeholders. It would also provide greater confidence to donors and international investors. However, the legislative process is slow and resource-intensive and requires high levels of political support. Regulatory reforms could provide a sound legal basis on a somewhat shorter timeframe, but will require harmonization among key pieces of legislation and their implementing regulations. Finally, direction in the form of new policies, operational guidelines or codes of conduct, as enabled under existing regulations, could fill some critical gaps in existing planning criteria and processes. **Ultimately, it will be a political decision whether there is sufficient support**

[39] See Technical Annex F for the full report on the Policy, Legal and Institutional Framework Analysis (DR-2c)

[40] It is important to note that detailed review and revision of laws and regulations is being carried out through the EU Voluntary Partnership Agreement (VPA) project and is planned as a component of the Liberia Forest Sector Project (LFSP).

to conclude new REDD+ legislation or to address the gaps and overlaps in the existing frameworks to provide legislative backing for REDD+ implementation in Liberia.

4.1 Current policy, legal and institutional framework relevant to REDD+

4.1.1 International requirements for REDD+ readiness

REDD+ is a voluntary initiative established under the United Nations Framework Convention on Climate Change (UNFCCC) with a number of operationally significant, but non-legally binding decisions that have been adopted by the Conference of Parties (COP). **Despite the fact that the decisions are non-binding, it is clear that the requirements of these decisions do have some normative force.** Ultimately, the framework developed under the UNFCCC provides the requirements that developing countries are expected to meet in order to qualify for results-based payments under an international REDD+ mechanism. Thus, in practice, these obligations will determine which countries are able to access funds, providing a strong incentive for compliance.

Box 1 - The '4 pillars' of REDD+ Readiness under the Warsaw Framework

1) A National Strategy or Action Plan for REDD+
2) Mechanisms for promoting and supporting the Cancun Safeguards and establishing a Safeguards Information System (SIS) for monitoring and reporting on compliance with the safeguards;
3) A National Forest Monitoring System, including measures for complying with requirements on measurement, verification and reporting; and
4) A national forest reference emission level and/or forest reference level.

At COP 19 in 2013, a series of nine decisions were taken on institutional arrangements, methodological guidance, and REDD+ finance to guide the implementation of REDD+ at the domestic level. Taken together, these decisions are now commonly known as the "Warsaw Framework" on REDD+.[41] In addition to the four 'pillars' (Box 1), the Warsaw Framework also recognizes the need to establish effective institutional arrangements for implementing REDD+ and to address the drivers of deforestation and forest degradation with a view to

[41] This section and the categories identified as relevant to domestic REDD+ implementation draws upon previous work of the author in: Troell, J. and Banda, G. (2016). *Legal and Policy Frameworks Assessment for REDD+ in Malawi.*

reducing emissions and enhancing forest carbon stocks due to sustainable management of forests.[42] Each of these elements of the Warsaw Framework is described in Technical Annex F.

4.2 Domestic legal frameworks for implementing REDD+

Domestic governance frameworks set the 'rules of the game' for REDD+ implementation.[43] Policies set forth goals and objectives, laws create mandates and grant authority to execute those mandates, and institutional frameworks create the enabling environment for implementation and enforcement. In the context of REDD+, Liberia's policy and legal frameworks will be the vehicle through which many of the international requirements for REDD+ will be translated into tangible and specific national requirements.[44] The successful implementation of REDD+ will also depend on the existence of legal and policy frameworks that address broader governance challenges, such as corruption and meaningful stakeholder participation. These broader enabling frameworks will safeguard against negative social, environmental and economic impacts from REDD+. Moreover, well-designed legal frameworks for REDD+ have the potential to produce co-benefits in multiple sectors by creating more effective, accountable, and equitable governance approaches to natural resource management and promoting sustainable ecosystem-based approaches.

While REDD+ is still in its formative stages in most countries, there is an increasing wealth of experience in assessing the types of governance challenges and opportunities that are associated with its implementation. UN-REDD and FCPF have gathered much of this information in their partner countries and independent scholarship has documented these challenges and options for addressing them, as well. Taken together, these national experiences addressing the legal aspects of REDD+ indicate specific areas of domestic law that are relevant to REDD+ implementation.[45]

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[42] UNFCCC Decision 1/CP.16; Climate Law & Policy (2015). Unpacking the UNFCCC Framework for REDD+: the Requirements for Implementing REDD+ under the UNFCCC Climate Law & Policy Briefing Note, available at http://www.climatelawandpolicy.com/files/Unpacking_the__UNFCCC__Framework_for__REDD.pdf

[43] For the purposes of this assessment, 'governance' is defined to include policies, laws, regulations, institutions and processes for implementation and enforcement.

[44] Denier, L., et al. (2014), supra n. 15.

[45] These areas of domestic law were drawn from review of a number of scholarly papers on national experiences, as well as the following guidance documents: Costenbader (ed.) (2009). Legal Frameworks for REDD. Design and Implementation at the National Level. IUCN: Gland, Switzerland; Denier, L., et al. (2014), supra n. 32; UNEP (2015),

4.2.1 Legal definition of forests and REDD+ terminology

How forests and other forest-related concepts are defined in national laws, regulations, and policies is central to the operation of effective REDD+ programs.[46] Depending on how such terms are framed, forest loss and conversion may not officially be considered deforestation and effective monitoring of forest loss and conversion can be undermined.

The definition of 'forest land' provided in Liberia's 2006 National Forest Reform Law (NFRL) is extremely general: "A tract of land, including its flora and fauna, capable of producing Forest Resources, not including land in urban areas, land in permanent settlements, and land that has been in long-term use for non-shifting cultivation of crops or livestock in a manner that precludes producing Forest Resources."

This definition does not account for the density or diversity of tree species and thus changes to the structural composition of the forest under this definition cannot be measured. As it stands, the definition precludes the possibility of classifying 'Forest Lands' into sub-types based on physical attributes and species composition, as well as rigorous monitoring and measurement of changes to Forest Lands across management types. While UNFCCC decisions have not provided a definition of 'forest' or related REDD+ concepts, the IPCC guidance on reporting national GHG inventories provides a description of Forest Lands that includes three variables: [47]

- Minimum crown cover (expressed in percentage);
- Minimum tree height (expressed in meters); and
- Minimum area (expressed in hectares).

These variables may impact the assessment of what constitutes forest cover, the assessment of forest area change, and identification of nationally appropriate REDD+ activities to implement.[48] When determining a national definition for forests, it is also important to consider the availability and access to consistent or comparable data over time and the capacity to monitor small forest changes.

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supra n. 19; UN-REDD (2013). Legal Analysis of Cross-cutting Issues for REDD+ Implementation: Lessons Learned from Mexico, Viet Nam, and Zambia. FAO: Rome, Italy

[46] UNEP, 2015, supra n.19.

[47] IPCC 2006 Guidelines for National Greenhouse Gas Inventories, Vol. I: General Guidance and Reporting.

[48] UN-REDD, Technical Considerations for Forest Reference Emission Levels and/or Forest Reference Level Construction for REDD+ under the UNFCCC (2015).

In January 2016, Liberia adopted the following forest definition:[49]

- Minimum area: 1 hectare;
- Minimum canopy cover: 30%;
- Minimum height at maturity: 5 meters; and
- Industrial agricultural plantations are not considered as forest.

This follows the definition proposed in Liberia's R-PP. It is the narrowest definition of forest that is available within the UNFCCC guidance and hence creates the maximum area of 'non-forest' land on which forest can be removed without it counting as a loss of forest cover as measured for REDD+.

4.2.2 Stakeholder Engagement and Free, Prior and Informed Consent (FPIC)

A critical aspect of REDD+ is how the rights of forest-dependent communities and other stakeholders will be protected. In order to understand how these rights might be affected by REDD+, it is necessary to have meaningful mechanisms for engaging stakeholders in decision-making around its structuring and implementation. Stakeholders are defined as those individuals and organizations having a 'stake' or interest in forests and/or REDD+ and who may be positively or negatively affected by REDD+ decisions or activities. This includes government agencies, forest-dependent communities, private sector entities, civil society, research institutions, and others.

The costs and benefits of REDD+ will likely be felt most strongly by forest-dependent communities, as they rely on forests and their resources for their subsistence and livelihoods. In Liberia, where poverty and resource dependence are pervasive and inter-linked, forest-dependent communities must be allowed to actively participate in the decisions that will impact their rights to access and use those resources and shape the mechanisms employed to share the benefits that may accrue from REDD+.

In recognition of these rights, the UNFCCC Cancun Safeguards specifically emphasize the need to respect the knowledge and rights of local communities and to promote and support the "full and effective participation of relevant stakeholders, in particular, indigenous peoples and local communities."[50] In certain circumstances, the UNFCCC

[49] Adopted by consent amongst participants at the FDA-organized "forest definitions" conference in Lofa County, Liberia, January 25-29 2016.

[50] UNFCCC, Cancun Decision 1/CP.16.

requires that countries go beyond engagement to require that communities have the right not only to participate in decision-making but also to consent to or withhold consent for a proposed action.[51] FPIC applies to REDD+ when decisions relate to resource uses that could significantly impact the rights of indigenous people and, where relevant, other forest-dependent communities.

Although there is no universally accepted definition of FPIC, it is generally considered as the right to make free and informed choices about the development and management of their lands and resources. The basic principles of FPIC are to ensure that indigenous peoples and communities are not coerced or intimidated, that their consent is sought and freely given prior to the authorization or start of any activities, that they have access to information about the scope and impacts of any proposed developments, and that ultimately their choices to give or withhold consent are respected.[52]

Liberia's forestry policies and laws contain extensive requirements related to access to information and stakeholder engagement. The National Forestry Policy and Implementation Strategy includes among its objectives, "to ensure that all stakeholders participate in the formulation of forestry policies and in the conservation and management of the forest resource". Similarly, Section 3.1 of the 2006 National Forest Reform Law states that FDA shall manage forest resources "with the participation of and for the benefit of all Liberians." There is thus a clear commitment to broad engagement with all stakeholders in the management of Liberia's forests, reflecting the Constitutional guarantee of the greatest feasible public participation in the management of Liberia's natural resources (§7).

With respect to commercial forestry activities, FDA Regulation 102-07 on Forest Land Use Planning requires the FDA to secure FPIC from 'affected communities' in writing prior to designating a commercial logging area (§61(c)(3)). Regulation 104 also requires FPIC from Community Forestry Development Committees (CFDC) of all affected communities to negotiate social agreements with the winning bidder (§22(j)(1). **A notable gap is the failure to define FPIC in either the legislation or the regulations, leaving the procedural requirements for obtaining consent open to interpretation.**

Despite the solid legal foundation for transparency and the pervasive mandates for public participation and representivity in decision-making and management throughout the forestry sector legislation and regulations, communities and government stakeholders have expressed dissatisfaction with the implementation of

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[51] Id.

[52] Ward, T. (2011). The Right to Free, Prior and Informed Consent: Indigenous Peoples' Participation Rights within International Law, 10 NW J. Int'l Hum. Rts. 54.

public involvement in forest decision-making and management. Similarly, in auditing forestry concessions, the Liberia Extractive Industries Transparency Initiative (LEITI) has noted a consistent failure to undertake effective stakeholder engagement processes.

The recently conducted SESA for REDD+ in Liberia noted that several stakeholders throughout the country raised concerns regarding the inability of local leaders to effectively represent their constituencies in consultative processes.[53] According to the SESA Priorities Report, stakeholders pointed to social agreements signed by affected communities in FMC areas as an indication of the lack of knowledge and information held by community leaders. Apparently, these agreements were so similar in content that they appeared to be taken from a template. They also lacked sufficient benefits allocated to communities relative to the value of the resources, and failed to specify promised investments in community development. Stakeholders felt that the consultations relied on templates for the agreements, that discussions with community leaders was limited, and that the level of understanding regarding the value of the resources was not well understood by leaders representing community interests.[54] **This raises the question of how to ensure the representivity of community forestry institutions required under the CRL, the composition of which are largely left to the discretion of the community.** It also demonstrates the need for effective capacity building of community members and leaders with respect to the value of forest resources and the rights of communities under the existing legal framework.

Representatives of FDA and other stakeholders consulted for this Assessment also highlighted the capacity constraints of FDA as a critical challenge to effective engagement. FDA has the legal mandate to support communities in developing community forestry institutions, but lacks the personnel and technical capacity to do this effectively. One legal aspect of this issue is the question of whether third parties should be allowed to support communities and help build their capacity to participate effectively in creating and implementing community forest management institutions and plans. While it would appear to make sense to enable such support given the limitations on FDA's capacity, this might also make it easier for commercial interests to gain undue influence in the process and take advantage of communities' lack of capacity in negotiating favorable contracts through the process.[55]

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[53] SESA Priorities Report (2016)

[54] Id.

[55] USAID/PROSPER (2015). The Role of Third Parties in Establishing Community Forests. Policy Brief # 1 (June 1 2015).

4.2.3 Forest, land, and carbon tenure

Clearly defined and secure tenure rights for land, forests, and carbon are critical enabling conditions for REDD+ readiness. Tenure systems determine who can access and use which resources, under what conditions, and for how long.[56] Poorly defined forest tenure can undermine incentives for protection of forest resources and drive their over-exploitation.[57] Moreover, the quality of tenure rights – whether they are contested, enforceable, and long lasting – influence incentives for sustainable management of forest landscapes.[58]

REDD+ is premised on providing benefits to those who maintain or enhance forest carbon stocks in order to compensate for lost opportunities and incentivize good forest stewardship. This requires a clear understanding of who owns the land and resources in question (including carbon) and the ability of rights holders to exclude others from accessing and changing forest cover.[59] Rights holders must be able to be held accountable when they fail to fulfil the obligations under this results-based payment system. Moreover, a clear understanding of who holds which rights is the only way to ensure that all legitimate rights holders are included in REDD+ decision-making processes. If tenure is insecure, unclear, or in conflict, there is a real risk that powerful actors will usurp the rights and the resulting benefits. This is of particular concern on community-held lands, where informal rights holders can be accidentally or deliberately overlooked or convinced to cede their rights without a full understanding of the consequences.

Conversely, where REDD+ policies clarify, promote, and support improvements in forest tenure and forest management institutions, they can complement and enforce ongoing national reform processes for more sustainable and equitable outcomes for REDD+. It is important to note, however, that clear and secure tenure rights do not *per se* lead to such improvement, and much depends on the reform process itself.[60]

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[56] Voluntary Guidelines on the Responsible Governance of Tenure (VGGT), available at http://www.fao.org/3/a-i3920e/i3920e11.pdf

[57] Bolin et al., 2013.

