Sustainable Forest Management (SFM) in Liberia—The 4Cs Approach

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Foreward

According to the 2019 National Forest inventory (NFI), Liberia has close to 6.5 million hectares of forests spread across its total national territory of 9.6 million hectares. The commercial forest sector alone accounts for about 10 percent of the gross national product (GDP) of the country. However, forests are much more than just a commercial resource. Forest provide food and livelihoods for several hundred thousand rural families and more than 80 percent of are dependent on forests for their livelihoods. By acting as a safety-net in times of stress, forest resources prevent them from falling into abject poverty. Forests also harbor important biodiversity and contribute valuable ecological services to the national and global environment, climate, and economies.

The FDA is the principal agency responsible for the management of this resource for the benefit of the present as well as future generations of all Liberians. This is no easy task, and the FDA is constantly striving to improve the ways in which it manages the forest asset of the country. Sustainable forest management (SFM) requires paying close attention to the four closely intertwined forest management regimes: (1) Conservation; (2) Commercial (both formal and informal); (3) Community; and (4) Carbon (climate change)—the so-called 4Cs. It also requires finding the balance between these 4Cs so that forests can continue to make their full contribution to the economy of Liberia.

It is in this context that this book makes a profound contribution. The book discusses the underlying rationale for SFM and the importance of balancing the 4Cs in Liberia. The book emphasizes that there is a current lack of balance in the implementation of the 4Cs and that the implementation of the 4Cs is skewed towards commercial forestry due to its immediate monetary benefits. It outlines six guiding principles, which are necessary to direct the implementation of the policy on balancing the 4Cs and thus proposes a practical way forward. In this context, it argues that a new mindset is needed to drive a significantly more sustainable approach to how this vital natural resource is managed, and the book provides pointers on that as well.

I believe that the FDA, its staff, allied public sector institutions, forest practitioners, researchers, private sector logging companies and civil society organizations will be able to use the book to refresh their knowledge and enhance their skills on issues of SFM. In addition, teachers and students alike, at universities and the Forestry Training Institute (FTI) will find it a valuable teaching aid and reference. Overall, I am certain that this book can make a positive contribution to implementing SFM in our country and I am proud that FDA has supported the initiative to produce this book.

Hon. C Doryen Mike
Managing Director
Forest Development Authority (FDA)
Liberia

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About the Book

Liberia's forestry and natural resources (FNRs) sit at the core of Liberia's socioeconomic existence and its future development. And forests are Liberia's largest FNR with more than two-thirds of its land surface covered in forests (World Bank 2020). The forest sector is a key economic sector perceived to have the greatest and most immediate impact on the nation's economic development.

However, Liberia's forests are under threat from overexploitation, climate change and governance related challenges. There is an excessive focus on commercial forestry and not enough attention is paid to the other aspects (such as conservation, community, and carbon forestry) that play an equally significant role. Liberia's approach to forestry is 'out of balance' and a new mindset is needed to drive a significantly more sustainable approach to how this vital natural resource is managed. Balancing and integrating the 4Cs of Sustainable Forest Management (SFM) can make real change happen. The 4Cs are: (1) commercialization; (2) conservation; (3) community; and (4) carbon.

The 4Cs Approach

This book discusses the underlying rationale for national forest management in Liberia, in particular, the concept of the management of 4Cs.

A Lack of Balance

The book emphasizes that there is a current lack of balance in the implementation of the 4Cs and that the implementation of the 4Cs is skewed towards commercial forestry due to its immediate monetary benefits. It outlines six guiding principles, which are necessary to guide the implementation of the policy on balancing the 4Cs and thus proposes a practical way forward.

The Target Audience

This book will bring together the latest thinking on various aspects under one roof for the first time. As such it will be a valuable resource and reference for those interested in understanding the importance of forests for the Liberian people. This will include governments, development agencies, donors, the private sector, researchers, and forest stakeholders both within Liberia, across the region and the World.

Teachers and students will be able to benefit from it as it will be a valuable teaching aid at Universities and the Forestry Training Institute (FTI).

In addition, the Forestry Development Authority (FDA) and its staff will be able to use it to refresh their knowledge and enhance their skills on issues of SFM.

The Chapters

This book is divided into eight chapters:

Chapter 1 Sustainable Forest Management (SFM) in Liberia—Setting the Scene

This chapter sets the scene for the contents of this book.

- It provides an historic and socio-economic background on Liberia and its people.
- It explains the relationship between the 1986 Constitution and forests and outlines the constitutional provisions on how forests are used.
- It describes Liberia's forests and biodiversity and explains why these resources are so crucial for Liberia's future prosperity.
- It discusses the relationship between forests, the war and gender and discusses the complex relationship between tenure and forests.
- It explains how the financing of the forest sector works and what are the main sources of funding available.
- Finally, it offers insight into the challenges faced by the forestry sector and presents an explanation of why the 4Cs approach is the most effective way of managing these challenges.

Chapter 2 CONSERVATION Forestry

This chapter explores the key aspects of conservation forestry—one of the 4Cs of SFM.

- There is a critical analysis of the policies and legislation that have been put in place to address conservation forestry, including wildlife management, biodiversity conservation and management of protected forests areas networks (PFANs).
- This is followed by a discussion of the important relationship between conservation and tenure.
- The chapter then discusses biodiversity in detail and how forestry plays such an important role in the health of Liberia's environment.
- The five key strategic elements to managing conservation forestry in Liberia are presented.
- The challenge of low revenues for conservation forestry is examined with a reference to the new Conservation Fund and how it will work.
- The challenges faced by the FDA and conservation forestry in general in the management of protected forests are discussed.
- The chapter concludes with a review of the extent of achievement of the objectives of conservation forestry and suggests some actions for change.

Chapter 3 COMMERCIAL Forestry—Formal

This chapter focuses on *formal* commercial forestry—that is the legal and measured part of the forestry sector and one of the 4Cs of SFM.

- The chapter presents the policy and legislative requirements of commercial forestry with a particular focus on the 2006 forest sector reform process and the features of the policy changes that emerged from this process.
- There is a discussion on the important Forest Law Enforcement, Governance and Trade (FLEGT) action plan and the agreements in place between the European Union (EU) and the Government of Liberia (GoL) to implement this plan in Liberia.
- This is followed by a brief history of commercial forestry before, during and after the civil conflict.

- The success of commercial forestry is dependent on its concessions system and its ability to implement and enforce the forestry fiscal regimes. This chapter discusses the types of forest concessions available in Liberia, the processes involved with applying for and implementing these concessions, and the challenges the sector faces with some of these concessions and the administrative structures involved.
- The forest fiscal regime from before the 2006 review process and after is also presented. It discusses how extraction was reported for fiscal collection purposes and the changes that came from the 2006 review including the LiberTrace Chain of Custody (CoC) system.
- Finally, it provides a breakdown of the amounts of timber exported and the amounts of revenue collected, along with an analysis of the key revenue collection challenges.

Chapter 4 COMMERCIAL Forestry—Informal

This chapter is a discussion on the *informal* commercial production of timber from the chain saw milling (CSM) sector which is the main source of domestic timber in Liberia and provides a crucial livelihood for a large proportion of the population.

- It presents the regulatory framework relating to the informal CSM sector and reviews the Liberian chain saw timber value chain.
- It highlights how the limited downstream processing capacity in the country and how the relatively lower costs of chain saw timber fuels domestic demand.
- It also explores the relationship between the CSM sector, the economy, and the environment while connecting this relationship with the important export timber industry.
- In addition, it presents and evaluates the current fiscal arrangements and the barriers to ensuring this important economic sector makes the necessary contributions to the country's gross domestic product (GDP).
- Finally, it explores the challenges and failures of CSM policy initiatives and concludes with a list of policy recommendations for the sustainable production of chain saw timber.

Chapter 5 COMMUNITY Forestry

This chapter explores the crucial role community forestry plays across the whole forestry sector—the interface between people, forests, and livelihoods and one of the 4Cs of SFM.

- It explains the aims and objectives of community forestry including the importance of an enabling legal and tenurial system.
- It provides a background to community forestry in Liberia followed by an explanation of customary land tenure and what this means in the Liberian context.
- It looks at the Community Rights Law (CRL) 2009 and discusses its relationship to the Land Rights Act (LRA) 2018 along with a discussion on the other important policy and legislative frameworks that support community forestry.
- It presents the 9-step process to obtain authorized forest community (AFC) status with a Community Forest Management Agreement (CFMA).
- It discusses the gender dimensions of community forestry.
- Finally, it concludes with the challenges faced by community forestry with recommendations on the way forward. These recommendations include actions to streamline the 9-step process, strengthen the interaction between tenure and community forest management, and to make community forestry gender responsive.

Chapter 6 CARBON Forestry

This chapter discusses carbon forestry—that is the relationship between forests, climate change and carbon emissions.

- The background of Liberia, carbon and climate change is presented including future predictions.
- There is a discussion on the key policy and legislative documents that refer to carbon forestry and allow it to be implemented in Liberia.
- A section presents a full description of Reducing Emissions from Deforestation and Forest Degradation (REDD+), while also tracing the evolution of international thinking on climate change and carbon markets through the relevant CoP meetings over the last few decades.
- It describes how REDD+ is being implemented in Liberia.
- It concludes with recommendations on how REDD+ benefits can be made equitable, and its implementation be scaled-up in Liberia.

Chapter 7 Livelihoods, Food Security, and Pro-Poor Growth

The chapter is a summary of the poverty profile of Liberia and outlines the poverty status of rural communities and its unique relationship with forests.

- It provides evidence that the livelihoods of most of these poor rural communities are intrinsically interwoven with lands and forests. In this regard, the chapter examines challenges of forest access, security of tenure, and ownership rights and the extent to which these challenges impact the rights of the vulnerable communities to forest goods and services.
- The chapter also reviews the extent to which the forestry agenda, as outlined by the 1986 Constitution and sector-related policies and strategies, impact on the lives of poor people.
- The national pro-poor agenda is examined within the context of Liberia's poverty reduction strategy.
- The contribution of the forestry sector in pursuing the national pro-poor Agenda is outlined in the chapter.
- The apparent disconnect between forestry and agricultural policies and the apparent lack of policy coherence and weak multisectoral coordination in the implementation of the pro-poor forestry sector agenda are discussed.
- The chapter reviews policy actions for the achievement of transformative changes in agriculture, together with sustainable use of forest resources, and provision of alternative livelihood options, to augment rural household incomes. In particular, the use of alternative livelihood micro-enterprises at the community level to enhance the incomes of farmers and vulnerable groups are examined.

Chapter 8 Balancing the 4Cs of Sustainable Forest Management (SFM)

This (concluding) chapter looks at the extent to which the 4Cs should be balanced and offers advice on the best approaches to use.

- The chapter emphasizes that there is a current lack of balance in the implementation of the 4Cs and that the implementation of the 4Cs is skewed towards commercial forestry due to its immediate monetary benefits.
- It outlines six guiding principles, which are necessary to guide the implementation of the policy on balancing the 4Cs: (1) ensuring sustainability and SFM; (2) ensuring equal weighting of the 4Cs in decision-making; (3) recognizing and managing the trade-offs; (4) providing for the greater good of the majority of Liberians; (5) giving a voice to local communities in the management of forest resources; and (6) improving coordination among different public sector agencies and other stakeholders.
- The chapter concludes with a section on a way forward, which emphasizes the importance of mindset changes, together with other actions, that are required to effectively implement the policy of balancing the 4Cs.

About the Authors

Victor K. Agyeman

Victor is a Professor at the University of Environment and Sustainable Development (UESD) and at the CSIR College of Science and Technology (CCST) in Ghana. He is also a Solicitor and Barrister of the Supreme Court of Ghana. Previously, he was the Director-General and Chief Research Scientist of the Council for Scientific and Industrial Research (CSIR) in Ghana. Victor is a Fellow of the Ghana Academy of Arts and Sciences (FGA), Fellow of the Ghana Institute of Foresters (FGIF), and a Member of the Ghana Bar Association.

Victor's research work has over the years focused on long-term impacts of logging in West Africa and plant responses to environmental changes. He has authored several publications in high impact journals and books on tropical forest ecology and forest management. He has also consulted for several international organisations, including the World Bank, African Development Bank (AfDB), International Tropical Timber Organization (ITTO), United Nations Food and Agriculture Organisation (FAO), and Conseil Ouest et Centre Africain pour la Recherche et le Développement Agricoles (CORAF).

Victor has a PhD in Tropical Forest Ecology from the University of Aberdeen, UK. He holds an LLB (Law degree) and a Qualifying Certificate/Barrister of Law (QC(BL)) degree from the Ghana School of Law.

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Nalin M. Kishor

Nalin Kishor has worked at the World Bank for over thirty years, on sustainable forest management issues. A significant focus of his work has been on forest governance and control of illegal logging. He transitioned from Senior Natural Resources Economist to becoming an independent consultant in 2016 and has since been implementing World Bank supported forest projects in countries such as Cote d' Ivoire, Liberia and Uzbekistan. Most recently he led on developing a World Bank approach to assess climate risk resilience for forest landscapes.

Nalin Kishor holds a PhD in economics from the University of Maryland, College Park, US with a specialization in environmental and natural resource economics, econometrics, and public finance.

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Saah A. David, Jr.

Saah A. David, Jr. is a development practitioner and climate change expert with over 10 years of progressive experience in forestry and climate change. He heads the REDD+ Implementation Unit (RIU) Reducing Emissions from Deforestation and Forest Degradation (REDD+) Implementation Unit of Liberia as the National REDD+ Coordinator. He is also Liberia's focal point on REDD+ and the Economic Community of West African States' (ECOWAS's) Forest Convergence Plan.

During the last five years, Saah has expeditiously provided stewardship over the technical aspect of the REDD+ implementation through the Liberia Forest Sector Project (LFSP) funded by the Government of Norway through the World Bank.

Under Saah's leadership, Liberia conducted its first comprehensive National Forest Inventory 2018-2019. A Forest Reference Emissions Level (FREL) was also developed which was submitted to the United Nations Framework Convention on Climate Change (UNFCCC).

In the lead-up to his ascendency as the National Coordinator of the RIU, Mr. David managed two World Bank funded Forest Carbon Partnership Facility projects (FCPF I & II)- and both projects were a resounding success.

Mr. David is an acclaimed leader in the environmental sector of Liberia as he's actively involved in mobilizing and strengthening collaboration with development partners, private sector organizations, and civil society institutions at the national and sub-national levels. He has background in Economics (BSc). Undoubtedly, Mr. David is an astute program and project administrator with a Master's in Business Administration (MBA).

He has post graduate certificates in Climate Change, REDD+, Sustainable Forest and Natural Resource Management, National Forest Inventory Planning and Management, and Monitoring and Evaluation.

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Edward F. Dwumfour

Edward is a development specialist with vast experience in the field of natural resource and environmental management; forestry and biodiversity; environmental, social and governance (ESG); and climate change. He worked at the World Bank for 25 years with a focus on designing and implementing investment project financing and safeguard stewardship in support of development operations in many developing countries. Prior to that, he worked for the Ghana Forestry Commission and Ghana Environmental Protection Agency and represented Ghana at the UN Commission on Sustainable Development (UNCSD). He has also worked with several reputable international research and development organizations such as the International Centre of Insect Physiology and Ecology (ICIPE), and United Nations Development Programme (UNDP). Since retiring from the World Bank, Edward has been consulting for international development agencies including the World Bank, UNDP, and the African Development Bank (AfDB).

Edward Dwumfour holds a PhD from the prestigious Georg-August University of Göttingen and a Master's in Science (MSc) in Forestry from the Technical University of Dresden—both in Germany.

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Testimonials

"This book should be compulsory reading for anyone involved in the Liberian forest sector. It pulls together all the information I wish I had when I first started my own engagement. I highly recommend that ***all development practitioners read this book before starting an assignment in Liberia****."*

Arild Skedsmo

"I would like to ***congratulate the book authors for their brilliant and illustrative contributions to sustainable forest management (SFM) in Liberia.*** *Given the significance of this book, I am strongly recommending that it is used as a textbook for senior lecturers and prospective graduates thus preparing them for the forestry world market."*

Prof. John T. Woods

"A ***first-time detailed exploration of the forestry sector in Liberia*** *and focuses on the contribution of the sector to the economy, to poverty reduction, to ecosystem restoration, and to climate change."*

Prof. Dr Jürgen Blaser

"This information-rich and interesting book on sustainable forest management (SFM) in Liberia has been written by ***seasoned foresters with decades of experience in tropical forest management.*** *Their vast experience in natural resources management comes to the fore in this book, which will serve as a very useful source of information for policy-makers, forest managers, scientists, lecturers, students and a wide range of other readers….****it is worth reading****."*

Ernest Foli

"The authors of [this book] deserve to be congratulated for ***this important and comprehensive analysis of the physical and socio-economic conditions of the forests in Liberia.*** *It is by far the most holistic and professionally researched repository of information about the prospects of Liberia's forests and the underlying causes of deforestation, forest degradation and loss of biodiversity."*

Gerhard Dieterle

"[This book is a] welcome input and important asset for a robust, inclusive, and permanent dialogue amongst forest sector stakeholders. The deliverance of the 4Cs [will ensure….Liberia's forests] remain a bright spot, not just for West Africa, but also globally in a century from now."

J Smyle

Having had the privilege to experience the Liberian forest landscape both professionally and through private expeditions, I can testify to its uniqueness and captivating magic. It is a fertile and dynamic landscape that offers generous opportunities to the people living with and of the forest, and to the Liberian population and economy at large. But it is also a fragile landscape where rights and interest need to be managed in a balanced manner based on facts, deep contextual knowledge, and a good portion of wisdom.

This book provides the facts and the historic context that shapes today's management practices with all its challenges and opportunities, both regulatory, economic, and cultural. With the facts and the context at hand, the authors also share their recommendations for well-balanced management, not forgetting the critical participation of stakeholders with less formal power and a lower public voice. This book should be compulsory reading for anyone involved in the Liberian forest sector. It pulls together all the information I wish I had when I first started my own engagement, representing the Norwegian International Forest and Climate Initiative (NICFI). To every development practitioner—I highly recommend that you read this book before starting your assignment in Liberia—and then spend your time in the field when you land in the country.

Arild Skedsmo
Senior Advisor
Norwegian International Forest and Climate Initiative (NICFI)
Norwegian Ministry of Climate Information

I agree with the book that commercial forestry has outweighed both community and conservation forestry, thanks to the tangible monetary value and benefits associated with the commercial forestry. However, curbing the imbalance of the 3Cs plus the addition of the fourth C has the potential to provide perpetual socio-economic values as well as maintaining the integrity of the forest corridor.

I would like to congratulate the book authors for their brilliant and illustrative contributions to sustainable forest management (SFM) since 2006. Given the significance of this book, I am strongly recommending that it is used as a textbook for senior lecturers and prospective graduates thus preparing them for the forestry world market.

Prof. John T. Woods
Former Managing Director of the Forestry Development Authority (FDA)
Retired professor of the University of Liberia

This book is a first-time detailed exploration of the forestry sector in Liberia and focuses on the contribution of the sector to the economy, to poverty reduction, to ecosystem restoration and to climate change. The strengths and weaknesses of the conservation, commercial, community and carbon aspects of forest management are discussed and a blueprint for a balanced approach to the 4Cs is proposed. The book, written by skilled international and national experts, combines rigorous analysis and practical guidance, for SFM in Liberia, and should thus appeal to policymakers, researchers and students alike.

Prof. Dr. Jürgen Blaser
Ord. Professor for International Forestry and Climate Change
School of Agricultural, Forest and Food Sciences
Unit Forest Policy and International Forest Management
Bern University of Applied Sciences

This information-rich and interesting book on sustainable forest management (SFM) in Liberia has been written by seasoned foresters with decades of experience in tropical forest management. Their vast experience in natural resources management comes to the fore in this book, which will serve as a very useful source of information for policy-makers, forest managers, scientists, lecturers, students and a wide range of other readers. The book discusses, in comprehensive and meticulous detail, the innovative approach to SFM in Liberia. This approach seeks to shift the focus on commercial forestry to include conservation, community and carbon forestry (4Cs).

The authors have critically assessed the implementation of the 4Cs, highlighting the policy, regulatory, and institutional shortcomings that have held back effective implementation of the concept. Practical guiding principles have been suggested, with recommendations for the way forward towards effective implementation of various elements of the 4Cs, emphasising the importance of changes in mindset of all stakeholders as one of the key pre-requisites to make the 4Cs a viable approach to sustainable management of the forest resources of Liberia. It is worth reading!

Ernest G. Foli, PhD
Forest Management Specialist

The authors of the publication Sustainable Forest Management (SFM) in Liberia—The 4Cs Approach deserve to be congratulated for this important and comprehensive analysis of the physical and socio-economic conditions of the forests in Liberia. It is by far the most holistic and professionally researched repository of information about the prospects of Liberia's forests and the underlying causes of deforestation, forest degradation and loss of biodiversity. In complementing many other specialized analytical pieces about the Liberian forest sector, this publication highlights the need for addressing issues holistically and in context and thus makes a convincing case for the 4Cs approach. The book also reminds us that the Corona pandemic and the emerging global economic crisis might, as before, increase the pressure on forests and biodiversity in Liberia where its rich resources must serve as a last resort for sustaining the livelihoods for so many impoverished people.

Gerhard Dieterle
Former Executive Director at International Tropical Timber Organization (ITTO)

Where Liberia's neighbors have largely destroyed their natural forest patrimony, Liberia has managed to be a bright spot in the West Africa region. That Liberia remains a bright spot, not just for West Africa, but also globally a century from now, depends critically on decisions made in the short- to medium-term and how local peoples and communities are empowered as the key actors in delivering a balanced 4C approach. The publication of this work is timely. A comprehensive stocktaking of forest sector policy, legislation, performance, and lessons has been long overdue. As such, it is a welcome and important asset for the robust, inclusive, and permanent dialogue amongst forest sector stakeholders.

Jim Smyle
Independent Consultant—Natural Resource Management
Former Senior Natural Resources Specialist at World Bank

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The lead authors of this book include **Victor Agyeman**, **Nalin Kishor**, **Saah David Jr**, **and Edward Dwumfour**. The authors worked together in the forestry sector on the World Bank's Liberia Forest Sector Project (LFSP) in Liberia. The purpose of this book is to share the lessons learnt and to provide suggestions on ways forward.

The Government of Liberia (GoL) through the Ministry of Finance and Development Planning (MoFDP), the Ministry of Agriculture (MOA), the Environmental Protection Agency (EPA), and the Forestry Development Authority (FDA) provided enormous support towards the development and writing of this book. In addition, the management of FDA, and other FDA colleagues, provided important invaluable inputs. These included **John S. McKay**, **Attorney Roland J. Lepol**, and **Cllr. Yanquoi Dolo.**

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Several individuals also provided further support including **Olagoke Oladapo** (African Development Bank (ADB), Cote d'Ivoire), **Samuel Ajuwon** (Agricultural Economist, Nigeria), **Dr. Mercy Derkyi** (a social forester and gender expert, Ghana), and **Valerie Fumey Nassah** (monitoring and control and project management expert, Ghana).

In addition, **Thea Hilhorst** (Senior Land Governance Specialist, World Bank) gave the team extremely valuable comments on the tenurial issues discussed in the book.

Finally, the excellent editorial inputs from **Cath Croxton**, and **Ingrid Richards**' design of the book, brought the content alive and helped make it into this excellent product we are proud to share.

Abbreviations

4Cs	Conservation, Commercial (formal and informal), Community, Carbon
AAC	Annual Allowable Cut
ACS	American Colonization Society
AFC	Authorized Forest Community
AfT	Agenda for Transformation
BFWC	Bureau of Forests and Wildlife Conservation
CBD	Convention on Biological Diversity
CBL	Central Bank of Liberia
CBOs	Community-based organizations
CDM	Clean Development Mechanism
CF	Community Forestry
CFA	Community Forest Area
CFMA	Community Forest Management Agreement
CFMD	Community Forest Management Department
CIFOR	Center for International Forestry Research
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CoC	Chain of Custody
CO2	Carbon Dioxide
CoP	Conference of the Parties
CRL	Community Rights Law
CSM	Chain saw milling
CSOs	Civil society organization
DAC	Development Assistance Committee
DANIDA	Danish International Development Agency
DBH	Diameter at breast height
EIA	Environmental Impact Assessment
EITI	Extractive Industries Transparency Initiative
ENNR	East Nimba Nature Reserve (ENNR)
ENSO	El Niño Southern Oscillation
EPML	Environmental Protection and Management Law
EPA	Environmental Protection Agency
ESMF	Environmental and Social Monitoring Framework
ESRP	Economic Stabilization and Recovery Plan
EU	European Union
EUTR	EU Timber Regulation
EVD	Ebola virus disease
FAO	Food and Agriculture Organization
FCL	Forest Conservation Law
FCPF	Forest Carbon Partnership Facility
FDA	Forestry Development Authority
FGM	Female genital mutilation

FGRM	Feedback Grievance Redress Mechanism
FMP	Forest Management Plan
FRL	Forest Resource License
FLEGT	Forest law enforcement, governance, and trade
FMC	Forest Management Contract
FNL	Forest Network Law
FNRs	Forests and natural resources
FOB	Free on board
FREL	Forest Reference Emission Level
GAC	General Auditing Commission
GBV	Gender-based violence
GDP	Gross Domestic Product
GEF	Global Environment Facility
GFP	Growing Forest Partnerships
GHG	Greenhouse gas
GIS	Geographic information system
GoL	Government of Liberia
IMF	International Monetary Fund
IPCC	Intergovernmental Panel on Climate Change
IPRS	Interim Poverty Reduction Strategy
ISO	International Organization for Standardization
ITCZ	Inter-Tropical Convergence Zone
ITTO	International Tropical Timber Organization
IUCN	International Union for the Conservation of Nature
JAS	July to September
JFM	Joint Forest Management
KBA	Key Biodiversity Area
Kt of CO2e	Kilotons of Carbon Dioxide equivalent
LAS	Legality Assurance System
LC	Land Commission
LCF	Liberia Conservation Fund
LEAP	Law and Assistance Program
LEITI	Liberia Extractive Industries Transparency Initiative
LFI	Liberia Forests Initiative
LIF	Industrialization Incentive Fee
LFSP	Liberia Forest Sector Project
LISGIS	Liberia Institute of Statistics and Geo-Information Services
LLA	Liberian Loggers Association
LMO	Living Modified Organism
LNAP	Liberian National Plan of Action
LPRS	Liberian Poverty Reduction Strategy
LRA	Land Rights Act
LRL	Land Rights Law
LRP	Land Rights Policy
LTA	Liberia Timber Association
LUCF	Land use, change, and forestry
LUS	Lesser used species
MDG	Millennium Development Goal

MITC	Ministry of Information, Culture and Tourism
MLME	Ministry of Lands, Mines, and Energy
MOF	Ministry of Finance
MOFDP	Ministry of Finance and Development Planning
MPEA	Ministry of Planning and Economic Affairs
MPSS	Monthly Production Summary Sheets
MRV	Monitoring, Reporting and Verification
MSMEs	Micro, small, and medium enterprises
MT	Metric tons
MTEGDS	Medium Term Economic Growth and Development Strategy
MTS	Modified Taungya System
NAPA	National Adaptation Program of Action
NBFDP	National Biosafety Framework Development Project
NBSAP	National Biodiversity Strategy and Action Plan
NCCPRS	National Climate Change Policy and Response Strategy
NCCS	National Climate Change Secretariat
NCEP	National Community Ecoguard Program
NCSAI	National Capacity Self-Assessment Initiative
NDC	Nationally Determined Contribution
NDMP	The National Disaster Management Policy
NEAP	National Environment Action Plan
NECOLIB	National Environmental Commission of Liberia
NEP	National Energy Policy
NFI	National Forest Inventory
NFL	National Forestry Law
NFMS	National Forest Management Strategy
NFP	National Forest Policy
NFPIS	National Forest Policy and Implementation Strategy
NFRL	National Forestry Reform Law
NFSNS	National Food Security and Nutrition Strategy
NGOs	Nongovernmental organizations
NTFPs	Non-timber forest products
NWCPAML	National Wildlife Conservation and Protected Area Management Law
NWNP	New Wildlife and National Parks Act
O&M	Operation and maintenance
ODA	Overseas Development Assistance
OECD	Organization for Economic Cooperation and Development
OND	October to December
PAPD	Pro-Poor Agenda for Prosperity and Development
PAM	Protected Areas Management
PES	Payment for ecosystem services
PFAM	Protected Forest Areas Management
PFM	Participatory Forest Management
PFAN	Protected Forest Areas Network
PFANL	Protected Forest Area Network Law
PPA	Proposed Protected Area
PUP	Private Use Permit
REDD+	Reduce emissions from deforestation and forest degradation

R-PP	Readiness preparation proposals
RTWG	REDD+ Technical Working Group
SCNL	Society for Conservation of Nature of Liberia
SDG	Sustainable development goal
SDI	Sustainable Development Initiative
SESA	Strategic Environmental and Social Assessment
SFM	Sustainable forest management
SGS	Société Générale de Surveillance
SIIB	Special Independent Investigative Body
SIS	Safeguard Information System
SNP	Sapo National Park
SRA	Social Responsibility Agreement
TS	Tally sheets
TSC	Timber Sales Contract
TUC	Timber Utilization Contract
TVET	Technical and Vocational Education and Training
UHC	Universal Health Coverage
DFID	Department for International Development
UN	United Nations
UNCBD	United Nations Convention on Biological Diversity
UNCCD	UN Convention to Combat Desertification
UNDP	United Nations Development Programme
UNEP	United Nations and Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNFPA	United Nations Population Fund
UNSC	United Nations Security Council
USAID	United States Agency for International Development
VPA	Voluntary Partnership Agreement
VPASU	Voluntary Partnership Agreement Support Unit
WASH	Water, Sanitation, and Hygiene
WCF	Wildlife Conservation Foundation
WCU	Wildlife Confiscation Unit
WGFC	Working Group on Forest Carbon
WNPA	Wildlife and National Parks Law
WNPA	National Parks Act
WRI	World Resources Institute
WWF	Worldwide Fund for Nature

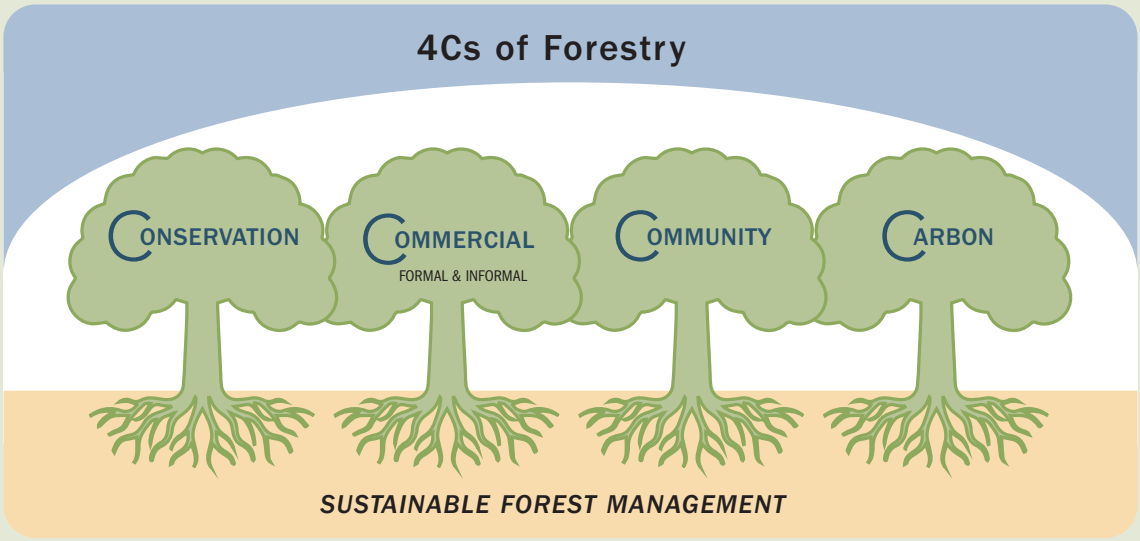
CHAPTER 1

Sustainable Forest Management (SFM) in Liberia—Setting the Scene

A Blueprint for Change—The 4Cs of Sustainable Forest Management (SFM)

It is crucial that when making decisions about forestry in Liberia, all aspects of **conservation**, **commercial**, **community** and **carbon** forestry are given equal consideration.