[58] USAID (2012). Tenure, Governance, and Natural Resource Management. USAID Issue Brief, available at http://www.usaidlandtenure.net/sites/default/files/USAID_Land_Tenure_Natural_Resource_Management_Issue_Brief_0.pdf

[59] Larson et al., 2013.

[60] Bluffstone and Robinson, 2015.

Land tenure

To redress past inequities and confront the critical need for increased tenure clarity and security, a Land Commission was formed in 2009 to develop a comprehensive governance system for land allocation, use and management.[61] The Commission has proceeded with developing policy in four clusters: land rights, land administration, land use/management, and land dispute resolution. The Land Rights Policy was passed in 2013 and has formed the basis for a draft Land Rights Act (2014), which is still under review by the legislature. While the Land Rights Policy provides a strong foundation for clarifying and securing land tenure in Liberia, the legal basis for operationalizing tenure reforms must come from new legislation.

The 2013 Land Rights Policy establishes that the Government of Liberia is responsible for administering and managing land in the public interest (Box 2)**.** The Policy highlights the principle of tenure security as the basis for sustainable economic growth and development and defines four categories of land tenure: Public Land, Government Land, Customary Land, and Private Land. The Policy also recognizes the need for a cross-cutting Protected Areas category that can be established across land categories to conserve resources for the benefit of all Liberians. (§1.0). Perhaps most critically, the Policy clarifies and provides mechanisms for securing customary land and resource tenure. The clarification of customary tenure rights has significant implications for REDD+ implementation.

[61] Land Commission, Land Rights Policy, approved May 21, 2013.

Box 2 - The Land Rights Policy: Clarifying and securing customary land and resource tenure

The Policy recognizes and protects Customary Land rights as ownership rights that are equal to Private Land rights (§§6.1.1; 6.2.2). Historically, Customary Land rights have not been given the same legal status as private land rights. The Land Rights Policy abolishes any preference for private land rights and clarifies that ownership of customary land comprises the full "bundle of rights" normally associated with freehold tenure, including: use and possession, exclusion of others, own natural resources on the land (including forest resources), and transfer the rights through sale, lease, concession, gift, will, or other legal means (§6.2.2).

Deeds will be issued for customary land in the name of the community, but no deed is required to prove customary ownership (§6.3.1). The Policy emphasizes that Customary Land is owned by a community, "whether or not the community has self-identified, established a legal entity, or been issued a deed" (§6.2.1). This enables the protection of customary rights immediately and addresses the past issues of needing documentation to prove formal ownership. Ultimately, the process envisioned for provision of deeds in the name of the community will further strengthen tenure clarity and security.

Communities are responsible for self-identification and demarcating their boundaries through a participatory process (§§6.2.4;6.4.1). This process will further clarify and secure customary ownership by formalizing boundaries and requiring communities to create representative and accountable management entities for land management (§6.4). This will also support the national policy for decentralization by promoting local governance within a "framework of shared responsibility with the Government" (Id).

Customary Land Ownership includes ownership of natural resources on the land, including forests, carbon credits, and water (§6.3.2). This is particularly relevant to REDD+, as the Policy clarifies who owns forests and carbon credits and thus enables communities to engage in and benefit from REDD+ activities, although it leaves open the question of carbon ownership.

The draft Land Rights Act adopts the same four categories of land as the Policy and expands upon the rights, responsibilities and procedures for acquiring and alienating each category. Notably, Customary Land is not acquired from any person or Government, but arises "by operation of law based on the proven longstanding relationship of possession and protection between the individual community and the subject land" (Art. 32(5)). No deed or other written documentation is necessary to validate customary ownership, although the Act takes up the recommendation in the Policy to facilitate tenure security and clarity (and ease of administration) by requiring communities to self-identify and create a representative and accountable Community Land Development and Management Authority (CLDMA) to act as the body for land governance at the community level (Arts. 35-6).

Within Customary Land, the draft Land Rights Act delineates a number of sub-categories of land, including Forest Land and Protected Areas that should be created "based on customary practices" (Art. 38). Any land established as a Protected Area on Customary Land without the consent of the community constitutes a taking and must comply with the requirements for eminent domain (Art.42). Forest Lands are areas that are not residential, agricultural or protected and have timber as the primary cover (Art.43). Communities are entitled to harvest all timber and non-timber products thereon, in keeping with the NFRL and CRL. This last provision is important, as it harmonizes the approach to community use and management with the forest legislation. However, there are a number of issues that may arise from the potential for parallel implementation of these pieces of legislation.

Forest tenure

Pursuant to the 2006 NFRL and 2009 CRL, Liberia's forest resources are vested in the state to manage and regulate in trust for the people of Liberia, save for: i) forest resources located in community forests; and ii) forest resources that have been developed on private or deeded land through artificial regeneration.[62] The CRL also clarifies that communities own the forest resources within Community Forests (§2.2). The classification of customary land as Community Forests, however, requires the completion of a process that entails: i) submission of an application to FDA; ii) socio-economic and resource surveys; iii) demarcation of the land with FDA; and iv) adjudication of conflicts before conclusion of a CFMA between the FDA and the community. To complete this process, the community must also establish a representative forest governance institutional framework, including the election of a Council Assembly (CA) with an Executive Committee that oversees an appointed, five-member Community Forest Management Body (CFMB) that oversees day-to-day implementation of community forest management and represents the community in all negotiations and activities surrounding forest management.[63]

One overarching consideration is the careful balancing that the CRL attempts to ensure that communities maintain ownership (i.e., secure tenure) of their forest resources, but are still required to conform to regulations issued by the FDA. Under the Land Rights Policy and draft Land Rights Act, full ownership of forest resources is supported, which begs the question of how far the FDA may go in imposing regulatory requirements on those resources. This tension is highlighted by the inconsistencies between the CRL and its

[62] NFRL, §2.1; CRL, §2.2.

[63] Two members of the legislature from the relevant County are required to sit on the CA, but no elected officials are able to sit on the Executive Committee (CRL, Ch.3).

implementing regulations, which attempt to provide stricter guidance for communities entering into commercial agreements than was envisioned in the statute.

Overlaps between Land and Forest Tenure Legislation

A potential challenge related to the governance of community forests under the proposed Land Rights Act will be aligning the institutional mechanisms and mandates proposed for local land and resource management with those created under the CRL. Specifically, the LRA proposes the creation of a CLDMA to govern all land management, while the CRL mandates the creation of the CA/CFMB to manage Community Forests. If the draft LRA comes into effect, it would then be possible for a community to form a CLDMA and register community forest land without undergoing the required process under the CRL. The community would have the equivalent of fee simple ownership of the forests and thus the ability to manage them without the need for a CFMB. The role of a CFMA would be limited to conclusion of commercial forestry contracts, which must be approved by the FDA.[64] Failure to undergo the process outlined in the CRL could undermine the potential for communities to undertake and benefit from REDD+ activities because no comprehensive forest management planning process would be required.

FDA also has power to revoke authorized status of community forests if the forest resources are being damaged or if practices are breaching approved planning and policy documents or the CFA. This set of protections provides a sound basis for communities to qualify for REDD+ activities, which will require proof of sustainable management of forest resources and/or reduction of emissions through community management practices. The CRL and its regulations also provide a basis for nesting community-based REDD+ activities within a national REDD+ Program. It should be noted, however, that no specific requirements have yet been developed to encourage planning for REDD+ on Community Forest Lands, such as identification of High Conservation Value areas, or mechanisms for preserving high carbon value forest stands. Official forest management planning guidelines are currently limited to FMCs.

The completion of guidance by FDA on the content and process for concluding Community Forest Management Plans – as required under the Community Rights Law – could provide a window of opportunity to integrate REDD+ considerations into community forest management planning. Without such a process, and without the monitoring and assistance provided from FDA pursuant to the CRL, it would be challenging for communities to establish the qualifications for REDD+. REDD+ activities could still be possible through the establishment of Customary Protected Areas, but the scope for REDD+

[64] USAID/PROSPER (2015). Customary Land Governance: Options for Community Forests.

in the absence of a comprehensive forest management planning process would be significantly diminished.

Overlapping Tenure Claims: Community Forests on Concessions

Another key set of issues related to land and forest tenure is the potential for conflict between communities claiming rights to forest land where those claims overlap with existing concessions, Protected Areas or Proposed Protected Areas. Approximately 37% of the forest land in Liberia is allocated for commercial concessions.[65] Forestry (logging) concessions cover almost 30% of the total forest area and together, the land designated as Protected Areas and as Forest Management Contracts contains approximately 50% of the most dense and most biodiverse forest.[66] Given the breadth of coverage of these areas, there is a high likelihood that several community forests will overlap with concessions and PAs (and PPAs).

Overlapping Tenure Claims: Community Forests on Protected Areas and Proposed Protected Areas

The 2006 NFRL made a commitment to placing 30% of Liberia's forest estate under protected area status (§9.1(a)). More recently, the 2014 Letter of Intent signed between the Governments of Liberia and Norway includes in its agenda the operationalization of this commitment by 2020.[67] Existing PAs are considered Government land. This is reinforced by the provision in the draft Land Rights Act that includes conversion of any Private or Customary Land to PA status is considered a 'taking', or exercise of the Government's eminent domain powers, and triggers the requirements for negotiation and compensation (Art. 42.5). The potential for conflict is where the expansion of the Protected Area Network essentially removes large tracts of forest lands from the possibility of being claimed as Community Forests. Even if these lands could be claimed as Community Forests pursuant to the CRL, their status as Protected Area could limit the range of ownership, use and management rights available to communities.

Carbon tenure

[65] LTSI (2016). REDD+ Strategy Options DR-2b Report submitted to FDA, March 2016.

[66] Id.

[67] Letter of Intent between the Government of the Republic of Liberia and the Government of the Kingdom of Norway on "Cooperation on reducing greenhouse gas emissions from deforestation and forest degradation (REDD+) and developing Liberia's agriculture sector" (signed Sept. 23, 2014).

There is currently no clear or commonly accepted definition of carbon rights[68] under international law or the international UNFCCC policy framework for REDD+. While the current UNFCCC framework for REDD+ makes no specific mention of carbon rights, it does 'request' State Parties to address land tenure issues when developing their national REDD+ strategies, and it does establish some other guiding principles that are relevant to the way that countries will develop their framework for carbon rights (e.g. safeguards).[69] Only a few countries have introduced a legislative scheme defining carbon rights.[70]

Carbon rights could be vested in governments, land owners, forest users, or exist as separate property (where a carbon right is 'detached' from other land and resource rights to facilitate carbon trading). The ownership of carbon rights can affect how carbon benefits are managed and shared between stakeholders.

Carbon is deemed included in the broad definition of 'forest resources' in the Forestry Reform Law and covered under the CBFM agreement. Forest resources is defined as "all natural resources, whether biomass such as plants and animals or non-biomass such as soil and water, as well as the intangible services and values present in forestlands or other lands devoted for forest purposes".

4.2.4 Community forestry and REDD+

Over three decades of implementing community forest management approaches worldwide have shown that, on balance, forests under community ownership and management have

[68] The term 'carbon rights' is generally used to refer to the right of a person or group to the legal, commercial or other benefit, whether present or future, generated by exploiting the forest carbon.

[69] Conference of Parties, The Cancun Agreements: Outcome of the work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention, COP Decision 1/CP.16, UNFCCC, 9th plenary meeting, UN Doc FCCC/CP/2010/7/Add.1 (15 March 2011) [72].

[70] For example, each State and Territory in Australia has introduced legislation clarifying the ownership of carbon rights. There is also a national scheme which enables the generation of forest carbon offsets which can be used within Australia's Emissions Trading Scheme which commenced on 1 July 2012: *Carbon Credits (Carbon Farming Initiative) Act* 2011. Vanuatu also has carbon rights legislation in the form of the *Forestry Rights Registration and Timber Harvest Guarantee Act* 2000 (also known as "The Plantation Act"), although this legislation only applies to leased land. It is understood that Vanuatu is considering repealing the Act to replace it with a more comprehensive framework for carbon rights due to the fact that it appears to have been introduced without sufficient community or national consultation and does not appear to have been used.

better ecological outcomes than state-managed forests.[71] Livelihoods outcomes are also generally more positive under community ownership, but the correlation is less definitive.[72]

Community forestry is at the heart of the Liberian legal framework governing forest resources. In recognition of the high level of dependence of the majority of Liberians on forests and their products and services, the 2009 Community Rights Law (CRL) grants full ownership rights of community forests to local communities (§2.2). The CRL also establishes that the FDA has regulatory oversight of these forests and sets out a series of institutional and planning requirements for communities to officially establish their tenure claim to Community Forests. The Regulations to the CRL further elaborate these requirements into a 9-step process for completing a Community Forestry Agreement with the FDA as a prerequisite to taking over the use, management and control of community forests pursuant to a management plan approved by the FDA.

One issue that was raised consistently by stakeholders interviewed for this assessment and throughout the literature is the complexity of this process and the burden in terms of time and resources that the process places on both the FDA and forest communities. The requirements were developed during the post-conflict period in Liberia and were a prerequisite to the lifting of UN sanctions on timber exports. There was thus a premium on strict and detailed procedural requirements that would provide every protection for communities and enable capacity building through a longer process. In retrospect, some stakeholders feel the burden is too high and that the CRL and its regulations should be streamlined to more closely reflect the support role that FDA should be playing and minimize the regulatory requirements on land that is 'owned' by the communities as stated in the CRL.[73]

Another key legal issue related to community forestry is the apparent disparity between the CRL and its implementing regulations. As noted above, there are some concerns that the Regulations extend FDA's regulatory authority too far and undermine the CRL's assertion that communities have ownership rights to community forest lands. The counter-argument, at least with respect to the regulatory requirements for concluding a Community Forestry Agreement, is that the FDA is only regulating how forest resources on

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[71] USAID (2012). Devolution of Forest Rights and Sustainable Forest Management Volume I: A Review of Policies and Programs in 16 Developing Countries. USAID: Washington, DC, USA.

[72] Id.

[73] An initial assessment of the CRL Regulations noted that the ability of the FDA to regulate access, management and use rights was contrary to the spirit of the CRL itself. The CRL states that community ownership rights exist based on historic occupation and practice, and the process introduced in the Regulations undermines that statement. USAID (2011). LCRFP Final Evaluation.

community forest lands are managed. Once the Community Forest Management Plan is approved for meeting "technical specifications based on regulations and guidelines," the community gains full management rights and the FDA is limited to monitoring and enforcement of the Management Plan.[74]

4.3 Policy, legal and regulatory gaps

Liberia's national REDD+ strategy will be based on a number of strategic priorities and options for addressing those priorities. While REDD+ implementation will require attention to the diverse set of policy and legal issues discussed in Section 4.2 of this assessment, it is also important to understand what specific policy and legal issues need to be addressed immediately to enable the implementation of the national strategy priorities and options. This section draws on the analysis from the earlier sections and provides a more focused discussion of the potential gaps, overlaps and other challenges to implementing the Priorities and, where possible, the specific REDD+ strategy options, which are set out in Section 3.3.

The need for an integrated approach to land use planning and management will play a critical role in providing practical options for individuals and communities relying on these currently unsustainable livelihoods options. This, in turn, will be impacted by the evolving land tenure and land use policies and laws that must be aligned more closely with forestry laws and regulations to ensure a comprehensive and sustainable approach is taken to managing forests on community lands. Throughout the development of the regulations, it will also be critical to ensure active and meaningful participation of the stakeholders who depend on these activities for livelihoods to address the challenges that will otherwise present obstacles to implementation and enforcement. Finally, while policies across the relevant sectors are rarely in conflict, there is great room for improvement in coordination and need for workable mechanisms for joint implementation of policy goals between agriculture, energy, mining and forestry sectors.

4.3.1 Strategic Priority 1: Reduce forest loss from pit sawing, charcoal production and shifting agriculture

The first strategic priority focuses on regulating key drivers of deforestation and forest degradation: pit sawing, charcoal and shifting cultivation. All three of these drivers also are important aspects of current livelihoods strategies for many Liberians, so a careful balance needs to be struck between regulation of these activities to avoid deforestation and forest

[74] USAID/PROSPER (2015). "Addressing the Shortfalls of the Community Rights Law: Amend or Adapt?" Policy Brief No. 2.

degradation, and providing options for entering a more formalized market, as well as for alternative livelihoods/income options. The Liberian Government has recognized the need to formalize and manage the impacts of these sectors, and is currently drafting regulations to govern charcoal and pit sawing.

The drivers listed below are all inter-related. Degraded areas are generally more susceptible to extraction for charcoal and when most woody materials are cleared, to shifting cultivation.[75] This demonstrates the linkages between pit sawing, charcoal and shifting cultivation and highlights the need for integrated policies and approaches to addressing the inter-related nature of these livelihoods. Similarly, the impacts of roads on making areas accessible for clearing imply the need for coordination and policy integration with the Ministry of Transport. It will be critical for FDA to note the existing policy linkages (and gaps) to build support for more effective coordination under the REDD+ Implementation Unit.

Shifting Cultivation

Shifting cultivation is the primary livelihood activity of the majority of rural population and often takes place in high canopy forests, as these areas are preferred due to soil fertility. While the practice rarely provides for more than subsistence livelihoods, alternatives are limited by a number of factors, including: poor infrastructure, limited expertise, costs of inputs, access to markets and long-standing cultural practices.[76] As noted in the REDD+ Strategy Options, one mechanism for reducing the impact of shifting cultivation would be to increase area and productivity of non-forest land under permanent food and cash crops. In addition to the challenges noted above facing all alternative livelihoods options, numerous studies point to the lack of information available and the limited research into the viability of permanent agriculture. In particular, tree crops and agroforestry may be more suitable alternatives given the quality of soils in some areas of Liberia.

To facilitate the implementation of this strategic priority, it will be critical to facilitate closer coordination between the FDA and the Ministry of Agriculture to identify realistic, equitable and data-driven policies that account for forest sustainability, livelihoods and food security priorities. The current Food and Agriculture Policy and Strategy (FAPS) has a number of provisions that are relevant to these goals, and specifically

[75] USAID/PROSPER (2015). "Addressing the Shortfalls of the Community Rights Law: Amend or Adapt?" Policy Brief No. 2.

[76] SESA Priorities Report, *supra* n.

promotes the establishment and enforcement of appropriate policy instruments to ensure environmental protection from agricultural and related land use activities.

A specific coordination mechanism between the EPA, FDA and Ministry of Agriculture could help further these policy goals and develop integrated approaches to achieving them. This could either be done under the auspices of an existing mechanism, such as the Environmental Policy Council, or take the form of a more focused and specialized coordination mechanism that would engage policymakers from the sectors under the auspices of the REDD+ Implementation Unit. It will also require meaningful participation of communities or their legitimate representatives (e.g., CFMBs, where they exist) in these discussions to ensure both the monetary and non-monetary values of forests to communities are accounted for and that options for alternative livelihoods take into account the priorities and preferences of, as well as the challenges facing communities who are often struggling with food security and extreme poverty.

Charcoal

Charcoal represents a significant driver of deforestation and forest degradation in Liberia, but the informal nature of the sector means that its precise impacts are difficult to quantify. An estimated 95% of Liberia's population relies on fuelwood and charcoal for cooking and heating and it provides a significant source of income through its decentralized, informal, and mostly unregulated value chain.[77] The lack of accessible and affordable alternatives to charcoal means that, at least for the foreseeable future, the main mechanisms for managing the forest impacts of the industry will need to stem from: i) greater understanding of the precise extent, nature and impacts of the charcoal value chain; and ii) targeted regulatory oversight to minimize negative impacts and encourage more sustainable practices.

There is little regulation of charcoal currently, aside from an inconsistently enforced collection of L$ 2.50 (Liberian Dollars) by the FDA at the entry checkpoints to Monrovia.[78] A draft regulation, however, is currently being prepared by the Legal Department at the FDA.[79] Studies have noted the lack of data on household charcoal consumption and on the charcoal production situation or trends that would need to inform the drafting of such a regulation, so it is necessary to ensure that the regulation is reviewed

[77] USAID (2015). "Gap Analysis of Targeted Domestic Natural Resource Markets in Liberia," available at https://rmportal.net/library/content/gap-analysis-of-targeted-domestic-natural-resource-markets-in-liberia/at_download/file

[78] Id.

[79] While requests were made, the draft Regulation was not able to be shared with the authors for this Assessment.

and revised as new information becomes available.[80] This could be achieved partially though regulating to require data collection from charcoal transporters at checkpoints. **Additionally, it will be important to regulate and provide incentives that not only target end users (i.e., improved cookstoves) but also on more efficient production methods (e.g., high efficiency kilns), delineation of allowable harvesting areas, and requirements for replanting harvested areas.**

Chainsaw Milling (pit sawing)

With the ban on export timber in 2003, the chainsaw milling, or pit sawing industry in Liberia expanded to fill the vacuum left in the domestic market by commercial logging operations. The vast majority of domestic timber comes from this largely unregulated activity.[81] The practice is widely dispersed, including in Proposed Protected Areas.[82] Based on some estimates, the potential impact from pit sawing is actually more significant a cause of deforestation and forest degradation than logging on forestry concessions.[83]

In 2012, an attempt to regulate pit sawing was made with the drafting of the Chainsaw Milling Regulation #115-11 by the FDA. The Regulation recognizes the need to formally regulate chain sawing as a means for maximizing the socio-economic benefits while addressing and mitigating the negative ecological and environmental impacts of the practice. To achieve this balance, the Regulation created a permit system that would allow pit sawing in Community Forests or Private Forest Land, if the land was suitable for commercial use and registered with the FDA for chain sawing (§2(a); §6(d)).

The Regulation has faced opposition and its legality questioned on the basis that it was not reviewed by the Forest Management Advisory Committee as required under the NFRL. A revised version of the Regulation is currently being drafted by FDA.[84] **One major consideration in reviewing the detailed provisions in the existing Regulation is the capacity of FDA to implement and enforce this new permitting system.** One proposal to mitigate the additional burden would be to issue permits to communities enable them to

[80] Id.; Jones, B. (2015). "Social and Environmental Impacts of Charcoal Production in Liberia," Master's Thesis for University of Michigan, available at https://deepblue.lib.umich.edu/handle/2027.42/110987.

[81] LTSI (2016) Forest and land use change analysis (Task 2 report)

[82] Id.

[83] Id.

[84] No copy of the draft Chainsaw Regulation was made available to the authors. At time of writing it was being revised.

grant rights for pit sawing in certain areas. In this way, communities could be engaged for complementary enforcement.

Roads infrastructure

Roads correlate strongly with the exploitation and degradation of forest resources, acting as both an enabling mechanism that increases accessibility to markets and urban centers, and an indicator of land use conversion from forest to infrastructure when new roads are built.[85] Most of the road network in Liberia, and all in some rural areas, was built by logging companies to extract timber. These play a vital role in opening up the land for pit sawing, agriculture, settlement expansion, charcoal production, hunting, artisanal mining and other activities that lead to deforestation and forest degradation.[86]

The regulation of forestry roads is addressed in the 2007 Code of Harvesting Practices. The Code provides guidance on road planning to ensure that it minimizes the impact to the environment. While this process ensures that roads have minimal impacts on protected areas and take account of direct environmental impacts, no mention is made of potential cumulative or secondary impacts of forest roads, including opening the area to the destructive activities listed above. The Code does require a field inspection by the FDA, which could allow consideration of secondary impacts, but this would need to be specifically elaborated to ensure that these potential impacts were considered.

4.3.2 Strategic Priority 2: Reduce impact from commercial logging in all forestry concessions

While there is a solid policy and legal foundation for requiring high conservation standards across the various allowable commercial logging activities, there is no clear definition of what such standards should entail in the Liberian context, nor are there procedural requirements for ensuring that such a standard will guide the EIA, forest management planning, or even the identification of suitable forest land for commercial activities. As noted in the REDD+ Strategy Options draft report (Task 3), 'high conservation standards' is used as a general term because the appropriate standard needs to be defined, based on a review of the existing harvesting codes and the applicability in Liberia of the various standards for achieving protection of High Conservation Value and/or High Carbon Stock areas.

[85] LTSI (2016) Forest and land use change analysis (Task 2 report)

[86] Id.

From the legal perspective, Liberia has a strong foundation for requiring the protection of these areas and a framework for incorporating assessment and identification of HCV and HCS areas to be protected and managed within concessions. NFRL Regulation 102-07 on Forest Land Use Planning requires a National Forest Management Strategy (NFMS), which was created in 2007 to "outline the FDA approach to forest management, its long-term end-states, or goals, and the Authority's major forest management objectives for the following two years." The NFMS is based on the 2006 Forest Suitability Study, which categorized forest areas into either a) multiple sustainable use where both community and industrial management may be practiced, or b) conservation. The FDA have yet to update the NFMS, but such a process could integrate considerations of HCV/HCS to inform conservation suitability within commercial areas and provide new categories for management of those areas.

To facilitate REDD+ implementation, the HCV/HCS areas could be integrated into this identification process and count as exclusion areas or be managed according to certain requirements. This would require an amendment to the Code, but such an amendment could ensure that REDD+-relevant considerations informed the entire process, such as road building.

In addition to the Code, for FMCs, the FDA has also developed *Guidelines for Forest Management Planning*.[87] These also focus on the ability of commercial concessions to achieve "sustainable forestry" which is defined in the Guidelines as focusing on a "balanced, constant and sustainable production of forest products, especially in timber wood products," and includes measures to guarantee the long-term social and environmental integrity of the forest.[88] The Guidelines focus solely on FMCs and provide instructions on how to prepare forest management plans and Annual Operation Plans. They are meant to be reviewed and improved on by the FDA on a regular basis in consultation with diverse stakeholders.

The Guidelines could be revised to include provisions on identification and management (or exclusion) of HCV/HCS areas. Additional guidelines are under development for community forest management plans that could include the specification of managing commercial forestry in community forests larger than 1,000 ha to achieve sustainable logging standards as apply to FMCs. This specification would also likely require an amendment to the CRL and its regulations to provide the legal basis for FDA taking this regulatory measure. Additionally, TSCs should also have specific guidance that incorporates

[87] FDA (2009). Guidelines for Forest Management Planning.

[88] Id. at §1.

these priorities and limits the scope of allocation of TSCs near Protected and Proposed Protected Areas.

4.3.3 Strategic Priority 3: Complete and manage a network of Protected Areas.

The selection and application of standards for HCV/HCS areas to the proposed PAN would also ensure that these areas qualify for REDD+. The requirements would need to be incorporated into an amended Protected Areas Network Law, or into the draft Protected Areas Management Law (2014).

Additional legal considerations surrounding completion of the PAN relate to the potential for overlapping land tenure claims. Existing Protected Areas (PAs) are considered Government land, raising a potential for conflict where the expansion of the PAN essentially removes large tracts of forest lands from the possibility of being claimed as Community Forests. Even if these lands could be claimed as Community Forests pursuant to the CRL, their status as Protected Area could limit the range of ownership, use and management rights available to communities.

One option for addressing the issue of communities claiming rights within PAs would be to ensure that community consultations during the establishment of the PA – either through the EIA process or additional consultations required under the PFAN Law – **enabled communities to understand the implications of the process.** If the community agrees to enter into the process for establishing the CF pursuant to the CRL, these consultations could provide a mechanism for gaining the community's free, prior and informed consent with respect to the restrictions they are willing to put into place to qualify for a specific type of Protected Area status. Otherwise, if they do not agree, there could be a contingent arrangement for the community to receive compensation once they achieve Community Forest status pursuant to the CRL as if this were a case of eminent domain.

4.3.4 Strategic Priority 4: Prevent or offset clearance of high carbon stock and high conservation value forest in agricultural and mining concessions

In addition to forest concessions (and commercial activities on community forest land), it will be critical to conserve HCS/HCV forests within agricultural and to conserve or offset within mining concessions. In order to implement this Strategic Priority, Liberia will need to review the various types of standards and mechanisms for the application of HCS/HCV standards in the Liberian context, and then provide both policy direction and a regulatory framework for implementation. The FDA has broad legal authority to regulate forest resources under the NFRL, which could provide the basis for a new regulation without

amending the existing legislation.[89] This could include new priorities and criteria for location of future large-scale agriculture and mining concessions in relation to HCV/HCS areas.

Mining Law is being updated to include much higher standards of environmental protection, including taking into account competing land use priorities in consultation with other government agencies, as well as considering conservation needs prior to granting mining licenses. A zero-net deforestation policy or legal requirement could be incorporated into the draft legislation. In 2015, the World Bank commissioned a Roadmap for creating a national system for biodiversity offsets in the mining sector, which could provide a sound basis for implementing this policy. Key legal considerations will include the establishment of criteria that reflect HCV and HCS areas, ensuring that FDA has the legal authority and requisite capacity to implement such a system in partnership with the Ministry of Lands, Mines, and Energy, and the National Concessions Bureau, clarification of the existing and potential overlaps in forest tenure between communities and Proposed Protected Areas that would be incorporated into the offset scheme, and aligning any requirements with the Protected Areas Management Act.