Balancing and integrating the 4Cs of Sustainable Forest Management (SFM) can make real change happen.



Liberia's forests are under threat from overexploitation, climate change and governance related challenges. There is an excessive focus on **commercial forestry** and not enough attention is paid to the other factors that play an equally significant role. Liberia's approach to forestry is **out of balance** and a **new mindset** is needed to drive a significantly more sustainable approach to how this vital natural resource is managed.

CHAPTER CONTENT

Liberia's forestry and natural resources (FNRs) sit at the core of Liberia's existence and its future development. Forestry is a key economic sector that is perceived to have the greatest and most immediate impact on the nation's economic development. More than two thirds of Liberia is covered by forest and Liberian forests are the largest and best protected resource in the Upper Guinean Forest Ecosystem.[1] This chapter sets the scene for this content presented in this book—*Sustainable Forest Management (SFM) in Liberia—The 4Cs Approach*.

It provides an historic and socio-economic background on Liberia and its people. It explains the relationship between the 1986 Constitution and forests and outlines the constitutional provisions on how forests are used. It describes Liberia's forests and biodiversity and explains why these resources are so crucial for Liberia's future prosperity. It also discusses the relationship between forests, the war, and gender.

The management of Liberia's forests is dependent on the legal and policy frameworks that guide it. Land, forest, and tree tenure also affects how decisions on forest resources are made. The chapter clarifies the difference between land, forest, and tree tenure and how it applies to Liberia. It also presents the key legislative and policy frameworks introduced since the 1986 Constitution and evaluates the management and policy challenges faced by the forestry sector in Liberia.

1 See: https://blogs.worldbank.org/africacan/liberia-understanding-peoples-dependence-forests

Forests are a rich natural resource that provide important revenue for the Government of Liberia (GoL) whilst providing livelihoods for forest dependent communities and serving as one of the lungs of the world. However, there are challenges regarding the collection of this revenue. This chapter provides an explanation of how this worked before and after the 2006 forest reforms.

Finally, the chapter introduces the four-part regime for managing Liberia's forest resources. The 4Cs forest management regime (conservation, commercial, community and carbon—see Figure 1.4) is designed to place equal emphasis on the four important aspects of sustainable forestry in Liberia while also understanding the overlaps and relationships between the four pillars. In practice, far greater emphasis is placed on the commercialization of forests, due to the high revenues that can be achieved from the market. However, it is important that a balance is achieved between the 4Cs regime for the sustainable and transparent management of forest resources in Liberia.

BACKGROUND TO LIBERIA

History

Liberia, which means land of the free, is located on the west coast of Africa, surrounded by Guinea, Sierra Leone, Cote d'Ivoire and the Atlantic Ocean (see Map 1.1 and Map 1.2). The country was founded by the American Colonization Society (ACS) in 1820 in a drive to resettle freed slaves from America back to Africa. The capital, Monrovia, was named after the United States President, James Monroe in 1824. Liberia became an independent state in 1847, and Joseph Jenkins Roberts, one of the freed African Americans, was its first elected president.

Map 1.1 Liberia's Place in the World

Source: Vardion 2006[2]

2 See: https://commons.wikimedia.org/w/index.php?curid=1493408

Map 1.2 Liberia

Source: Oona Räisänen (Mysid), CC BY-SA 4.0 <https://creativecommons.org/licenses/by-sa/4.0>, via Wikimedia Commons

Until 1904, the indigenous Africans resisted the settlers. As a result, at the time they were refused citizenship in the new republic. To this day, descendants of the American freed slaves are referred to as Americo-Liberians[3], highlighting Liberia's longstanding connection with the United States of America (Guannu 2010).

Climate

The climate of Liberia is tropical, and the whole country is within the rainfall range of the humid or wet evergreen semi-deciduous forest. The annual rainfall decreases from 4,500 millimeters to 2,200 millimeters along the central and northern parts of the coast. The temperature varies from 21°C to 32°C.

Population Facts

In 2021, the population of Liberia was over 5 million (up by 2.42 percent since 2020). About 30 percent (1,569,000) of the country's population live in the metro area of Monrovia, which is the capital city of Liberia.[4]

- In 2019, 49.8 percent of the population were women and 51.9 percent of the population was younger than 18 years old.
- Children under the age of five years accounted for 14.4 percent of the population.[5]

3 See: https://aaregistry.org/story/the-americo-liberian-community-a-brief-story/
4 See: https://tradingeconomics.com/liberia/population
5 See: https://data.worldbank.org/indicator/SP.POP.TOTL.FE.ZS?locations=LR

- The life expectancy at birth in 2020 was 64.16 years and infant mortality rate for the same period was 51.19 deaths per 1000 live births.
- According to the 2008 National Population and Housing Census, the population is 85.6 percent Christian, 12.2 percent Muslim, 1.4 percent persons who claim no religion, 0.6 percent adherents of indigenous religious beliefs, and less than 1 percent members of other religious groups, including Bahai's, Hindus, Sikhs, and Buddhists (US Department of State 2019).

Ethnic Groups and Language

Over 50 percent of Liberia's population comes from four ethnic groups. These include:

1. **Kpelles**—20 percent of the population, mainly from central and western Liberia in Lofa, Bong, Bomi, Margibi, Montserrado, and Bassa counties
2. **Bassas**—16 percent of the population and mainly from Grand Bassa and Rivercess counties
3. **Dan (Gio)**—8 percent of the population and who are predominantly from Nimba County
4. **Kru (Klau)**—7 percent of the population and from Kru County.

The remaining 49 percent of the population come from 12 other ethnic groups.

Americo-Liberians represent 2.5 percent of the population and are the descendants of former slaves who emigrated from the U.S. to Liberia. The other ethnic group is the **Congo People**. They make up 2.5 percent of the population and are the descendants of former slaves who emigrated from the Caribbean. **Lebanese**, **Indians**, and other **West African** nationals also live in Liberia and make up a significant part of Liberia's business community. There are few Westerners in Liberia and those who are there are mainly based in Monrovia. This is because of the civil war and its accompanying problem of insecurity. In addition, the Liberian Constitution restricts citizenship only to people of Negro descent.[6]

English is the official language spoken by about 20 percent of the population in Liberia, and the remaining 80 percent speak any of the 29 African languages belonging to the Mande, Kwa, or Mel linguistic groups in the country.

The Constitution and Forests

Liberia's first Constitution was approved in a referendum on September 27, 1847 (it was ratified in 1848). It followed the Declaration of Independence on July 26, 1847. Under Article I titled "*Declaration of Rights*" the Constitution guaranteed the power of citizens to enjoy their natural rights, including access to FNRs, in safety and tranquility. Between 1847 and 1980, the Constitution was amended several times and the current one was passed in 1986.

All the Constitutions in Liberia have guaranteed the rights of citizens to benefit from forest resources, since they go to the core of livelihood support and are invariably linked to socio-economic development. Chapter II, Article 7 of the 1986 Constitution refers to the importance of equal participation of all citizens to build social and economic development. It states that all citizens are responsible for the protection and management of the Liberia's natural resources. It also requires state organizations to formulate legislation and policy to ensure national development plans are environmentally sensitive (UNEP 2004). Article 5 (C) of the 1986 Constitution of Liberia further provides that action will be taken to prevent abuses of power including the misuse of government resources and other corrupt activities.[7]

> All the citizens of Liberia are constitutionally entitled to benefit from forest resources.

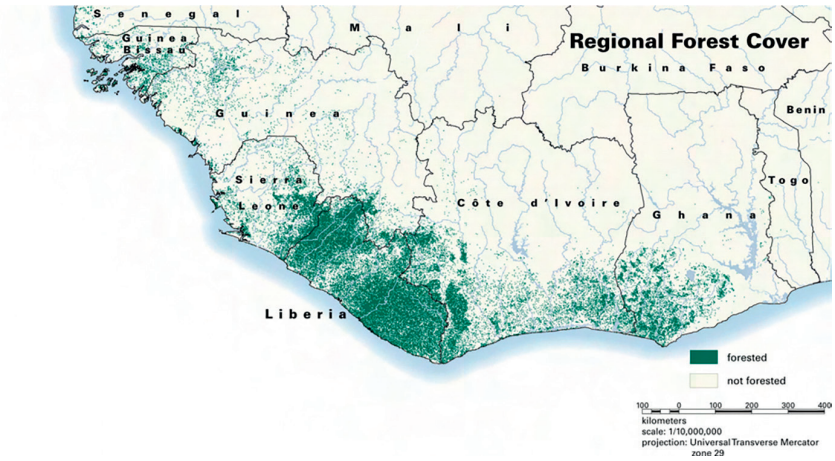
6 See: https://www.cs.mcgill.ca/~rwest/wikispeedia/wpcd/wp/d/Demographics_of_Liberia.htm
7 See: https://www.constituteproject.org/constitution/Liberia_1986.pdf?lang=en

The 1986 Constitution specifies that the Legislature must ratify many commercial concession agreements including forestry concessions. These constitutional provisions are in line with Articles 1 and 8 of the United Nations General Assembly (UNGA) Resolution 1803[8], which establishes the right of peoples and nations to permanent sovereignty over their natural wealth and resources, and that foreign investment agreements between sovereign nations and their private operators shall be observed in good faith. It is worth noting that under the Constitution, forest resources are not excluded from private ownership, in contrast to the position on mineral resources.

Liberian Forests

Liberia is situated within the Upper Guinea Forest, a tropical rainforest belt stretching from Cameroon to Guinea (Map 1.3). Its land area is 9.59 million hectares, and it is one of the most forested countries in West Africa, with more than two thirds of its land surface (6.69 million hectares) covered by forest (World Bank 2020). Liberia currently holds the largest remaining portion of the Upper Guinea Forest Ecosystem (estimated at 42 percent).

Map 1.3 Upper Guinean Forest



Source: FDA 2007

In 2018, Liberia established a formal country specific definition of *Forest* which was developed and validated by the stakeholders and approved by the Board of the Forest Development Agency (FDA). Forest was defined as an area of land that:

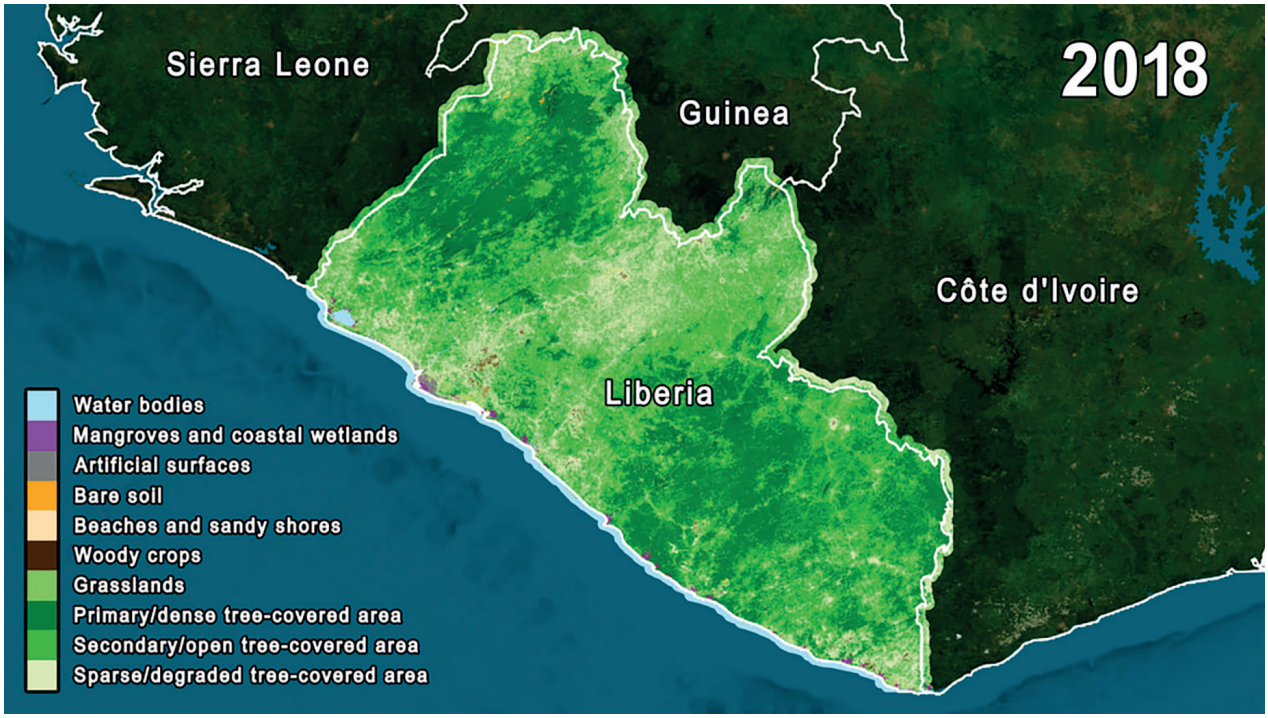
1. Has a canopy cover of minimum 30 percent
2. Contains trees with a minimum of five meters height or the capacity to reach it
3. Covers a minimum of 1 hectare of land.

The definition included shifting cultivation in its fallow phase (in so far as the threshold values are met) but did not include land with predominant agriculture use such as oil palm and rubber.

A National Forest Inventory (NFI) was conducted in 2018 and 2019 (FDA 2019). Using the definition above, it estimated forest cover in Liberia to be 6.69 million hectares, which is approximately 69 percent of the total landmass (FDA 2019)—see Map 1.4. Liberia's evergreen forests are in the more humid south, ranging from the Cestos to Cavally Rivers. The deciduous and mountainous forests are in the hills of Northwest Liberia and Mount Nimba.

8 See: https://legal.un.org/avl/ha/ga_1803/ga_1803.html

Map 1.4 Forest Cover in Liberia 2018



Source: SVS 2022[9]

The forest cover of Liberia is divided into three vegetation zones:

1. **Coastal Savannah**: This zone consists of mangrove swamps, savannah woodland and patches of forest scattered in fields of grassland. Predominant tree species include palm, coconut, and mangrove trees.
2. **High Forest**: This zone is divided into two areas: (1) evergreen rainforest; and (2) the moist semi-deciduous forest. The evergreen rain forest zone receives 4,475 millimeters of rainfall annually and consists of plant species which do not have a well-developed marked period of leaf-shedding. The tallest trees in this zone reach about 50 meters. The semi-deciduous forest is a transition to the deciduous forest type found in La Cote d'Ivoire.
3. **Northern Savannah**: The forest zone comprises the tall grass woodlands in the far north-western parts of the country and a small portion in the northeast. The zone is found predominantly in the Lofa and Nimba counties and is covered with scattered trees, patches of forest and a dense growth of elephant grass. It is man-made vegetation due to continuous burning and clearing for agricultural purposes, which prevents the original vegetation from regenerating. The long dry season (5 to 6 months) in this forest eco-type forces many plant species to drop their leaves during course of this period to minimize their evaporation of moisture.

These forest resources are important as they are directly linked to the economic development of the country. In fact, forestry is the economic sector that is perceived to have the greatest and most immediate impact on the nation's economic development. The sector is also a major natural resource whose poor management triggered and fueled the 14-year civil conflict in the country from 1989-2003. During the war, logging and timber exports accounted for more than half (50-60 percent) of the country's foreign exchange and contributed to 26 percent of GDP in 2002. However, mismanagement of these resources fueled the conflict and led the United Nations Security Council (UNSC) to impose sanctions on timber exports from Liberia in 2003. The sanctions were lifted in 2006 leading to the beginning of the economic revitalization of the country. It is crucial that the forestry and natural resources sectors are managed effectively to avoid a recurrence of the internal conflict.

9 See: https://svs.gsfc.nasa.gov/4836

Biodiversity

Liberian forests are an important biodiversity hotspot and contain diverse ecological communities and distinctive flora and fauna. The country is home to about 600 bird species, 125 mammal species, over 150 reptile and amphibian species. There are over 2,200 vascular plant species of which 4.7 percent are endemic to its forests and 240 are timber species. Most of the rare species of West Africa occur in Liberia.

Some of the most important areas in terms of biological significance are the Krahn-Bassa Forest, the Cestos-Senkwehn River sheds, the Nimba Mountains, the Lake Piso wetlands, the Grebo National Forest, plus the Gola and North Lorma Forests.

Pygmy Hippos Mainly Confined to Liberia

Gender

Women, Forests and Livelihoods

Women in Liberia are major users of forests and forest products, such as wood for fuel, medicinal plants, and wild foods. This is largely because forest products are important for household livelihoods, and much of the collection of forest products is done by women for subsistence household needs.[10] Correspondingly, deforestation and degraded forests impact heavily on women in rural areas of the country and exacerbate food insecurity and loss of livelihoods.[11]

10 https://www.forestcarbonpartnership.org/understanding-forest-dependency-liberia
11 https://www.clientearth.org/latest/latest-updates/stories/how-liberian-community-forestry-laws-are-empowering-women/

Women Members of the Village Savings and Loan Association. Bensonville, Montserrado County, Liberia

National Response on Gender-Based Violence (GBV)

In 2008, Ellen Johnson Sirleaf[12], Her Excellence the President of Liberia, made a speech on "Liberia's Gender-Based Violence National Action Plan" to the United Nations Population Fund (UNFPA). She noted that the country is on the path to national recovery after 14 years of a brutal civil war that left around half of all Liberian women as survivors of gender-based violence (GBV) (Sirleaf 2008). She pointed out that the rates of GBV, especially domestic violence, remained high. The President also stated that for many Liberian women, the violence they experienced during the conflict period was still happening.

Her Excellency Ellen Johnson Sirleaf, President of Liberia (2006-2018)

In response to this challenge, GoL formulated a national response for the prevention and case management of GBV. In 2009, to address the gender-based challenges brought about by the conflict, GoL formulated a Liberian National Plan of Action (LNAP) (Government of Liberia 2009). The LNAP constructed on four pillars: (1) Protection; (2) Prevention; (3) Participation and Empowerment; and (4) Promotion. It also proposed actions to promote gender equity and inclusivity, using strategic multi-cultural and multi-dimensional approaches.

Key actions included the following:

1. Strengthening the health sector for an effective and efficient response to GBV case management, documentation, and reporting on clinical evidence

12 See: https://en.wikipedia.org/wiki/Ellen_Johnson_Sirleaf

2. Reforming the legal system to deal more efficiently and expeditiously with violence, particularly with the security of women and girls
3. Putting in place systems and outreach services for psychosocial support and 'safe homes' for survivors of GBV
4. Providing appropriate skills to social and health professionals
5. Support for women and girls' economic and social empowerment.

In 2019, the LNAP was reviewed for the period 2019-2023.[13] The 2019 LNAP committed to increase the political participation of women at the national and local levels to reach a target of 30 percent by 2023. It was constructed on five main pillars. These included: (1) Prevention; (2) Protection; (3) Participation; (4) Relief and Recovery; and (5) Coordination and Accountability. Each of these pillars has dedicated outcomes, outputs, indicators, and activities, which support the following goals:

- Women and girls' safety, physical and mental health, and security
- Empowerment of women and participation of women, at all levels, towards the building of sustainable and inclusive peace and security in Liberia.

Women and Natural Resources

Social analysis of gender issues in the utilization, conservation, and management of natural resources (Agyeman and Ajuwon 2010) and gender assessment following the implementation of the LNAPs (EPA 2019), has clearly shown that to bridge gender disparity and to alleviate women's vulnerabilities in natural resource utilization and management, GoL should consider the following interventions:

1. Ensure that information relating to project activities reach both men and women, as well as preparing women to effectively participate in the resource management process
2. Target women in the communities, as well as existing women's organizations, for education and awareness on biodiversity and medicinal plant conservation and safe use
3. Promote alternative sources of energy and efficient use of fuel wood
4. Support women to conserve existing medicinal plants through cultivation
5. Promote mechanisms for the active and full participation of women in FNR management.

CIVIL WAR—A DEVASTATED LAND

Socioeconomic Impacts

As a result of the 14 years internal conflict, there was extensive destruction to the infrastructure and the social fabric of the society (AfDB 2013). It was estimated that in 2006, three years after the end of the conflict, that: (1) about 80 percent of the population was living below the poverty line and surviving on less than US$ 1 per day; (2) 35 percent of the population were undernourished; (3) 75 percent of people did not have access to clean water; and (4) over 75 percent of inhabitants were illiterate, the majority of whom were under the age of 14 years who were born during the conflict. In addition, most of the health infrastructure at the time was not functioning and employment had become a further challenge. In 2002, the available labor force in Liberia was estimated at about 1.33 million.[14] By 2006, unemployment rate in the country was over 80 percent (IMF 2006), and less than 100,000 Liberians were registered as employed in the public and private sectors.

13 See: https://www.un.org/shestandsforpeace/content/liberia-national-action-plan-wps-2019-2023
14 https://data.worldbank.org/indicator/SL.TLF.TOTL.IN?locations=LR

Throughout Liberia, and particularly in Liberia's urban centers, key services collapsed during the period of the conflict. The lack of safe drinking water, electricity production, and waste management also led to increased risks to human health and increased demand on natural resources. Communities had to resort to local watercourses and shallow wells for their water supply. At the same time the breakdown in sewage treatment facilities often led to spillage of raw sewage into rivers, lagoons, and the sea. Waste collection facilities did not exist throughout most of the country. This resulted in open dumpsites and frequent burning which posed potential environmental risks, such as, air pollution, contamination, and the spread of disease.

Unidentified Rebel Fighters during Second Liberian Civil War

With the collapse of the country's major hydro and thermal power generating facilities the demand for fuelwood and charcoal increased substantially putting further strain on forest resources. It was estimated that during and immediately after the conflict as much as 99 percent of the population depended on wood fuel for their basic needs (UNEP 2004). In addition, by the end of the conflict, gross domestic product (GDP) had decreased from over US$ 1,000 million in 1988 to less than US$ 500 million (UNDP 2006) unemployment in 2006 stood at 85 percent.[15]

Civil War and Gender

Overall, women have not recovered from the impacts of the civil war. During that time, most schools were closed, and women could not continue their traditional involvement in the production and sale of food (US Department of State 2020). The war totally disrupted traditional village life including social structures and traditional institutions. Most of the population fled to neighboring countries or became displaced within the country.

Gender-Based Discrimination

The Constitution prohibits discrimination based on ethnic background, race, sex, creed, place of origin, or political opinion. Yet, gender-based discrimination still exists in the country. The status of women varies by region, ethnic group, and religion. Before the outbreak of the civil war, women held one-fourth of the professional and technical jobs in Monrovia. But the civil war disrupted this trend and gender-based discrimination has arguably increased since then (US Department of State 2020).

Female Genital Mutilation (FGM)

One potential benefit at the time was the disruption of the secret societies that performed female genital mutilation (FGM) as an initiation rite. As a result, it is suggested that by the end of the war the incidence of FGM had dropped to as low as 10 percent (US Department of State 2020). However, since the conflict ended traditional societies are now re-establishing themselves throughout the country. As a result, there are now reports of an increase in the incidence of FGM.

15 See: https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_070502/lang–en/index.htm

In 2000, it was estimated that each Liberian woman averagely gives birth to 6.43 children, with an infant mortality rate of 134.63 deaths per 1,000 live births and a maternal mortality rate of 560 deaths per 100,000 births. LISGIS (2014) also estimated that about 13 percent married women and 6 percent of married men are in polygynous unions. The proportion of women in polygynous unions is highest in Lofa county (31 percent) and lowest in Montserrado County (7 percent) (LISGIS 2014).

Security of Tenure

Security of tenure is another issue faced by women in Liberia. Women married under civil law can inherit land and property. However, women married under traditional law are considered the properties of their husbands and are not entitled to inherit from their husbands or retain custody of their children if their husbands die. In addition, women were frequently the victims of rape and abuse by the armed factions (ILO 2005). In 2003, to address barriers to gender equity and inclusivity, GoL enacted an "Act to Govern the Devolution of Estates and Establish Rights of Inheritance for Spouses of Both Statutory and Customary Marriages". The 2003 Act gave women the right to inherit their husband's land and property. However, only applied if the woman was widowed, and her son or sons gave their approval (IBIS 2012).

Impact on Forests

Forests were particularly badly affected during the civil war and unregulated timber extractions helped fund the 14-year civil conflict. During the war, logging and timber exports accounted for more than half (50-60 percent) of the country's foreign exchange and contributed to 26 percent of GDP in 2002.[16] The regime of Charles Taylor, first as insurgent leader (1989-1996) and subsequently as president (1997-2003), created a regime of patronage, terror, and intimidation, to extract millions of dollars from logging companies, to purchase arms and finance the conflict. A network of collusion and corruption developed, which went far beyond the forestry sector and tainted the entire economy. A report that analyzes the financial flows that fueled wars globally, states:

"The prime example of conflict timber is Liberia. First as insurgent leader, then as president, Charles Taylor managed to control territory and extort logging companies in order to fund his war and consolidate control.

In Liberia as in other conflict zones, logging fueled conflict when money flowed from the forestry sector, corrupting officials, funding arms and other material, financing direct intervention of loggers in the conflict, paying private security forces, and facilitating financial crime. Comprehensive reform is needed to deal with these stresses. Corrupt practices, for instance, must be eliminated, such as the allocation of logging concessions based on patronage." (Program on Forests 2011 p 143)

To finance the conflict, the Taylor regime treated Liberia's forests as a lootable asset and flouted the legislation and institutions responsible for its sustainable forest management (SFM). It left a legacy of broken institutions, corruption, and a perception that forests are a free for all, a legacy that haunts SFM in Liberia to this day.

The international community was aware that the conflict was being fueled by the misuse of forestry resources. However, it was not till 2003 that the United Nations Security Council (UNSC) imposed sanctions on timber exports from Liberia to cut-off the source of revenues. At the same time, peace was achieved in 2003, and Charles Taylor was exiled to Nigeria. This marked the beginning of a period of hope for Liberia and its future economic development.

To minimize the risk that forestry would fuel a resumption of conflict, the UNSC laid down three conditions before timber sanctions could be lifted:

1. Security should be established throughout Liberia
2. Money from logging should not fund conflict
3. The government must manage forests to ensure their legitimate use.

16 See: https://sur.conectas.org/en/civil-societys-role-reforming-liberias-forestry-sector/

In December 2003, as part of the post-conflict engagement, the United States (US) organized a workshop for local stakeholders to develop a *roadmap* to meet the conditions to lift the UNSC timber sanctions, and more generally, to produce a plan for the comprehensive reform of the forestry sector. Although forestry was not initially on the agenda at the first donors' conference on Liberia, held at the UN in New York in 2004, the transitional Government of Liberia (GoL) and the US government established the Liberia Forest Initiative (LFI) to coordinate donor efforts and to build transparency, sustainability, and good governance for the sector. Other Liberian stakeholders and international development partners joined the LFI, including the World Bank, the United Nations Food and Agriculture Organization (FAO), the International Union for Conservation of Nature and Natural Resources (IUCN), the European Commission (EU), the Center for International Forestry Research (CIFR), Conservation International, and Fauna & Flora International.

In 2005, a Forest Concession Review (FCR) Committee was established that included civil society and members of the LFI. This was a notable first step in the sectoral reform process. It was perceived that, to prevent a return to business as usual, Liberia would need to review the forestry sector and its role in the conflict, including the behavior of logging operators. In addition, the information obtained by the review assisted in laying the institutional foundations and building the stakeholder consensus for the needed reforms. Following the demonstration of satisfactory overall progress, the sanctions were lifted in 2006 leading to the beginning of the economic revitalization of the country.

FORESTRY SECTOR IN LIBERIA

Importance of Forests for Livelihoods

Liberia's FNRs are significant and serve as a key livelihood for about 80 percent of its population (see Chapter 7). Individuals, especially forest fringe and local communities rely on forests for income generation and livelihood support. The government also depends heavily on the use of FNRs for socio-economic development. This means that, for the people and government of Liberia, the use of FNRs sit at the core of their existence and development.

Making Charcoal—An Important Forest Livelihood

However, despite the heavy dependence on forest resources, historically, Liberia's forests have been well conserved. This is due to strong forest legislation and governance and the low population density in forest areas. The alternative national sources of economic growth such as rubber and iron ore have also contributed.

The forestry sector has always been a big contributor to Liberia's economy in the form of industrial output, national income, employment, and export earnings (FAO 2007). For example, forest products accounted for around 5 percent of GDP in the 1980s, rising to 20 percent in the late 1990s and to over 50 percent of GDP in 2000 during the civil war (UNSC 2003). The natural resources sector also contributed 60 percent of recorded export earnings in 2002, while agriculture and forestry contributed approximately 55 percent and 24 percent respectively of official GDP (Birikorang 2008).

The forests and natural resources (FNRs) of Liberia:

- Are a key livelihood for 80 percent of its population
- Provide an important contribution to gross domestic product (GDP)
- Drive socio-economic development.

Liberia's natural resources generate large revenue inflows from forestry, mineral deposits, natural rubber, and, potentially, petroleum. At the end of November 2017, natural resource revenue inflows accounted for about 18 percent of GDP (Baffoe and Mwasambili 2018). It is worth noting that between 2015 and 2019, Liberia earned up to US$ 100 million a year from timber and rubber exports.

Currently, Liberia's formal forest sector contributes about 9 percent to the national economy. It is an important source of livelihoods and jobs for more than a third of Liberia's population that lives in forested areas (Ampaire 2020). This is likely to remain at this level, at least over the next few years (see Table 1.1). It should also be noted that the forestry sector has consistently contributed more to the economy than the entire manufacturing sector of the country. In 2015, around 39,880 full-time equivalent workers (of which about 35 percent were women) were employed by the formal forestry sector (FAO 2020a). However, this formal sector is just a small part of the story.

Table 1.1 Sectoral Origin of Growth (in Million US$ at Constant 2018 Prices)

	2018	2019	2020**	2021**
Agriculture and Fisheries	882.1	902	960	993.1
Forestry	295	272.9	285.3	291
Mining and Panning	401.6	454.7	462.3	471
Manufacturing	208	186.1	186.1	192.3
Services	1,477.50	1,366.30	1,193.30	1,239.20
Real GDP	3,264.20	3,182.10	3,086.90	3,186.60

Source: Liberian Authorities and IMF staff estimates

** Projection

Informal and Chain Saw Milling (CSM) Sectors

The informal and chain saw milling (CSM) sectors are a vital part of commercial forestry (see Chapter 3 and Chapter 4). Informal, and largely unmeasured, forest activities are an important source of jobs and incomes for rural Liberians. The informal CSM sector provides between 19,000 and 24,000 permanent jobs to both urban and rural individuals. The annual revenue generated by CSM alone is estimated to be US$ 31-41 million, or about 3-4 percent of Liberia's GDP. The charcoal industry employs up to 28,000 people on a 'full-time equivalent' basis (Hooda et al 2019). In addition, the informal collection and use of non-timber forest products (NTFPs) are also essential for forest communities. They offer a source of livelihood and food for much of Liberia's rural population (Welti et al 2015).

Workers Carrying Planks Can Earn 10 to 15 Liberian Dollars per Plank

Land Use

Liberia has 1.22 million hectares of agricultural land (cropland) consisting of lowland and upland agricultural areas. Table 1.2 shows land use in hectares for 2018/19.

Liberia has made a commitment to designate 30 percent of its forests as a Protected Forest Areas Network (PFAN), together with conservation corridors. About a quarter of the forest area is for commercial timber production. A non-designated category is about 45 percent of the forest area, and this land is used in a variety of ways by communities, smallholder cultivators, and transitory populations.

Table 1.2 Land Use in Liberia (2018/2019)

Land Use	Area per 1,000 Hectares
Forest	6,605
Cropland	1,222
Shrubland and Woodland	756
Wetland	490
Other land	220
Grassland	182
Settlement	105
Water	8,7

Source: National Forestry Inventory (NFI) 2018

In 2008, there were 274,070 farm families each with an average range of 1.17-2.06 hectares for arable crops (Ministry of Agriculture 2008). Assuming a 10 percent growth rate, today there are probably over 330,000 farm families now engaged in farming activities. Food crops such as rice, cassava and other vegetables are the predominant crops grown. However, some families also have small plots of cash crops such as rubber and cocoa.

LAND AND FOREST TENURE

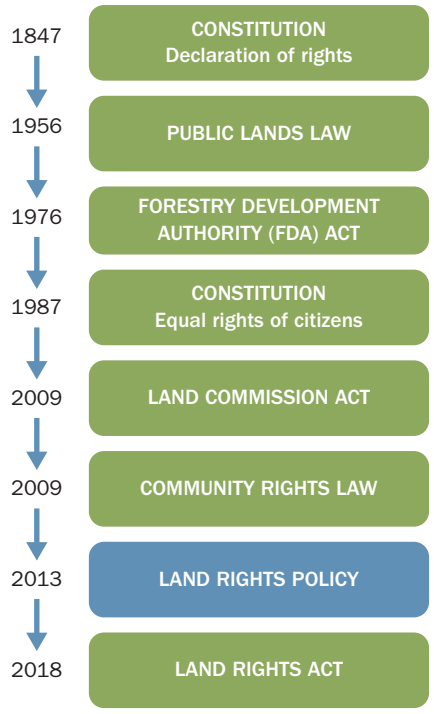
Tenure is a system of rights that regulates the ownership or use of land. It can exist formally, inscribed in a legal document, or informally, in response to orally established local property rights for which there is community-based consensus.

- Tenure defines property and what can be done with it.
- It explains who controls these assets, who benefits from them and where the power to make decisions about them is vested.
- As a social institution, it describes the relationship of a community, its members, and those outside the community and their rights and obligations on the control and use of land and forest resources (Birgegard 1993).

Tenure is a key means to survival in any community as it determines the access to and use of the forest resources. Therefore, social identification with a group is an important prerequisite for acceptance by the group and access to forest resources.

Tenure as a concept is enshrined in Liberia's Constitution. The first Constitution of 1847 confirmed the right of citizens to benefit from the country's natural resources. The 1986 Constitution detailed the right of access to forest resources, rights to equitable distribution of benefits from the forests, and the right of all citizens to participate in resource management. Following this, policy and legislation strengthened the right to tenure in Liberia. See Figure 1.1 for a list of important legal and policy statues that impact on tenure.

Figure 1.1 Land and Forest Tenure in Liberia—Policy and Legislation



2013—Land Rights Policy (LRP)

The Land Rights Policy (LRP) was developed in 2013 to strengthen tenure in forests and other power purchase agreements (PPAs). Implementation of the LRP changed the quantity and location of land owned by the government and what was available for allocation as concessions and possibly PPAs. This policy covers four land rights categories: 1) **public land**; (2) **government land**; (3) **private land** and the new category of **customary land** (See Box 1.1). There is also a cross-cutting sub-category called protected areas. For public land and government land, to private and community interests, the policy makes critical recommendations on how the government transfers such land and how the government acquires land, especially through the exercise of '**eminent domain**' (that is acquiring land forcefully to create protected areas).

Box 1.1 Land Categories

Public Land

Land which is not Government Land, Private Land or Customary Land.

Government Land

Land owned by the Government of Liberia (GoL), including land used for the buildings, projects, or activities of GoL, including lands that ministries, agencies, parastatal bodies, military bases, roads, ports, airports, public schools, public universities, public hospitals, public clinics, public libraries, public museums, and public utilities are situated on. Government Land also includes Government protected areas and proposed protected areas (PPAs).

Private Land

Land that is owned or otherwise held by private person(s) under the provisions of this Act and other applicable laws of Liberia.

Customary Land

Land that is owned by a community and used or managed in accordance with customary practices and norms. It includes residential land, farmland, communal forestlands, and fallow lands.

The policy made several significant recommendations with respect to the new category of customary land. It recommended that:

1. Customary land and private land are equally protected, and
2. Customary land of Communities can only be alienated to government, public or private enterprises for commercial and other interests, after the community has:
   a. Self-defined
   b. Been issued a deed
   c. Established as a legal entity, and
   d. Their governance arrangements are strengthened to make them fully representative and accountable.

2018—Land Rights Act (LRA)

In 2018, land and forest tenure were improved further with the enactment of the Land Rights Act (LRA), 2018 which legislated for more equitable and fair land rights for the citizens of Liberia. The Act emphasized the importance of community land rights and brought into force a recognition of oral testimony of ownership and the need for all members of the community to be represented in decision-making processes (including women and youth). It placed landowning communities as key actors in the country's development.[17]

Forest Tenure

Forest tenure is not only a legal concept but a complex social institution. As a legal concept, it refers to both rights and obligations: (1) the right to own, hold, manage, transfer, or exploit forest resources and land; and (2) the obligation not to use these in a way that harms others (Bruce 1998). In other words, these are the terms and conditions on which forest resources are held and used (Birgegard 1993). Forest resources cover a range of natural assets such as land, water, rivers, trees, freshwater fisheries, and wildlife.

A community's rights to forests define their forest resource tenure (WRI 2005).

Tenure is multiple and diverse because different resources are put to different uses. For example, forested land, riverbanks, and home gardens are likely to be ruled by different tenures, different land uses and different types of users. This diversity is due to the need to make resource use socially and economically efficient (Birgegard 1993). A tenure system can involve traditional practices, customary authorities, and formal laws, and more than two tenure systems can operate simultaneously. There are also state and customary forest tenure systems. Customary forest tenure is based on the traditions of the local communities and state forest tenure is the administrative system governed by the state rules and regulations (Freudenburger 1995). However, a tenure system must be coherent with tenures complementing each other.

Forest tenure represents a major challenge in Liberia. In the early years of the Republic of Liberia, customary and communal ownership of forests were recognized. However, since the 1950s several legal developments have weakened and confused the situation (GoL 2012).

During the 1970s, commercial forestry activities were based on the understanding that the state owned the land and all forest resources on it. Management decisions were taken by central government, which also collected all revenues from the sector.

However, from 2004 onwards, efforts were made to reform the forestry sector. It was decided to separate the forestry sector (particularly the legal framework for commercial forestry) from questions of wider land tenure reform. One of the motivations for this was to completely reform the forestry sector to allow commercial logging activities to resume and help restart the economy after the civil conflict.

At present, forest tenure rules give the right and supremacy to the state, and this is outlined in the National Forest Reform Law (NFRL), 2006. The law states in Section 2.1 that Liberia's forest resources belong to the Republic. The only exception is forest resources that are privately owned and exist because they were planted as a crop and did not grow naturally. Currently the legal status of the forest is recognized as the government holding in trust the forest resources for the republic for the greater good of the population (FAO 2007). There are eleven National Forests, one National Park, and one Strict Nature Reserve.

17 See: https://news.trust.org/item/20181023161353-j601g/

The UNSC would not consider lifting sanctions on Liberian timber without significant legal reform in the forestry sector, such as competitive bidding and legislative approval for commercial logging. At the same time, it was recognized that the scale of tenure reform required would take many years to complete. To speed up the process of lifting sanctions, it was agreed tenure questions be left out of the 2006 NFRL. However, it was also agreed that an additional law would be developed and presented to the Legislature within one year of the passage of the NFRL, 2006. This law would focus on community rights in relation to forestry and empower communities to fully engage in the sustainable management of forest resources in Liberia. This law came into force in 2009 and is known as the Community Rights Law (CRL) of 2009 with Respect to Forest Lands—Liberia.[18]

The FDA has taken a strict policy to not allow land use activities (commercial, community or conservation) without first establishing:

1. There are no prior land tenure claims in the area, and
2. The local population agrees with the land use activity.

See **Step 4** requirements in the 9-step application procedure to authorized forest community (AFC) status—Chapter 5.

The FDA has substantial field vetting and decision-making processes in accordance with provisions mandated in the forestry law and regulations (FDA 2007). World Bank (2012) outlines this process in the section on Additional Issues in the sub-section called Planning and Decision-Making Process (World Bank 2012).

Currently, the issues of customary tenure and access rights over forests and trees have been comprehensively addressed by the CRL, 2009 and the LRA, 2018. In these acts, communal forests are defined as areas set aside by law for use by communities on a non-commercial basis. Communal land is land available for the exclusive use of communities through customary laws and procedures.

However, the rights of communities to use forests on their land is unclear and ownership of land appears to have been dissociated from the forest growing on it. This lack of clarity also applies to private land owned by private individuals, entities, corporations, or cooperatives obtained by the granting of a public land deed or long leasehold by GoL.

The latter issues have resulted in conflicting tenure arrangements and persistent clashes of customary and statutory rights over the management, authority, and control of the forest resources, especially on communal lands. Land and forest tenure and use rights are consequently contentious issues for the communities, and public sectors such as forestry, agriculture, mining, and the local government.

Another major challenge associated with current forest tenure rights includes the status of encroached forest lands because of the increasing expansion of agricultural settlement and development of the rural economy. This is largely because most customary land is not formally deeded or registered, and therefore most communities do not have the security of tenure enjoyed under statute by deeded landowners. This means the conversion of forestland to agricultural land, especially by migrant farmers, has resulted in a further weakening of their tenurial rights.

Due to the focus on commercial interests, the exclusion of forest property rights for communities as part of modern forest governance that has continued apace with the NFRL, 2006 has resulted in diluting customary forest tenure. Forests and forestland have become two separate properties. The legal reality is that even those communities that hold formal title to their customary properties (almost all of which include substantial forestlands) have no rights to the trees that are integral to the land.

18 See: https://www.clientearth.org/latest/documents/act-2009-act-to-establish-the-community-rights-law-of-2009-with-respect-to-forest-lands-liberia/

Tree Tenure

Tree tenure is defined as a bundle of rights over trees and tree products each of which may be held by different people at different times (Fortmann 1985 cited in Dumenu et al 2014). These rights include possession, exclusive use, disposal, and inheritance (Acheampong and Marfo 2011).

Tree tenure primarily refers to the multiple relationships between people, trees, tree products, rights, and responsibilities within different and competing socio-economic and political contexts. These rights may be seen as a bundle that can be broken up, re-divided, transferred, and transmitted. They include the right to use, inherit, plant, dispose of and exclude others from using (Fortmann 1985). Some of these rights may be held by individuals, some by groups and others by political authorities.

A tree tenure regime can be complicated. It may, for instance, distinguish between planted and wild trees, between various species of trees and between trees near to the human settlement and those further afield. The rights to use tree products may also depend on the nature of the use, such as whether the produce is taken for commercial or personal use.

Security of Tenure

Tenure security refers to the degree of confidence held by people that they will not be arbitrarily deprived of their property rights, their access to resources, or the benefits they derive from their use of the forest.[19] One of the main factors that affect the level and type of consumptive use of forests in many settings is the security of tenure that residents possess in relation to trees and forests. Security of tenure determines whether local people are willing to participate in the management and protection of tree resources (Acheampong and Marfo 2011). In customary law, trees naturally growing on the land belong to the whole community. However, it is increasingly being recognized that trees do not necessarily belong to the land on which they grow, and that this distinction may have significant implications for rural development forestry (Bruce and Fortmann 1989).[20]

Equitable access and distribution of customary beneficiary rights to forest resources is an issue that needs to be addressed. Over time, the development of the timber trade has led to a system where all rights to natural forest assets (not planted or tended to) are vested in the government. There is a need to strengthen the traditional clan and family systems to maximize the benefits to the local communities.

POLICY AND LEGISLATIVE FRAMEWORKS

All the chapters in this book that discuss the 4Cs of sustainable forest management (that is conservation, commercial, community and carbon) provide a section on the relevant policy and laws that affect that aspect of forestry. Table 1.3 provides a complete list of these frameworks and Table 1.4 is a list of the relevant regulations issued by the FDA.

19 https://www2.cifor.org/forest-tenure/about/definitions/

20 The concept of tree tenure as distinct from land tenure is new in the literature though it may have existed for a long time in African societies (Okoth-Ogendo 1987).

Table 1.3 Summary of Policy and Legislation Developments on Forest Management, Wildlife Conservation and Protected Areas Management—1953 to 2020

Year	Achievement
1953	• Bureau of Forests and Wildlife Conservation (BFWC) • Creation of Bureau of Forests and Wildlife Conservation in the Ministry of Agriculture. Mainly dealt with forest inventory and concession allocation • First Forestry Law
1956	• Liberia Code of Law (Creation of Reserves) • Liberia Code of Law, Subset 2, permits the creation of government reserves, native authority reserves, communal forests and national parks
1957	• Supplementary Bureau of Forests and Wildlife Conservation (BFWC) Law • Supplementary Forestry Law (Act for the Conservation of Forests)
1976	• Forestry Development Authority Law (FDAA)
1979	• Natural Resources Law
2003	• East Nimba Nature Reserve
1983	• Creation of Sapo National Park
1986	• Constitution of Liberia
1988	• Amendment (FDAA) • Wildlife and National Parks Law (WNPA)
1999	• National Environmental Commission of Liberia (NECOLIB)
2000	• Amendment (FDAA) • Liberia ratified the Convention on Biological Diversity (CBD) • Minerals and Mining Law • National Forestry Law
2002	• Environmental Protection and Management Law (EPML) • National Forestry Law • Production of the National Environmental Strategy
2003	• Amendment (FDAA) • Establishment of the Environmental Protection Agency • Extension of Sapo National Park • National Forestry Law • East Nimba Nature Reserve Law (Proclamation of the East Nimba Nature Reserve) • Protected Forest Area Network Law (PFANL)—Establishment of a protected forest areas network • Sapo National Park Law • United Nations Security Councils places sanctions on the export of timber and timber products originating from Liberia
2004	• Invitation of Forest Sector Reform Process • National Biodiversity Strategy and Action Plan (NBSAP) Revised in 2017
2005	• Public Procurement and Concessions Act
2006	• Executive Order No.1 (Adopted Report of the Forest Concession Review Committee • National Forest Policy (NFP) • National Forestry Reform Law
2007	• FDA Regulation No. 101-110 07 • National Forest Management Strategy
2009	• Community Rights Law • Liberia Extractive Industries Transparency Initiative (LEITI)
2010	• Investment Law • Liberia's Medium Term Economic Growth and Development Strategy (2010-2017)
2011	• Chainsaw Regulation No 115-11 • Signing of voluntary Partnership Agreement
2016	• National Wildlife Conservation and Protected Area Management Law (NWCPAML)
2018	• FDA Vision 2030

Table 1.4 Forestry and Wildlife Regulations Which Cover Sustainable Management and Conservation of the Forest and Regulated Resources

Regulations	Content
Regulation No. 1	Residue and Waste of Forest Resources
Regulation No. 2	Registration of Timber Export Sales Contracts
Regulation No. 3	Waybills
Regulation No. 4	Control of Non-Concession Operation
Regulation No. 5	Assistance to Owners of private Land
Regulation No. 6	Exploitation Permit for Non-Concession Public Forest Land
Regulation No. 7	Revised Forest Fees and Taxes
Regulation No. 8	Revised Industrialization Incentive Fees
Regulation No. 9	Enabling a Special Trade Depression Allowance on Certain Forest Fees
Regulation No. 10	Enabling a Further Reduction of Certain Forest Fees
Regulation No. 11	Revised Forest Fees and Taxes
Regulation No. 12	Administrative Fees
Regulation No. 13	Forest and Wildlife Conservation Fees
Regulation No. 14	Export of Logs and processed Wood
Regulation No. 15	Amending Sections I, II and III of Regulation No. 14
Regulation No. 16	Increasing the Industrialization Incentive Fees
Regulation No. 17	Restricting the Export Size of Niangon Logs
Regulation No. 18	Banning Export of Selected Species as Logs
Regulation No. 19	Sustainability of the Resources Base for Fuelwood and Charcoal Production
Regulation No. 20	Restriction on Export of Minor Forest Products
Regulation No. 21	Revised Administrative Fees as Regards Standardized Monetary Unit
Regulation No. 22	Pit-sawing of Timber
Regulation No. 23	Minor Forest Products and Administrative Fees
Regulation No. 24	Utilization of Minor Products
Regulation No. 25	Revised Administrative Fees on Wildlife Conservation
Regulation No. 26	Ban on Pit-sawing and Power Chain sawing
Regulation No. 27	Reduction in Reforestation, Conservation, and Forest Research Fee (Amending Regulation No. 23)

FOREST FINANCING

The commercial forestry sector development plan is significantly dependent on timber exploitation as the main source of revenue, unlike the other three management regimes (that is conservation, community, and carbon). In response, the FDA and Société Générale de Surveillance (SGS) have initiated measures to ensure economic revitalization of the forestry sector by boosting wood processing industries and generating revenues across all the forestry sub-sectors (FDA 2010). Most of the measures have focused on collection of revenue from timber cutting operations. This is because total revenue from NTFPs have been low compared to revenue from timber operations. For example, in 2015, the FDA as a revenue generating entity raised over US$ 8 million (93.25 percent of total forest sector revenue) from export fees, Land Rental Bid Premiums, Administrative Fees and Annual Area Fees (contract areas) through the LiberFor[21] Chain of Custody (CoC) system and SGS. Meanwhile, only US$ 609,086 (6.75 percent of total forest sector revenue) was generated from NTFPs.

Before 2006—Timber Revenue Collection Process

Before the reforms in 2006, forest taxes were mainly calculated on round log volumes and on processed forest products volumes. The basic unit of volume assessment was the cubic meter. Scalers worked directly with the companies and recorded logs and processed products production volumes. These scalers assessed and graded the round logs and processed forest products volumes for the assessment of taxes (revenue) at the regional level. The regional forestry administrators, that is District Foresters, Production Forest Officers, and Regional Foresters, checked the scalers' work to determine accuracy of production volumes recorded on prescribed forms. In addition, an inspection team (forest management) stationed at Headquarters was frequently dispatched to the regions to reconcile production records and investigate encroachment cases.

The collection of forest revenue started with the reconciliation of production and processed volumes (data) recorded on prescribed forms, known as tally sheets (TSs)—the first book of data entry. The information from the TSs was then transcribed onto the second book of data entry known as the Monthly Production Summary Sheets (MPSSs). From the MPSSs, waybills (the third book of entry) were issued out.

The raw data from the TSs served as the basis for the assessment of forest revenue. At the end of each month, the MPSSs accompanied by the TSs were delivered to the billing unit at Headquarters by the Regional Foresters to effect billing of logging concessions. The information on the MPSSs was crosschecked and typed onto the bill forms (bill invoices) and submitted to companies for payment (the source documents, monthly production summary sheets were always attached) to allow companies to double-check.

Active companies paid taxes with checks deposited in designated FDA and Ministry of Finance (MOF) accounts at appropriate banks and delivered receipts to the Deputy Minister for Revenue, MOF and Controller at FDA Headquarters. A fifteen-day grace period was allowed after the date of submission of bills. The assessment of all taxes and submission of bills were performed by the FDA. There was a collection and payments percentage sharing for stumpage and land rental fees in conformity to the stipulation of Executive Order No. 4 of June 22, 2000.

21 LiberFor was the initial CoC designed through the SGS and FDA program. In 2017, a new version of the CoC was launched. It is now known as LiberTrace. See: https://libertrace.sgs.com

After 2006

After the 2006 forestry sector reforms, an audit of the FDA structures at both headquarters and regional levels concluded that the tax collection structure at the FDA was weak and ineffective. To ensure an effective tax collection structure and improvement in the future tax collection and other revenues, the FDA needed to be both empowered and strengthened. It was agreed it needed to be supported by a proven and experienced company or organization.

The United Nations (UN) selected SGS[22] on a competitive bid and commissioned them to monitor timber logging in the country and collect the fees and taxes on timber business in the country. In addition, SGS was expected to build the capacity of FDA to collect fees and taxes on timber exports in future under the LiberTrace CoC system. Such an initiative was necessary because FDA lacked the capacity in terms of logistics and numbers of staff to carry out this responsibility. SGS was contracted to carry out this assignment for five years, with an option for renewal. During this period, they were to train the FDA counterpart staff to take over full responsibility at the end of the contract period. See Chapter 3 for more information.

Timber Tagged According to the LiberFor System Waiting for Export

Sources of Finance

Building a sustainable forest sector that caters for all its stakeholders and maintains a healthy environment cannot happen without funding. This section discusses the various funding options available to the forest sector from both domestic and international sources. See Table 1.5 for an overview of the finance options available.

22 See: https://www.s-ge.com/en/company/sgs-societe-generale-de-surveillance-sa

Table 1.5 Overview of Forest Financing Sources

Financing sources		Domestic	International
Public	Governments	• Investments by national and local governments through subsidies, soft loans, non-monetary incentives, and direct investment • Budgetary allocations • Revenue generated from government owned forests	• Bilateral official development assistance (ODA) (such as grants, recoverable grants, concessional loans) • Multilateral ODA institutions: IDA, GEF, ITTO, FAO, UNEP, UNDP, GM, and regional development banks grants, investment lending, investment guarantees • Multilateral targeted program: PROFOR, FLEG, CGIAR, BPF, and NFP (grants, co-financing) • Multilateral financial institutions: IFC, IBRD, and regional development banks
Private	Forest Industry	• Direct investments (including small and medium-size enterprises	• Foreign direct investment (FDI)
	Financial institutions and institutional investors (including micro- finance institutions)	• Short- and long-term credit • Portfolio investment • Targeted credits • Insurance and re-insurance	• Short- and long-term credit • Portfolio investment • Export credits • Guarantee instruments • Insurance and re-insurance
	Philanthropic	• Financial support to national nongovernmental organizations (NGOs) and targeted beneficiary groups	• Financial support to international NGOs and targeted beneficiary groups
	Conservation NGOs (self-financing)	• Financial support to national NGOs and targeted beneficiaries (project funding)	• Financial support to international NGOs (program and project funding) • Twinning arrangements
	Other NGOs and CSOs (self-financing)	• Financial support to national civil society organizations (CSOs) s and targeted beneficiaries (project funding)	• Financial support to international CSOs (program and project funding) • Twinning arrangements
Payments for environmental services (PESs)		• Watershed protection payments • Carbon payments • Fresh water supply payments • Nature-based and eco-tourism • Landscape, recreation, and other payments for forest services	• Carbon payments (regulatory and voluntary market) • Biodiversity • Nature-based and eco-tourism • Bioprospecting

Source: Simula 2008

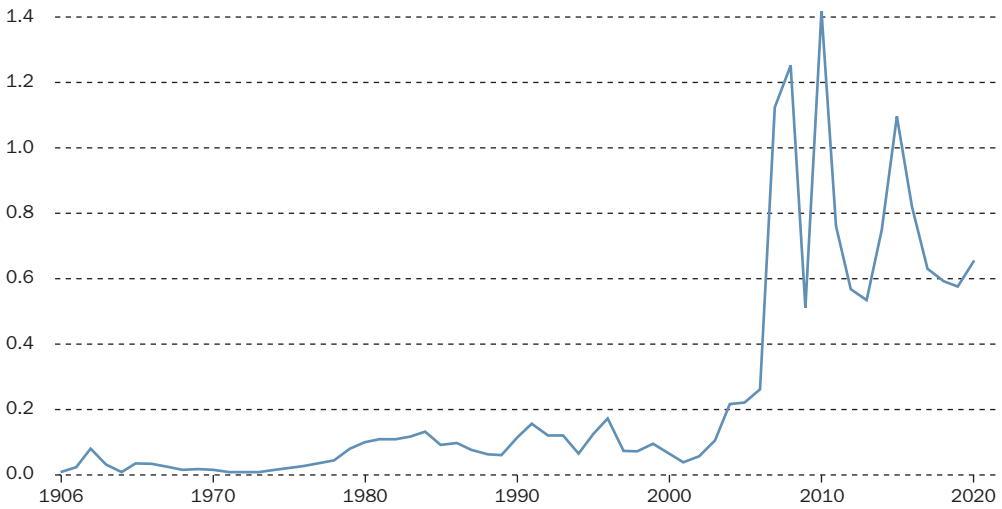
Official Development Assistance (ODA)

The Official Development Assistance (ODA) from the Organization for Economic Cooperation and Development's (OECD's) Development Assistance Committee (DAC) member countries is the main source of financing to promote economic and welfare development.[23]

23 https://www.oecd.org/dac/financing-sustainable-development/development-finance-standards/official-development-assistance.htm

Although ODA assistance to Liberia rose exponentially between 2000 and 2010, more recently it has fallen back. In 2010 it received a high of US$ 1.4 billion whereas in 2019 it received just US$ 597million. See Figure 1.2. Of this, only a small (though unspecified, as a sectoral breakdown is not available) percentage has been going to the forestry sector, and we can assume the volume of assistance has declined significantly.

Figure 1.2 ODA Assistance to Liberia



Source: World Bank 2022

ODA comes in two forms: (1) bilateral (one government to another); and (2) multilateral aid (money from many governments that is channeled towards one government). Ninety five percent of bilateral ODA to forestry in Africa comes from nine donors EU, Finland, France, Germany, Japan, Netherlands, Switzerland, United Kingdom, and the United States). The relatively low number of donors and low amounts disbursed to the forestry sector in Africa, including Liberia, is explained mainly by two factors.

1. Finance to the forestry sector is being increasingly channeled through multilateral agencies.
2. Forestry financing is now being included in the climate change and biodiversity agendas rather than as a standalone sector (Simula 2008).

In the Liberian forest sector, bilateral ODA has tended to focus on development of national forestry programs, strengthening national forest institutions, and Reducing Emissions from Deforestation and Forest Degradation (known as REDD+[24]) (see Chapter 6) (Gondo 2010). Over the six-year period from 2009 to 2014, donors committed a total of US$ 47.2 million to support REDD+ readiness and development in Liberia (Mulbah 2016). REDD+ financing to Liberia began to rise exponentially in 2014 after Norway pledged to greatly increase its funding to support Liberia's forest conservation efforts by up to US$ 150 million from 2015-2020, more than half to be results-based payments for verified emission reductions (Gaworecki 2016).

Forest Levies

Forest levies include a range of charges, fees, and taxes for the use of forest resources. The 2006 NFRL requires the FDA, by regulation, to establish Stumpage Fees, Land Rental Fees, and Forest Product Fees. The FDA is required to establish a fair and transparent procedure for allocating fees to communities and to Counties. The 2006 NFRL also states that GoL allocate and distribute fees collected as follows:

24 See: https://redd.unfccc.int/fact-sheets.html

- 10 percent of Stumpage Fees to support operational costs for the PFAN established by Chapter 9 of the National Forestry Reform Law, 2006
- 30 percent of Land Rental Fees to communities entitled to benefit sharing under Forest Resources Licenses
- 30 percent of Land Rental Fees to Counties
- 40 percent of Land Rental Fees to the Ministry of Finance to hold as part of the general revenues of the Republic in accordance with Section 7 of the Reform Tax Code
- 10 percent of Forest Product Fees to support operational costs for the PFAN established by Chapter 9 of this Law (NFRL 2006).

Consolidated Fund

In Liberia, the Consolidated Fund is money that passes through GoL (such as taxes, fines, and fees) and that GoL has the responsibility of using and disbursing. The Consolidated Fund is a key source of finance for forest sector activities. However, this fund has not paid out adequately, and raising enough funds for forest management activities is a challenge.

Forest sector financing is heavily reliant on internal cash flows, and this is the case for most countries. In Liberia, domestic public sector financing is the major source of financing for forest-related activities in Liberia (Gondo 2010). For example, the financial arrangement for the FDA strategic plan (2018-2030) suggests an amount of over US$ 58 million would be required to finance the key intervention strategies outlined in the plan. It is expected that Budgetary Appropriations from GoL would cover US$ 42.5 million (or 73 percent) of the total budget sum. Development partner support would amount to over US$ 15 million (or 27 percent) of total funds required.

However, in practice the FDA struggles to raise adequate domestic public funds for the forest sector, as forests have been treated as quick sources of revenue with minimal re-investment into the management of forests.

Industry and Private Sector Support

Private sector investments are mainly directed toward forests managed for wood production from both natural forests and plantations. Although, in a few cases private sector investments are channeled towards the management of protected forest areas. The forest products industry in Liberia also contributes occasionally to the FDA for forest management activities.

In other regions, the private sector has provided some funding for projects on carbon markets and other mechanisms related to the forest services. It is estimated that private investments contributed 64 percent of the total identified sources of forest financing in the Latin America and the Caribbean region and totaled an average of almost US$ 4.4 billion per year between 2006 and 2011. Investments in small to medium scale forest enterprises have been promoted and directed more towards harvesting indigenous forest concessions and related timber value chains, small scale saw milling from plantation and indigenous forest ecotourism in forest protected areas (Gondo 2010).

Philanthropic Funding

Philanthropic funding represents a small portion of forest financing in Liberia. The sustainability and predictability of philanthropic grants from the private sector are difficult to estimate and downturns in the global economy generally impacts the level of investment from philanthropy. Most NGOs in Liberia rely mostly on international donors and philanthropic organizations for funding.

Local Community Support

Local communities and farmers funding contribution to the forest sector is mostly in-kind in forms such as labor. However, there is evidence that, with a little support and improved security of tenure, smallholder farmers can mobilize massive

investment into forestry, especially regarding plantations and trees outside forests.

An example of an FDA community collaboration, with in-kind contribution by farmers and local communities is the Modified Taungya System (MTS). The MTS is believed to have been started in Burma in 1862, when the colonial British employed Burma's Taungya tribes to raise Teak plantations along with their paddy rice (Chaudry 1980). The MTS is a plantation establishment method where farmers are given parcels of degraded forest reserves to produce food crops and to help establish and maintain timber trees. This system is usually practiced in areas where there is a land shortage. In Liberia, the MTS has been practiced on a small scale, and is applied in communities bordering forest reserves which are experiencing land scarcity for their farming ventures, while at the same time portions of these forest reserves were poorly stocked in terms of commercial timber species. The MTS is one scheme whose implementation could be broadened to increase community participation in forest management in Liberia.

New and Emerging Areas of Finance

Significant resources are being made available through new and emerging forest financing mechanisms. A large part of new financing initiatives is linked mainly to forest law enforcement, governance, and trade (FLEGT) issues, climate change and biodiversity conservation. In recent years, forest carbon and forests' contribution to climate change mitigation and adaptation has been one of the main driving forces behind financing climate change forest-based activities.

The potential for REDD+ to contribute to forest financing is large and is estimated globally at as much as US$ 6.2 billion in 2020. It has also led to unprecedented attention to the carbon potential of forests. In Liberia new and innovative market-based sources of finance are being piloted in Liberia, including payments for ecosystem services (PESs), bioprospecting, eco-tourism, greening commodities, and complementary biodiversity payments in REDD+.

However, many of these innovative financing mechanisms require policies that recognize and valuate the vital environmental services forests provide. These financing mechanisms also require broader enabling frameworks that ensure reinvestment of monetary benefits back into the forest sector (Gondo 2010).