4.4 Carbon rights options

This section introduces the concept of carbon rights, then presents a summary of the existing legal and policy framework related to carbon rights in Liberia followed by the options for defining carbon rights.

4.4.1 What are carbon rights?

Carbon rights are an emerging form of property in forest ecosystems that have potential value linked to the implementation of REDD+.[90] They can be defined as intangible assets, created by regulations or contracts that allow the recognition of separate benefits arising from the sequestration of carbon in the forests.[91] This includes two concepts: i) property rights to sequestered carbon (contained in land, trees, or soil); and ii) the rights to benefits that arise from the transfer of these rights (e.g. in emissions trading schemes). Due

[89] "The Authority may by Regulation require permission for non-commercial forest uses and may by Regulation control any activity involving Forest Land, Forest Resources, or Forest Products." NFRL, §5.1(d).

[90] Peskett, L. & Brodnig, G. (2011). Carbon Rights in REDD+: Exploring the Implications for Poor and Vulnerable People. World Bank and REDDnet.

[91] Feliciano-Robles, F. (2013). "Carbon rights: a central tenure consideration for REDD+." Presentation to Expert Meeting on Tenure in REDD+, FAO, Rome.

to the intangible nature of carbon, identification of land or forest ownership is not always sufficient to ensure ownership of the carbon stock in a forest.[92] There is thus a need to clearly define carbon rights and their relationship to land and forest tenure to ensure the alignment of incentives for forest protection with the potential for receiving benefits under REDD+.

4.4.2 Why define carbon rights?

Just as land and forest tenure rights define who can access and benefit from forest land and resources, defining carbon rights provides clarity and security surrounding their ownership and rights to benefit from their management and protection. The clarity and security of carbon rights, is contingent on a clear delineation of how those rights relate to existing land and forest tenure regimes. Provisions relating to land tenure, tree tenure, forest governance, environmental protection and indigenous rights can all affect how carbon rights are conferred and governed.[93] Under REDD+, it will also be necessary to define how individual or community rights to carbon relate to the national scheme for benefit sharing and the processes and responsibilities associated with this integration.

While it is thus possible to create rights to carbon as a 'new' resource to be regulated under REDD+, it is important to recognize that such an approach presents new complexities for implementation and enforcement to an already burdened forest administration. Additionally, stakeholders – particularly communities – likely have expectations that rights to the benefits from forest carbon will be directly linked to the ownership of the forests themselves. Understanding existing and evolving forest tenure rights and their implications for carbon rights as an ecosystem service that is linked to sustainable forest management will likely provide the most straightforward and equitable approach to ensuring that REDD+ is effectively implemented in Liberia. This is in line with the national Land Rights Policy, which states that the ownership of customary land should extend to ownership of natural resources on the land, including forests, carbon credits, and water (§6.3.2).

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[92] Feliciano-Robles, F. (2013). "Carbon rights: a central tenure consideration for REDD+." Presentation to Expert Meeting on Tenure in REDD+, FAO, Rome.

[93] Norton Rose Group, "Forest Carbon Rights in REDD+ Countries: a snapshot of Africa." Available at http://www.nortonrosefulbright.com/files/forest-carbon-rights-in-redd-countries-a-snapshot-of-africa-pdf-994-kb-32479.pdf.

4.4.3 Options for defining carbon rights and ownership in Liberia

Option 1 – Policy reform

The Government could develop a Carbon Policy that is consistent with the international standards on REDD+ and clarifies that existing legislation and regulations govern rights to carbon and the benefits emanating from REDD+. Policies are the general principles that guide government in its management of public affairs. Thus, while a carbon policy could clarify how existing legislation should be applied to guarantee the rights as interpreted under the policy, policies are not legally enforceable instruments and must be implemented through enforceable legislation or regulations. Clarification that carbon is included within the NFRL's definition of 'forest resources' and the ways in which this definition should be interpreted in light of the pending land rights legislation could be extremely useful, but again will not be legally enforceable. Additional existing policies would also require adaptation to align how forest carbon is addressed in the land, agriculture and mining sectors, for example.

Option 2 – Legal reforms

Prior to any significant national REDD+ developments there is need to clarify carbon ownership. This will therefore require that carbon rights are clearly set out in the relevant law, whether as an amendment to the NFRL and CRL or as a separate piece of legislation or new regulation. The law will also establish criteria that will determine if carbon rights are associated with rights to land, trees or other forest resources and whether these rights are automatically acquired when those rights are transferred. These legal reforms may be in the form of:

(a) Enactment of new legislation that is specific to REDD+ and carbon rights
(b) Amendment to existing legislation with a view to accommodate provisions relating to carbon, carbon ownership and carbon rights within existing legislation.
(c) Development of regulations under existing law such as the Forestry Reform Law to further define carbon rights and carbon ownership.

(a) Create new carbon rights legislation

Under this option, the Government would propose legislation that could, in principle, proceed on a clean slate, distinct from existing legal frameworks and institutions. The process of enacting carbon rights legislation is to develop a draft Bill through stakeholder consultation and based on a clear policy response. Following drafting, three readings occur in Parliament with debate by the Committee of the whole house and finally assent by the

President is required. This process is generally protracted and time consuming, at times lasting multiple years.

Unlike traditional regulatory approaches, which typically focus on a limited set of problems, creating new legislation provides the opportunity to adopt a broad scope that cuts across multiple sectors. Such an approach may be particularly necessary given the necessity of mainstreaming as well as vertical and horizontal policy integration. Accordingly, through the establishment of a new overarching legal framework, there is potential for increased breadth of coverage, facilitating the integration and a coordinated implementation of carbon rights in related legislation such as the Land Law, Mining Law, Agriculture Law and Forest Law. Further, standalone legislation offers Liberia the opportunity to address gaps and overlap in a more coherent manner.

(b) Legislative amendments

An alternative option to establish a carbon rights legislative framework is to amend existing laws. Amendments to the NFRL and CRL could be undertaken in concert and any additional changes to other sectoral legislation to ensure alignment with REDD+ provisions would also be necessary.

(c) Combined Approach

A third option to achieve an enabling legislative framework for carbon rights is a combined approach, which involves creating a new carbon rights law accompanied with amendments to existing legislation either through the law. As outlined above, creating legislation has benefits such as: i) broadly reaching provisions that support vertical and horizontal policy integration; ii) high-level coordination and coherence of response actions that target gaps and overlaps in jurisdictions; and iii) the ease of establishing new institutions with designated financial resources. However, even should standalone legislation be enacted, any effective inclusion and definition of carbon rights will require sector-specific legal frameworks. For instance, new legislation for climate change could conflict with, or go beyond, existing legal and institutional frameworks in any given sector. Therefore, taking into account the potential impact of standalone legislation on existing sectoral frameworks, a dual approach should ideally be considered whereby an overarching legal framework is established taking account of all necessary institutional and finance considerations, and a series of sector specific legislative and regulatory amendments are passed to establish specific carbon related issues.

(d) Drafting REDD+ or Carbon Rights Regulations

Legal reforms may be achieved by establishing regulations under the existing laws such as the Forestry Reform Law which gives the FDA the mandate to establish enabling regulations to implement the Forestry Reform Law. The advantage of establishing these reforms through

regulations is that regulations are signed by the Director and do not necessarily need to be laid in the Assembly. Thus the period within which this can be done is short as compared to enacting legislation. However, a disadvantage of using regulations is that they can only be used in so far as they are provided for and do not contradict existing legislation. The NFRL grants broad authority to the FDA to regulate "any measure that needs to be efficiently regulated under this law," which is broad enough to allow for a carbon rights regulation.

Assessment of the Options

The four options were assessed against the following criteria:

- **Efficiency:** is the approach cost-efficient?
- **Equity:** do all stakeholders participate in the process?
- **Transaction costs:** how costly is the approach?
- **Political/legal feasibility:** how feasible is it, considering the political and legal barriers?
- **Expected timeline:** how much time is it expected to take?

Table 8 - Assessment of options for carbon rights

Option	Efficiency	Equity	Transaction cost	Political/ Legal Feasibility	Expected timeline
Option 1 Create new Carbon Rights Law	Enacting new law is time consuming and costly. It involves bringing together relevant stakeholders and agreeing on issues.	The process of making a new law requires the participation of all relevant stakeholders.	The process of enactment of new legislation is costly as it involves a rigorous consultative process. The operationalization of the new law may also be costly as it may propose the creation of new institutions.	It is feasible to make a new law where there is political good will.	The process of enacting new legislation is usually lengthy and may take several years before the law is eventually passed. After enactment, it may again take some time before it takes effect, as it may need to be made operational by notice in the gazette

Option	Efficiency	Equity	Transaction cost	Political/ Legal Feasibility	Expected timeline
Option 2 Legislative Amendment	An amendment has the same effect as making new legislation. It is therefore time consuming and not necessarily cost effective.	Like a new law, it needs the involvement of all relevant stakeholders	Depending on the scope of the amendment, the transaction cost may be minimal if the amendment is minimal. Where the amendment may involve several other laws, accumulative the transaction cost may be high. Should the amendment also suggest the creation of new institutions the transaction cost will	It may require amendment to other laws that may be affected by the slight amendment to one law.	An amendment to a law has the same procedure of getting it enacted. It may take several years before it is eventually passed into law. After enactment, it may again take some time before it takes effect, as it may need to be made operational by notice in the gazette
Regulation	Regulations are quick to develop and do not necessarily require much resources to develop them. The technocrats in the agencies mainly do them in house and therefore costs are kept at a minimum.	The initiation and development of regulations are mainly undertaken by the agencies, in this case it will be the FDA, who may develop the regulation and have it signed and gazetted without necessarily involving the relevant stakeholders	Transaction costs are minimum as this is usually an internal arrangement and may not upset the entire system.	Legally feasible as a regulation must be within the context of the existing law. It may also be limiting where the existing law did not substantively provide for the subject hence introducing it by way of regulation might mean that it is *ultra vires* the substantive law.	Quick to develop, sign and publish. Does not require to be laid in the National Assembly. Once gazetted they become operational

Option	Efficiency	Equity	Transaction cost	Political/ Legal Feasibility	Expected timeline
Policy	They are time consuming and costly as they require the involvement of several stakeholders. Legal amendments or new regulations would still be required to provide enforceable rights.	It is multi-sectoral and participatory	The transaction cost may be in the involvement of the stakeholders and the implementation of the Policy.	It is mainly Government initiated and driven hence the political will is there.	Once adopted by the Cabinet it may become operational as it awaits further adoption by the National Assembly. It is easily developed if Government driven, may be done within a year.

4.5 Benefit sharing mechanism options

4.5.1 The basics of Benefit Sharing Mechanisms

What are REDD+ benefits?

The 'benefits' distributed through benefit sharing mechanisms may not always involve a direct monetary payment, and the total benefit delivered may be a combination of many different forms of benefits. There is also a need to understand the distinction between compensation and net positive benefits. In other words, compensation for opportunity costs (or other costs) is typically described as a 'benefit' to help ensure that REDD+ does no harm in addressing drivers of deforestation and forest degradation. While the term 'benefits' is broadly used, it is crucial for REDD+ stakeholders in Liberia to understand that if REDD+ benefits do not exceed real costs, there is no net positive benefit.[94]

What are REDD+ 'costs'?

In order to obtain the benefits listed above, REDD+ requires investments by the range of stakeholders, which are typically categorized as opportunity, implementation and transaction costs (Table 9)**.**

[94] Campese, J. (2012). Equitable Benefit Sharing: Exploring Experiences and Lessons for REDD+ in Tanzania.

Table 9 – Types of costs related to REDD+

Cost Type	Examples of potential REDD+ costs
Opportunity costs *(value of benefits foregone in refraining from land use changes that will result in GHG emissions)*	Value of foregone: • Physical or economic access to natural resources for livelihoods, subsistence use • Physical or economic access to natural resources for value-added activities (e.g. oil palm, rubber, timber harvesting) • Tax revenues
Implementation costs *(direct costs of implementing measures and policies to address drivers of deforestation and forest degradation)*	Activities across the REDD+ Strategy Pillars: • Land use planning • Land tenure reform • Governance reform • Forest protection, improved forest and agriculture management • Capacity building
Transaction costs *(costs incurred in complying with REDD+ requirements by the UNFCCC and the entity issuing results-based payments)*	• REDD+ program development • Measurement, Reporting and Verification (MRV) • Project design and development • Negotiating agreements (bilateral, multilateral) for input-based and/or results-based payments

Source: Adapted from Campese (2012)

Who participates in Benefit Sharing Mechanisms?

Examples of the roles for organizations involved in a BSM include:

- **Funder:** Source of funding can come from bilateral partnerships (e.g. Liberia-Norway Letter of Intent) and/or carbon markets (voluntary or regulated).[95]
- **Fund manager:** Normally a multi-donor trust fund (short-term) or national REDD+ fund (long-term) that disburses input-based or results-based payments, under the supervision of a multi-stakeholder governing body (with a financial management committee and technical committee).

[95] It remains unclear whether REDD+ will be included in Emissions Trading Schemes in the future, although the International Civil Aviation Organisation has recently announced that it is considering REDD+ credits in their carbon offsetting scheme under development.

- **Administrator:** Responsible for the administration, monitoring and operational management of the distribution of funds, and coordinating with the REDD+ Registry to avoid double-counting.
- **Implementation agencies:** At sub-national or project level, they are NGOs and groups that implement pilot REDD+ projects within a defined project/program area.
- **Beneficiaries:** Communities, households, individuals, NGOs, companies.
- **Third-party verifier:** An independent monitoring and audit group that is responsible for ensuring that the BSM is adhering to its mandate. Particularly important to verify compliance with established safeguards to ensure fair distribution of benefits.

How do we define types of Benefit Sharing Mechanisms?

Benefit Sharing Mechanisms can be classified based on the **scale** (national or sub-national) and the conditionality of the **disbursement** (input-based or performance-based).[96,97] Each combination can be relevant and applicable to the implementation of REDD+ in Liberia; for example, a sub-national input-based benefit sharing mechanism can allow pilot projects to demonstrate proof of concept of certain REDD+ activities, MRV (e.g. forest inventory, allometric equations, and forest monitoring systems) and benefit sharing arrangements (Table 10).