POLICY AND MANAGEMENT CHALLENGES

The 1986 Constitution confirms the right of access to forest resources, rights to equitable distribution of benefits from the forests, and the right to participation of all citizens in resource management. However, the forestry sector faces policy and management challenges that make these non-justiciable constitutional provisions difficult to achieve fully.

Implementing Policy

The ability to implement policy successfully faces many challenges. These include: (1) market and policy failures; (2) excessive focus on timber exports; (3) governance issues and weak law enforcement; (4) problems accessing export markets; (5) weak local and national forestry-sector institutions; (6) rent-seeking behavior; and (7) gender challenges.

Undervaluation of Forest Products

Market prices for forest products do not reflect the social costs and benefits of forest resource use and scarcity. Given current domestic prices, export prices and revenues derived from forestry, forests are becoming relatively unprofitable in the eyes of forest owners, including local communities. At the same time, policies have failed to correct these incorrect market signals. As a result, market and policy failures have generated disincentives to manage and conserve forest resources (Birikorang 2008).

Resource undervaluation is a manifest symptom of market and policy failures. Under-valuation means that forest management decisions have an inherent bias in favor of commercial forest logging operations, and to the stakeholder groups who stand to benefit most from these. Yet, there are substantial revenues to be gained from commercial forestry, and the sector is likely to be an important part of strategy in future economic development for Liberia and of the forest sector.

However, there are also opportunity costs that are lost in terms of broader environmental and livelihood benefits. These broader values need to be factored into decision-making. In particular, the trade-offs between short-term financial gains that accrue to a relatively small sector of the population need to be balanced against longer-term social and public benefits, which are spread throughout the population and economic sectors. Furthermore, it may mean that potential financing opportunities and mechanisms for capturing broader forest benefits may be missed.

Undervalued forest products discourage sustainable forest use. When it is not a profitable option, there are no incentives to manage and conserve forest and natural resources. The result is over extraction for commercial logging revenues in high-potential timber areas.

In addition to fines, penalties, royalties, stumpage fees, concession fees, land rent and associated timber charges, there may be great potential to generate funds for the FDA (and for other forest managers) by recognizing the broader benefits forests provide within and outside Liberia. Possible funding sources include PESs, carbon finance, biodiversity markets and ecotourism. While these may not be able to compete with commercial logging revenues in high-potential timber areas, they provide an untapped opportunity for the FDA to diversify their revenue base from forest conservation land uses. In addition, better appreciation of the full range of forest benefits allows for a more comprehensive identification of the range of markets and enterprise opportunities, which are associated with non-commercial logging and the use of NTFPs.

Under-valuation does not only influence economic and investment planning. It also means that the full extent of forest values is poorly represented in the policy, market and price instruments, which have been set in place to regulate and influence economic activity in Liberia. As a result, taxes, subsidies, prices, markets, investment incentives and other stimuli for economic activity tend to provide a higher level of support to other sectors, and to unsustainable forestland and resource uses. For example, land and resource taxes and user fees do not account for these broader social and environmental values. Varieties of credit, tax and investment incentives are targeted at activities in other sectors, while few are available for sustainable forest-based enterprises. In some cases, subsidies and other price controls may serve as perverse incentives, which encourage people to use forestland and resources unsustainably.

All these policy, price and market distortions result in the sustainable use of forests not being a profitable option as compared to other economic activities, or as compared to unsustainable forestland and resource uses (Birikorang 2008). Generally, the market prices for informal timber are relatively low compared with indicative prices on the export market. This points to the fact that the current reform vision is likely to face potential price distortions on the domestic market for both round wood and timber.

Excessive Focus on Timber Exports

Commercial forestry in Liberia depends on the exploitation and marketing of a few prime timber trees. The small number of species that are commercially exploited tends to make profitable logging and sustained yield management difficult to attain. The government has initiated a series of measures including the introduction of **annual allowable cuts (ACCs)**, a ban on illegal chainsaw operations, and the allocation of logging permits and timber utilization contracts. However, ineffective implementation of these measures has led to actual harvesting of timber being higher than the allowable cut. This has placed inadequately defined community property rights beneath the rights to raw material base or concessions.

At present, the award of timber rights is determined administratively rather than by the market. The distribution of concessions has been discretionary, as has the more recent distribution of timber utilization contracts. However, the allocation of timber rights based on competitive bidding for concessions will clearly define property rights and allow enterprises to undertake long-term raw material planning.

Most of the population believe that the interests of local or domestic forest consumption are less important and less legitimate than those of the export industry. Reconciling lucrative opportunities in the international market and domestic demand in a low population economy with limited purchasing power remains a significant challenge.

This has led to a situation where the export industry ignores the legal requirements to satisfy domestic demand, as it is not cost-effective. The requirements are also dismissed as unworkable due to the ways in which cheap and unregulated chainsaw lumber undercuts the industry's own supply. This is viewed as one of the challenges that have contributed to illegal timber felling activities. Illegal CSM is rapidly decimating the country's forest estate. Illegal activities have gained much prominence because of limited processing mills in the country to service the large demand for timber in the domestic market, as well as the inability of the forest estate to sustain under a huge domestic demand for wood products.

Poor Governance and Weak Law Enforcement

On paper at least, Liberia has one of the strongest and most effective forest legislations in the West Africa region. However, the implementation of these policies has been fraught with challenges. Poorly equipped institutions and general lack of capacity to enforce the laws have contributed to deforestation and a weakening timber industry.

Good governance is critical to the well-being of the FNR sector in Liberia. Forest governance relates to how decisions about forests and forest-dependent people are made, who are responsible, how they wield their power, and how they are held accountable. It encompasses decision-making processes among institutions at local, national, regional, and global level. In the context of an increasingly globalized forest sector and decentralized system of management, forestry sector governance issues arise from both local and global processes. This, and the growing array of stakeholders with diverse interests and uneven power have made forest governance increasingly complex and prone to conflict.

The governance challenge is not just a technical problem but has strong political dimensions. Although within the country's forestry sector improving its governance structures and mechanisms is getting strong attention by key stakeholders, including development partners, there are still challenges. These include: (1) policy failures; (2) inadequate transparent system of resource allocation; (3) non-compliance or non-adherence to rules; (4) weak law enforcement; (5) challenges in working partnerships among different stakeholders; (6) wood-trade related challenges; and (7) inadequate structures to promote local civil society voice to support pluralism in forestry.

Policy Failures

Generally, policy failures affect both the formal and informal forestry sectors. Formal sector policy failures include: (1) overexploitation and undervaluation of forest products (timber and non-timber), especially the creaming of valuable species; (2) poor timber pricing mechanisms; (3) security of tenure, including access to forest resources, their ownership and use rights; (4) inadequate community involvement in forest management; (5) inadequate support for the promotion of sustainable livelihoods for vulnerable groups and forest-fringe communities; and (6) lack of consistency of forest policies with policies on climate change mitigation, adaptation and resilience (Halton et al 2012). In particular, the REDD+ strategy development for Liberia is not integrated into forest policies. Informal sector (mainly CSM) policy failures include: (1) poor regulation of domestic wood markets, which has allowed chain saw timber to fill in the gap; (2) large flows of benefits from CSM into both communities and county authorities thus perpetuating the informal sector and rent-seeking behavior; and (4) lack of incentives to ensure speedy prosecution of those who flout the laws.

Inadequate Transparent System of Resource Allocation

There is the problem of the lack of availability of databases on forestry issues on which to take appropriate decisions. The release of the results from the National Forest Inventory (NFI) 2018/2019 will hopefully address such challenges. Other resource allocation challenges include: (1) lack of innovative market systems in resource allocation that reward efficient entrepreneurs and optimize returns to forest owners and managers; (2) political and social pressure that interferes with professional decisions involving timber use rights; (3) weak legality verification monitoring; (4) lack of an effective structured distribution or management of benefits leading to inequities; and (5) the inability of FDA to effectively regulate the actions of local actors on the ground, through direct financial and economic incentives. See Chapter 2 for more information.

Non-Compliance (Non-Adherence of Rules) with Forest Laws

There is a general lack of complete adherence to forest resource allocation procedures in the country, due to underlying social, economic, cultural, and political causes. An example of non-compliance is around revenue collection. Forest Trends (2020) states that "*The government apparently has failed to collect at least half of the base land rental fees due from logging companies. While $27.7 million in area-based fees has reportedly been collected by the Liberian revenue Authority (LRA) by mid-2019 from logging companies, the arrears may be more than $37.6 million. If all land rental fees had been collected ($65.6 million), by law, 30% (or more than $19.6 million) should have gone to communities. But even of the $27.7 million reportedly collected, by law, $8.3 million (30%) should have been transferred to the NBST to be disbursed to communities. However, only $2.6 million has been transferred to date; the government is more than $5.5 million in arrears to the NBST, and thus, communities*" (Forest Trends 2020 p6).

Another reason for non-compliance is the conflict of laws. For example, land and forest tenure within protected forest areas (PFAs) are under both the jurisdiction of the Land Commission and the FDA. There is therefore the need to strive for consistency in the regulatory framework to ensure that laws are not contradictory. In many tropical countries, a historical driver of deforestation has been non-compliance with forest related laws and the poor governance of the forest resource. The substantial number of illegal activities in the sector is a symptom of this failing. In most countries with considerable potential for REDD+ (that is, countries with large forest areas and high levels of deforestation and degradation), illegal activities (both the conversion of forests for agricultural purposes, and forest degradation, particularly those caused by illegal logging) have been among the most significant drivers of deforestation. Strategies to improve forest law compliance should be based on the assessment of the underlying causes of illegal acts and the identification of leverage points for combating corruption. However, without sufficient political will measures to improve forest law compliance have a limited chance of success.

Weak Law Enforcement

Forest crime interferes with the ability of the state's capacity to impose law and order in the sector. It undercuts economic efficiency because it leads to wrong decisions and mistaken allocation of scarce economic resources. Weak law enforcement issues include: (1) poor institutional coordination; (2) law enforcement agencies having inadequate knowledge of forest laws thus not able to enforce the law; and (3) forestry officials, although mandated by law to arrest offenders, do not have enough conflict management skills to resolve non-criminal offences at the administrative level. Moreover, illegal acts undermine the effectiveness of the forestry sector and therefore it is likely that they will generate undesirable economic impacts (Thomas et al 2000). Difficulty in controlling illegal acts arises because the current penalties for forest related illegal acts appear to be minimal in comparison with the rewards of forest crime. Thus, penalties do not provide a significant deterrent. In addition, public sector officers who ensure compliance with the law are on relatively low salaries compared to the products they control which have high values thereby compromising their effectiveness. Thus, incentives for malfeasance in these circumstances are high. There is the common notion that illegal logging and trade depress the market value of forest products, thereby leading to rapid liquidation of forest resources because they are considered as cheap resources and there are insufficient law enforcement mechanisms.

Wood Trade-Related Challenges

According to McAlpine et al (2006), wood trade-related challenges in Liberia include: (1) international trade in illegal and unsustainable timber in domestic, regional, and international markets; (2) rent seeking behavior; (3) under-regulation of the wood industry; (4) lack of transparency and traceable chains of custody; and (5) unaccounted exports and the inevitable loss of valuable public revenue. To address these challenges, the GoL requested the United States government to provide funding for the establishment of a CoC system (see Box 1.1), which had earlier been stipulated by the NFRL of 2006.

Box 1.2 Liberia's CoC System and Voluntary Partnership Agreement (VPA)

LiberTrace

LiberTrace, known earlier as LiberFor, program was developed jointly by the Liberian and United States (US) Governments and managed by a Swiss private company known as Société Générale de Surveillance (SGS). The aim of the LiberTrace program was to make the wood trade system self-financing by the end of 2009 and transferred to the Forestry Development Authority (FDA).

Because the revival of commercial forestry in Liberia was slower than expected, SGS was not able to cover its costs by that date and needed additional time to deploy the CoC system in the field. At the request of the Government of Liberia (GoL), the international donor community agreed to provide additional financing for LiberTrace through two trust funds, the multi-donor Forest Law Enforcement and Governance program (FLEG) and the multi-donor Program on Forests (PROFOR), for an overall total of US$ 1.55 million to help bridge the financing gap and allow SGS to deploy additional staff and vehicles in the field. Liberia's Ministry of Finance also agreed to invest US$ 0.5 million to develop a system that has assisted in securing more than US$ 27 million in net tax revenue for the state in 2008-2012.

Voluntary Partnership Agreement (VPA)

The European Union's (EU's) Action Plan on Forest Law Enforcement, Governance and Trade (FLEGT), published in 2003, gave birth to VPAs—bilateral agreements between the EU and producer countries which are committed to ensuring the legality of their timber exports to the EU. As of January 2013, six countries had concluded VPA agreements with the EU, including Liberia.

The aim of the VPA program in Liberia is to provide a practical mechanism to ensure only legal timber products from Liberia enter the EU via an agreed system for licensing timber exports from the producer countries. The VPA is also expected to encourage legally sourced timber exports and good governance in respect of a controlled and regulated timber industry, the promotion of fairer distribution of trade benefits, and the sustainable development and conservation of Liberia's ecological heritage (Lomaz 2008).

Poor Working Partnerships Among Different Stakeholders

There appears to be weak stakeholder co-ordination (lack of working partnerships) in the forestry sector. This may be attributed to weak capacity of local stakeholders in ensuring broad decision-making, participation and transparency in the development and implementation of forest policies and laws. Even though international NGOs have been initiating such partnership, there is more to be done for each of the three pillars of the governance structure (that is the state, private and civil society) to have equitable playing field in decision-making processes and benefit sharing. For instance, facilitating law enforcement requires the effective partnership between FDA and law enforcement agencies, such as the police and judiciary. Currently, such coordination and partnership has been reported to be weak. This demonstrates weak mechanisms for legality and sustainability of forest resources and the ability to integrate FLEGT into national development agenda such as the Liberia Poverty Reduction Strategy (LPRS).

Inadequate Structures to Promote Local Civil Society Voices

As the economy of Liberia is regrowing, the contributions of civil society at both the national and international levels cannot be underestimated. Stakeholders believe their voices are not being heard yet they consider their voices should not only be heard but also should be considered by the sector. As noted by Amanor (2000), civil society involvement in forestry is crucial to the sustainable management of the nation's forests. However, effective civil society participation will depend on a population with the requisite capacity to make meaningful contribution and thereby strengthen forest sector governance. Civil society consists of plural groups, with different and sometimes conflicting interests and perspectives. These groups have different economic interests and perspectives on forest management. Some of these groups have interests which are ascendant and given priority in policy at a certain period. Other groups may never have engaged in any kind of dialogue with forest policymakers.

Problems Accessing Export Markets

The activities of environmentalists in consuming countries and markets are driving a move away from the use of tropical hard wood timber because of unsustainable forestry management. Major wholesalers and retailers in the EU are insisting that wood products they buy come from certified forests. With no certification, Liberia will be cut out of important export markets, and this will constrain the attraction of investments into the timber industry. Certification requires that forests are managed sustainably, and this sustainability is enforced effectively to protect timber and wildlife. FLEGT and Voluntary Partnership Agreement (VPA) programs are being implemented (see Box 1.1), but strong stakeholder participation, particularly from industry, will be needed for the programs to work.

Weak Local and National Forestry Institutions

Forestry sector institutions can be categorized into the public, private and civil society sectors as well as the international development partners. In Liberia, the FDA is the mandated institution that manages forest resources in collaboration with other supporting institutions. The FDA is responsible for both regulating and managing forest resources. However, it lacks capacity at all levels. Institutional challenges include: (1) limited infrastructure (office space, equipment, and tools); (2) inadequately skilled staff; (3) poor staff incentive and compensation mechanisms; and (4) inadequate information flow because of a lack of a communication strategy. Another serious constraint is the lack of adequate numbers of skilled and experienced staff to supervise logging operations, to enforce existing laws and policies, monitor the preparation of management plans, or to implement them.

Rent Seeking Behavior

Rent seeking behavior is a challenge in all public sector institutions, especially among the revenue generating sectors of the economy such as forestry. The 1976 Act Creating the Forest Development Agency (FDA)—Liberia required legislative ratification of concession agreements, which provided an important safeguard against abuse of discretion and rent seeking by officials. However, this provision was deleted in the 2000 National Forestry Law (NFL).[25] The 2000 NFL, and its reformed version of 2006, are both silent on measures to sanction forestry officials who abuse discretion or engage in rent seeking when performing duties. Nonetheless, the prevailing law clearly outlines different types of sanctions for concession holders when they indulge in forest offences.

25 Amended in 2006.

Gender Challenges for the Forestry Sector

According to Weah (2012), the concept of gender equality is relatively new in the Liberian development discourse. For many people in Liberia, gender inequalities both socially and legally, is a non-issue. In fact, it is argued by some that the concept of gender is foreign and an imposition of Western values on Africa. Gender-based inequality is one example of social marginalization that has historically characterized Liberian policy and citizen participation. Meanwhile, across Sub-Saharan Africa, women play an important role in managing the forests that support their lives, livelihoods, and households. Yet they are often excluded from decision-making processes affecting these natural resources (Onzere et al 2020).

In forest-reliant communities in Sub-Saharan Africa, and in Liberia, gendered norms relating to speaking up in public meetings mean that men often have more of a say in publicly made communal decisions, including those related to the management of forests (Sun et al 2011; Kazoora et al 2006; Rocheleau and Edmunds 1997). Social norms and dynamics also affect formal user groups that have considerable numbers of women members, resulting in what Agarwal (2001) terms **participatory exclusions**, which refer to exclusions within seemingly participatory institutions that stem from systemic factors and can, in turn, unfavorably affect both equity and institutional efficiency.

Managing Forests

The ability to manage forests sustainably also faces many challenges. These include: (1) high dependency on forest resources; (2) unsustainable exploitation of forest resources; (3) inadequate protection of conservation and biodiversity areas; (4) deforestation; and (5) inadequate local community participation in forest management.

High Dependency on Forest with Resources

High forest resource-dependency has come about because many Liberians, especially rural dwellers, are dependent on lands and forest resources for their livelihood.[26] Income from forest products for these rural dwellers and local communities is an integral part of household strategies to cope with poverty. For these forest fringe communities, an important distinction can be made between: (1) those for whom forests provide a safety net (that is those who rely on subsistence supplies of forest products); and (2) those households that rely on forest products to generate income. For these communities, income from forest products is an integral part of household strategies to cope with poverty. However, the continued over-exploitation of forest resources together a challenged public service and resource management systems have combined to keep these forest fringe households, and local communities, in persistent poverty.

Overexploitation of forest resources together with poor public service and resource management systems keep forest fringe households and local communities in persistent poverty.

Unsustainable Exploitation of Forest Resources and Deforestation

The forestry sector is threatened by unsustainable exploitation and a limited capacity to rehabilitate and manage the resource base. A contributing factor is the 14 years of civil war (1989-2003), which resulted in severe deforestation (Wegbeh et al 2004). During the civil conflict, logging and timber exports accounted for between 50 percent and 60 percent of the country's foreign exchange earnings and contributed to 26 percent of GDP in 2002. However, mismanagement of FNRs and its use to fuel the internal conflict led the UNSC to impose sanctions on timber exports from Liberia in 2003. In 2006, UNSC lifted the sanctions leading to the beginning of the economic revitalization of the country.

26 See: https://2016.export.gov/usoffices/

The legacy of the civil conflict left behind the extensive destruction of infrastructure and the social fabric of the society. The impact of the civil war not only affected the socio-economic wellbeing of citizens but also negatively affected the FNR sector resource base, human capacity, and the physical infrastructure. Problems related to deforestation, especially the sharp rise in chain saw operations, have their roots in weak implementation of forestry policy strategies, inefficient forest resources management practices, and fiscal restrictions within the sector.

The rate of deforestation in Liberia remained consistent between 1990 and 2015 (WRI 2019) averaging 30,000 hectares per year (FAO 2015). In addition, between 2001 and 2018 Liberia lost 1.53 million hectares of tree cover, equivalent to 16 percent decrease in tree cover[27] (WRI 2019). However, the World Resources Institute (WRI) also estimates that only 12 percent of tree cover loss during the period happened in areas that would become permanently deforested. Most of this tree cover loss was driven by shifting agriculture in areas where the forest would recover.

Inadequate Local Community Participation in Forest Management

Communal forests are defined as areas set aside by law for use by communities on a non-commercial basis. Current legislation and policy framework fail to provide local communities with real control over their traditional resource base, which is left unprotected unless made into communal forests. Even then, these forests cannot be used on a commercial basis, depriving communities of a potential source of revenue for community infrastructure and development. In addition, only a small proportion of guaranteed revenue from commercial forestry to local communities is ploughed back into the sustainable management of forests. Therefore, transparency and accountability into the management of all revenues derived from forestry need to be strengthened.

Weak Land Tenure Security

Another challenge is the poor legal recognition of customary land tenure, which does not effectively guarantee the protection of local communities from further challenges to their customary claims (Namubiru-Mwaura et al 2012). The weak tenure security arises from an ineffective process for adjudicating and recording community-based tenure claims in a manner that reflects local norms and values and provides equitable access to land for rural populations. This process fails to reflect local norms and values or provide equitable access to land for rural populations. In addition, there is a lack of social legitimacy and accountable local governance over land access and use-rights in local communities (See Chapter 5).

Communities are both an important source from which customary rights are derived and the basis for resource governance institutions (Knox 2012). Providing communities with stronger management rights over land, in addition to equipping them with the tools they need to engage in community land-use planning, has the potential to not only improve natural resource management, but also to open the door for community investments that generate income and increase productivity (Knight et al 2012).

Inadequate Protection of Conservation and Biodiversity Areas

Liberia is rich in biodiversity with several endemic species. However, this is under threat from three major sources: (1) deforestation resulting in loss and fragmentation of habitat; (2) increased bushmeat hunting, which constitutes a critical source of protein and cash income to rural Liberians; and (3) increased road construction for logging and settlement leading to forest fragmentation and resulting in 81 percent of Liberia's forests now lying within 3 kilometers of a road. These threats have resulted in the rapid penetration of logging and hunting into previously inaccessible forest, which is undermining the forests' ecological balance. The **'empty-forest' syndrome**[28], which results from over-hunting, has been recorded since 2002 in several forest areas previously thought to be wildlife strongholds.

27 Using the year 2000 as the base period.

28 Empty forests are characterized by an otherwise excellent habitat, often have large, fully grown trees, but lack large mammals because of human impact. Empty forests syndrome show that human impact can destroy an ecosystem from within as well as from without.

Botanical knowledge of Liberia is poorer than for any other country in the Upper Guinean Forest Ecosystem. Given that no systematic inventories have ever been carried out of southeast and northwest Liberia's flora, or its insects, amphibians, arachnids, gastropods, or other animal species displaying a high degree of dependence on specific plant hosts, the uniqueness of Liberia's flora and fauna can only be surmised (Hahn et al 2014).

Another challenge facing biodiversity conservation and the management of protected areas is that some areas designated for protection overlap with logging concessions, creating potential legal claims. The recent pattern of forest use, coupled with conflict, weakened forest governance, mass migration, and economic collapse, has placed unprecedented pressures on Liberia's forests, threatening the functioning of vital environmental services. It has also impacted on the viability of commercial logging, and undermines the emphasis originally placed on conservation in the 1976 law.

Lack of Effective Measures to Reduce Emissions from Deforestation and Forest Degradation (REDD+)

One major challenge of forest management in the country is how to reduce emissions from deforestation and forest degradation, while at the same time improving the value of Liberia's forests.

To address these shortfalls, in 2006 a National Forest Policy and Implementation Strategy (NFPIS) was developed to maximize the benefits of the forestry sector to the Liberian society especially with respect to facilitating poverty alleviation. Liberia's REDD+ readiness and implementation activities are led by the FDA and co-led by the Environmental Protection Agency (EPA). The Forest Carbon Partnership Facility (FCPF) and several other development partners have provided finance and support.

Reducing Emissions from Deforestation and Forest Degradation (REDD+) is a United Nations (UN) led initiative that aims to create a financial value for the carbon stored in forests, offering incentives for developing countries to reduce emissions from forested lands and invest in low-carbon paths to development. REDD+ is also an opportunity to support forest conservation in commercial concessions.

Insufficient Research and Adaptation

Another challenge is that the uptake of research results and commissioned studies is not amply demonstrated in policy and management decisions. In addition, capacity development has not kept pace with the expanded needs of the sector in terms of new skills and knowledge as well as spread across the stakeholder spectrum. Information is not actively circulated or packaged in a format that gingers up its application and resources have not been applied in the most effective way. Associated concerns include the issue that stakeholders are not deriving optimum benefits from the forest. There is a need to have a situational analysis to inform new policies and strategies necessary for ensuring the integrity of the resource and satisfaction of societal needs.

THE 4Cs FOREST RESOURCE MANAGEMENT REGIME

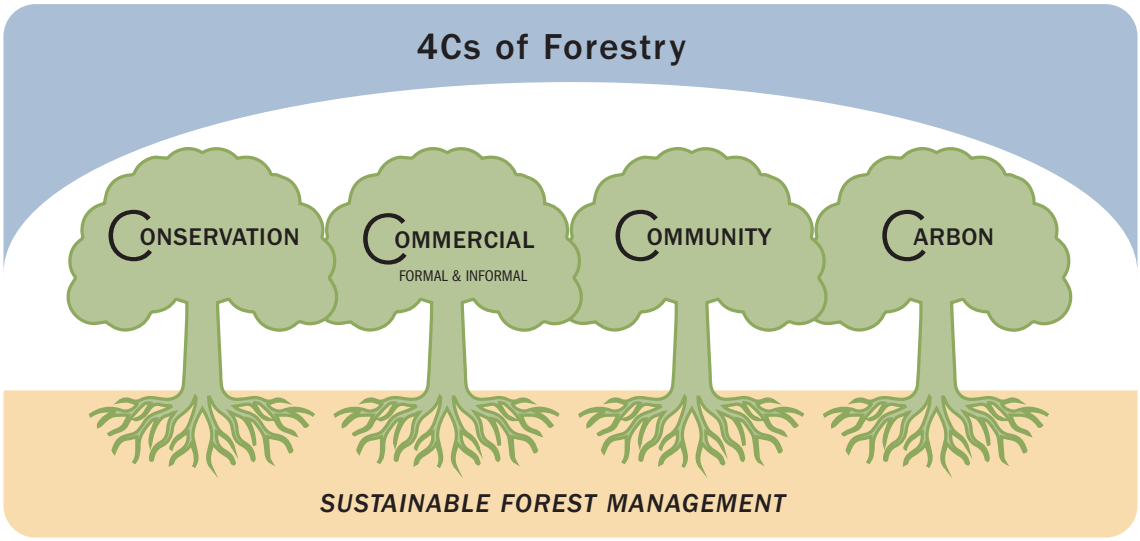
To promote the preservation and conservation of forests in the country and enhance the benefit flow to the people of Liberia, in 2006, the NFPIS was developed. The policy document was established using a consultative process. However, while there is a strong policy and legal framework for forestry, especially community forestry, it is not implemented because of land and resource conflicts that have affected the Liberian forestry sector for decades (O'Hagan et al 2020).

The NFPIS focused on maximizing the benefits of the forestry sector to the Liberian society, with special emphasis on the contribution of the sector to poverty alleviation. It did this by seeking to balance and integrate the conservation, commercial and community uses of the nation's forests, so that these uses can continue to produce vital environmental goods and services as well as support the economic development of the nation. These were the traditional 3Cs of forest management.

However, climate change is now an issue. And in response, a fourth C known as carbon forestry was added to the policy agenda. Carbon is still not formalized in writing as an addition to the 3Cs regime, but GoL has committed to implementing this aspect of forestry (see Chapter 6).

The 4Cs forest management regime was introduced to prevent the past bias towards commercial forestry, and to ensure the integration and balance of the 4Cs for the sustainable production of forest goods and services, as well as, to achieve maximum economic benefits for the whole nation. Figure 1.3 presents the four forestry pillars as trees that exist in the same ground and under the same umbrella. They are intrinsically connected and cannot exist without each other. In addition, they have equal in stature and importance.

Figure 1.3 4Cs of Forestry



The 4Cs of forest resource management are:

1. Conservation forestry
2. Commercial forestry
3. Community forestry
4. Carbon forestry.

Conservation Forestry

Conservation forestry includes the protection of specific forest areas as well as measures to enhance the environmental quality of other forest areas. It also covers biodiversity conservation (at landscape, site, and species level) and maintenance of the other environmental functions of forests (such as soil and water protection). The aim of forest conservation is to sustain and enhance these functions for current and future generations. See Chapter 2 for more information.

Commercial Forestry

Commercial forestry includes the production and processing of wood and non-wood forest products for profit. This includes:

1. The formal commercial forestry market which mainly feeds the export market
2. The informal market mostly involves small-scale CSM which feeds the local market, involves micro, small and medium enterprises (MSMEs), and is regulated by few rules and regulations.

The aim of commercial forestry is to ensure the sustainable production of forest products while also developing viable forest-based industries. The resulting forest taxes and charges can then be used to finance public sector administration of the sector and government expenditure on public goods and services (UNDP 2011). See Chapter 3 and Chapter 4 for more information.

Community Forestry

Community forestry regime was initiated in 2001 and backed by the CRL, 2009. It is an area set aside legally or temporarily by regulation for sustainable use of forest products by local communities on a non-commercial basis. Activities allowed include the management of the production of wood and NTFPs. In addition, forests can be used for other purposes such as cultural rituals, future farmland and settlement areas, and the protection of sacred sites (FDA 2006). Community forest management focuses more on the interests of people who live in and on the fringes of forest areas. See Chapter 5 for more information.

Carbon Forestry

Carbon forestry is the management of forest for climate change. This includes mitigation, adaptation, and resilience and emerging areas such as reducing emissions from deforestation and forest degradation (REDD+) and voluntary partnership agreements (VPAs). See Chapter 6 for more information.

BALANCING THE 4Cs OF FOREST MANAGEMENT

The objective of implementing the 4Cs of forest management is for the forestry sector to contribute more effectively to national socio-economic development, poverty reduction, and help finance Liberia's transition to middle income status by 2030 (the objective of the Agenda for Transformation[29]) (Baffoe and Mwasambili 2018). The 4Cs approach is also a way to address the sectorial challenges listed in the previous section systematically and practically.

While these four pillars of forest management have the potential to generate a substantial contribution to national economic development, separately and in combination, each is also associated with a different type of economic benefit and beneficiary group. As such, there are strong linkages between the 4Cs as together they generate and distribute benefits across multiple stakeholder groups, sectors of the economy, and indicators of economic growth and development in Liberia. Focusing on one to the exclusion of the others will undermine this economic and beneficiary diversity.

A related synergy is the recognition that commercial, conservation, community and carbon forestry all have the potential to contribute significantly to poverty alleviation and poverty reduction—which currently forms a cornerstone of government economic policy. Again, this is a strategic decision since each tackles a very different aspect—and together, it can be hoped that the 4Cs will maximize the contribution of the forest sector to national poverty goals.

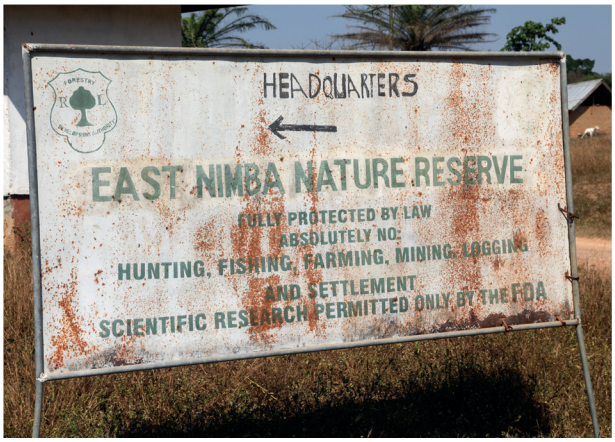
While the synergies between these four pillars of the NFPIS, 2006 are evident, the main challenge will lie in balancing these four categories of economic benefits, stakeholder groups, engines for economic growth and environmental sustainability. A good balancing act is necessary because these four pillars can be seen as having competing economic activities and forest uses. How the economic trade-offs associated with these competing land and resource uses are treated, and prioritized in decision-making, will to a large extent determine how successful the 4C strategy is in making sure the country and its citizens benefit fully from the economic, social, and environmental benefits its forest resources can provide.