[96] Peskett, L. (2011). Benefit Sharing in REDD+: exploring the implications for poor and vulnerable people. REDD-Net. Retrieved from http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:Benefit+Sharing+in+REDD++#5

[97] PwC. (2012). Assessing Options for Effective Mechanisms to Share Benefits for REDD+ Initiatives. Washington, DC, USA.

Table 10 - Types of benefit sharing mechanism for a national REDD+ program.

		Description
Scale	National	Benefits distributed from a national to sub-national or project level, either directly to the end recipient (e.g. community groups) or through a sub-national intermediary (e.g. County Development Steering Committees).
	Sub-national	Benefits distributed from a sub-national to project level (e.g. CDSC to community groups) or between sub-national actors (e.g. benefits disbursed from County to Clan level).
Conditionality	Input-based	Beneficiaries agree to carry out specified actions, or refrain from certain actions, in return for up-front monetary (e.g. grants) or non-monetary (e.g. equipment, training) inputs from the benefit sharing mechanism.
	Performance-based	Distribute benefits on the condition that the partners receiving the benefits have achieved a predefined, measurable, and verifiable standard of performance against a baseline (e.g. have restored or protected X hectares of forest).

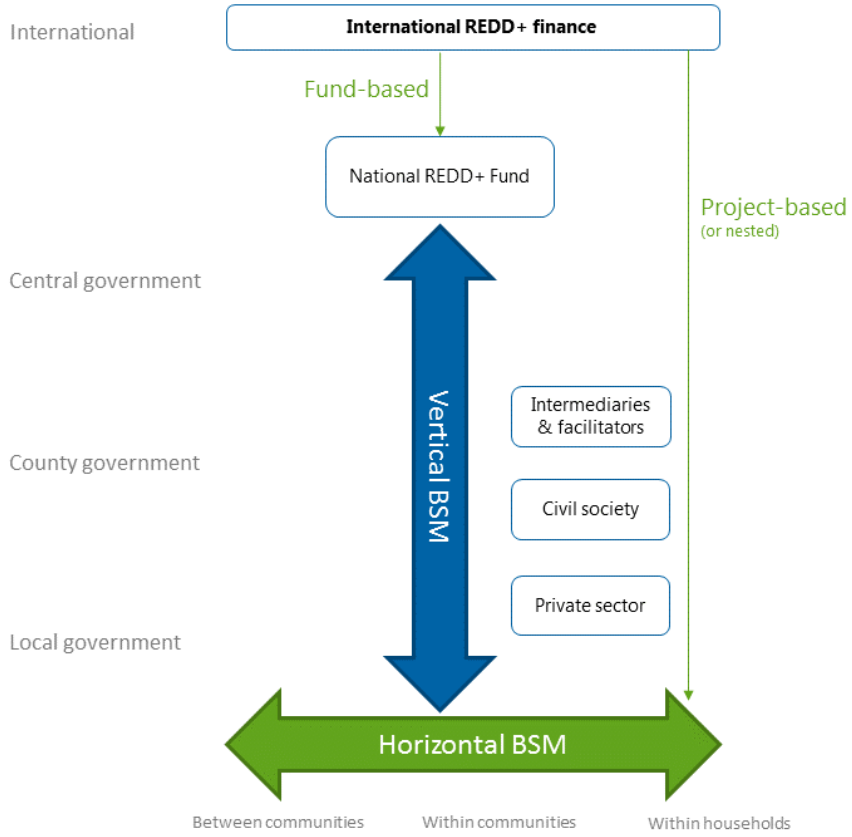
Adapted from PwC (2012)

How can benefits be distributed?

The distribution of benefits from a national REDD+ program can be based on one, or a combination, of three approaches: i) vertical allocation; ii) horizontal allocation; and iii) direct allocation.[98] The broad **vertical** arrow in Figure 18 illustrates the sharing of benefits between national level Government and non-governmental stakeholders down via regional government and intermediaries to the local level. Sharing benefits between and within communities and households and other local level stakeholders is called **horizontal** benefit sharing. This illustrates an important concern with a national REDD fund: if too many stakeholders demand a share of the benefits on the way down to the local level, incentives for local actions will be weakened.

[98] Lindhjem et al (2010). Experiences with benefit sharing: issues and options for REDD-Plus.

Figure 18 - Vertical and horizontal national benefit sharing distribution mechanisms for REDD+



Source: Adapted from Lindhjem et al. (2010)

4.5.2 Benefit sharing mechanisms in REDD+ countries

Lessons learned from Indonesia

A key component of the Indonesia-Norway bilateral agreement is the requirement for Indonesia to develop, establish and operationalize a national REDD+ financing mechanism. As a result, the Fund for REDD+ in Indonesia (FREDDI) was developed by Indonesia's National REDD+ Agency as a national trust fund with mechanisms to manage, mobilize and disburse funds through performance-based and input-based disbursements.

Challenges to implementation of FREDDI have a financial cost that must be factored into any calculation of net benefits. While certainly not unique to Indonesia, we must be cognizant of the complexity of government and international stakeholder consultation, as well as barriers to speedy implementation, the excessive costs of verification and monitoring,

the complexity of budgeting processes and financing mechanisms and the barriers to the transfer of knowledge and expertise.[99]

A longer-term vision of a benefit sharing arrangement should steer towards 'strategic investments'. For the most part, FREDDI is mainly a passive disbursement mechanism to channel funds from a source of funding – like the Letter of Intent signed with the Government of Norway – and input-based or performance-based disbursements. However, UNORCID argues that there is an opportunity for FREDDI to become an active investor and build the role of the domestic private sector in its financial portfolio as a 'strategic investment fund'.[100]

Funding windows to a benefit sharing arrangement provide flexibility in diversifying the 'mechanisms' used in FREDDI. Four windows have been defined to organize the long list of initiatives the FREDDI project pipeline: i) strategic programs, which is essentially national REDD+ readiness processes; ii) sub-national initiatives; iii) competitively-selected initiatives; and iv) small-scale community based initiatives.[101] Such windows could be applied to the Liberian REDD+ context so that the range or initiatives would be covered.

Lessons learned from Ghana

Benefit sharing is one of the major issues in the policy discourse in Ghana, and there are conflicting views and opinions about who has the right to share in benefits and what constitutes the equitable or fair distribution of benefits. Many of the existing benefit sharing schemes are widely perceived to be inadequate to address the benefit sharing needs for REDD+.[102,103] However, IUCN-Ghana has proposed three benefit sharing frameworks being adopted by the Cocoa Forest REDD+ Program (under the FCPF Carbon Fund):

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[99] UNORCID. (2015). The Funding Instrument for REDD+ in Indonesia: Making the Case for Financial Innovation. Jakarta, Indonesia. Retrieved from http://www.unorcid.org/index.php/unorcid-publications/research-studies/387-funding-redd

[100] Sari, A. P. (2014). FREDDI: Financing Instruments for REDD+ in Indonesia. Jakarta, Indonesia.

[101] Ibid.

[102] Dumenu, W. K., Derkyi, M. A., Samar, S. B., Oduro, K. A., Mensah, J. K., Pentsil, S., Obeng, E. A. (2014). Benefit sharing mechanism for REDD+ implementation in Ghana. Accra, Ghana.

[103] Ghana ER-PIN. (2014). Emission Reductions Program Idea Note - Cocoa Forest REDD+ Program.

- **Individual payment scheme**: individuals would be paid for the projects they undertake under the REDD-plus program based on performance.
- **Community managed revolving credit scheme**: revenues accruing from REDD+ activities will be put in a fund and managed by trustees decided on by the communities themselves. It is argued that the scheme has the potential to ensure the welfare of the wider community, and engender wider support and ownership for projects/activities executed by communities.
- **Hybrid scheme**: a higher percentage of revenue generated from REDD+ activities is paid to individuals and a smaller percentage to the revolving fund for the community. It is argued that the scheme takes into consideration the fact that there are different forms of land ownership in Ghana.

Lessons learned from Guyana

In 2009, the Government of Guyana signed a Memorandum of Understanding with the Government of Norway to provide up to approximately USD $250 million in support of performance-based payments to implement activities from Guyana's Low Carbon Development Strategy (LCDS). The funds are being managed through the Guyana REDD+ Investment Fund (GRIF), with the objective to provide results-based payments to be re-invested in projects which support the implementation of the LCDS.

The World Bank's International Development Association acts as Trustee and is responsible for receiving payments from contributors, managing the funds' assets and investments, transferring funds to partner entities for projects approved by the Steering Committee, and submitting regular financial reports.

4.5.3 Benefit sharing mechanisms in Liberia

Important benefit sharing arrangement lessons can be drawn from experience in Liberia, for example with agricultural, mining and logging concessions issued by the Government.

In Liberia, concessions have generated economic rent and it is from these that benefits are shared between the concessionaires and the affected communities. There are three main types of concessions granted in Liberia: agricultural, mining and forestry. Under these concessions, various forms of monetary and non-monetary benefits have been developed and applied.

National Benefit Sharing Trust

The National Benefit Sharing Trust Fund is established under the Forestry Reform Regulations 106-107. The Fund is managed by a Board that consists of 14 members representing government, civil society, private sector and donor organizations. They are

mandated to: i) hold in trust, manage, and supervise the land rental fee funds received for the benefit of Affected Communities; ii) receive and review applications for funds needed by Community Forestry Development Committees (CFDC) on behalf of Affected Communities; iii) disburse funds to Community Forestry Development Committees for projects/programs approved for the Affected Communities.

The Board has further developed criteria for the disbursement of funds to the CFDCs. Each CFDC receives a share of the Trust based on the number of hectares of land the affected community covers. The affected communities' funds in the Trust for projects that have been identified and agreed upon by the community. The Board is mandated to establish a Monitoring and Evaluation Committee and a Project Technical Review Committee to address accountability and adaptive management. The Monitoring and Evaluation Committee is further mandated to develop a Monitoring and Evaluation Plan for the Trust in order to determine the effectiveness of the trust and of the community use of funds. The committee is further required to provide a report to all CFDCs detailing the financial status of the Fund. This includes the Trust's Income and Expenditure for the respective quarter.

Conservation Trust Funds

Working with the Global Conservation Fund and the Government of Liberia, Conservation International (CI) is currently developing a trust fund for conservation in Liberia. The first fund of its kind in Liberia, it will initially focus on the East Nimba Nature Reserve, and only the investment earnings on the funds held in trust will be used. The initial target for the endowment is US$6.75 million, to support annual costs of US$220,000 per year for management of the reserve and US$120,000 per year for community development. The ultimate goal of the Government of Liberia and her partners is to ensure long-term financing for all of Liberia's protected areas. Completing the ENNR trust fund will be an important first step toward this goal, as the partners are designing this fund so that it can be built on to develop a national mechanism.[104]

Other conservation NGOs are piloting sustainable financing mechanisms within Protected Areas and community forests, and have published a Joint Document[105] to demonstrate how current efforts can provide valuable sub-national lessons learned on benefit sharing mechanisms applicable to Strategic Priority 3 (Complete and manage a network of Protected Areas).

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[104] CI, FFI, RSPB/SCNL, WCF & ACDI/VOCA (2016) Working together for conservation in Liberia

[105] Ibid.

Ebola Trust Fund

The Ebola Trust Fund was established as a response mechanism to the Ebola outbreak that hit Liberia in 2014. The President requested emergency spending from the National Legislature to intensify the Government's effort to contain the outbreak. The Legislature approved an allocation of USD $20 million and the Ministry of Finance was requested to establish the modality for the execution of the spending Authority. The Minister for Finance thus established the Ebola Trust Fund to pool resources from the Government, development partners and other interest groups. In order to ensure that the funds are used effectively and that the goal is achieved, the President authorized the Minister of Finance & Development Planning to appoint a Special Comptroller General and a small team of accounting, internal audit and procurement specialists to manage the Fund.

The Ebola Trust Fund was not established in the general manner or structure of funds in Liberia. Generally, legislation will establish a Fund under a legal framework, although the instrument to set up the Ebola Trust Fund is not clear on these provisions.

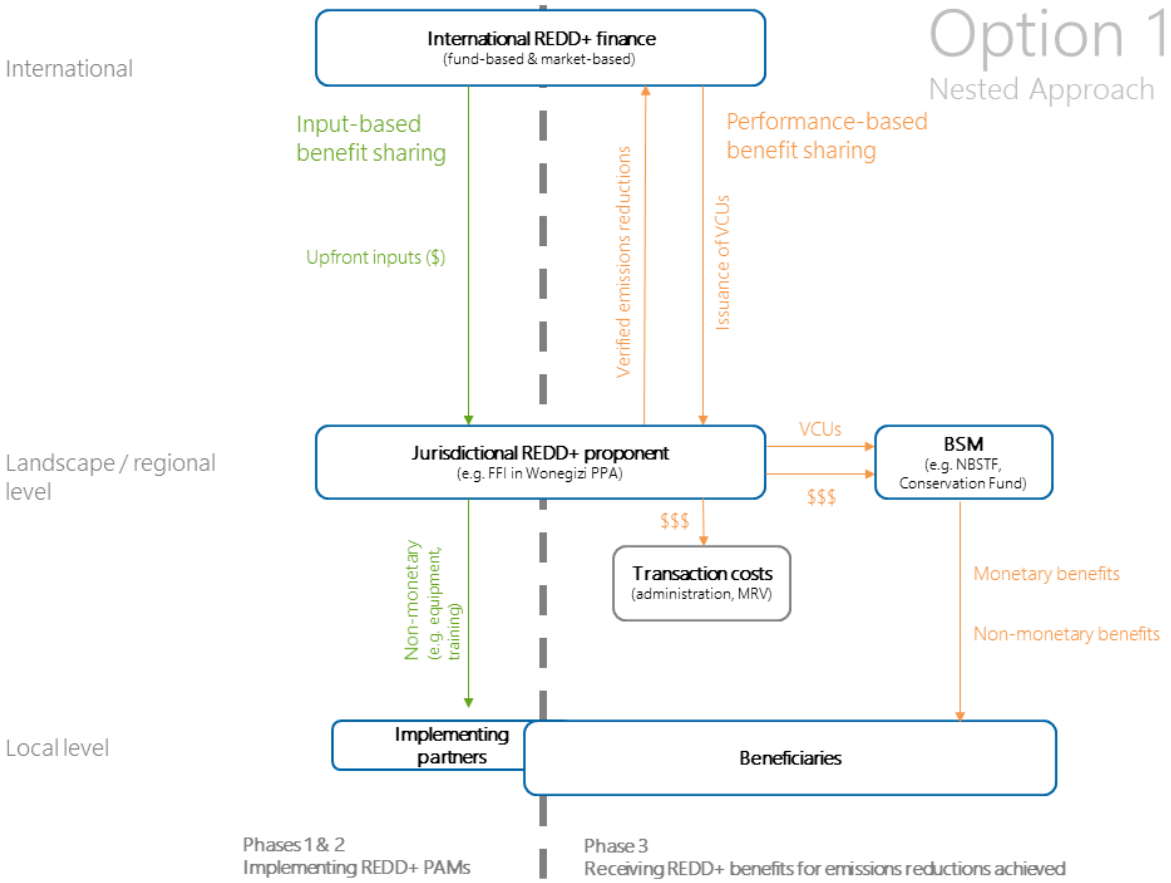
4.5.4 Proposed options for REDD+ benefit sharing mechanism in Liberia

Option 1 – Nested approach

Option 1 would be a combination of sub-national input-based and sub-national performance-based benefit sharing using either existing benefit sharing mechanisms (e.g. National Benefit Sharing Trust) or create new ones at sub-national level (e.g. Conservation Funds for specific PA/PPAs like East Nimba Nature Reserve and/or Wonegizi) (Figure 19).

As policies and measures are implemented (Phases 1 & 2) – and emissions reductions are measured, reported and verified (Phase 3) – the jurisdictional REDD+ proponent receives performance-based benefits likely in the form of payments per unit of emissions reductions (e.g. ton of CO_2 equivalent). A portion of that revenue will cover the transaction costs (administration, management, MRV) while the rest is channeled through one or many financial instruments, such as a Conservation Fund dedicated to one Protected Area or PPA, or existing mechanisms like the National Benefit Sharing Trust.

Figure 19 – Diagram of Option 1 with a nested approach at sub-national level.



Option 2 – National REDD+ Fund approach

Option 2 would entail the creation of a National REDD+ Fund for Liberia – similar to other countries like the DRC REDD+ Fund, GRIF (Guyana) and FREDDI (Indonesia) – by legal decree such as a Presidential Regulation (Figure 20). A Memorandum of Understanding could then be signed between the Government of Liberia and, initially, an interim Administrative Agent (e.g. multi-donor trust fund) that would act as the Trustee for the fund.

A **fund investment plan** would be developed based on the priorities of the national REDD+ strategy (e.g. what activities to be funded? Where are the priority areas?). Then, an **operations manual** would be developed to clarify how funds are disbursed, including governance structures, legal arrangements and fiduciary measures.

The National REDD+ Fund would need to be linked to a national system that measures, reports and verifies emissions reductions, and act as the financial instrument for receiving performance-based payments and disbursing them according to pre-determined criteria.

The disbursement mechanism could be organized into four 'Funding Windows' (FW) based on the various levels of REDD+ activities being implemented:

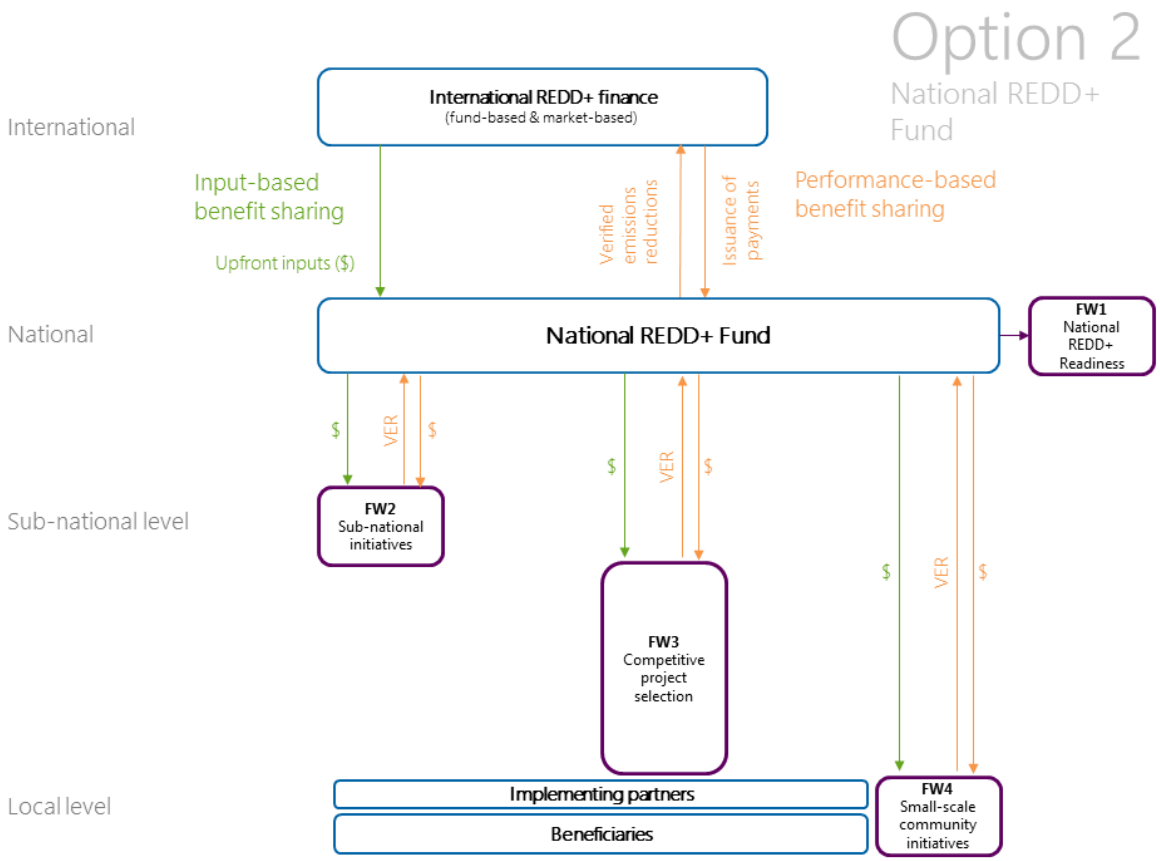
Funding Window 1: strategic programs on REDD+ readiness and national level policy and legal reform.

Funding Window 2: sub-national initiatives at landscape/jurisdictional REDD+ scale, similar to the three priority landscapes identified by LFSP.

Funding Window 3: competitive selection process for funding REDD+ initiatives.

Funding Window 4: funding targeted for small-scale community-based initiatives who may not have the capacity to compete in terms of capacity and scale.

Figure 20 – Diagram of Option 2 with a National REDD+ Fund approach.



Option 3 – Combined approach

A third option to consider is a phased combination of Option 1 (sub-national approach) and Option 2 (creation of a national REDD+ fund). First, benefit sharing mechanisms and models are tested at sub-national level with activities like the Liberia Forest Sector Project and the NICFI-funded FFI REDD+ pilot project. As lessons from these experiences are being generated, the initial steps to establish a national REDD+ fund – namely the development of a fund investment plan and operational manual – is put in place to eventually migrate nested BSMs into the national fund.

Experiences from other REDD+ countries like Indonesia and DRC have shown that Option 2 is a long process that requires extensive stakeholder consultations and negotiations within government ministries. Therefore, Option 1 would be focused on testing different models with the ultimate purpose of ensuring that a national REDD+ fund in Liberia is based on practical experiences to understand what works and what does not.

Assessment of REDD+ benefit sharing mechanism options

The three options are assessed against the following basic criteria:

- **Efficiency**: is the approach cost-efficient?
- **Equity**: do all stakeholders benefit? Are the benefits reaching the poorest and most vulnerable?
- **Transaction costs**: how costly is the administration of the funds? How decentralized is the distribution?
- **Political/legal feasibility**: how feasible is it, considering the political and legal barriers?
- **Expected timeline**: how much time is it expected to take?

Table 11 - Assessment of REDD+ benefit sharing mechanism options

Option	Efficiency	Equity	Transaction costs	Political & legal feasibility	Expected timeline
Option 1 – Nested approach	BSM can be designed to meet different sub-national REDD+ needs/drivers, and therefore be more efficient at targeting/rewarding the right actors. Risks of inefficiency if lessons learned from various jurisdictions are not being shared, and/or if there is lack of coordination (e.g. consistent use of spatial	Operating closer to community level may make it easier to ensure that all stakeholders benefit from REDD+ activities.	Each jurisdiction is required to develop its own reference level, MRV, safeguards, BSM, etc. Leakage monitoring may also be considered an additional cost compared to option 2.	Use of existing BSMs such as NBSTF and Conservation Funds is 'path of least resistance' compared to option 2. Existing political support for Liberia Forest Sector Project and other donor-led initiatives will allow for smaller-scale BSMs to be established and tested.	Jurisdictions with higher MRV capacity can move forward to Phase 3 more quickly (with proper leakage safeguards in place).

Option	Efficiency	Equity	Transaction costs	Political & legal feasibility	Expected timeline
	data, forest inventory methodologies, etc).				
Option 2 – National REDD+ Fund	Linked to a national MRV system, this option is more efficient for reporting emissions reductions and receiving results-based payments from international REDD+ financial mechanisms.	Linking funding to verifiable proxy measures of carbon abatement can provide beneficiaries with a clear target (and criterion for distribution). Risk of inequitable distribution of REDD+ benefits if national systems are too costly and safeguards are not monitored/enforced.	Administrative costs could be lower if BSM is centralized and uses efficient systems. MRV system linked to calculation of results-based payments can be costly to maintain (e.g. national forest inventory, national forest monitoring system).	Less certain on political support, which is essential for this option. Legal barriers also exist, depending on the route taken for establishing a national REDD+ trust fund.	At least 3-4 years away from being a reality, which will strongly depend on political and donor support.
Option 3 - Combined	Linking both options allows for scaling up from pilot project activities to national systems (MRV, BSM) in the most efficient way.	Jurisdictional BSMs can test various models to inform policy when designing a national mechanism.	Cost savings can be achieved during the transition from nested activities to a centralized national fund.	More realistic to use existing BSMs in the short term, with the medium-long term objective of consolidating BSMs into a national one focused on REDD+.	Allows for more immediate testing and learning.

Concluding remarks on assessment of options

Option 1 has the benefit of taking a pragmatic approach to developing a REDD+ benefit sharing mechanism by 'starting small' in terms of scale of area and number of actors, either by using existing BSMs or by creating project-scale ones (i.e. Conservation Fund created for East Nimba Nature Reserve). The main premise of Option 1 is that it is by implementing demonstration projects that one can show 'proof of concept' and address stakeholder concerns. With that, however, comes the risk of pilot activities operating in silos and never amounting to being greater than the sum of its parts. In other words, demonstration projects need to have the right tools and channels for communicating lessons learned from experiences in their respective jurisdictions, with the ultimate aim of influencing national level REDD+ policies and regulations.

Option 2 requires a longer term perspective by embedding the systems for the REDD+ 'cycle' of: i) establishing a reference level; ii) implementing policies and measures that reduce emissions; iii) measuring, reporting and verifying those emissions reductions; iv) receiving results-based payments as a result of those emissions reductions achieved, either from a fund-based or market-based REDD+ mechanism; and v) distributing the REDD+ benefits in an effective, efficient and equitable way, with appropriate social, environmental and fiduciary safeguards. However, the establishment of a national REDD+ fund – as experience from other REDD+ countries has shown – takes many years and requires strong political backing. Consultations with REDD+ stakeholders in Liberia indicate that Option 1 is the preferred option, likely because REDD+ readiness processes are still taking place and implementation of demonstration projects is in early stages.

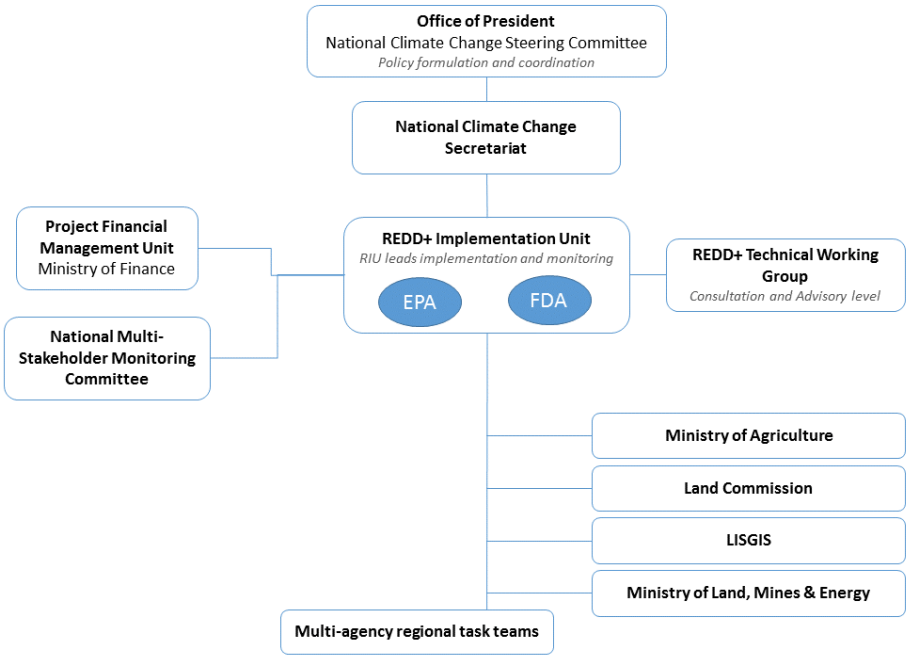
Option 3 could be considered the preferred option because it combines the benefits of 'hitting the ground running' in the short-term, with taking the time to design a national REDD+ benefit sharing mechanism that ensures an effective, efficient and equitable distribution of benefits. It will be important for this funding instrument to be designed in a way that captures other opportunities beyond the Letter of Intent with Norway, and any future non-market based results-based payments once a global REDD+ mechanism is in place and operational.

4.6 Institutional arrangement for implementing REDD+

Countries participating in REDD+ are required to set up a national REDD+ entity and designate a REDD+ Focal Point to communicate with the UNFCCC Secretariat and other relevant bodies[106]. Liberia has done this, through the REDD+ Implementation Unit (RIU) which coordinates and oversees REDD+ readiness and implementation. The RIU sits in the FDA and is being strengthened in staff numbers and capacity through the LFSP (Figure 21).

Liberia has well-established arrangements for REDD+ preparation and these have been adopted by the LFSP for implementation. An elaborate and new national architecture just for REDD+ would be complex and expensive to set up and it would distract effort away from local projects. Instead, the need for institutional development should be revisited once there is better evidence on how the current arrangement works and when there is greater clarity from the international community about what REDD+ financing will be available to Liberia, beyond that coming from the bilateral agreement with Norway and the Readiness investment by FCPF.