The concluding chapter of this book discusses the 4Cs approach in detail and provides recommendations on how Liberia can implement the approach by balancing the 4Cs whilst minimizing the trade-offs, so that forests can truly benefit the current and future generations of Liberians.

29 See: https://www.undp.org/liberia/publications/liberia-agenda-transformation

CHAPTER

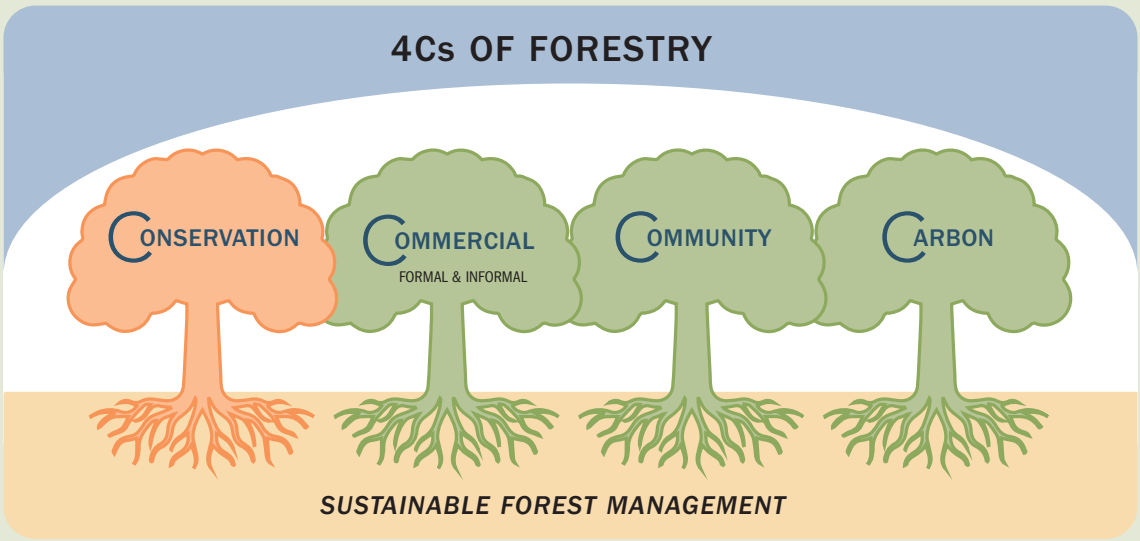
2 CONSERVATION Forestry


HEADQUARTERS
EAST NIMBA NATURE RESERVE
FULLY PROTECTED BY LAW
ABSOLUTELY NO:
HUNTING, FISHING, FARMING, MINING, LOGGING
AND SETTLEMENT
SCIENTIFIC RESEARCH PERMITTED ONLY BY THE FDA

A Blueprint for Change—The 4Cs of Sustainable Forest Management (SFM)

It is crucial that when making decisions about conservation forestry, all aspects of **commercial**, **community** and **carbon** forestry are given equal consideration.

Balancing and integrating the 4Cs of Sustainable Forest Management (SFM) can make real change happen.



Liberia's forests are under threat from overexploitation, climate change and governance related challenges. There is an excessive focus on **commercial forestry** and not enough attention is paid to the other factors that play an equally significant role. Liberia's approach to forestry is **out of balance** and a **new mindset** is needed to drive a significantly more sustainable approach to how this vital natural resource is managed.

CHAPTER CONTENT

The conservation of Liberian forests is an integral part of the country's environmental and economic health. The forests are recognized as a **biodiversity hotspot**, important for mammalian diversity and particularly renowned for primate diversity, with high level of endemism and of threat. Two of the three remaining large blocks of the Upper Guinean rainforest in West Africa is in Liberia, whilst the third block, which is mostly in Cote d'Ivoire, is a continuation of the south-east Liberian block. In addition, the use of wildlife and biodiversity is a crucial contributor to local community livelihoods and health. However, there is an increasing dependence on wildlife as bushmeat which is threatening not only the national heritage but also creating a food security risk as the population of many species become more vulnerable.

This chapter explores the key aspects of conservation forestry. There is a critical analysis of the policies and legislation that have been put in place to address conservation forestry, including wildlife management, biodiversity conservation and management of protected forests areas networks (PFANs). This is followed by a discussion on the important relationship between conservation and tenure.

The chapter then discusses biodiversity in detail and how forestry plays such an important role in the health of Liberia's environment, while also presenting the five key strategic elements to managing conservation forestry in Liberia. Conservation forestry currently generates relatively low revenue due to the principle of low exploitation and this is a particular challenge for this aspect of forestry. However, there is a new Conservation Fund that has been set up to direct important funding towards conservation forestry. This is examined, as are the other challenges faced by the Forest Development Authority (FDA) and commercial forestry in general in the management of protected forests.

The chapter concludes with a review of the extent of achievement of the objectives of conservation forestry and suggests some actions for change.

Conservation Forestry

Conservation forestry is the practice of planting and maintaining forested areas for the benefit and sustainability of future generations. It includes **biodiversity conservation** at landscape, site, and species level, and **maintenance of the other environmental functions of forests** (such as soil and water protection). It also involves the **protection of specific forest areas** as well as **measures to enhance the environmental quality of other forest areas** (such as through the rehabilitation of secondary forests).

The aim of conservation forestry is to sustain and enhance these functions for current and future generations.

CONSERVATION FORESTRY—AIMS AND OBJECTIVES

Conservation as a goal is the wise use of a whole area (Harley et al 1977). In terms of conservation forestry this includes: (1) the reversal of forest loss; (2) a significant increase in protected forests in Liberia; (3) the enhancement of forest productivity and conservation; (4) the protection of water quality in streams, lakes, and other freshwater and marine ecosystems; (5) the promotion of habitat and species diversity; and (6) the improvement of benefits from protected areas.

Conservation forestry programs in Liberia are broadly classified into three areas:

1. Protected areas management (PAM)
2. Wildlife management
3. Ecotourism management and public awareness.

PAM aims to:

1. Formulate and enforce policies and regulations relating to PAM and ensure PAM practices are consistent with international treaties and conventions such as Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on Migratory Species (CMS), RAMSAR Convention, International Union for Conservation of Nature (IUCN), Convention on Biological Diversity (CBD).
2. Design, plan and supervise programs relating to PAM including national parks, nature reserves, game reserves, world heritage sites and national forests. Of particular importance is the identification and designation of critical and suitable (ecosystems) areas for various categories of protection.
3. Develop collaborative programs with conservation partners, including donors and development partners, to mobilize revenue to implement conservation and PAM.

Wildlife management aims to:

1. Implement, supervise, manage, coordinate, and monitor programs related to wildlife conservation and management.
2. Enforce laws and regulations relating to protection of endangered species and sustainable utilization of wildlife is a major objective.
3. Promote collaborative regulatory enforcement with national and international partners, including International Criminal Police Organization (INTERPOL), Wildlife Conservation Foundation (WCF) and Great Apes Survival Partnership (GRASP).

EMPA aims to:

1. Develop and implement programs related to wildlife and protected area education along with the promotion of eco-tourism.
2. Facilitate the establishment of standard infrastructure for eco-tourism and awareness raising.

CONSERVATION FORESTRY—POLICY AND LEGISLATION

The national legislation and policy on conservation forestry in Liberia is strong. Between 1957 and 2022, much legislation was enacted specifically to conserve the forest resources of Liberia. The following section briefly outlines the laws that have been promulgated and the objectives for which they were passed. The chronological development of some of the key policy and legislation relevant to conservation forestry is presented in Figure 2.1.

Figure 2.1 Conservation Forestry—Policy and Legislation Timeline

Policy

2002—National Biosafety Framework Development Project (NBFDP)

In 2002, the National Biosafety Framework Development Project (NBFDP) was developed by the Environmental Protection Agency (EPA) in collaboration with United Nations Development Programme (UNEP) and the Global Environment Facility (GEF). The project provided capacity building for the relevant public sector agencies to regulate, manage and control the risk associated with the use and release of Living Modified Organisms (LMOs) resulting from biotechnology. These LMOs are considered to have adverse environmental impacts that could affect the conservation and sustainable use of biological diversity, and the risk to human health.

2004—National Biodiversity Strategy and Action Plan (NBSAP) (Revised in 2017)

The 2004 National Biodiversity Strategy and Action Plan (NBSAP) was the formal Government of Liberia's (GoL's) guidance for implementing the CBD. It predated Reducing Emissions from Deforestation and Forest Degradation (REDD+) and did not consider potential conservation outcomes. However, in March 2017, Liberia completed the revision of the NBSAP which included a long-term vision to have a society living in harmony with its natural environment.

The mission of the revised NBSAP was to develop education and information programs to raise the level of awareness of the population about the importance of biodiversity and place values on ecosystem goods and services through assessment and evaluation. It was also to develop a framework for mainstreaming biodiversity into national accounting systems, development of policies, plans and programs.

The NBSAP contained "*five strategic goals"*:

1. *Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society*
2. *Reduce the direct pressures on biodiversity and promote sustainable use*
3. *Improve the status of biodiversity by safeguarding ecosystems, species, and genetic diversity*
4. *Enhance the benefits to all from biodiversity and ecosystem services*
5. *Enhance implementation through participatory planning, knowledge management and capacity building*".

(EPA 2019 p122).[1]

2006—Forest Management Suitability Study

The 2006 Forest Management Suitability Study concluded that the Gola-Lofa-Mano Forest complex and Wonegizi and Wologizi forests should become National Parks. It recommended that West Nimba Forest be a Nature Reserve, and wildlife and protected areas corridors should be established for the Cestos-to-Sapo forests and the northwest Grand Kru Forest. It also suggested that the Zwedru forest block should be established as a multiple sustainable use area. Prior to the above study, a 2005 Rapid Biological Assessment (RBA) recommended the inclusion of North Lorma, Gola, and Grebo National Forests in the PFAN (Hoke et al 2007).

Following the 2006 Forest Management Suitability Study, GoL undertook another study titled *The Liberia Protected Areas Network (2008) Study*, which indicated that in view of the continuous decline or near extinct of the biological resources of Liberia, it was necessary to enact legislation to protect important forest resource areas in the country (EPA/FDA 2012).

1 See: https://www.sciencedirect.com/topics/earth-and-planetary-sciences/primary-forest

Legislation

1953—Act for the Conservation of the Forests of the Republic of Liberia

The first comprehensive Act on Conservation Forestry, which provided for the creation of reserves, national parks and communal forests was the Conservation of the Forests of the Republic of Liberia Act, 1953 (Lomax 2008). The Liberia **Code of Law** (1956)[2] required the creation of government reserves, native authority reserves, communal forests, and national parks. However, few native authority reserves and communal forests were established, and their management was never properly addressed.

1957—Supplementary Act for the Conservation of Forests of the Republic of Liberia

In 1957, the Supplementary Act for the Conservation of the Forests provided an overall framework for the use of forests and wildlife resources including the creation of government reserves, native authority reserves, communal forests, national parks, and wildlife refuges.

1976—Act Creating the Forest Development Authority (FDA)—Liberia

In 1976, the Forestry Development Authority (FDA) was created with the mandate to protect, manage, and conserve government-owned forests and wildlife on a sustainable basis.[3] The 1976 FDA Act provided a strong foundation for conserving Liberia's forests and biodiversity. The mandate of the FDA was further strengthened through the Natural Resource Law (NRL) of 1979 which gave the FDA authority to establish forest reserves and national parks where other uses such as logging, hunting, and mining were prohibited and included provisions for the protection of ecosystem services.

1988—The Wildlife and National Parks Act (WNPA)

In 1988, the Wildlife and National Parks Act (WNPA) was enacted to provide for effective management and protection of wildlife habitats, as well as for protection and enhancement of wildlife ecosystems, biodiversity and for the promotion of opportunities for equitable and sustainable use of park resources. The WNPA placed emphasis on having a system of protected areas and led to the creation the Division of Wildlife and National Parks (DWNP) in that same year. It also repealed Chapters 1, 2, 3 and Subchapters A and C of Chapter 4 Title 24 of the Natural Resources Law, Volume 5 of the Liberian Code of Laws 1956, relating to the conservation of forests, forest reserves, conservation of wildlife and fish resources and national parks.

The WNPA, 1988 covered policies, objectives, administration, establishment, and management of protected areas including: (1) plans and prohibited acts; (2) controls on hunting; and (3) the establishment of protected species. The WNPA, 1988 also identified several protected areas and specified policies and objectives regarding wildlife conservation in the country. However, its effect was reduced at the time by a total hunting ban imposed by the president, immediately prior to the act.

The Act was repealed in 2016 by the Act Adopting the National Wildlife Conservation and Protected Area Management Law of Liberia (NWCPAML).

2 A code of law, also called a law code or legal code, is a type of legislation that purports to exhaustively cover a complete system of laws or a particular area of law as it existed at the time the code was enacted, by a process of codification. The Liberian Code of Law is a standing body of statute law on a particular area, which is added to, subtracted from, or otherwise modified by individual legislative enactments

3 See: https://www.clientearth.org/latest/documents/act-1976-act-creating-the-forest-development-authority-liberia/

1999—Strategic Commodities Act (SCA)

The Strategic Commodities Act (SCA), 1999, indicated that all natural forest resources (such as minerals, diamonds, gas, timber, and other unique and rare species of vegetation and trees common and indigenous to Liberia) were the property of the State and that their exploitation depended solely on the President's approval (see Section 2.b). The SCA, 1999 further authorized specific people and entities to extract, exploit, sell or export the natural and mineral resources of Liberia without having to pay any kind of State tax or having to pass through Customs controls, to the economic and social detriment of the nation (Greenpeace 2001). According to Johnston (2004), the SCA, 1999 further limited the ability of non-state actors and civil society groups to incorporate themselves into the formal export economy—the only viable sector of the domestic economy—without the consent of and subservience to the Executive at that time.

2000—National Forest Law

The National Forest Law (NFL), 2000 contains 22 Chapters and mandates the FDA to administer the Law and the Regulations promulgated under it. The Act provides a framework for the ownership of forest resources; outlines the eligibility criteria for the award of forest resources utilization rights; and sets out the procedure for the revocation or cancellation of forest resources utilization agreements. The NFL, 2000 provides for the management and conservation of forest resources of Liberia and for the protection of the environment and wildlife in forests, regulates the trade in forest products, and deals with various other matters relative to forestry and wildlife. In addition, NFL, 2000 also deals with trade in forest products and fiscal provisions related to forests. Provisions on dispute resolution can also be found in the NFL, 2000.

2003—Protected Forest Area Network Law (PFANL)

In 2003, GoL promulgated an Act for the Establishment of a PFAN and Amending Chapters 1 and 9 of the New National Forestry Law, Part II, Title 23 of the Liberian Code of Law Revised and Thereto Adding Nine New Sections—Liberia. The Act outlined the procedure for the establishment of a protected forest area and conservation corridor and further mandated that a PFAN along with conservation corridors should be established, incorporating existing National Forests. It was to cover at least 30 percent of the existing forest area of Liberia, about 1.5 million hectares (or 3.7 million acres).

In addition to the Protected Forest Area Network Law (PFANL), 2003, the Nimba Nature Reserve Law and Sapo Park Law were enacted between October and November 2003.[4] It was proposed that seven areas were to be incorporated into a network of protected areas—a PFAN. The PFAN was designed to provide greater protection for wildlife resources and protected areas including: (1) buffer Zones; (2) communal Forests; (3) community resource management areas; (4) community wildlife management; (5) conservation corridors; (6) controlled hunting areas; (7) game reserves; (8) marine reserves or parks; (9) multiple sustainable use management areas; and (10) wildlife sanctuaries.

2006—National Forestry Reform Law (NFRL)

In 2006, the National Forestry Reform Law (NFRL) was enacted. The legislative framework for the PFAN and wildlife conservation was set out in Chapter 9 of NFRL, 2006. The act stated that the FDA must:

- Establish a PFAN together with conservation corridors. The PFAN must incorporate existing national forests, cover at least 30 percent of the existing forested area of Liberia, and represent about 1.5 million hectares of land.
- Create ten categories of protected areas including: (1) national forests; (2) national parks; (3) nature reserves; (4) strict nature reserves; (5) game reserves; (6) controlled hunting areas; (7) communal forests; (8) buffer zones; (9) conservation corridors; and (10) biodiversity protection areas.
- Present to the Legislature a comprehensive framework law for wildlife conservation and protection.

4 See: https://www.clientearth.org/latest/documents/act-for-the-establishment-of-a-protected-forest-areas-network-and-amending-chapters-1-and-9-of-the-new-national-forestry-law-part-ii-title-23-of-the-liberian-code-of-law-revised-and-thereto-adding-nine-new-sections-liberia/

- Publish, review, and republish a comprehensive management plan for the PFAN every five years.
- Conserve, manage, and control the hunting, trade, and use of wildlife.

The NFRL, 2006 also specified the activities that were allowed or prohibited in PFANs. Activities that were prohibited included mining, hunting, farming, fishing, extracting timber or on-timber forest products (NTFPs). The only exceptions included activities such as tourism, recreation, research, and conservation management.

2016—Act Adopting the National Wildlife Conservation and Protected Area Management Law (NWCPAML)

The 2016 National Wildlife Conservation and Protected Area Management Law (NWCPAML) states in Section 2.2 that the flora and fauna species in its wild habitat in Liberia, except those areas conserved, are held in trust, and regulated by the Republic for the benefit of the people of Liberia and humanity. Section 2.2 of NWCPAML, 2016 further states that the mandate to manage wildlife and their habitats in and outside of protected areas for the benefit of the people of Liberia be entrusted to the FDA. The FDA is required to protect, preserve, and manage wildlife that is endemic, rare, threatened or endangered by extinction. The FDA also must ensure that women and youth are integrated into the development and implementation of conservation and wildlife management.

On wildlife ownership, Section 2.3 of NWCPAML, 2016 states that regardless of land proprietorship, all matters pertaining to protected areas, conservation areas and wildlife management are subject to the following categories of proprietorship; (1) lawful ownership by private landholders who have been licensed by the FDA to farm or manage wildlife species; (2) ownership vested by certificate, license or use right-granted; (3) ownership of dead protected animals or cut protected plants is vested in the Republic of Liberia except where ownership has been vested by certificate, license or use rights; and (4) ownership of an animal killed or trophy acquired by a wildlife officer in the execution of that staff's duties is vested in the Republic.

The functions of the FDA under NWCPAML, 2016, include among others; (1) the promotion of conservation of biological diversity in Liberia; (2) the sustainable management of wildlife and conservation areas; (3) to act as the focal agency for the transparent implementation of all conservation and wildlife management policies in Liberia; and (4) to control all trade in wildlife and specimens thereof.

Other Protected Areas and Wildlife Acts

Other protected areas and wildlife Acts include:

1. **An Act for the Establishment of the East Nimba Nature Reserve (2003)** established the East Nimba Nature Reserve located in North-Central section of Liberia in Nimba County. The Act mandated the FDA to make rules for the management of the East Nimba Nature Reserve. It also specified that the FDA should manage the Reserve as a permanent component of the PFAN of Liberia.
2. **An Act for the Extension of the Sapo National Park (2003)** established the Sapo National Park within the Southwestern section of Liberia in Sinoe County. The Act stated that the Sapo National Park should be managed as a permanent component of the PFAN of Liberia. In addition, the FDA was mandated to establish such rules and regulations necessary for the sustainable management of the Sapo National Park.
3. **An Act Adopting the Environment Protection and Management Law, 2003** established a legal framework for the sustainable development, management, and protection of the environment by the Environmental Protection Agency (EPA). The Act further mandated the EPA, in consultation with the relevant Line Ministry, to provide guidelines for the sustainable use of forests and any natural resources (Section 76.3.a) and provide necessary measures for afforestation and reforestation (Section 76.3.g). The EPA was tasked to issue guidelines and prescribe measures for the sustainable use and protection and management of all forests in Liberia in consultation with the relevant Line Ministry.

International Conventions and Agreements

2000—Convention on Biological Diversity (CBD)

To strengthen international cooperation in biodiversity conservation and protected area management, the GoL ratified several international conventions, including the Convention on Biological Diversity (CBD) on 8 November 2000. The CBD is the framework for national legislation and policy concerning conservation and sustainable use of biodiversity and equitable sharing of its benefits. Key commitments under CBD are: (1) the principle of 'no net loss of biodiversity'; (2) a pledge to set aside at least 10 percent of the land area for 'strict protection'; and (3) a pledge to set aside 30 percent of the land area for protection and multiple use for 'partial protection'.

Other Conventions and Agreements

Liberia is also a party to the following international conventions and agreements:

- **The African convention on the conservation of nature and natural resources, 1968**. This Convention was adopted in 1968 in Algiers and is considered as one of the most forward-looking regional agreements as it significantly influenced the development of environmental law in Africa.
- **The Convention on International Trade in Endangered Species, 1973**. This international agreement was between governments and was aimed at ensuring that international trade in specimens of wild animals and plants did not threaten the survival of the species.
- **The International Tropical Timber Agreement, 1983**. This agreement established the framework of international co-operation between producing and consuming members in finding solutions to the problems facing the tropical timber economy. The agreement among others, was aimed at promoting the expansion and diversification of international trade in tropical timber and the improvement of structural conditions in the tropical timber market. It did this by considering: (1) a long-term increase in consumption and continuity of supplies; and (2) prices which were remunerative to producers and equitable for consumers, and the improvement of market access.
- **The Convention on Biological Diversity (CBD), 1992**. The Convention was opened for signature at the Earth Summit in Rio de Janeiro on 5 June 1992 and entered into force on 29 December 1993. It recognized for the first time in international law that the conservation of biological diversity was 'a common concern of humankind' and is an integral part of the development process.
- **The United Nations Framework Convention on Climate Change (UNFCCC), 1992**. This convention was signed in 1992 at the United Nations Conference on Environment and Development and constituted the foundational climate agreement that has provided the platform for most subsequent international climate agreements.
- **The United Nations Convention to Combat Desertification, 1994**. This Convention was adopted in 1994 and is the sole legally binding international agreement linking environment and development to sustainable land management.
- **The RAMSAR Convention on Wetland Management, 2003**. This convention, which was signed in 1971 in Ramsar, Iran, is the only global treaty that focuses specifically on wetlands.
- **The Cartagena Protocol on Biosafety, 2000**. This Protocol was adopted by the Conference of the Parties (COPs) to the Convention on biological diversity (CBD), on 29 January 2000. Liberia became a party to the protocol on February 15, 2002, when GoL ratified and accepted the instrument and deposited same into the depositary of the convention. On September 11, 2003, the protocol came into force in Liberia. The objective of the protocol was to ensure the safe handling, transport, and use of living modified organisms resulting from modern Biotechnology that may have adverse effects on biological diversity (in Liberia), taking also into account human, animals, and plants health.[5]

5 See: https://ekmsliberia.info/mea-resource/cartagena-protocol-on-biosafety-to-the-convention-on-biological-diversity/

CONSERVATION AND TENURE

Tree and forest tenure is complex and forest policy in Liberia is weak in addressing the issue (Danso 2016).[6] Tree and forest tenure in protected areas in Liberia are largely regarded as a disincentive to sustainable forest management (SFM) by local communities. For example, many farmers in forest fringe communities perceive forests as places they can use to increase agricultural productivity to support subsistence living. The main reason for this is the lack of incentives built into current forest tenure and policy.

For the sustainable management and conservation of private and communal forests to happen, incremental changes in tenure features (transferability, comprehensiveness, economic compensation, and duration) are needed. Economic compensation is noted to be one of the most significant tenure variables affecting adoption and implementation of forest conservation and sustainable forestry practices. In addition, the inability to enforce the payment of compensation to farmers when their crops are destroyed during logging operations has significant negative effects on sustainable forestry and conservation practices (Danso 2016).

Tree and forest tenure is complex and forest policy in Liberia fails to encourage sustainable forestry and conservation practices.

- There is a lack of economic incentives to conserve forests
- The immediate needs of subsistence living forces forest-fringe farmers to use forests to increase agricultural productivity
- Compensation payments for crop destruction are not enforced which deters cooperation from local communities.

In the past, traditional land, tree, and forest tenure systems were incorporated through cultural norms, traditions, and beliefs into everyday life. This ensured that forests and trees were protected. However, as the structure of communities has changed through migration to urban areas and the influence of chiefs and elders has been reduced, there has been less community pressure upon individuals to conserve trees on their land. Secondly, increasing population pressure, land shortage and cultural changes have reduced the effectiveness of these systems (Agyeman 1994). Generally, even though customary laws and practices frown upon the indiscriminate felling of trees and forest destruction, the regulations in place have not been dynamic enough to adapt to the changes in community structure. As a result, these regulations fail to prevent indiscriminate felling of trees, illegal exploitation of forest resources and forest degradation.

To address these problems, it is necessary to rationalize the plurality of rules and sources of authority (both customary and statutory) to identify clear issues and problem areas for redress to encourage security of tenure among all people and resource conservation (Kasanga 2002). The need for local communities and migrant farmers to legitimately search for land to meet their basic needs in the face of limited land supplies in forest areas has resulted in massive deforestation in some areas and underlies current tenurial and land use conflicts.[7] This has partly been brought about by the creation of GoL forest reserves and without extensive local community consultation processes (see Chapter 5).

BIODIVERSITY AND CONSERVATION

Biodiversity is defined as the variability among living organisms and the ecological complexes of which they are a part, including the diversity within species, between species and of ecosystems. Biodiversity provides goods such as food, medicine, building material, fiber, fuel, paper product, industrial materials that are for direct use (FDA 2017a).

6 There is a more detailed discussion in Chapter 1 describing the concepts of forest tenure, tree tenure and security of tenure.
7 See: https://www.fao.org/3/y5026e/y5026e0a.htm

Biodiversity Hotspot

Historically, Liberia's forests have been well conserved. This has been due to low-impact selective logging, strong forest governance, low population density in forest areas, and alternative national sources of economic growth such as rubber and iron ore. As a result, the forests that still cover half of Liberia's land area constitute nearly half of the remaining forests in West Africa and are an important **biodiversity hotspot**.

Liberian forests also contain diverse ecological communities and distinctive flora and fauna. They are home to more than 2,000 flowering plants including about 240 timber species, approximately 125 mammal species, 590 bird species, 850 butterfly species, 74 known reptiles and amphibians, and more than 1,000 described insects (World Bank 2015). The country is located within the Guinean Forests of West Africa Biodiversity Hotspot, important for mammalian diversity and particularly renowned for the primate diversity, with high level of endemism and of threat (CEPF 2000; Conservation International 2017). Liberia is also one of the richest land areas for threatened amphibians, birds, and mammals (Jenkins et al 2013); Junker et al 2015).

Key Biodiversity Areas (KBAs)

Within Liberia, there are 25 Key Biodiversity Areas (KBAs). These are places of international importance for conservation. However, unlike neighboring countries in West Africa, the percentage of KBAs in Liberia that are afforded protection is currently low at only 8 percent (Johnson 2015). Some of these KBAs include:

- Nine Important Bird Areas (IBAs) have been identified together with five Ramsar Sites, which are sites designated as Wetlands of International Importance
- Two areas (the Nimba Mountains and the Cavalla Forest) have been designated as Alliance for Zero Extinction[8] sites
- The Nimba Mountains support the one remaining population of the endangered Liberian Nimba Toad
- The Cavalla Forest has been designated because it is the only known site where the critically endangered Liberian Greenbul is claimed to have been found.

Liberia and the Upper Guinean Rainforest

The importance of Liberia to the conservation of West African **moist forest** was highlighted as far back as 1975 (World Bank 2015), and many surveys and workshops have been undertaken in the intervening years to identify a network of priority sites for conservation. In 1983 the first protected area (Sapo National Park) was designated. This was followed by the East Nimba Nature Reserve in 2003 and Lake Piso Multiple Sustainable Use Reserve in 2011. Collectively, these account for 3 percent of the landmass of Liberia (Johnson 2015).

In terms of conservation, Liberia contains two of the three remaining large blocks of Upper Guinean rainforest in West Africa. These three blocks include:

1. The **south-east block**—entirely in Liberia
2. The **Lofa-Gola-Mano block** in the north-west—mostly in Liberia but borders a smaller block in Sierra Leone
3. The **Taï National Park and its surrounding forests**—mostly in Côte d'Ivoire but are a continuation of the south-east Liberian block.

8 See: https://zeroextinction.org

Liberia also harbors the largest remaining proportion of the Upper Guinean Ecosystem estimated at 42 percent of the remaining forest. This is followed by Côte d'Ivoire estimated at 28 percent, Ghana estimated at 16 percent, Guinea estimated at 8 percent, Sierra Leone estimated at 5 percent and Togo at just 1 percent (Critical Ecosystem Partnership Fund 2000).

Outside of Liberia and the Taï forest complex, the Upper Guinean rainforest survives in threatened fragments scattered unevenly across the region. Bayol and Chevalier (2004) estimated that the overall extent of the Upper Guinea Forest has dwindled to an estimated 14.3 percent of its original extent. However, in Liberia, the results of the 2018/2019 National Forest inventory (NFI) indicate that approximately 69 percent of the total landmass is still covered by forests (FDA 2021). Forest cover in Liberia is estimated to be 6.6 million hectares (Confidence Interval (CI) 5 percent) which is 40-45 percent of its original forest cover survives of which, according to FDA, approximately 35 percent is *undisturbed*, 45 percent is *disturbed but productive* and 20 percent is *disturbed and unproductive*. (FAO 2021).

Marine Life and Wetlands

The coastline of Liberia is 560 kilometers (350 miles) long and about 58 percent of the population lives along this coast. With a continental shelf of nearly 15,000 square kilometers,[9] and territorial sea of up to 159,200 square kilometers, it produces annually 7,616 metric tons of fish and 126 metric tons of marine invertebrates, including mollusks and crustaceans. The marine and brackish fish species are all native species. Currently, there are four wetland types: (1) inland riverine; (2) inland swamp; (3) coastal; and (4) coastal lacustrine. Presently only eight wetlands have been identified, three of which have been proposed for conservation status (NBSAP 2003). Lake Piso is a high priority for conservation. It is a lagoon with about 100 square kilometers on the border with Sierra Leone (Kai Curry-Lindahl 1969).

Community Conservation

One key achievement of both the NBSAP and National Capacity Self-Assessment Initiative (NCSAI) was the implementation of community-focused conservation strategies. These plans and initiatives built the capacity of local communities to be involved in decision-making and community-based conservation actions (see Chapter 5 on community forestry). Under this strategy, local communities that relied on forest resources (such as NTFPs and bushmeat) for their daily subsistence were also trained in biodiversity conservation and the regulation of extractive activities in a manner that fosters sustainable extraction of forest resources.

These conservation strategies were focused on the following goals: (1) conservation of Liberia's biodiversity and the maintenance of resource benefits for local people; (2) the management of existing protected areas; (3) the development and implementation of community-based income generating activities; (4) awareness creation; (5) landscape conservation; (6) transboundary conservation; and (7) the establishment of hunting zones to prevent encroachment on protected areas.

Forests and Biodiversity Under Threat

There are three major threats to Liberia's rich biodiversity and endemic species:

1. **Deforestation** resulting in loss and fragmentation of habitat
2. **Uncontrolled hunting, fishing, logging, and mining**
3. **Increased road construction** for logging and settlement leading to forest fragmentation.

9 See: https://aquadocs.org/bitstream/handle/1834/585/Coa_cou_430.pdf?sequence=1&isAllowed=y

Deforestation for farming, Lofa County, Liberia

However, this is just the big picture. The list of activities and issues that contribute to the degradation of Liberia's forests and the resulting decline in biodiversity and endemic species is long. This list includes:

Three major biodiversity threats:
1. Deforestation
2. Uncontrolled hunting, fishing, logging, and mining
3. Increased road construction.

1. The traditional *slash and burn* system of crop cultivation
2. Uncontrolled mangrove exploitation
3. Indiscriminate exploitation of fisheries resources
4. Poaching and unregulated harvesting of plants, mammals, reptiles, and birds
5. Inadequate public participation in coastal ecosystem degradation-related decision-making process
6. Inadequate public awareness
7. Deforestation due to logging, shifting cultivation, firewood and charcoal production and associated destruction of biodiversity through illegal hunting and harvesting of protected species
8. Pollution of surrounding rivers and streams, destruction of vegetation, habitats, and forests through uncontrolled mining operations.

It is also important to understand what drives these activities. These underlying challenges are the key reasons why these things happen and must be addressed to for Liberia to be able to conserve its forests and biodiversity status.

CONSERVATION FORESTRY STRATEGY—FIVE KEY ELEMENTS

The objective of forest conservation is to protect forest biodiversity and ecology in Liberia by regulating the consumption of wildlife and by creating and managing the PFAN (FDA 2007). The forest conservation strategy to achieve its objective is based on five key elements (see Figure 2.2):

1. Protection and management
2. Sustainable use (conservation)
3. Benefit sharing
4. Public awareness and community participation
5. Partnerships with neighboring countries.

Figure 2.2 Elements of Forest Conservation Strategy in Liberia

Protection and Management

Historically, Liberia's forests were conserved due to low-impact selective logging, strong forest governance, low population density in forest areas, and alternative national sources of economic growth such as rubber and iron ore. As a result, the forests that still cover half of Liberia's land area constitute nearly half of the remaining forests in West Africa. In addition, they are an important **biodiversity hotspot**.

However, since the 1980s, forest sector output as a percentage of Liberia's gross domestic product (GDP) has increased nearly five-fold—suggesting a significantly increased economic dependence on forest resources. A recent report, based on a detailed household survey of households located close to forests, estimated that forest income contributed 37 percent of total household income on average (World Bank 2021). However, forest use over the last few years of conflict was at an unsustainable level, with reports of over harvesting in several areas. And now, Liberia's forests are becoming increasingly fragmented due to road construction for logging and settlement, resulting in 81 percent of Liberia's forests lying within 3 kilometers of a road.

Liberia's forests and wildlife also traditionally provided diverse services to the population besides forestry revenue and employment. However, instability in rural areas has severely impacted these benefits. Many forest fringe farmers have given up agriculture for hunting, which provides a quicker economic return. High demand for bushmeat in urban areas, including Cote d'Ivoire, has provided an additional incentive, and accelerated the trade in wildlife. The result is a drastically increased threat to the viability of species populations and an increase in food insecurity.

In 1976, the FDA was created and charged with the management of Wildlife and National Parks in the country. The 1976 Act Creating the Forest Development Authority—Liberia provided a strong foundation for conserving Liberia's forests and biodiversity. Three years after the setting up of the FDA, the Agency collaborated with the Worldwide Fund for Nature (WWF) and the International Union for the Conservation of Nature (IUCN) to identify areas for conservation as wildlife reserves, nature reserves and national parks.

Creation of a PFAN

To safeguard the integrity of the forest resources of the country, the country created and protected a biologically representative network known as the PFAN. This was facilitated through the 2003 law titled "Act for the Establishment of a Protected Forest Areas Network and Amending Chapters 1 and 9 of the New National Forestry Law, Part II, Title 23 of the Liberian Code of Law Revised and Thereto Adding Nine New Sections".

A major driver of the creation of the PFAN was the ratification by Liberia of CITES in 1981 and the United Nations Convention on Biological Diversity (UNCBD) treaty in 2000. By ratifying the UNCBD, Liberia pledged to ensure that at least 10 percent of land was designated for strict protection and a further 30 percent was set aside for protection and multiple use. As a result, about 950,000 hectares (or 10 percent of the total area) was agreed to be set aside as the minimum area for PFAN management (EPA 2017).

In 2003, a Protected Forest Area Network Law (PFANL) was enacted, which committed to creating the 2006 National Forestry Reform Law (NFRL). These two laws, supported by the National Forestry Policy and Implementation Strategy (NFPIS), 2007 and the Community Rights Laws (CRL), 2009 established the framework for the establishment of the PFAN. The PFAN is made up of national parks and nature reserves (including national forests, strict nature reserves, game reserves, controlled hunting areas, community forests, conservation corridors, and buffer zones).

To support the development of an effective PFAN, GoL requested the GEF, through the World Bank, to provide financial support for the activity. In addition, in 2006 a Forest Management Suitability Study was conducted. It identified 14 areas to be included within the PFAN to ensure adequate representation across biological scales (species and ecosystems) and biological realms (terrestrial and freshwater ecosystems) (see Table 2.1). At present, only five of these areas have protected area status.

Table 2.1 Protected and Proposed Protected Areas (PPAs) in Liberia

Protected Area	Location	Area (Hectares)	Year Designated	Status	IUCN Category
Sapo National Park (SNP)	Sinoe, Grand Gedeh, and River Gee	180,363	1983	National Park	II
East Nimba Nature Reserve (ENNR)	Nimba	13,569	2003	Strict Nature Reserve	I
Lake Piso Basin Multiple Sustainable Use Reserve (LMUR)	Grand Cape Mount and Bomi Counties	97,159	2011	Sustainable Use Reserve	VI
Gola Forest National Park (GFNP)	Gbarpolu and Grand Cape Counties	88,150	2016	National Park	II
Grebo-Krahn National Park (GKNP)	Grand Gedeh and River Gee	96,149	2017	National Park	II
Proposed Protected Area					
Kpo Mountain Proposed Protected Area	Gbarpolu County	83,709	Proposed	• Social Economic Studies (SES) • Biological Baseline Studies (BBS) • Community Meetings Ongoing	*Proposed*
Grand Kru-River Gee	Sinoe, Grand Kru and River Gee Counties	135,100	Proposed	• Social Economic Studies (SES) • Biological Baseline Studies (BBS)	*Proposed*
Cesto Sehnwehn	Rivercess and Sinoe Counties	80,348	Proposed	• Social Economic Studies (SES) • Biological Baseline Studies (BBS)	*Proposed*
Foya Proposed Protected Area (Fppa)	Lofa and Gbarpolu Counties	164,628	Proposed	• Social Economic Studies (SES) • Biological Baseline Studies (BBS) • Community Participation—*Completed* • Community Engagement—*Ongoing*	*Proposed*
Bong Mountain Proposed Protected Area	Bong County	24,813	Proposed	Proposed	*Proposed*
Wologizi Proposed Protected Area	Lofa	28,000	Proposed	Proposed	*Proposed*
Krahn-Bassa Proposed Protected Area (Kbppa)	Rivercess, Sinoe and Grand Gedeh Counties	235,222	Proposed	• Social Economic Studies (SES) • Biological Baseline Studies (BBS) • Community Engagement—*Ongoing* • Participatory Mapping—*Started but On Hold*	*Proposed*
Marshall Wetland Proposed Protected Area (Mwppa)	Margibi and Grand Bassa Counties	25,000	Proposed	• Social Economic Studies (SES) • Biological Baseline Studies (BBS) • Ground Truthing to Identify Fringe Communities (*Margibi*) • Completion Of Flagging • Environmental Social Impact Assessment (ESIA)—*On Going*	*Proposed*

Source: FFI and FDA (2013)

PFAN Criteria

The criteria for the selection of the areas of the PFAN included the following:

- **Species diversity**—Normal biodiversity indicators as well as economic and ethical values.
- **Threat level**—The main pressures, usually anthropogenic, that affected the area and number of threatened species and ecosystems.
- **Data availability**—Biological and socioeconomic data.
- **Stakeholder involvement**—Stakeholder participation and buy-in, and support for the PFAN from local authorities and communities was crucial for the success of the PFAN.
- **Species vulnerability**—Presence of: (1) threatened, endemic, or congregating species; (2) species with restricted ranges; (3) important species assemblages; and (4) keystone and flagship species. Importance of the site for species was also considered.
- **Funding availability**—Availability of funding substantially increased the likelihood of achieving the objective of the PFAN.
- **Connectivity potential**—The effectiveness of the PFAN in maintaining long-term viable populations of key species was dependent on maintaining natural processes such as migration, species movements, and genetic exchanges.
- **Population density**—The higher the population density, the greater the level of threat to the PFAN.
- **Uniqueness or irreplaceability**—The protection of areas with unique or irreplaceable characteristics and values (biological, socioeconomic, and cultural) had to be prioritized.
- **Land use potential**—Because the PFAN aimed to reduce poverty and enhance people's quality of life, areas with high potential to improve local livelihoods through the provision of goods and services were given higher priority.
- **Security level**—Liberia had emerged from many years of civil conflict. Hence, security in and around the PFAN was an important criterion for prioritization.
- **Management capacity**—The existing or potential capacity for implementing the PFAN through active management.

Benefits of a PFAN

PFANs provide an excellent network of sites offering great potential for sustainable management. Areas outside of the PFANs which support high biodiversity are also protected and managed. Key management considerations include:

1. Management of the existing protected areas (East Nimba Nature Reserve and Sapo National Park) totaling 193,500 hectares in accordance with the National Forest Reform Law and FDA regulations.
2. Implementation of social and biological surveys and allocation of at least 100,000 hectares allocated per year up to 950,000 hectares as protected areas in line with the recommendations of 2006 Forest Management Suitability Study.
3. Ensuring conservation at landscape scale to preserve integrity of biodiversity and maintain ecological services as consistent with the 4Cs management philosophy (see Chapter 8).
4. Forging public-private partnerships in establishing and managing protected areas to address budget constraints.

Sustainable Use (Conservation) Strategy

There are two key conservation models[10]:

1. *Preservationism*—The argument that some species, especially large vertebrates, habitat specialists, and other sensitive species, cannot be conserved when human densities and the extractive use of forests are high.

10 Both paradigms have their own strengths and weaknesses.

2. *Sustainable use*—The emphasis on the importance of local community involvement in the management of protected areas to enhance its protection (Kumar et al 2020).

The management of protected areas in Liberia has used both conservation models but the *sustainable use* model has been more widely applied.[11] This involved a minimal extractive use of protected areas by local communities and private enterprises in return for their participation in the management of the protected area. This was needed because local people rely on forest resources (such as NTFPs and bushmeat) for their daily subsistence.

The forest conservation strategy of Liberia achieves a dual objective of: (1) preserving species biodiversity; and (2) regulating extractive activities in a manner that fosters sustainable extraction of forest resources. However, the *sustainable use* principle is being promoted because of the important role protected areas play in providing a range of ecosystem services that are essential to forests, food, and agriculture.[12] They also provide a home to more than 80 percent of all known species of animals, plants, and insects (FAO 2020b).

While the primary aim of protected areas is the conservation of biodiversity, well-managed protected areas that are well managed can provides multiple benefits for sustainable social and economic development. The conservation and sustainable use of protected areas are prerequisites for the long-term continuation of forest ecosystem services, preservation of species biodiversity and regulation of extractive activities in a manner that fosters sustainable extraction of forest resources. Three things are needed to achieve these objectives.

1. A robust and well-managed PFAN
2. Effective enforcement of appropriate hunting and other regulatory measures
3. Assistance to local communities to improve extractive activities or develop alternative income generating activities (FDA 2007).

Protected areas also bring tremendous cultural, ecological, spiritual, and scientific benefits to society. It is important to build safeguards into the management of protected areas to ensure the socioeconomic development of local people and encourage the sustainable use of resources within the protected areas (Kumar et al 2020). Protected areas should be managed in such a way that they promote biodiversity conservation, while simultaneously meeting human needs. The sustainable use of protected areas should consider maintaining ecological balance, the sustainable use of wildlife (FAO 2020b), the development of safeguards and thresholds that balance the need for biodiversity conservation with the needs for economic development (FDA 2017a). Safeguards and thresholds can also reduce conflicts over the use of protected area resources.

Benefit Sharing

Community benefit-sharing mechanisms refer to transformation of funds from forest resources into fair and equitably allocated benefits with additional and permanent outcomes for communities. There are different types of financial incentives or benefits, ranging from: (1) monetary and nonmonetary; (2) productive and non-productive; and (3) conditional and input based. These benefits aim to empower communities and generate sustainable economic development (Gill 2017).

Experience, as well as logic, shows that local communities are likely to support protected areas while they continue to benefit from the resources available from that protected area.[13] These resources can include bamboo, firewood, construction materials, medicinal plants, timber, fish, animal skins, honey, beeswax, fibers, gums, resins, ornamentals, game meat, fodder, mushrooms, fruits, and dyes. Local people understand the benefits of these resources. They have been harvesting

11 Traditionally, the preservationism model resulted in local people having severely restricted access to protected areas or being relocated from protected areas to guarantee the integrity of those areas.

12 See: https://www.fao.org/forestry/wildlife/en/

13 See: https://www.solimarinternational.com/project/liberia-conservation-works/

them sustainably for hundreds or even thousands of years. In addition, they have developed mechanisms for managing these resources and allocating the benefits among the community. In remote areas, many of these benefits are experienced directly, without passing through a market (Ervin et al 2010).

Public Awareness and Community Participation

The implementation of forestry policy is more effective with public participation. The stronger the collaboration among government, the private sector, communities, and other stakeholders the more successful the policy will be. Public awareness includes public outreach, awareness raising and consultation processes. It is also especially important lessons are learnt to reform the management of protected areas to ensure protected areas contribute more to sustainable local livelihoods and biodiversity conservation.

Community management plan meeting in Konobo, Grand Gedeh county, Liberia

The facilitation of Liberia's strong, dynamic, and vocal civil society participation in PAM will be key to the success of forest conservation in the country. Civil society has been noted to be a good partner in raising awareness among local communities (Ware 2020) and pressuring the ministries, departments, and agencies of governments to follow due process and law.

It is also urgent that public awareness of protected areas is increased at decentralized levels, including local community and other stakeholders. Understanding of policies and incentives to ensure the sustainable use of protected areas should be included, as should the importance of community participation in setting up good governance. Workshops, training of trainers and role play are useful tools to support this.

In view of the strong interest and rights of local communities in forest resource management, greater consultation with stakeholders is also important, especially with local communities that are dependent on the forests and are willing to ensure its maintenance. Thus, the focus of forest management in Liberia will have to shift from a government-led system to a community-government participatory management approach. The participatory approach involves consultation, needs assessment, investigation, synthesis, and consensus building. This is aimed at ensuring equity and the fair distribution of benefits and efficiency in the execution of forest management prescriptions. A community-based policy and strategic document also needs to be developed that promotes public awareness, consultative and participatory approaches, enhances land and tree tenure, and encourages employment, poverty reduction and gender equality.

This community-based approach should include the promotion of community-based organizations (CBOs), building local capacity in support of SFM and sustainable livelihoods, and collaborating with CBOs to manage, conserve and develop the resource base (see Figure 2.3). This initiative must focus on strengthening civil society by facilitating the building of its organizational structures and capacity (such as networking CBOs with each other, with markets, and with other government agencies) as well as the political-legal environment in which CBOs operate.

Figure 2.3 Community-Based Participation in Conservation Management

Build Partnerships with Neighboring Countries

Partnership has been defined as a situation when at least two organizations or groups collaborate to reach a common goal allowing them to achieve more than doing it alone (New Opportunity Fund 2004). Ideally partnerships are characterized by organizations working together in a transparent, equitable and mutually beneficial way, whereby partners agree to commit resources, and to share the risks as well as the benefits of working together.[14]

For any kind of partnership to be established, there must be mutual interest and benefits between the parties, and the roles of each involved partner must be clearly articulated (Davey 1998). There is no doubt that effective cooperation between partners with realistic common objectives about where the cooperation is leading represents an important prerequisite for the effectiveness and long-term sustainability of the overall initiative.

The focus of building partnerships within the Liberia's forest conservation strategy is towards trans-boundary conservation. The aim is to establish transboundary conservation areas and corridors. However, working across national borders poses an additional layer of complexity in terms of establishing co-management arrangements. As such, informal transboundary agreements can often be more effective and much easier to achieve (Erg et al 2012). The FDA has been tasked to develop collaborative agreements with the respective countries. In addition, numerous partnerships with key regional conservation processes and projects have been established and maintained, leading to synergies and the elaboration of new innovative conservation ideas.

14 See: https://thepartneringinitiative.org

WILDLIFE MANAGEMENT AND PROTECTION

The first comprehensive law that dealt with wildlife management in Liberia was the 1953 Act for the Conservation of Forests of the Republic of Liberia. The law states among other things that "*the forests are among the Nation's greatest natural resources and may best contribute to our economic and social welfare by being devoted to their most productive use for permanent good of the whole people*". Section IV, Paragraph G, of the same law specifies that one of the primary objectives of the Bureau of Forest Conservation (now the FDA) was to conserve recreational, fish and wildlife resources of the country alongside the development of a forestry program. In addition, Section X of the Act gives power to the President of the Republic "*to create and establish National Parks embracing any area of the country having such outstanding science, recreational, scientific or other pertinent values that it is deemed wise and expedient in the national interest to set aside as permanent parts to be retained insofar as is practicable in their existing condition*" (Curry-Lindahl 1969). However, the regulations concerning the wildlife resources, contained in Part VIII of the 1953 Act for the Conservation of Forests of the Republic of Liberia, have not been sufficient to protect Liberia's game populations adequately (Curry-Lindahl 1969).

To strengthen wildlife resources management, the 1988 Wildlife and National Parks Act (WNPA) was enacted. The WNPA called for the creation of more protected areas and drew attention to the need to protect many wild animals, which are considered either threatened or vulnerable. The Act provided for effective management and protection of wildlife habitats, as well as for protection and enhancement of wildlife ecosystems, biodiversity and for the promotion of opportunities for equitable and sustainable use of park resources. It placed emphasis on a protected area system. It also repealed, among others, Chapters 1, 2, and 3 of the Liberian code of laws of 1956, relating to conservation of forests, forest reserves, conservation of wildlife, fish resources and national parks.

In 2016, the 1988 WNPA was repealed by the Act Adopting the National Wildlife Conservation and Protected Area Management Law of Liberia (NWCPAML).[15] The Law defined a wild animal as "*Any animal (vertebrate or invertebrate) and insects of every description, not including domesticated animals*". Section 2.2(1) of the NWCPAML stated that "*the flora and fauna species in its wild habitat in Liberia is held in trust and regulated by the Republic for the benefit of the people of Liberia and humanity*". The FDA was mandated under Section 2.2(3) of NWCPAML, 2016 to "*manage wildlife and their habitats in and outside of protected areas for the benefit of the people of Liberia in accordance with Liberia's obligations under international conventions and agreements to which Liberia is a party and consistent with internationally accepted principles of ecologically-based wildlife management*".

The 2016 NWCPAML recognized the following types of wildlife ownership:

- Lawful ownership by private landholders who have been licensed by the FDA to farm or manage wildlife species based on regulations
- Ownership vested by certificate, license or use right-granted under this Act
- Ownership of dead protected animals or cut protected plants is invested in the Republic of Liberia except where ownership has been vested by certificate, license or use rights granted under this law
- An animal killed or trophy acquired by a wildlife officer in the execution of that staff's duties, is the property of GoL.

Wildlife Protection

Under Section 6.1.2 of NWCPAML, 2016 the FDA is legally bound to ensure the protection of all wildlife species, known and unknown. Wildlife is seen as an important natural heritage and a symbol of significance to the cultural values of the communities surrounding the protected areas, forest edge and the corridors joining key wildlife protected areas. In ensuring the protection of all wildlife species, the FDA is obliged to:

15 See: https://www.clientearth.org/latest/documents/act-2016-act-adopting-the-national-wildlife-conservation-and-protected-area-management-law-of-liberia/

1. Ensure that viable populations of all indigenous wild species, including migratory species, marine species, and mangrove species are adequately conserved and that rare, endangered, and endemic species are specially protected
2. Ensure that indigenous species are maintained to support genetic pool and diversity essential for maintaining a viable wildlife population in the country
3. Provide opportunities for research, education, recreation, and community eco-tourism opportunities as an incentive for local communities to participate in community-based wildlife management
4. Enhance rural development by diversification of community-based activities that depend on wildlife in the community lands and as an alternative and viable land use.

Private Sector Participation

Section 7.1 of NWCPAML, 2016 demands the development of a policy on private sector involvement in community-based management and joint forest management of protected areas, conservation areas, and wildlife management areas. It states that this should be done in collaboration with communities, private landowners, occupants, forest resources license holders, civil society, and relevant line ministries, especially the Ministry of Internal Affairs, and other constituents of Liberian society. The FDA is further mandated in consultation with relevant stakeholders, to establish a Fund to be known as the Conservation and Wildlife Fund for the administration of protected areas, wildlife conservation and management activities.

ECOTOURISM

Traditionally, Liberia's forests and wildlife have provided diverse services to the population, including forestry revenue and employment. However, there is great potential for ecotourism to contribute to this list of important services. Liberia's ecotourism potential has long been recognized. Sustainable tourism could contribute directly to the conservation of Liberia's sensitive areas and habitats by bringing visitors to protected areas to learn, participate, and support local economies.

It has been noted that income from tourism could exceed that of timber extraction if tourism development policies and plans were properly implemented. It has been proposed that a portion of the revenues generated from park entrance fees and tourism providers (such as tours and accommodations) could be allocated specifically to fund the protection and management of environmentally sensitive areas. Tourism also has the potential to increase public appreciation of the environment by bringing people into closer contact with nature thereby increasing public awareness of conservation.[16]

Liberia also has some unique wildlife offerings for tourists. While there are several hundred species of undomesticated mammals, birds, and reptiles in Liberia's ecosystems, a few stand out for tourism potential. These include the pygmy hippopotamus, chimpanzees, manatees, forest elephants, zebra duikers and others living in habitats that are in places pristine and in others endangered (International Trade Centre 2015; Liberian Export Strategy on Tourism 2016-2020).

However, the potential benefits from tourism remain unachieved due to insufficient political will, lack of policy coherence, lack of stakeholder coordination, inadequate infrastructure, limited human resources, and a lack of access to financing.[17] Another constraint limiting tourism activities is the scarcity of any hospitality services.

The main constraint to ecotourism development is bad infrastructure (roads and utilities) at the potential tourist sites. Improved inter-sector cooperation and coordination in tourism development is crucial between the FDA, the EPA, and the Ministry of Information, Culture and Tourism (MITC). It is also essential there is absolute security of tenure of the protected areas devoid of litigations in addition to effective collaboration with law enforcement agencies.

16 See: https://www.solimarinternational.com/project/liberia/
17 See: https://www.solimarinternational.com/project/liberia/

CONSERVATION FORESTRY FINANCE

Conservation forestry financing comes from a range of sources including public or private, and payments for ecosystem services. Chapter 1 discusses sources of finance for all types of forestry. However, the recent launch of the Liberia Conservation Fund is a finance source specific to conservation forestry.

In May 2018, Conservation International and GoL launched the Liberia Conservation Fund[18]. The Fund is the first independent conservation fund to be set up in the country. Its objective is to provide sustainable, long-term financing for the country's protected areas. Conservation International has committed US$ 1 million to the Fund via its Global Conservation Fund and GoL has made a matching pledge to contribute to the Fund through the FDA.

The Liberia Conservation Fund will direct funds from a range of conservation finance sources and set up multiple endowments to support individual protected areas throughout the country. The Fund has already established an endowment for the East Nimba Nature Reserve, one of Liberia's five existing protected areas. Conservation International's Country Director stated that the fund will help maintain the country's rich ecosystem and mitigate against global climate change.[19]

CONSERVATION FORESTRY CHALLENGES

Biologically, Liberia is exceptionally diverse. It has high rates of endemism of many species that are nearly extinct outside the country. In fact, Liberia has been identified as by far the top priority country in West Africa for conservation (Jerving 2015). However, rapid penetration by logging and hunting into previously inaccessible forest is quickly undermining the forests' ecological balance. Evidence of this decline can be seen in the **empty-forest** syndrome, which results from over-hunting, has been recorded since 2002 in several forest areas thought to be wildlife strongholds.

While GoL and the FDA are committed to tackling this environmental decline of Liberia's forests, there are some key issues that need to be addressed if they are to be successful.

Insufficient Long-Term Financing for REDD+

Results show that a significant gap exists between the total finances committed and the amount required for sustainable national conservation financing, including REDD+ implementation. Even though the GoL is in the process of sourcing long-term financial support through bilateral means, the impacts of these finances remain unclear to local people.

Limited Private Sector Engagement

Many private sector actors, especially agribusinesses, forest concessioners, financial institutions, and investors, see conservation forestry and REDD+ as a threat to their investments. They view these initiatives as activities for keeping forest cover intact. As a result, few are interested or involved in the on-going national REDD+ processes. While the national REDD+ implementation team has made great efforts to better involve the private sector, policy makers have not adequately and effectively presented REDD+ to the private sector as an opportunity for sustainable forest management and future revenue generation.

18 See: https://abcg.org/rss/conservation-international-helps-launch-liberias-first-sustainable-conservation-fund/
19 See: https://abcg.org/rss/conservation-international-helps-launch-liberias-first-sustainable-conservation-fund/

Limited Knowledge about Conservation Forestry and Donors

There is a lack of readily available information on conservation and REDD+ financing activities. In addition, few REDD+ donors are known by GoL and other important REDD+ stakeholders. This has led to several organizations either duplicating activities or failing to focus on national priorities in reducing deforestation and forest degradation.

Lack of Data

Botanical knowledge of Liberia is poorer than for any other country in the Upper Guinean Ecosystem. Given that no systematic inventories have ever been carried out of southeast and northwest Liberia's flora, or its insects, amphibians, arachnids, gastropods, or other animal species displaying a high degree of dependence on specific plant hosts, the uniqueness of Liberia's flora and fauna can only be guessed (FDA and LFI 2006).

One of the key challenges is that, outside of the PFAN, there have been few rigorous studies to have generated quantitative biological data sets on forest conservation in the country. Most of the studies that have taken place, have focused on chimpanzees and forest elephants. Between 2010 and 2012, the first nationwide survey across Liberia was undertaken to estimate chimpanzee abundance and large mammal diversity (Tweh et al 2014). In another study, a team from the Max Planck Institute for Evolutionary Anthropology in Leipzig, Germany, systematically surveyed some 320 kilometers of transect lines. The study noted that that Liberia harbors the second-largest population of West African chimpanzees (*Pantroglodytes verus*), and potentially one of the most viable. The study also showed that the many chimpanzees and some of the most species-diverse mammal communities in Liberia exist outside of protected areas and some of the PPAs. Data from recent and historic surveys on forest elephants suggest that the main concentrations of the species are found in Gola, Wonegizi, Grebo, Sapo, Cestos-Senkwehn and possibly Grand Kru (Blanc et al 2007).

Protected Areas and Concessions

Another major challenge is the fact that some areas designated for protection overlap with logging concessions creating potential legal claims. Several mining licenses and concessions have been issued to individuals and concessionaires to prospect for or to mine minerals in protected areas. Others have been awarded for commercial agriculture. West Nimba protected area has already been affected by mining while at the same time has been designated a Community Forest. Bong has been affected by a mining operation and Wologizi appears to have been removed from the PFAN because of its importance for iron ore. As a result, the total area under protection is in the region of just over one million hectares (down from 30 percent to 25.2 percent of the total forested area in Liberia).

Small-scale miners operate within a forest concession in Liberia

Poverty

Poverty poses an underlying threat to biodiversity in Liberia because the livelihoods pursued by poor people (agriculture, bushmeat hunting, charcoal-making, harvesting of medicinal plants, and so on) frequently degrade or destroy natural ecosystems, and it is often difficult for poor people to transition to more sustainable and biodiversity-friendly livelihoods. Poverty in Liberia remains pervasive, particularly in rural areas, and access to basic services continues to be limited.

Inadequate Budget Allocation

There is not enough budget allocated for forest conservation and this has hindered the completion of the establishment of the PFAN. As a result of low budgetary allocation to the FDA, the recruitment and deployment of rangers and forest guards to protected areas has also been delayed. Even in areas where the FDA's presence is felt, personnel numbers, equipment, and budget for operating costs are inadequate to sustain operations.

Lack of Economic Alternatives for Communities

This depends on the challenges of sustainable utilization of forest resources for livelihoods enhancement. Many communities around protected areas fear that they will be denied their existing livelihoods when the protected areas are established.

Lack of FDA Capacity

There is a lack of capacity of FDA staff and in-country actors to fully execute and implement a conservation and REDD+ program. The concepts and systems needed for to implement conservation forestry and REDD+ remain new to many stakeholders. This lack of knowledge and capacity is hindering stakeholder involvement in the development of Liberia's National REDD+ strategy, including national civil society organizations, private sector actors and community-based organizations. This issue undermines the establishment and sustainable management of protected areas.

WHAT HAS BEEN ACHIEVED

Strengthened Wildlife and Protected Forest Area Management

GoL has committed to setting aside 30 percent of Liberia's forest cover for the PFAN. The National Forest Inventory (NFI) 2018/2019 estimates that Liberia's forests make up more than two-thirds of the country's land area and cover 6.69 million hectares (FDA 2019a). Therefore, it is estimated that about 2 million hectares of land should be ultimately placed under the PFAN. However, only 24 percent of the total area is committed for PFAN and an estimated at 475,390 hectares have been placed under PFAN (FDA 2019a). Since 2015, the GoL through the FDA has established two new protected forest areas: (1) Kranh-Grebo National Park; and (2) the Gola National Park. GoL has also earmarked 501,765 hectares of forests as a PPA. Proposals have also been made to set aside another 137,044 hectares as PPAs, making a total of 638,809 hectares for earmarked PPAs.

Enforcement of Wildlife Laws and Regulations

One of the major achievements of conservation forestry in Liberia is the strengthening of enforcement mechanisms for implementation of wildlife laws and regulations. For example, a Wildlife Crime Task Force was established in 2019 under the support of EU funding. This team has played a leading role in the enforcement of Wildlife Conservation and Protected Area Management Laws and regulations[20] The Wildlife Crime Task Force, which is hosted by the FDA, is made up of representatives from the FDA Wildlife Division and Wildlife Confiscation Unit, EPA, Trans-National Crime Unit (TCU), Interpol, Liberia Chimpanzee Rescue and Protection, and Libassa Wildlife Sanctuary.

National Forest Inventory (NFI) 2018/2019

GoL and development partners, including the Government of Norway, the World Bank Forest Carbon Partnership Facility (FCPF), United Nations Food and Agriculture Organization (FAO), REDD+ National Programme Coordinating (NPC) Unit and the REDD+ Implementation Unit, successfully completed the NFI, 2018/19. The NFI provides the ecological basis for the management of PFAN and biodiversity resources of Liberia.