Figure 21 - Institutional arrangements for REDD+



[106] Based on the Warsaw Framework

The immediate issue confronting the existing institutions with a role to play in implementing REDD+ concerns their effectiveness rather than their design. Serious limitations in the capacity to implement activities or enforce laws and regulations have been very well documented; in the consultations and feasibility analysis conducted for the REDD+ Strategy preparation, in the SESA and in previous studies of forest governance – see, for example, the assessment of key government issues for REDD+ implementation conducted by PROFOREST in 2013.[107] These challenges are recognized in the LFSP and in the VPA project, and in other projects contributing to REDD+ implementation. The results of the measures to strengthen the FDA, community forestry institutions, etc. contained in these projects will determine the effectiveness of the NCCSC, RIU, RTWG and other REDD+ institutions. Initially, the REDD+ strategy relies very heavily on donor supported programs for capacity building and forest management. However these do not substitute for the core revenue support to ministries and agencies from the Government of Liberia. To date, budgetary constraints within the Government have severely limited the resources available to FDA, EPA and other bodies. This has hindered recruitment and organizational development, as well as the conduct of day-to-day activities such as forest monitoring and law enforcement. Looking ahead, it is vital that the resources required for implementing the REDD+ strategy are factored into the budget planning of the Ministry of Finance and Development Planning.

4.6.1 Integration of REDD+ with national coordination arrangements for development and environment

Successful coordination between forestry and other sectors is a critical component of REDD+. Many of the drivers of deforestation and forest degradation emanate from sectors outside of forestry, including agriculture, mining, and energy. These other sectors all have activities and policy, legal and institutional frameworks that significantly affect land use, forest cover and the success of REDD+ activities.

Liberia's climate change and REDD+ institutions have been designed to include different land-use sectors, different government ministries and a wide range of non-government interests. Nonetheless, with the NCCCS being a young body and with the general tendency for climate change issues to be lower priority, there remains a challenge to truly integrate REDD+ into national policy making. It is therefore relevant to consider the policy and coordination structures that exist for national development planning.

Liberian Development Alliance

[107] Halton et al (2013) Liberia: Assessment of key governance issues for REDD+ implementation through application of PROFOR forest governance tool. PROFOR/FCPF.

The Liberian Development Alliance (LDA) is the steering committee for the national Development agenda. It is the Government's most strategic forum for engaging the private sector, civil society and development partners in making progress towards the goals in Liberia's 2013-2018 *Agenda for Transformation*, the long-term development strategy *Vision 2030: Liberia Rising* and major donor initiatives such as the *New Deal for Fragile and Post-Conflict States*.[108]

The LDA is chaired by the president and led by The Ministry of Finance and Development Planning, with the Planning Coordination Unit at MFDP acting as secretariat. Under the LDA there are sub-committees for each pillar of the Agenda for Transformation (AfT). Forestry sits under pillar 2, *Economic transformation*.

This structure for monitoring and implementing the AfT is repeated at county level with County Development Steering Committees and pillar sub-committees.

National Environmental Policy Council

Potentially, there is overlap between the functions of the NCCSC and the National Environmental Policy Council (NEPC), but in practice this does not arise because the NEPC is inactive.

The NEPC is a broad mechanism for inter-sectoral coordination among natural resource-related Government institutions. It was established by the 2002 Environmental Protection and Management Law (EPML) as the "ultimate policy-making body on the environment" (§7). Its members are appointed by the President from across relevant Ministries and authorities and its mandate is to, "promote cooperation among Line Ministries, local authorities, the private sector, non-governmental organizations engaged in environmental protection programs and the public"(§8).

At a functional level, regular coordination meetings of the environmental focal points in various ministries and agencies were convened by the EPA's Department of Inter-sectoral Coordination. These meetings served to raise issues but lack of funding has prevented the meetings from taking place recently. Furthermore, the lack of senior representation at meetings prevented it from being an effective decision-making body.[109]

[108] UNDP (2013) text from program document for support to the LDA.

[109] Based on stakeholder consultations during a review of legal & policy aspects of the REDD+ Strategy

4.6.2 REDD+ Implementation

Prior to 2016, the institutional arrangements have been for national REDD+ readiness policy and coordination work. From 2016, national arrangements for the implementation of REDD+ interventions will be put into action through the Liberia Forest Sector Project, which represents the main program for implementation of REDD. It adopts the national REDD+ policy and coordination arrangements described above and adds implementation arrangements for the program at national and landscape level.

Liberia Forest Sector Project (LFSP)

At national level, the FDA-RIU is the lead implementing body. It will act through the technical departments of the FDA, particularly the Commercial, Conservation, Community Departments. Implementation then divides up into the sectors corresponding to the interventions and the sectoral Ministries and Agencies. There are also crosscutting implementation requirements and institutions. Implementation is managed through partnerships between FDA and other Government bodies (Table 12).

Table 12 - Implementation arrangements for LFSP REDD+ interventions

	FDA-RIU			
Sectors	Forestry	Environmental Protection	Agriculture	Mining
Sectoral Ministries & Agencies	Forestry Development Authority	Environmental Protection Agency	Ministry of Agriculture	Ministry of Land, Mines & Energy
REDD+ Interventions	Commercial forestry Community forestry Forest conservation	Environmental and social impact assessment and monitoring	Agro-forestry Agricultural concession on forest land Sustainable agriculture	Mining concessions on forest land Artisanal mining
Cross-cutting Ministries & Agencies	Ministry of Finance and Development Planning Financial Management Unit for LFSP Revenue support for FDA Land use planning Rural and urban development			
	Land Authority Resolution of Land ownership & rights issues Land administration			
	LISGIS Data management and GI for monitoring forest cover and land use change			
	National Bureau of Concessions Monitoring and oversight of concessions agreements			

At regional and landscape level the FDA has regional and district staff in a network of regional offices. The LFSP will introduce Interagency Task Teams, which combine the relevant ministries/agencies (FDA, MoA, EPA, MLME) with service delivery partners (the private sector or NGOs, CBOs, CSOs responsible for the delivery of projects). At project level, interventions are delivered by private sector and non-governmental organizations and are focused geographically on the LFSP priority landscapes in west and south-east Liberia.

Other REDD+ Implementation projects

Beyond the LFSP there are a variety of other projects with activities that are directly relevant to the implementation of REDD+. These projects are connected to the existing institutional arrangements for policy and coordination through partnership arrangements with FDA and/or EPA. They will all benefit from the institutional strengthening that is planned in the LFSP. These are of three main types:

- **Biodiversity Conservation projects**: Typically led by international NGOs, with Liberia NGO partners, and with international donor funding. Focused in and around conservation areas (e.g. FFI Wonegizi REDD+ Pilot; CI and FFI projects to develop conservation agreements and Protected Area management plans in East Nimba Nature Reserve; SNCL/Birdlife in the Gola-Foya conservation corridor).
- **Community forestry projects**: (e.g. PROSPER and the successor project FIFES. Community forestry projects usually have a conservation component and conversely biodiversity conservation projects also usually have a community forestry component)
- **Zero-deforestation commodity projects**: Typically public-private partnerships, focused on large concession-holding companies (e.g. IDH/FDA Production-Protection project, with NICFI funding, with Arcelor Mittal, Golden Veroleum Liberia and Sime Darby Plantations Liberia)

4.6.3 Institutions for FLEGT-VPA

Since 2011, Liberia has been developing institutions to manage a Forest Law Enforcement, Governance and Trade (FLEGT) initiative for sustainable logging. The measures required to fulfill this VPA with the EU are highly complementary with the REDD+ strategy priority on sustainable logging.

The VPA, which runs to 2018, addresses similar challenges to those involved in the introduction of REDD+: the strengthening of forest laws and regulations, the introduction of complex monitoring, verification and reporting procedures and the strengthening of Liberian institutions so they progressively take over the management and implementation of these procedures.

The national institutions established for VPA are the Liberian Implementation Committee, a National Multi-stakeholder Monitoring Committee (chaired by the FDA), and an Inter-Agency Coordinating Committee. The FDA is responsible for both VPA and REDD+ and so unites the two agendas. Outside of the FDA, there is currently no multi-agency institution that directly links VPA the REDD+, they have parallel arrangements, but the LFSP project will start to do this by sharing progress reports and key findings with the VPA National Multi-stakeholder Monitoring Committee, as a way to coordinate donors and engage sector partners in the objectives of project[110].

[110] LFSP Project Appraisal Document April 19 2016. Annex 3 Implementation arrangements, p.71.

Sub-nationally, there will be overlap in the FDA staff who manage both VPA and REDD+ activities and geographic overlap between the FDA regional offices managing the VPA process and the Interagency Task Teams established by LFSP in the targeted landscapes.

4.6.4 Assessment of institutional arrangements

From the description of existing institutions above it is clear that Liberia has well-established arrangements for REDD+ preparation and these have been adopted by the LFSP for implementation. Institutional arrangements for REDD+ are therefore, for the time being, settled and several years of implementing the LFSP are required before there is evidence on whether alternative or institutions are required.

The immediate issue confronting the existing institutions with a role to play in implementing REDD+ concerns their effectiveness rather than their design. Serious limitations in the capacity to implement activities or enforce laws and regulations have been very well documented; in the consultations and feasibility analysis conducted for the REDD+ strategy preparation highlighted weaknesses, in the SESA and in previous studies of forest governance (see for example the assessment of key government issues for REDD+ implementation conducted by PROFOREST in 2013)[111] These challenges are recognized in the LFSP and in the VPA project, and in other projects contributing to REDD+ implementation. The results of the measures to strengthen the FDA, community forestry institutions, etc. contained in the these projects will determine the effectiveness of the NCCCSC, RIU, RTWG and other REDD+ institutions and whether these need to be revised or added to. **An assessment of institutional needs and strengths/weaknesses should therefore form an important part of the mid-term review of the LFSP as well as reviews of progress with VPA and other REDD+ related projects. Suitable criteria for this assessment are:**[112]

[111] Halton et al (2013) Liberia: Assessment of key governance issues for REDD+ implementation through application of PROFOR forest governance tool. PROFOR/FCPF.

[112] Assessment criteria based on those used by CIFOR in a global comparison of emerging REDD+ structures: Pagiola, S., Bosquet, B. (2009) Estimating the Costs of REDD at the Country Level. Forest Carbon Partnership Facility.

Table 13 – Suitable criteria for an assessment of the existing institutional arrangement for REDD+ implementation in Liberia

Criteria	Indicators
Legitimacy	How acceptable the structure is for national authorities, civil society, local communities, donors and other international organizations engaged in REDD+. Legitimacy also concerns transparency and accountability, distribution of power and wealth of REDD+ financial flows.
Effectiveness	Capacity to deliver on reduced emissions, that is, address the drivers of deforestation and forest degradation, avoiding leakage and ensuring permanence.
Efficiency	Ability to deliver cost-efficient REDD+ results. This involves all costs of REDD+, including implementation, transaction and opportunity costs.
Capacity to deliver co-benefits	Effects on poverty reduction and biodiversity preservation.

An alternative institutional structure dedicated to REDD+ as has been adopted in other countries is unlikely to be advantageous for Liberia. Indeed an elaborate and new national architecture just for REDD+ would be complex and expensive to set up and it would distract effort away from local projects. Instead, the need for institutional development should be revisited once there is better evidence on what works and when there is greater clarity from the international community about what REDD+ financing will be available to Liberia, beyond that coming from the bilateral agreement with Norway and the Readiness investment by FCPF.

5. Roadmap for REDD+ strategy implementation

The Roadmap[113] for implementation of the national REDD+ strategy focuses on the short (1-5 years) and medium (5-10 years) term, although it includes the steps that should be taken towards the long-term destination of a national REDD+ program. The focus is on using existing institutions and processes, strengthening them and adding to the national framework for REDD+ only when there is a clear need. The aim is to avoid creating a complex and expensive infrastructure for REDD+ that distracts from practical action.

The approach taken in this Roadmap is to implement the REDD+ strategy through existing and planned initiatives. There are some gaps and so the summary of recommended additional measures below provides an agenda for the REDD+ Implementation Unit and partners to enhance the current package of measures.

Priority 2 (Commercial logging) is the part of the strategy that requires most new work by FDA and partners. This is because the LFSP, the principal mechanism for implementing REDD+, addresses commercial logging only in community forests. A key recommendation is therefore that FDA develop a REDD+ pilot project in a commercial forestry concession, within the targeted landscapes.

5.1 Geographic scale of REDD+ implementation

Implementation of practical REDD+ measures in Liberia has started at a project and landscape scale. Liberia is taking a 'nested' approach to implementation of REDD+, meaning that interventions are taken at a sub-national level and are fitted within a national framework for enabling and monitoring REDD+ results.

[113] The full Roadmap document, which includes the implementation plan, is annexed to this Final Report as Technical Annex B.

5.1.1 Pilot projects

The piloting of community-based REDD+ approaches begun in 2009 and the Wonegizi project in Lofa County is now becoming established as the first full-scale pilot and demonstration for REDD+. Funding from NORAD has been secured to develop this further over the period to 2020, by which time the project is expected to be producing verified reductions in emissions. Other projects, although not described as REDD+ pilots, have been testing and demonstrating interventions that contribute directly to the REDD+ strategy. The major examples of these are:

- Biodiversity program for East Nimba Nature Reserve and surrounding communities.
- Grebo protected area biomonitoring and community ecoguard program.
- Gola Forest National Park gazettement and GolaMa community forestry connecting with the proposed Foya Nature Reserve.