Strengthened Biodiversity Conservation

According to EPA (2017), one of the four existential threats humankind faces today are the loss of biological diversity, climate change, food insecurity and poverty. To address the threat of biodiversity decline, GoL ratified the Convention on Biological Diversity (CBD) on November 8, 2000, and further developed the National Biodiversity Support Action Program (NBSAP) between 2002 and 2005. The NBSAP was revised in 2017 and named the National Biodiversity Strategy and Action Plan-II 2017-2025. The NBSAP II, 2017-2025 has five strategic goals, two of which are focused on strengthening biodiversity conservation in Liberia resulting in:

1. A reduction in the underlying causes of biodiversity loss
2. A reduction in the direct pressures on biodiversity and promote sustainable use (EPA 2017).

Reduction in Bushmeat Trade

In 2022 at Margibi County, the Liberian Society for Conservation of Nature (SCNL) hosted a formal program marking the closing of the successfully completed EU-funded project known as "*Strengthening Local Communities and the Law Enforcement Network to combat Wildlife and Forest Crime in Liberia*".[21] The Executive Director reported that the bush meat trade had been reduced for the past three and half years through the support of the European Union to Liberia.[22] One of the other major achievements under the project was the establishment of the Wildlife Confiscation Unit (WCU) within FDA, which has provided animal sanctuaries for care for confiscated animals. The WCU has also worked to help support the arrests and prosecutions of violators. The survey conducted by SCNL as part of the project established that increased law enforcement by FDA and the Community Volunteers' activities had led to a 50 percent reduction in sale of bush meat in most city markets.[23]

20 See: https://frontpageafricaonline.com/environment/liberia-eu-funded-project-on-combating-wildlife-forest-crime-celebrates-achievements/
21 See: https://www.liberiaprojects.org/activities/1456
22 https://frontpageafricaonline.com/environment/liberia-eu-funded-project-on-combating-wildlife-forest-crime-celebrates-achievements/
23 https://allafrica.com/stories/202207040154.html

Establishment of Community Ecoguards

The FDA has established a National Community Ecoguard Program (NCEP), which is active in numerous (proposed) protected areas of Liberia and has been active at Grebo-Krahn National Park since 2014. The FDA, with the support of development partners, has helped establish 250 Community Ecoguards across Liberia through collaboration with community members.[24] The Community Ecoguards are at the forefront of the prevention of encroachment of PFAN areas and the prevention of unregulated wildlife hunting.

Ecoguards navigate a fallen tree trunk in Krahn Bassa Proposed Protected Area.

Provision of Livelihood Support in Protected Areas and PPAs

Conservation forestry efforts typically restrict activities from which forest communities derive their income such as chainsaw milling, artisanal mining and hunting, antagonizing people who have no alternative sources of income.[25] Ironically, where local people's livelihoods can be improved through proper use of forests, there are strong indications that forests can be protected and managed on sustainable basis.[26] And the reverse is equally true; at present the lack of access to resources, uncertain ownership of trees, inequitable benefit sharing, lack of consultation and participation in decision making in Liberian forestry have all contributed to the unsustainable use of the forests. Pressures on forests can be lessened without compromising the livelihoods of proximate communities by creating alternative and complementary means of earning a living.[27]

The FDA has supported the provision of alternative livelihood ventures for forest fringe communities to facilitate their support in conservation forestry (FDA 2019b). In this regard, the Liberia Forest Sector Project (LFSP), which was implemented by the FDA focused on the provision of sustainable livelihood support activities in communities around the Gola Forest National Park, as part of strengthening the on-the-ground management of this Protected Area (FDA 2017).

Conservation Trust Fund Established

In 2016, GoL through the FDA established a Liberia Conservation Fund (LCF) with the support of Conservation International (CI), and other partners and stakeholders (FDA 2017b). The objective of the LCF is to provide for forest, wildlife and biodiversity conservation through the provision of grants to support: (1) the management and protection of new and existing protected areas and their surrounding areas in Liberia; and (2) long-term forest conservation and improved land management practices within Liberia.[28] Although initially motivated as a dedicated financing mechanism to support the East Nimba Nature Reserve (ENNR) and community-based conservation efforts around ENNR, the LCF is conceived as a necessary financing mechanism for the entirety of Liberia's PFAN.

24 https://frontpageafricaonline.com/environment/liberia-eu-funded-project-on-combating-wildlife-forest-crime-celebrates-achievements/
25 https://www.undp.org/liberia/press-releases/liberias-forest-communities-benefit-sustainable-alternative-livelihoods-new-project
26 https://www.un.org/esa/forests/wp-content/uploads/2015/06/Enabling_SFM_highlights.pdf
27 https://blogs.worldbank.org/africacan/liberia-understanding-peoples-dependence-forest
28 https://abcg.org/rss/conservation-international-helps-launch-liberias-first-sustainable-conservation-fund/

THE WAY FORWARD

The recommended solutions include the following:

SECURE Existing Protected Areas and the PPAs

There is an urgent need to: (1) secure the existing protected areas of Sapo National Park and East Nimba Nature Reserve; and (2) gazette the proposed PFAN. Such support should focus on the creation of new protected areas outside disputed concession areas, including wetlands such as Lake Piso and Marshall Islands. In addition, a moratorium on logging, mining, settlement, agriculture, and plantations must be introduced and enforced in the protected areas.

PROTECT Endemic Species

Measures aimed at protecting endemic species should be strengthened, as well as other highly endangered species.

ENCOURAGE Community Wildlife Protection Mechanisms

Alternative livelihood opportunities should be promoted to boost the income of forest fringe communities to decrease the reliance of the communities on the PFAN. Special focus should be on developing an alternative means of earning livelihoods to hunters, especially those that also provide sources of protein (such as poultry farming or sustainable fishing).

There is also a need for conservation education and public awareness programs, implemented in collaboration with local communities, and aimed at reducing economic pressure on wildlife and other forest resources. Rules and regulations on the hunting of wildlife should also be strengthened, especially regulations covering designated hunting seasons and permitted species.

IMPLEMENT Biodiversity-Related Conventions

Measures in biodiversity-related conventions such as CITES should be implemented. In addition, all related international agreements to which Liberia is a party, including the introduction of necessary controls on actions that impact significantly on biodiversity should be adhered to.

CONSERVE Water and Soils

Until the late 2000s, there was no coordinated framework for water resources management in Liberia. This was mainly due to the fragmentation of roles and lack of coordination between different agencies with responsibilities in this sector (Integrated Water Resource Policy 2007).

To address these water challenges, in 2007 an Integrated Water Resource Policy was developed and implemented.[29] Unfortunately, the policy focuses on domestic needs rather than ecosystems maintenance, although it does recognize the need for soil and water conservation practices on upland slopes. However, it does not address or establish frameworks for developing specifics safeguards. As a result, there are no specific controls or water sector policies relating to the nature of development or activities allowed in, or in the vicinity of, protected areas. Similarly, there is no specific Liberian policy or legal instrument relating to sustainable management of soils and standards to be achieved when undertaking activities that may affect them, especially with respect to soils in protected areas.

29 See: https://www.fao.org/faolex/results/details/en/c/LEX-FAOC180020/

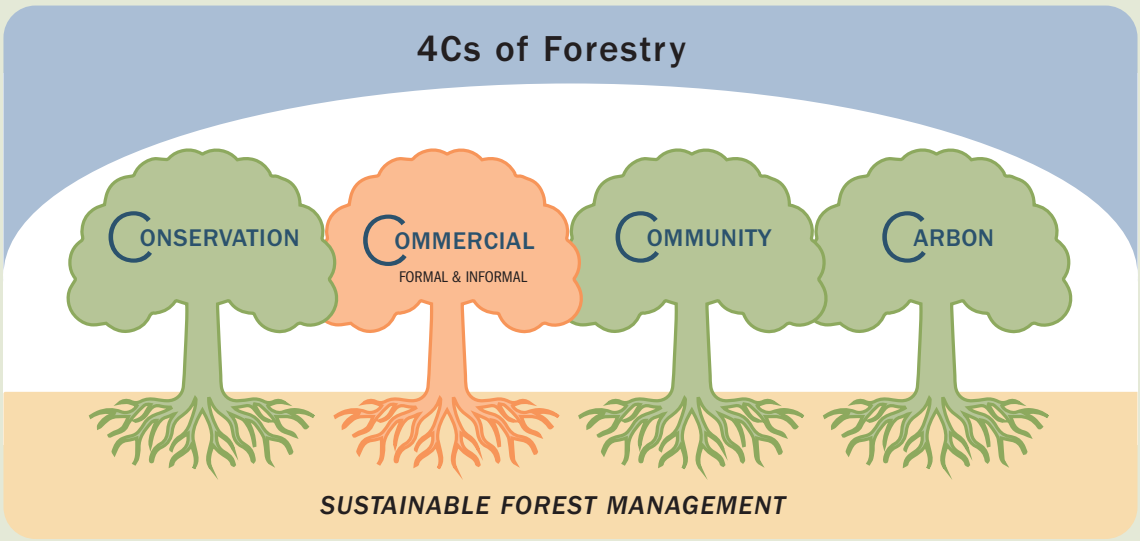
CHAPTER

3 COMMERCIAL Forestry—Formal

A Blueprint for Change—The 4Cs of Sustainable Forest Management (SFM)

It is crucial that when making decisions about commercial forestry, all aspects of **conservation**, **community** and **carbon** forestry are given equal consideration.

Balancing and integrating the 4Cs of sustainable forest management (SFM) can make real change happen.



Liberia's forests are under threat from overexploitation, climate change and governance related challenges. There is an excessive focus on **commercial forestry** and not enough attention is paid to the other factors that play an equally significant role. Liberia's approach to forestry is **out of balance** and **a new mindset** is needed to drive a significantly more sustainable approach to how this vital natural resource is managed.

CHAPTER CONTENT

The formal forestry sector is the people and businesses whose work is forestry-related and is legally recognized and measured. It includes the types of employment that offer regular wages and hours, have employment rights, and on which income tax is paid. In Liberia, formal commercial forestry is mainly focused on the export of logs. In 2020, formal forest sector contributed 10 percent to gross domestic product (GDP) and employed 39,880 full-time workers, of whom 35 percent were women (FAO 2020a).

This chapter focuses on the commercial and formal features of forestry. There is a background on commercial forestry in Liberia including its history and relationship with the civil war. This is followed by a description of the policy and legislative frameworks that control commercial forestry with a particular focus on the 2006 forest sector reform process and the features of the policy changes that emerged from this process.

The success of commercial forestry is dependent on its concessions system and its ability to implement and enforce the forestry fiscal regimes. This chapter discusses the types of forest concessions available in Liberia, the processes involved with applying for and implementing these concessions, and the challenges the sector faces with some of these concessions and the administrative structures involved.

A successful formal commercial forestry sector needs legitimacy to expand its market. The forest law enforcement, governance, and trade (FLEGT) program and its accompanying voluntary partnership agreement (VPA) provides a legitimacy framework for the Liberian forest sector. The details of this are discussed along with the challenges it faces.

The forest fiscal regime is also reviewed along with a presentation of the various charges and taxes involved. This is followed by an analysis of the challenges faced by the sector and a presentation of what has been achieved to date.

The chapter concludes with a list of recommended actions for the Government of Liberia (GoL) and the Forest Development Agency (FDA) to address the challenges faced by this crucial economic resource.

COMMERCIAL Forestry—Formal

Commercial forest land means forest land that is producing or capable of producing marketable forest products and is administratively available for intensive management and sustained production. Commercial forestry includes the production and processing of wood and non-wood forest products for profit. The aim of commercial forestry is to produce these products sustainably and develop viable forest-based industries. Taxes and charges on these products can be used to finance government expenditures for administration of the sector directly and on the provision of public goods and services more broadly.[1] Importantly, it also includes the development of tree plantations which can be commercially exploited.

AIMS AND OBJECTIVES OF COMMERCIAL FORESTRY—FORMAL

The basic aim of formal commercial forestry is to supply goods and services and meet the needs of people including government and local communities. Products supplied by commercial forestry include:

- **Industrial**—timber, plywood, matchwood, fiberboard, pulp, and paper
- **Non-industrial**—food, firewood, plant medicine, fodder, and fiber.

The main objective of formal community forestry is to optimize the contribution of forestry to the national economy (FDA 2006), through sustainable timber production, economically acceptable by stakeholders, and intended for log export or for the industrial processing in Liberia (FDA 2009). Other objectives include: (1) ensuring the sustainable harvesting and use of non-timber forest products (NTFPs), including bushmeat and plant medicine; (2) contributing to the national development goals of poverty alleviation and increased food security by increasing the opportunities for forest-based income generating activities; and (3) maximizing the contribution of the forestry sector to income, employment, and trade through the development of appropriate processing activities.

1 See: https://www.slideshare.net/ShadrachKerwillain/forestry-sectorlib-final2nd2704-50111410

LIBERIA'S COMMERCIAL TIMBER MARKET

History

Historically, the timber industries have provided jobs for the bulk of Liberia's rural inhabitants and for people in Monrovia and its surroundings. The forestry sector, especially the timber industries, provides economic activities in the rural areas and is responsible primarily for monetizing the rural economy. In addition, the industries have an impact on technological transfer with many rural workers acquiring knowledge of various kinds of forestry operations including mechanical (heavy-duty) and saw operators.

Prior to the civil conflict in 1989, timber harvesting followed a model forest management plan which allocated **an annual coupe** (annual harvestable land area) and **a diameter cut limit** of each species or species group. The annual coupe system allowed forests to be managed in a structured way and provided a complete inventory of the forest area designated blocks to be worked annually. It also enabled the FDA to stipulate in advance the percentage of the growing stock to be removed and where it came from. This forest management plan regulated and controlled the harvesting activities (operations) of logging companies. The plan stated that concessions should be for a 25-year period, cutting should be limited to 4 percent of the area each year, and only branches over a specified **diameter at breast height** (DBH) for certain species could be removed.

In addition, before this war about 10 sawmills and four ply mills were in operation exporting processed wood and plywood out of the country. The timber industries accounted for about 5-9 percent of the total exports and logging contributed about 8 percent of the country's GDP (Doe 2017). In the early 1990s, timber harvesting reached a peak production volume of about 1.1 million cubic meters, of which about 600,000 cubic meters were exported and between 1990 and 1998, there were only 35 logging companies operating in the country.[2] However, during the first serious political conflict in 1996 export numbers slumped to an all-time low of 30,000 cubic meters.

After 1998, logging and exports gradually resumed. By 2001, production had quadrupled and by 2003 production had returned to the pre-war level of 1 million cubic meters with a cash value of approximately US$ 100 million. This was produced by 36 forest companies, which employed approximately 10,000 people (Anon 2008). By 2003, timber export accounted for about half of Liberia's foreign exchange earnings and 20 percent of the country's GDP. This new peak occurred during the second conflict (2000-2003), when timber resources were used to fuel the war, and both production and exports peaked. Between 2000 and 2002, the forestry sector raised well over US$ 100 million per annum and was one of the prime sources of GoL revenue (Global Witness and International Transport Worders Federation 2001). According to the Law and Environment Assistance Program (LEAP) of the United Nations Environment Program (undated), even though the exploitation of forest resources was not the explicit cause of civil war, those involved in the conflict resorted to the exploitation of natural resources, including forest products, to finance the conflict (UNEP/LEAP Undated).

During the second civil war (1999-2003) timber processing was largely limited to sawn timber production and an insignificant production of plywood. Data available for 2000 indicate a log export volume of close to 640,000 cubic meters (70 percent of the annual harvest in 2000), and sawn timber export of 6,000 cubic meters in 2000. Sawn timber exports represented only 2 percent in roundwood equivalent of timber production in 2022. In addition, total sawn timber was exported by just seven companies, with three companies accounting for 90 percent. According to Global Witness (2002), official FDA statistics in 2000 indicated that total round log exports for the year amounted to 631,250 cubic meters, out of which 48 percent (303,000 cubic meters) were exported to China. Corresponding FDA figures for 2001 indicated that 982,000 cubic meters of round logs were produced, and 774,000 cubic meters exported in 2001. The total free on board (FOB) value of these exported logs was listed at US$ 80 million. Total round log exports to China for 2001 amounted to 452,000 cubic meters, which was 58 percent of total exports. Fifty eight percent with an FOB value of US$ 42 million were exported to China.

2 See: https://archive.globalpolicy.org/component/content/article/194-liberia/39174-the-role-of-liberias-logging-industry.html

In addition, in 2001, a total of 17,000 cubic meters of sawn timber was produced, with 14,600 cubic meters exported. The same report notes that the total round log production of three companies for 2001 amounted to 630,000 cubic meters, equivalent to 64 percent of Liberia's total log production. These three companies also had a combined log export volume of 548,000 cubic meters, which was 71 percent of total exports for the year (Global Witness 2002).

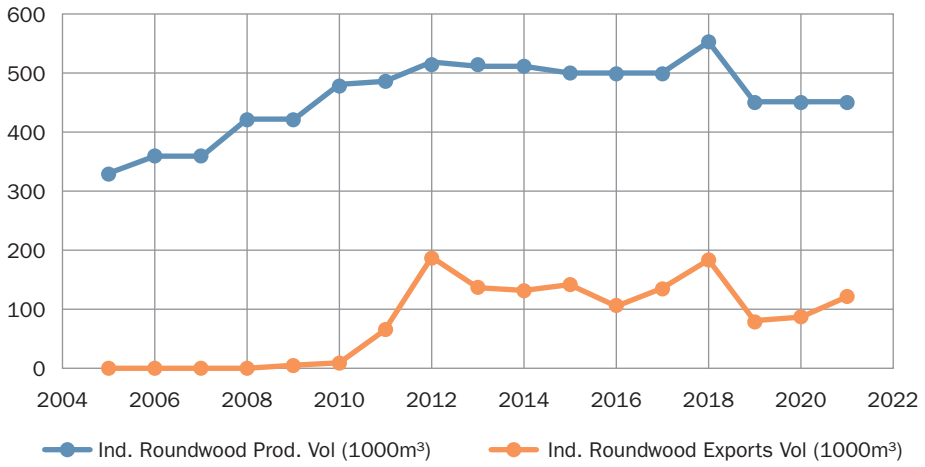
In 2003, the United Nations Security Council (UNSC) issued Regulation 1478, which prohibited UN Member States from importing logs from Liberia.[3] As a result, the timber industry collapsed. After a peace agreement was signed in 2003, Liberia sought to restore the rule of law to the forestry sector. The Liberia Forest Initiative (LFI) was convened to help GoL establish sustainable use of forest resources and to promote transparency in the forestry sector. To lift the sanction on the forestry sector, GoL set up a forestry reform road map towards a more sustainable, transparent, and development-focused approach to forestry. The passing of the 2006 National Forestry Reform Law (NFRL, 2006) resulted in lifting of the UN sanction in 2006.

Timber production was restarted in 2009, and seven Forest Management Contracts (FMCs) were awarded on just over 1 million hectares of commercial forest land (Symle 2012). Mean logging intensity in these concessions averaged 3 to 5 million cubic hectares. Ten Timber Sales Contracts (TSCs) were also granted covering about 50,000 hectares and 51 Private Use Permits (PUPs) were awarded over an area covering 2.081 million hectares). More than 1 million hectares of forest are under logging contracts, and 785,841 cubic meters of logs valued at just under US$ 150 million were exported between 2009 and 2016 (Siakor 2017).

Post Conflict

In 2018, the Liberian industry reached its highest production of about 551,000 cubic meters of logs most of which was used for the domestic market (see Figure 3.1). The export value of round logs accounted for around US$ 51.4 million. More recently, total production fell and has remained steady at 451,000 cubic meters per year between 2019 to 2021. As regards sawnwood production, that has remained steady at about 132,000 cubic meters with insignificant volumes of exports (see Figure 3.2).

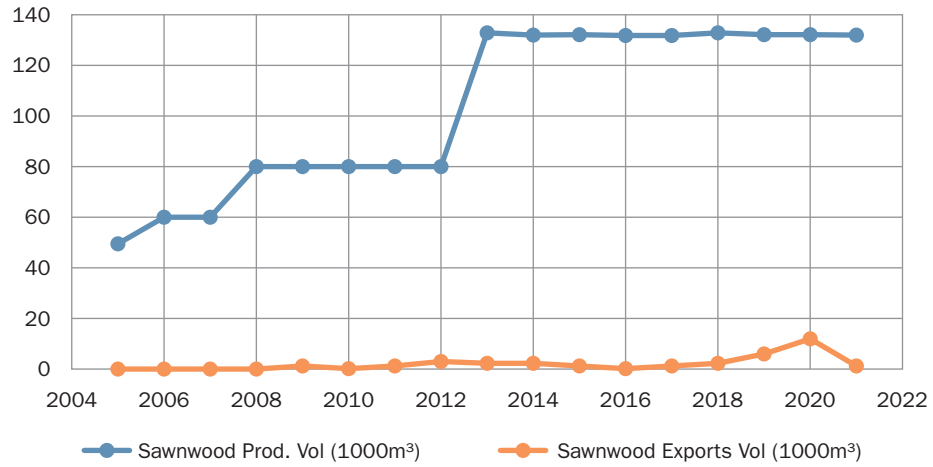
Figure 3.1 Industrial Roundwood Production and Exports between 2004 and 2022



Source: Data compiled by authors from https://www.itto.int/biennal_review/?mode=searchdata

3 See: https://news.un.org/en/story/2003/05/66992-extending-sanctions-against-liberia-security-council-adds-ban-timber-exports

Figure 3.2 Sawnwood Production and Exports Between 2004 and 2022



Source: Data compiled by authors from https://www.itto.int/biennal_review/?mode=searchdata

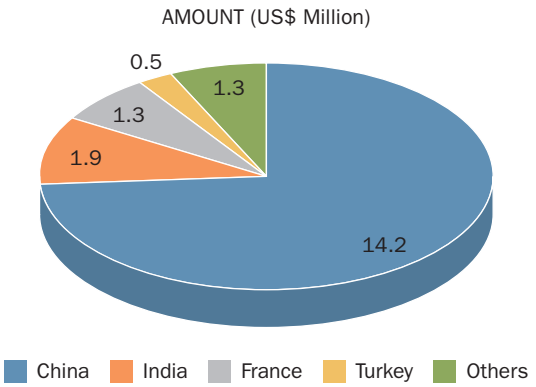
In 2015, the six most common commercially harvested timber species included Azobé (*Lophira alata*), Niangon (*Heritiera utilis*), Bossé (*Guarea cedrata*), Iroko (*Milicia excelsa*), Ayous (*Triplochiton scleroxylon*) and Dabema (*Piptadeniastrum africanum*). However, a total of 240 timber species have been identified, of which about 60 species have been exploited and exported (FAO 2015). The official species list entered in the Société Générale de Surveillance (SGS) LiberFor system in 2011 contained 95 species.

Most wood exports go to China, with the remainder mainly going to other Asian countries and to Europe (see Figure 3.3). Timber is mostly exported via the main ports of the country including the Freeport of Monrovia, Buchanan, Greenville, and Harper[4]. Harper and Greenville are known as the main outlets for the timber industry.

Timber waiting for export

4 Near Pleebo, a crossing point to Côte d'Ivoire.

Figure 3.3 Destination of Timber Products in 2020



Source: https://flegtimm.eu/country-profiles/liberia/

According to FLEGT Independent Market Monitor (2021)[5], out of a total of 2.5 million hectares of forest that could potentially be allocated for commercial timber contracts, 1.1 million hectares had been assigned for commercial forestry and 411,000 hectares had been assigned for conservation forestry. By 2019, the FDA had initiated plans to increase the area earmarked for conservation forestry to 1.5 million hectares in accordance with Liberian law. An additional 1.2 million hectares had been earmarked for allocation for the sustainable production of forest products by communities on a non-commercial basis. However, according to RoL (2019), by 2019 only seven FMCs covering an area of 1,058,189 hectares had been awarded by GoL. In addition, only 10 TSCs had been awarded with eight active TSCs in operations covering an area of 50,000 hectares.

A major challenge facing the forest sector is the inconsistencies in the data reported by governments, developing partners, and international forest agencies. For example, during the Charles Taylor period, the FDA reported that annual timber exports were worth US$ 80 million. Yet, international organizations and governments reported much higher export figures for this period with the FAO reporting exports of US$ 225 million and ITTO reporting exports of US$ 239.5 million (Blundell 2008). See Table 3.1 for more information.

Table 3.1 Reported Timber Exports (US$ million) from Liberia Between 1999 and 2002

Year	FDA	CBL	GTA	FAO	ITTO
1999	22.6	*	37.2	23.4	23.5
2000	67.5	59.5	106.8	212.5	213.9
2001	79.9	60.3	103.7	225.0	239.5
2002	*	*	146.5	325.0	282.5

Source: Blundell 2008

Data for sawn wood and roundwood combined, *Report not available.

Source: OCHA (2003): the Forestry Development Authority (FDA), the Central Bank of Liberia (CBL), the Global Trade Atlas (GTA); FAOSTAT (2008): the Food and Agriculture Organisation (FAO); ITTO (2008): the International Tropical Timber Organization (ITTO).)

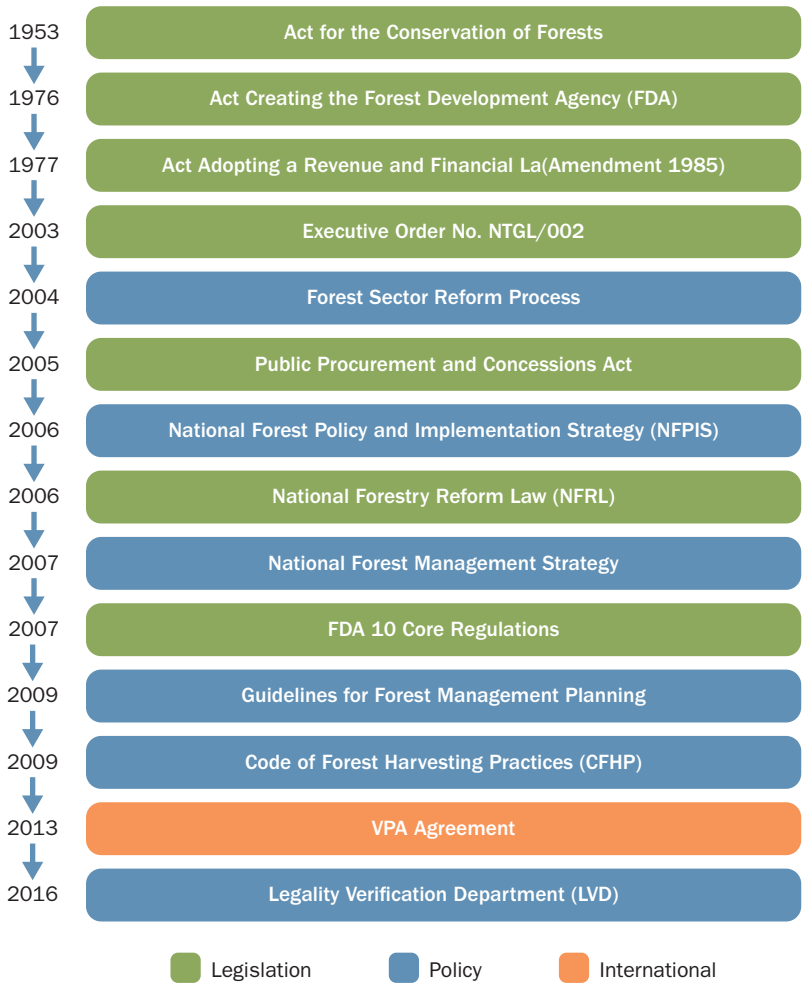
If this difference represents under-reporting by logging companies and corrupt officials to evade taxes, then Liberia lost approximately US$ 36 million in revenue in 2001 (given the tax rate of approximately 20 percent). In fact, this is probably an underestimate as an unknown, but undoubtedly sizeable, amount of wood was smuggled from Liberia, without any reporting at all, especially through the porous eastern border to sawmills in Ivory Coast. However, thanks to changes in process through the FLEGT, VPA and LiberTrace arrangements, the export of unreported and illegal timber is reducing.

5 See: https://flegtimm.eu/country-profiles/liberia/

COMMERCIAL FORESTRY—POLICY AND LEGISLATION

Since the creation of the FDA Agency Act, 1976, there have been a succession of important policy and legislative changes to support the activities of the formal commercial forest sector (see Figure 3.4). However, this is notably less than those focused on the informal commercial section. See Chapter 4 for more information. The reason for this may be an indication of the importance the GoL attaches to commercial forestry in comparison to the other Cs.

Figure 3.4 Commercial Forestry Policy and Legislation Timeline



Policy

2004—Forest Sector Reform Process (Executive Order No. 1: GOL Forest Sector Reform)

In 2004, Liberia initiated a forest sector reform process, which included a review of all existing logging concession claims. This was a review of all laws and regulations relating to forestry, as well as the forest policy and management strategies.

This reform process resulted in the development and enactment of three key laws and regulations governing how commercial forestry is managed in Liberia:

1. 2006—National Forestry Reform Law (NFRL) which amended the 2000 National Forest Law[6]
2. 2006—National Forest Policy and Implementation Strategy (NFPIS)
3. 2007—National Forest Management Strategy (NFMS).

2006—National Forest Policy and Implementation Strategy (NFPIS)

The NFPIS, 2006 was the policy implementation strategy that determined commercial forestry as one of the three key approaches to forests. These 3Cs were conservation, commercial, and community.[7]

This strategy document also defined the three main objectives of commercial forestry (FDA 2006). These are:

1. **Forest concession management**—Maintaining the capacity of the forest to produce economically viable future harvests, and wherever possible, provide social and environmental benefits to a large segment of the society.
2. **Reforestation and forest plantation development**—Ensuring the provision of new sources of wood for the processing industry and other forest products (such as fuelwood, building poles and non-wood forest products).
3. **Modernizing the wood processing industry**—This is important because the wood processing industry is a source of investment and employment in the Liberian economy and can contribute enormously to value added in the sector.

2007—National Forest Management Strategy (NFMS)

The policy framework regulating the concessions process is governed by the National Forest Management Strategy (NFMS), 2007.[8] The NFMS summarizes the Forest Development Agency's (FDA) philosophy for managing the national forest endowment, its methods and approaches to forest management, its long-term end-states, or goals, and its major forest management objectives. It is the legal foundation that prescribes specific and measurable goals on how Liberia's forest is managed to produce the desired goods and services current and future generations.

The primary objective of the NFMS, 2007 was to preserve and develop Liberia's forests by establishing community management areas and protected areas and allocate forest-related contracts, such as FMCs and TSCs. The NFMS, 2007 also established a vision for the *ideal status* of Liberia's forests in 25 years and proposed an *end state* against which future progress could be measured.

The NFMS, 2007 allocated a total of 4.59 million hectares of forest to be used for:

1. Multiple sustainable use management (commercial timber production)
2. Timber sales contracts (commercial timber production)
3. Community management
4. Protected areas (Smyle 2012).

6 See: https://www.clientearth.org/latest/documents/act-2000-act-adopting-the-new-national-forestry-law-liberia/

7 Carbon forestry was added to the regime later. The Government of Liberia (GoL) has committed to implementing carbon forestry, but it has yet to be formally legislated for.

8 See: http://wri-sites.s3.amazonaws.com/forest-atlas.org/lbr.forest-atlas.org/resources/Documents/National%20Forest%20Management%20Strategy.pdf

According to Symle (2012), the principal weakness of the NFMS, 2007 was its failure to operationalize the concept of the 3Cs. Other significant gaps and weaknesses of the NFMS were:

- The strategy was unclear on the internal objectives, goals, responsibilities, or mechanisms to integrate the activities of the FDA.
- It was a strategy for the public forest sector agency rather than the forest sector
- It largely ignored production for domestic markets
- It provided no guidance on land tenure and resource access issues
- It failed to provide direction on the future relationship of community forestry to commercial forestry.