The current projects are focused on single Protected Areas and the 'buffer zone' around these, although they are intended as catalysts for larger landscape initiatives that are eventually transboundary: the Tai-Grebo-Sapo complex into Côte d'Ivoire, the Gola Peace Park with Sierra Leone and the Nimba Mountains and Wonegizi-Ziama with Guinea. But these are long-term aspirations. The current projects are more localized and they are preparatory, in that their main outputs will be the necessary tasks of data gathering, land use planning and strengthening local institutions. The Wonegizi project aims to produce verifiable emission reductions by 2020. Gola may be the next project to reach this stage. There is not a REDD+ project on the Liberia side of Gola yet but if one is developed it could achieve verifiable emission reductions in around six years as was achieved on the Sierra Leone side.[114]

[114] RSPB (2015) The Gola REDD Project monitoring and implementation report. September 2015

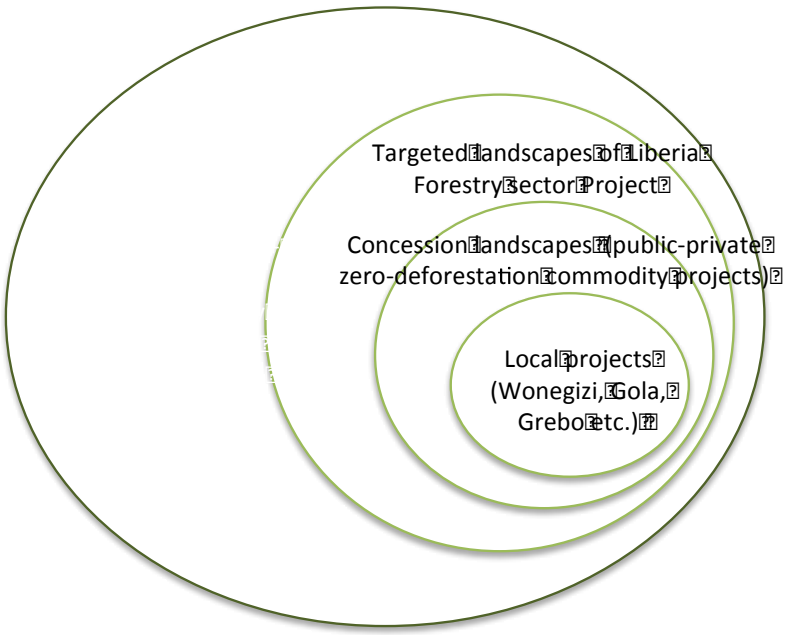


Figure 22 – 'Nested' approach: Sub-national implementation and national enabling

5.1.2 Landscape programs

Landscape programs cover a larger area and can achieve more substantial emission reductions. They are large enough to include Protected Areas, concessions for forestry, mining and agriculture, and community forests. At landscape scale, interventions from different projects and sectors can be brought together within an integrated plan. A partnership of organizations is required for oversight and implementation.

The LFSP takes this approach with interventions targeted at two landscapes, in Western Liberia and in the South East.[115] The main purpose of the LFSP is to test and demonstrate approaches for achieving land use change. It is part of the 'Transformation' phase of Liberia's REDD+ process. It does not aim directly to produce verifiable reductions in emissions within its four-year duration to 2020.[116] The Liberia-Norway Letter of Intent – which provides the overarching aims and strategy for the LFSP – includes the aspiration that Liberia should be in a position to measure emissions reductions from its REDD+ interventions from 2017 and may begin the phase of "contributions for verified emission reductions" in 2018.

[115] The World Bank. Project appraisal document On a Proposed grant in the amount of US$37.5 million From the Liberia forest landscape single donor trust fund to the Republic of Liberia for a Liberia forest sector project. April 19, 2016

[116] The objectives and results framework of the LFSP do not include emissions reductions, although this is the intended outcome of the preparatory actions supported by the project.

In addition to the LFSP the Sustainable Landscapes project, operated by IDH and FDA with Norwegian funding, will implement actions that may produce a significant contribution to REDD+. This is targeted in three landscapes. Two landscapes are centered on the extensive palm oil concessions of Sime Darby Plantation Liberia in Western Liberia and Golden Veroleum Liberia in the South East. They overlap with the LFSP landscapes but are smaller and are focused on the concessions and land for community-owned out grower schemes in or around these concessions. The third landscape is centered on the Northern Nimba mining concession operated by Arcelor Mittal. The project enhances the existing biodiversity offset project for East Nimba Nature Reserve, led by the company. The Sustainable Landscapes Project has a distinct focus on private-public partnership with concession companies.

5.1.3 Sub-national REDD+

With a 'nested' approach, the MRV system also starts at a sub-national level, to assess the emission reductions in specific project sites or targeted landscapes. It follows that the results-based payments will flow to these same sub-national areas.

The geographical scope of REDD+ can grow, from projects to landscape scale, as interventions are scaled up. Over time, a large sub-national REDD+ program or a national program can be established. It is up to countries to determine the scale at which they implement REDD+.

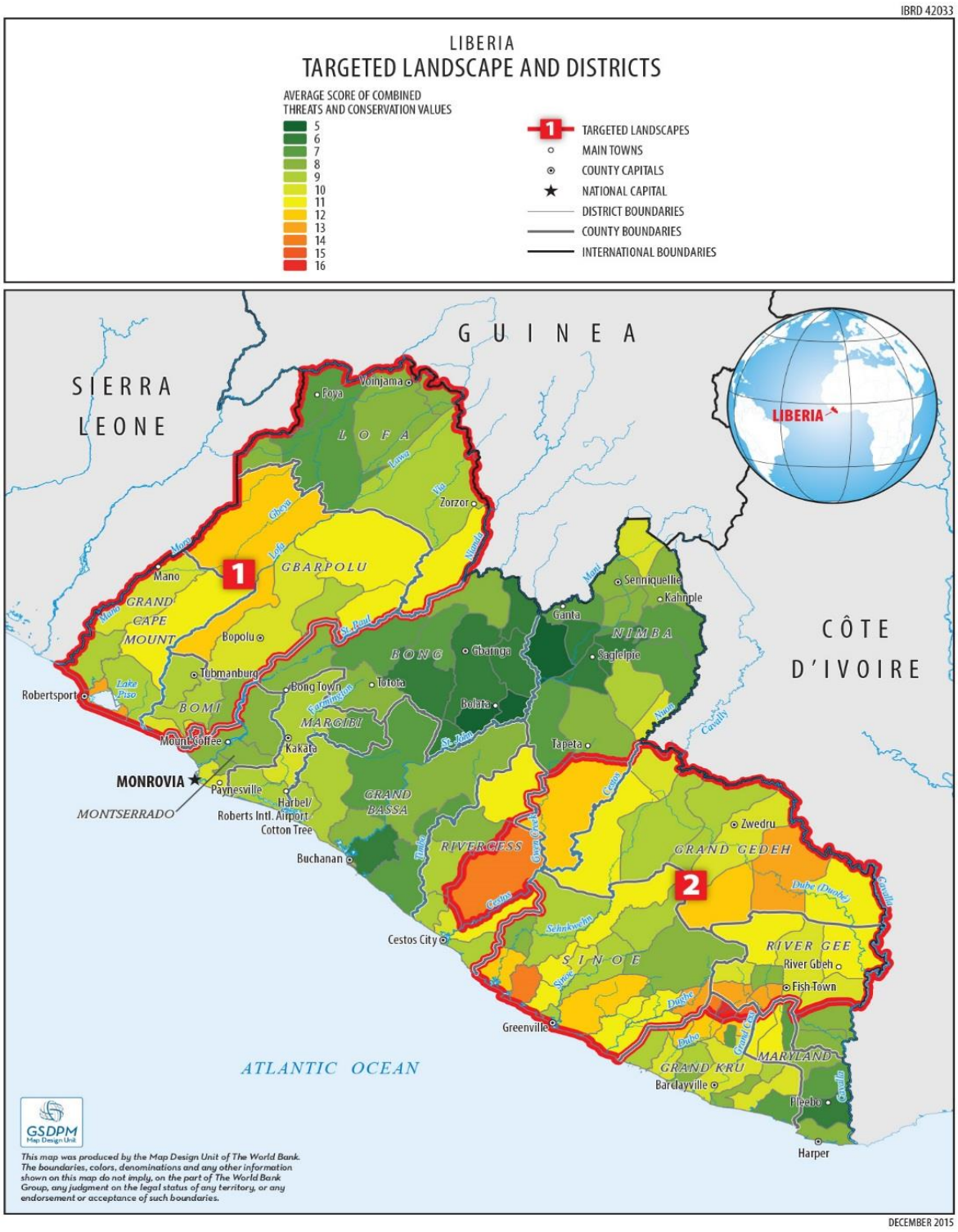


Figure 23 - Targeted landscapes for REDD+ interventions adopted by the LFSP

5.2Reviewing and updating of Strategy

The Strategy will need to be revised at future points in response to lessons learned from projects and research, and to reflect developments in relevant policies and laws as well as feedback through the ESMF and FGRM.

5.2.1 Inputs to monitoring and review

The process and timing for a review of the Strategy should be linked to the monitoring and evaluation (M&E) system that is being put in place for the LFSP, because that is the major instrument for implementing the Strategy and it is accompanied by the MRV System. The MRV system will provide information on whether emission reductions are being achieved and so is the key input for review of the strategy.

For the LFSP and MRV, the FDA and specifically the RIU, has the role of coordinating monitoring and evaluation. This involves gathering information on results as well as coordinating the inputs from groups such as the RTWG. The work plan for the LFSP includes capacity building for FDA to help it perform this task. The MRV roadmap describes the tasks involved in operating the system and notes the needs for capacity building and a technical group(s) specifically for this task. The functions for monitoring and evaluating the LFSP and MRV, and the appropriate institutional arrangements for doing so, will therefore be finalised in the early stages of these projects; a sub-group for MRV is envisaged.

The LFSP and MRV is at the heart of the process for monitoring and reviewing the REDD+ Strategy, but it is not the only input. There are also the results from other projects that contribute to the REDD+ Strategy, including the VPA, the Wonegizi REDD+ pilot, and a series of community development and forest conservation projects, as described in this Roadmap. These projects have their own M&E and reporting arrangements and hence the task for the REDD+ Implementation Unit is to gather this information and feed it into the "bigger picture" of the REDD+ Strategy.

In addition, the ESMF needs to be applied to assess environmental and social impacts of implementing the REDD+ Strategy and feedback from the FGRM needs to be considered. The design of the ESMF comes with a recommendation that it is managed by a "Safeguards Committee" (sub-group) under the RIU, or possibly under the MRV Working Group. A process and institutional arrangement for managing the FGRM is currently being designed.

Table 14 - Inputs to review of the REDD+ Strategy

Inputs	Key questions for review
MRV	Are emissions being reduced? If so, where is this occurring and what are the causes?
LFSP	Are interventions working as intended, to create the conditions for reducing emissions?
VPA and other projects	Are interventions resulting in changed land use practices which can be linked to a reduction in emissions, or the potential to achieve this?
ESMF	What are the environmental and social impacts of the projects which contribute to the REDD+ Strategy and what changes to the Strategy or its implementation would reduce negative impacts?
FGRM	What grievances are being raised and what adjustments to the strategy or implementation would relieve these?

5.2.2 Monitoring and review arrangements

For monitoring and reviewing the REDD+ Strategy, what is important is that:

- Each of the inputs to the REDD+ strategy have an effective monitoring and evaluation regime;
- Each are fed into an overall assessment of progress with implementing the REDD+ strategy, leading to adjustments/revisions.

Part of the early support from LFSP is to enable the RIU and RTWG to adjust to the new functions that come with REDD+ and to build its capacity. The remit of the RIU and RTWG is expanding to cover the ongoing management of the 'R-Package' including the MRV, ESMF and FGRM, plus management of the LFSP and coordination with the numerous other implementation projects.

This requires changes to the terms of reference, composition and working practices of the RTWG. This task should be taken forward as a distinct exercise, as part of early implementation of the REDD+ Strategy, to ensure that the RTWG is effective at supporting RIU in its management role and enabling all interests to participate.

Although the REDD+ Strategy has focussed on strategic priorities, it still includes a wide scope of issues and interventions. This will be very challenging to monitor and manage on a regular basis. It is important that the RIU is able to maintain a 'high-level', comprehensive

view of progress and to do this it will be greatly assisted if the MRV, LFSP, ESMF and FGRM are managed as distinct projects, with their own stakeholder engagement arrangements. In that way the RIU will be able to delegate management and receive management reports. .

It is recommended that the RIU convene a review of the REDD+ Strategy shortly after the Mid Term Review of the LFSP (approximately 2018). This should gather evidence from the various sources described above. To do so it will convene projects managers and/or technical working groups associated with each of the initiatives. The aim should be to produce a written stock-take of progress with implementing the strategy and preliminary conclusions on strengths and weaknesses of the Strategy itself.

Actual revision of the Strategy should be done following the evaluation of the LFSP (approximately 2020). Within this five-year period there will be sufficient results from projects, research, MRV etc. to inform changes to the strategy.

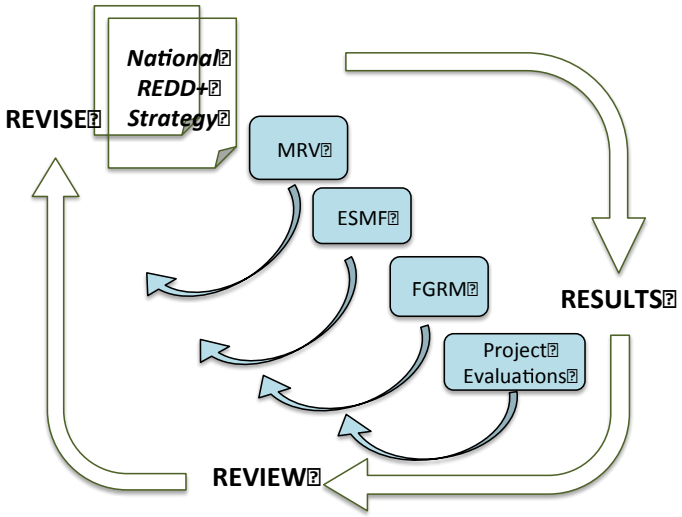


Figure 24 – Feedback loops in the process of reviewing and revising the REDD+ Strategy

Further guidance on the review process includes:

- Assessment of results should be based on evidence from practical projects, and those managing these across Liberia.
- The impact of the 2017 election in Liberia and the new administration should be factored into the review, as well as other changes to the context for REDD+ such as development in international climate change agreements (such as arise from the UNFCCC Conference of Parties).
- The terms of reference for the REDD+ Technical Working Group (RTWG) need to be revised to include a role in reviewing the REDD+ Strategy Document, as well as its implementation.

- Based on the capacity gaps of the RTWG identified in the SESA Priorities Report, a training program for RTWG members and others involved in the monitoring and evaluation of REDD+ should be carried out. This program may also include training on results frameworks in order to adequately monitor progress of the REDD+ Strategy implementation.
- The ESMF can act as a mechanism for documenting and storing issues and proposed edits to the REDD+ Strategy and Roadmap.

Technical Annexes

More detail of this Final Report is provided in the form of technical annexes as separate documents[117]:

Technical Annex A –National REDD+ Strategy

Technical Annex B – REDD+ Roadmap

Technical Annex C – Forest cover and land use analysis

Technical Annex D – REDD+ Strategy Options

Technical Annex E – Cost-benefit analysis

Technical Annex F – Policy, Legal and Institutional Framework

Technical Annex G – Consultation Report

[117] Each technical annex is prepared as a separate document in order to limit the file size of the Final Report.