2009—Guidelines for Forest Management Planning in Liberia

This set of guidelines were aimed at providing practical and technical information on the methods to use to design and implement Forest Management Plans (FMPs). It also provided the FDA with a set of consolidated procedures to ensure compliance with international standards. The previous set of guidelines only concerned FMCs and were intended for concessionaires and FMC in charge of managing their forest concessions, to help them prepare their FMPs.

2009—Code of Forest Harvesting Practices (CFHP) (amended in 2017)

These are a set of clear guidelines provided to help state foresters and logging companies guide forest harvesting operations.

2016—Legality Verification Department (LVD) Manual of Procedures

This is a working tool intended to give practical guidance to the forestry operators working in the forestry sector in Liberia. The manual consists of a set of 16 Standard Operating Procedures (SOPs) and their work instructions to implement the Liberian Timber Chain of Custody (CoC) Information System, the Legality Verification System, and the FLEGT Licensing System. The manual contains binding instructions for operators' staff on how to conduct, declare and register forest activities into the software application developed under LiberTrace.[9]

Commercial Forestry—Legislation

Several key legislative instruments govern the implementation and administration of commercial forestry in Liberia.

1953—Act for the Conservation of the Forests of the Republic of Liberia

The first Act dedicated to forestry in Liberia came into effect in 1953 and was followed by a Supplementary Act in 1957.[10] These Acts provided for, among other things, the creation of reserves, national parks, and communal forests to facilitate commercial forestry. In 1956, a Liberia Code of Law was enacted, and Subset 2 of the Law permitted the creation of government reserves, native authority reserves, communal forests, and national parks. These Acts contained the first instruments for forestry administration, including commercial forestry in Liberia.

9 LiberTrace is a project funded by the UK Department for International Development (DFID) (now Foreign Commonwealth and Development Office (FCDO)) and the European Union (EU). In the scope of the EU FLEGT initiative, the aim of the project is to establish and operate a Timber Legality Verification Department (LVD) with Liberia´s Forestry Development Authority (FDA) as described in the Voluntary Partnership Agreement (VPA) signed between the EU and the Republic of Liberia.

10 See: https://www.clientearth.org/latest/documents/act-1953-act-for-the-conservation-of-the-forests-of-the-republic-of-liberia/

1976—Act Creating the Forest Development Authority (FDA)—Liberia

The Act Creating the Forest Development Authority (FDA), 1976, which mandated the creation of the FDA, was the first comprehensive piece of legislation enacted to protect the country's forest resources and to promote commercial forestry.

1977—Act adopting a Revenue and Financial Law (Chapter 20: Stumpage and Forest Products Fee)—Liberia, Amendment, 1985

The Revenue and Financial Law describes the powers of the FDA with respect to the assessment, collection, and use of forest charges. In Section 20.2, the Law states that "*the rate and basis of assessment of the local stumpage fee shall be determined by the Forestry Development Authority together with the Ministry of Finance*". The Law further prescribes that a fee shall be paid on the severance of timber cut for commercial use in reserved forests and on privately-owned forest land by any person who cuts or causes trees to be cut for commercial use. In addition, Section 20 contains provisions on the industrialization incentive, the forest products, as well as the reforestation fees.

The Revenue and Financial Law was amended in 1985, essentially to amend Section 20. The title of the Amended Law is as follows: "*Title 36, Volume VI of the Liberian Code of Laws revised, with respect to the assessment and collection of local stumpage, industrialization incentive, forest products, reforestation and other forestry related fees which amended Section 20.6 of Chapter 20 of the Revenue and Finance Law*".

2003—Executive Order No. NTGL/002

The Executive Order, issued by the President, instructed the Ministry of Finance (MoF) to collect forest revenues and submit them to GoL's accounts at the Central Bank of Liberia (CBL). Thus, MoF became involved in the collection of forest revenue.

2005—Public Procurement and Concessions Act—Liberia, Amendment and Restatement of the Public Procurement and Concessions Act, 2005—Liberia

This Act regulates all forms of public procurement and concessions (including forest concessions), establishes the Public Procurement and Concessions Commission, provides for institutional structures for public procurement and concessions, stipulates methods and procedures for public procurement and concessions and for purposes related to it.[11] Contract holders are required to comply with all major requirements under the Public Procurement and Concession Act (PPCA), 2005 to obtain the contract, including tax clearance, an annual business registration certificate, and a pre-qualification certificate.

2006—National Forestry Reform Law (NFRL)

The 2006 National Forestry Reform Law (NFRL) is the main comprehensive law for the management of commercial forestry. It amended the 1976 Act that created the FDA, abolished the granting of salvage permits for non-concession operations, and discouraged the proliferation of logging companies. The Law also provided for the granting of harvesting (logging) rights under a 'Forest Products Utilization Agreement' (also known as a forest concession).

The NFRL, 2006 provided for rules on the ownership and use of forest resources, policy, and planning in relation to forests, the commercial and other use of forest resources, contractual aspects of forest resources licenses (FRLs), relations between neighboring forest areas, environmental protection, protected forest areas network and wildlife conservation, community rights and forests management, rights of landowners and occupants, trade in forest resources and fiscal provisions (Doe 2017).

The NFRL, 2006, stated in Section 2.1(a) that all forest resources in Liberia are held in trust by the Republic for the benefit of the People. However, there are two exceptions: (1) forest resources located in communal forests; and (2) forest resources that have been developed on private or deeded land through artificial regeneration.

11 See: https://www.fao.org/forestry/lfi/31586/en/

The NFRL, 2006 also granted the right to use forests to the GoL and concessionaires. These proprietary rights of GoL did not extend to the right of ownership which was still vested in customary or legal landowners. In return for proprietary rights, compensation for disturbance and damage to property was given to the landowners, but not for the loss of the benefit and use of the land. In addition, the control of the use of forest related GoL property, including the use of forest land and the harvest or other use of forest resources was delegated to the FDA under Section 2.2 of the NFRL, 2006.

Most importantly, the NFRL, 2006 defined the role of commercial forestry in sustainable development and protecting the environment. Section 3.1 of the NFRL stated that the management of commercial forestry should contribute to the sustainable development of the Republic's economy, involve the participation of all Liberians, and contribute to poverty alleviation. In addition, Chapter 8 of NFRL, 2006 addressed the need to consider the environment with requirements to ensure: (1) sustainable yields when harvesting forest resources, (2) target measures to achieve reforestation and afforestation; and (3) the promotion of planting of indigenous species of trees.

To achieve the objectives of maximizing commercial forestry, the NFRL, 2006, set out, to ensure that commercial forestry was integrated and balanced to ensure socioeconomic and environmental benefits for all. Commercial forestry was expected to contribute to the Pro-Poor Agenda (see Chapter 7). It was also expected that commercial forestry activities were scientifically and technically sound to minimize waste, environmental and health issues.[12]

2013—Voluntary Partnership Agreement (VPA) between the European Union (EU) and the Republic of Liberia on FLEGT in timber products to the EU

A legal framework aimed at ensuring that all timber products imports into the European Union (EU) from Liberia have been legally produced and, thereby, to promote trade in timber products. It also provides the basis for dialogue and cooperation between parties to facilitate and promote forest law enforcement.[13]

2007—FDA 10 Core Regulations

In 2007, the FDA outlined ten core regulations to provide guidance on forest-related issues in Liberia.[14] All the 10 core regulations are applicable to commercial forestry. They include:

1. **Regulation 101-07 Public Participation in Promulgation of Regulations, Codes, and Manuals**: This Regulation outlines transparent and participatory procedures that the FDA should follow when the Authority seeks to adopt or amend Regulations, Codes, and Manuals. The procedures that the FDA should follow to ensure broad public access to Regulations, Codes, and Manuals and to all supporting documents and information, to the greatest extent permitted by law, is outlined.
2. **Regulation 102-07 Forest Land Use Planning**: The purpose of forest land use planning is to establish the suitability of forest lands for sustainable land use allocations through a participatory process, based on local validation, that optimizes the benefits of forest land allocation to Liberian society. The FDA is expected to conduct forest land use planning activities in a manner that advances and balances economic development; benefit to forest-dependent communities; and protection of the Republic's environment and natural resources.
3. **Regulation 103-07 Bidder Qualifications**: The FDA is mandated by this regulation to keep a list of debarred and suspended persons who are ineligible to bid on a FRL offered through a concessions process. The Regulation further provides guidance on the requirements and procedures for all bidders, including prequalification criteria.

12 See: https://loggingoff.info/library/liberia-national-forest-management-strategy/

13 See: https://www.clientearth.org/latest/documents/voluntary-partnership-agreement-between-the-european-union-and-the-republic-of-liberia-on-forest-law-enforcement-governance-and-trade-in-timber-products-to-the-european-union/

14 See: https://www.clientearth.org/latest/documents/regulations-2007-forestry-development-authority-ten-core-regulations-liberia/

4. **Regulation 104-07 Tender, Award, and Administration of Forest Management Contracts (FMCs), Timber Sale Contracts (TSCs), and Major Forest Use Permits (FUPs)**: The FDA and its employees must act as trustee of forest resources, in a professional, transparent, and non-discriminatory manner, without personal interest or aim of self-enrichment. The FDA must facilitate social and economic benefits for forest-dependent communities and the nation, as well as to ensure sustainable development and conservation of the forests. In that respect, FMCs and TSCs are expected to be concluded on areas that meet specific criteria as listed by the Regulation.
5. **Regulation 105-07 Major Pre-Felling Operations under Forest Resources Licenses**: The holder of a FRL must satisfy certain social, environmental, and forest management planning obligations prior to getting approval to fell trees in an FMC or TSC area. Accordingly, the concession holder shall negotiate one or more social agreements for the benefit of all affected communities with respect to the area to be logged under the FRL. Social agreements for FMCs can last up to five years and up to three years for TSCs.
6. **Regulation 106-07 Benefit Sharing**: This Regulation implements the requirement of the NFRL, 2006 that the Authority should establish a fair and transparent procedure for allocating a designated percentage of land rental fees to Counties and to communities entitled to benefit sharing under FRLs.
7. **Regulation 107-07 Forest Fees**: The Regulation identifies three categories of forest-related fees that the FDA can charge. These are: (1) stumpage fees; (2) land rental fees; and (3) forest product fees. The FDA must develop a list of estimated market prices of forest products derived from specific tree species provided for in the Regulation. Section 46 of Regulation 107-07 on forest fees, to the extent that it deals with Sawmill Permits was repealed by Regulation 112-08 on the Forest Products Processing and Marketing.
8. **Regulation 108-07 Chain of Custody (CoC):** This Regulation provides for the establishment and operation of a transparent, nationwide CoC system supervised by the FDA. The system must make sure that illegal logs, timber, and wood products are identified and that they do not enter the CoC. It must ensure that all holders of FRLs comply with laws and regulations governing block maps, annual yield limits, and CoC requirements. Forest fees must be accurately assessed and timely remitted to the appropriate authorities. The legal origin for all logs and timber originating in the Republic must be certified. Reliable information on national timber flows must be generated so it can be used both to inform sound management and oversight of the forest sector and to provide a basis on which to issue reliable timber legality verification statements and permits (for purposes of export). In addition, the FDA must promote good governance and law enforcement by strengthening FDA staff capacity and encourage adherence to the rule of law by everyone working in, and affected by, the forest sector.
9. **Regulation 109-07 Penalties:** The Regulation provides for rules on penalties, including on the gathering of evidence to support penalties, reporting and investigation of violations of the NFRL. It also contains guidelines on the assessment of administrative penalties.
10. **Regulation 1010-07 Rights of Private Landowners:** This Regulation establishes the responsibilities of FRL holders with respect to the rights of private landowners and provides for a right of compensation to landowners harmed because of the operations of FRL holders.

Additional Forestry Regulations

Other important commercial forestry regulations include:

- **FDA Regulation No 9. 1982-03-23**: Regulation enabling a Special Trade Depression Allowance (STDA) of 10 percent from the existing rate of industrialization incentive fees for some listed species. On certain forest fees
- **FDA Regulation No 22. 1995-04-27**: Regulation deals with the deliverance of permit prior to any pit-sawing operation in Liberia. In areas including national forests, environmentally threatened areas, national parks, concessions and salvage areas, no pit-sawing activities are allowed.

- **FDA Regulation No 26 on the Ban of Pit-Sawing and Power Chain Sawing (repealed Regulation No 22)**: Regulation established sawmills and regulated on the usage rights of concession holders without sawmills as well as sawmills established without forest resources utilization rights agreements and local waybill.
- **FDA Regulation No 10. 1982-11-08**: Regulation enabled a further reduction of certain forest fees. This regulation provided for the imposition of a forest products fee in relation to wood products intended for export.
- **FDA Regulation No. 12. 1984-11-12 on administrative fees**: Regulation outlined administrative measures to ensure that FDA continues to effectively provide essential technical and administrative services to its customers and the public. It mandated the FDA to collect administrative fees for: (1) forest survey permits; (2) forest exploitation permits; (3) timber export permits; (4) annual coupe inspection; and (5) reopening of timber companies.
- **Abandoned Logs, Timber and Timber Products, 2017**: This Regulation ensures that: (1) logs, timber and timber products are transported, stored, processed, distributed or otherwise produced and exported legally; (2) the FDA acts in a lawful and procedurally fair manner when seizing, storing and auctioning abandoned logs, timber and timber products; (3) waste of Logs, timber and timber products from forests is minimized; and (4) the Republic of Liberia complies with its international obligations to export only legally produced logs, timber and timber products to any destination.
- **Third Party Access to Forest Resource License Areas, 2017**: This Regulation defines the rights and responsibilities of Area Communities and their individual members to: (1) access and use NTFPs in Forest Land areas covered by a Forest Resources License (FRL); (2) ensure socio-economic and environmental viability of FRL areas; (3) ensure that the FDA has effective control over harvesting of forest products within the FRL areas; (4) ensure respect for and balancing of the rights and interests of communities, their members, and holders; and (5) define the role of the FDA regarding third party access to FRL Areas.
- **Confiscated Logs, Timber and Timber Products, 2017**: The purpose of this Regulation is to: (1) ensure that contract holders, concessions, and exporters operate in compliance with the Legality Assurance System (LAS) of the Republic of Liberia; (2) clarify the conditions under which logs, timber and timber products shall be confiscated; (3) stipulate the requirements to be satisfied in order to have confiscated timber and timber products re-enrolled in the CoC system and reintroduced into the LAS; and (4) formulate the rights to, and permissive use of, confiscated timber and timber products.
- **Regulation No. 119-17 Sustainable Wood-based Biomass Energy Production and Marketing in Liberia, 2017**: The purpose of this Regulation is to: (1) provide guidelines on the legal requirements for producers, transporters, and traders, on a small or large scale, engaged in the wood-based biomass energy (such as fuelwood, charcoal, and briquettes) business in order to optimize its positive benefits and also mitigate its negative effects; (2) establish a structured process by which authorization for wood-based biomass energy production and trade is requested, reviewed, and granted or denied; and (3) ensure that wood-based biomass energy production and trade is carried out in an environmentally appropriate manner and through procedures and practices that promote the mutual interests of producers, traders.

FOREST CONCESSIONS

A forest concession is a bilateral or unilateral legal contract issued by an authority (in this case the FDA) which grants the right to use a designated forest area for commercial purposes. This can be allocated to an individual or a company.

In a public-private partnership model, a forest concession contract allows an individual or a company to exploit a designated forest area at the company's own expenses, with or without a subsidy. The concessionaire may remunerate itself through the commercial use of the forest products as stipulated in concession contract (Karsenty 2016).

Prior to the 2006 forestry sector reforms, about thirty-six forest companies were operating in Liberia producing timber exports valued at over US$ 100 million annually (or 60 percent of Liberia's total export earnings) and employing approximately 10,000 people. After lifting the ban on log exports by the UN, all the concessions that were previously allocated to different contract holders were cancelled and new allocations were made.

Concession Types

The NFRL, 2006 and NFMS, 2007 established a new commercial forestry management regime. It defined the types of contracts, permits and agreements that make up forest concessions in Liberia. These included:

1. **Forest management contracts (FMCs)**—Long-term contracts allowing the harvesting of wood from concession forests on lands of 50,000-400,000 hectares. An FMC can be in place for 25 years.
2. **Timber Sales Contracts (TSCs)**—Shorter-term contracts allowing the harvesting of wood from concession forests on lands no greater than 5,000 hectares. The contract cannot exceed three years. Management requirements are less onerous but annual operation plans must still be presented.
3. **Private Use Permits (PUPs)**—Permits that allow the harvesting of wood on private land, with the consent of the landowner. In 2013, the President issued *Executive Order 44* suspending issuance of PUPs. However, some PUPs in existence prior to 2013 continue to this day.
4. **Forest Use Permits (FUPs)**—The area involved must be less than 1,000 hectares. Permits are issued mostly for research purposes, tourism, and charcoal production for local needs.
5. **Community Forest Management Agreements (CFMAs)**—Issued to communities for the purpose of community-based forest management and covers an operational area of less than 50,000 hectares. The communities can use the land for hunting, farming and sign up to logging contracts with companies (Karsenty 2016).

Currently, forest concessions are allocated through a competitive concessions award process. As part of forest sector reforms under the NFRL, 2006, the competitive bidding process for allocation of timber concession started in 2007, resulting in awards of standardized agreements of twenty-five-year felling cycle FMCs, three-year TSCs, and PUPs. Between 2007 and 2009, the numbers and size of contracts awarded were:

- 7 FMCs (over 1 million hectares)
- 10 TSCs (50,000 hectares)
- 51 PUPs (over 2 million hectares) have been executed with private companies.

Since 2009, four international palm oil companies have been granted concessions for palm oil production on 620,000 hectares of land.Concession areas allocated to palm oil account for approximately 5.4 percent of the total forest area, which could potentially be cleared of forests (Hooda et al 2018). At present, there are seven valid FMCs, 10 TSCs (of which two are active), and 21 CFMAs (under 12 of which communities have entered into third-party agreements with logging companies).

Women eats palm fruit from a palm tree, Blayah town, Liberia

FMCs account for approximately 24 percent of the total forested area in Liberia and 29 percent of the highest canopy cover forest (more than 80 percent canopy cover). They comprise a total of about 1.7 million hectares (1 million hectares under active FMCs and 0.7 million hectares under proposed FMCs). The FMCs are often positioned between protected areas or proposed protected areas (PPAs) and cover large blocks of high canopy forest26. Existing and proposed TSCs cover 3 percent of the total forest area or about 190,000 ha. Most of this area is dense forest (over 80 percent canopy cover). Although most TSCs have the status of 'proposed', rather than 'active', once they are fully approved, this forest could be completely cleared. It is possible, however, that the TSCs where felling has not started will expire before any harvesting takes place (Hooda et al 2018).

Even though these contracts were awarded between 2007 and 2009, the production of timber only started between February 2010 and April 2012. It took companies between 1 and 1.5 years to satisfy pre-felling operation requirements including: (1) submission of management plan; (2) annual operational plan; (3) environmental impact assessment; (4) business plan; (5) social agreements and performance bond); and (6) gain access to the trees (FDA 2009). However, about 350,000 cubic meters are expected to be produced from the 10 TSCs and seven FMCs. The national annual allowable cut is governed by inventory results that have set the cut limit to about 750,000-800,000 cubic meters per annum (Emerton 2011).

The FMC (long-term) and TSC (short-term) concessions which are on state-owned land were allocated without recognition of private or community land title. However, the issue of large numbers of PUPs suggests a different approach to recognition of title in establishing forest concessions. Most PUPs were issued for communally owned land, and this shows an in-practice recognition of community land claims for the purpose of establishing commercial concessions. A further requirement was the social agreements with forest communities after the companies had signed contracts with the FDA.

Forest Concession Processes

The NFRL, 2006 and NFMS, 2007 also detailed the processes for implementation including:

1. The pre-qualification of companies
2. The process for competitive bidding
3. The posting of Performance Bonds
4. The submission of Environmental Impact Assessments (EIAs)
5. Forest management planning
6. Auditing and a CoC system (now known as LiberTrace)
7. The process for implementing of Social Agreements and Benefit Sharing.

These processes are discussed in greater detail below.

Pre-Qualification of Companies

The NFRL, 2006 requires that companies should be pre-qualified based on the size of the land available as concession, according to whether the companies are wholly owned by Liberians, majority owned by Liberia and wholly or majority owned by foreigners. Regulation 103—07 of the FDA's Ten Core Regulations, 2007, further provides that the FDA keeps a list of debarred and suspended persons who are ineligible to bid on a Forest Resource License offered through a concessions process. Those who have aided or abetted civil disturbances involving the use of weapons or who have defaulted on their financial obligations related to forest use are to be listed upon proof of such conduct. The Regulation further provides guidance on the requirements and procedures for all bidders, including pre-qualification criteria, namely: (1) only persons with a valid prequalification certificate issued under Part Four of this Regulation may submit bids for FRLs offered as concessions; and (2) all bids must include a notarized and unaltered copy of the bidder's valid prequalification certificate.[15]

15 See: https://www.clientearth.org/latest/documents/regulations-2007-forestry-development-authority-ten-core-regulations-liberia/

Competitive Bidding Process

The FDA identifies areas covered by forest and allocates areas for commercial logging to concessionaires through a competitive bidding process in consultation with other relevant stakeholders, including the Environmental Protection Agency (EPA). The introduction of competitive bidding provides an opportunity to rationalize forest fees and taxes and rethink their use and distribution.

It was expected that the introduction of competitive bidding as a mechanism for allocating timber rights would contribute to reshaping the structure of incentives—that is a move away from inducing short-term profits and rent-seeking behavior to a long-term focus on forest management, economies of scale in processing and high labor productivity. The basic term of the contract must approximate the length of a forest rotation on the land based on a sustainable yield of timber products. This term is currently 25 years. Although if there is good reason, the contract may be terminated sooner.

Performance Bonds

Section 5.1 (e) of NFRL, 2006 states that the FDA must make sure that those involved in commercial forestry activities post Performance Bonds to guarantee their performance of work. The FDA must also ensure that these Performance Bonds secure payment of fees, redress of injuries, compensation of employees, reclamation of land, and return of property. The FDA must set out the requirements for the Bonds and their distribution, and the objective formulas or methods for calculating the amounts of the bonds. The Performance Bonds are designed to ensure the satisfactory implementation of the contract terms and should be drawn up between banks and holders.

Environmental and Social Requirements

Environmental and social performance requirements are based on the different functions Liberian forests provide. These are:

1. Economic
2. Ecological
3. Social.

Forest functions have different impacts on forest management. Some functions exclude all types of forest operations. Others exclude only commercial timber harvesting or road construction, and others impose only minor management restrictions.

The concessionaire is required to submit an EIA to the FDA. This EIA should be prepared according to the framework specified in the legislation. The FDA then refers the EIA to the EPA for verification. However, there are not enough personnel trained to process the EIAs, and most of them are employed by the EPA. In addition, the capacity of the EPA to regulate the environmental sector is severely constrained.

If the forest sector is to function both within the existing legislation and to operate responsibly, it is essential that the EIA and forest management planning requirements are fully implemented. The lack of trained staff and facilities within the EPA and lack of FDA infrastructure are causing severe bottlenecks.

FMPs

Regulation 102—07 Forest Land Use Planning (FDA Ten Core Regulations, 2007), mandates the FDA to undertake forest land use planning, which establishes the suitability of forest lands for sustainable land use allocations through a participatory process, based on local validation that optimizes the benefits of forest land allocation to the whole of Liberian society. This regulation directs the FDA to formulate an NFMS to determine the framework for forest land use planning. It also states that Forest Resources Licenses (FRLs) should not be awarded before the FDA has advertised them.

The FDA's NFMS, 2007 classifies all forest land in the Republic of Liberia into one or more Forest Land Use categories. Prior to the classification, national and regional-level consultations are expected to have been carried out by the FDA. In addition, *Regulation 105—07 Pre-Felling Operations* (FDA Ten Core Regulations, 2007) describes specific social, environmental, and forest management planning obligations that a Holder of an FRL must satisfy prior to felling trees. Accordingly, the Holder must negotiate one or more social agreements for the benefit of all affected communities with respect to the area to be logged under the FRL.

Auditing and a CoC System

A robust log tracking system to monitor the movement of timber from concession to port has been developed. Known as LiberTrace and managed by SGS, this log tracking process is credited with making the export of illegal logs from Liberia much more difficult and less likely to occur than in the past. No system is totally tamperproof, there is always scope for cheating. However, the aim of the log tracking system is to make the export of illegal logs difficult and not very worthwhile.[16] The independent monitor SGS was contracted by the GoL in 2007 to build, operate, and eventually transfer to the FDA a Timber Legality Verification Department (LVD), first known as LiberFor (Forest Trends 2020), and later LiberTrace (World Bank and FDA 2017).

Social Agreements and Benefit Sharing

The participation of communities in forest management is mandated by Section 5.1 (e) (iii) of NFRL, 2006. The FDA must institutionalize this participation and ensure there are social agreements between Holders and communities that clearly define the rights, roles, obligations, and benefits of both parties.

Section 5.3 (b) of NFRL, 2006 requires Holder contracts to include the preparation of EIAs under the laws governing environmental protection. The contract must also require the Holder to establish a Social Agreement with local forest-dependent communities, approved by the Authority that defines these communities' benefits and access rights. Social Agreements for FMCs can last up to five years and up to three years for TMCs.

Regulation 106—07 Benefits Sharing (FDA Ten Core Regulations, 2007) provides for the allocation of a designated percentage of land rental fees to counties and communities entitled to benefit sharing under an FRL. A sum equal to 30 percent of all land rental fees collected is distributed for the benefit of all the Republic's counties. The FDA ensures the distribution in equal proportion among all 15 counties. The sum is received through a County Forestry Development Fund. Another 30 percent of all land rental fees collected is distributed to affected communities through the National Community Benefit Sharing Trust mechanism.

FOREST CONCESSIONS—CHALLENGES

PUPs and CFMAs

Recently, the issue of PUPs and large-scale CFMAs has emerged as serious concern (see Chapter 5 for a more detailed description of the status, and operational challenges with CFMAs). There has been a rapid expansion and scaling up of these instruments, which take advantage of the weakness of the policy environment and the ambiguities in the legal and regulatory framework (Symle 2012).

16 See: https://www.profor.info/notes/lessons-establishment-chain-custody-system-liberia

A Land Commission evaluation of PUPs, carried out in the first quarter of 2012, identified a total of 62 PUPs covering an estimated area of 22,000 square kilometers, making the total land area under the contracts equal to the sum of all lands under agricultural, mining, and forest concessions (Land Commission 2012). According to that report, since 2010, the single most important land use category has been the PUPs. In fact, PUPs have extended over an area, which is estimated to be more than 23 percent of Liberia's land mass. All but three of the PUPs were issued on collectively owned land (Symle 2012). Serious irregularities were also found in the issuance process, including practices followed by FDA and others that were perceived to have bordered on illegality and that demonstrated the continued poor governance around land.

In addition to the irregularities, there are diverse other reasons to be seriously concerned about the issuance of PUPs. One major concern is the process of land and forest allocation associated with these licenses. These include:

1. Land use policymaking that in practice conflicts with the Government's established land reform laws, policies, and procedures
2. Allocations that bypass the Land Commission and ignore its mandate (GoL 2009b)
3. A lack of transparency, which led the UN Panel of Experts (2011a) to conclude that there is a potential for undermining forest sector reforms
4. An apparent lack of due process around social, governance and benefit-sharing aspects
5. The high risk that communal forest resources will be appropriated by a small group of elites and private logging interests.

Concerns have also been raised that PUPs could potentially be used to create large-scale, industrial concessions on community forest lands, contrary to their intended purpose (Global Witness 2010). These concerns have been echoed by an individual who was instrumental in drafting the NFRL and conceptualizing the PUPs (Karsenty 2010). One difficulty in regulating PUPs is that they are not mentioned in any of the principal normative and regulatory instruments for forest management and harvesting, including the NFRL, 2006, the Ten Core Regulations of FDA, 2007, the FDA Guidelines for Forest Management Planning, 2007, and the FDA Code of Forest Harvesting Practices, 2007. This creates ambiguity over what *compliance* means, as it is unclear which regulations apply.

Because of the seriousness of these concerns, the FDA's Board of Directors, at the behest of the President of Liberia, placed a moratorium on the further issuance of PUPs for the harvesting of timber as of 18 February 2012. They also directed the General Auditing Commission (GAC) to investigate the PUPs granted by the FDA and established a Special Independent Investigative Body (SIIB) to conduct a comprehensive review of the policies and procedures regarding the issuance of PUPs. The aim of setting up the SIIB on PUPs was to address concerns that the PUPs (a mechanism for communities to engage in community forestry) had been violated. The Committee was tasked with investigating why FDA had issued 63 PUPs totaling 2,532,501 hectares (23 percent of the land area of Liberia), allegedly without proper procedure (SIIB 2012).

Aside the various recommendations issued by SIIB such as actions to be taken against government entities (FDA, FDA Board, individuals) and companies, the SIIB report recommended that in the development of regulations for PUPs consideration should be given to specifying procedural standards for demonstrating private ownership, documentation required for acquiring and demonstrating permission from the landowner, the term of years for the license, and other essential terms for the license in consonance with Liberian law. In addition, these regulations must be developed in meaningful consultation with stakeholders. It also recommended an independent audit of FDA and the FDA developing a recording system for all documents related to forestry licenses and social agreements.

Protected Areas, Minerals, and Agriculture

In 2011, a World Bank-financed study mapped all existing and proposed concessions and protected areas and noted that several FMCs and TSCs had huge overlaps with mineral project exploration concessions (see Table 3.2) (GeoVille Group and Metria 2011). In one case, the overlaps affected 100 percent of the mineral concession and, in all identified cases, were much more significant than minor overlaps or border problems. There were also significant overlaps between FMCs and agricultural concessions. In addition, FMCs coincided with proposed conservation areas.

Table 3.2 Where Mineral Exploration Concessions and FMCs Overlap

FMC	Location	Number of Hectares
A	Gbarpolu and Lofa	119,240
B	River Cess	57,262
C	River Cess	59,374
F	Grand Gedeh and River Gee	254,583
I	Grand Gedeh and Sinoe	131,466
K	Grand Gedeh, Nimba and River Gee	266,910
P	Grand Kru, Maryland and River Gee	119,344

Source: GeoVille Group and Metria 2011)

Forest Concession Administration

There are several key issues with the current system of administration of forest concessions that require urgent attention.

Concession Bidding Processes

Previous FMC auctions have demonstrated that current oversight mechanisms are not adequate to ensure full compliance with existing laws, regulations, and procedures. This was confirmed by an International Monetary Fund (IMF) study leading to recommendations to strengthen the auction process and re-establish the credibility of the FMC auctions process by considering a role for oversight by independent experts (Baunsgaard et al 2011). The IMF also recommended a moratorium on auctioning additional forest concessions until clear and independent oversight has been established, to ensure that the procedures in the NFRL and regulations are followed.

To date, the competitive bidding process for forest concessions has also been flawed. It has awarded concessions to companies that lack the knowledge, experience, or financial resources to perform on their contracts. Various authors (Rochow et al 2006; Gray 2002; and Blundell 2018) have noted that reasons for this failure include:

- Non-competitive allocation of the concessions, corruption, and a lack of required consultation with county authorities, district authorities, and affected communities
- A lack of understanding by both bidders and the FDA of how to determine an appropriate bid
- Apparent collusion among bidders
- Inadequate time allotted for bidders to assess the concessions before making a bid.

The Liberian Loggers Association (LLA) has consistently complained about the lack of transparency in the competitive bidding process, especially in decisions leading to prequalification of applicants. The loggers often feel ‘cheated’ and consider that FDA needs to carry out a minimum level of inventory to come out with bids (Blundel 2008).

Another important factor is the unwillingness of the FDA and GoL to act on findings in due diligence reports. These reports have showed that several bidders failed to meet the minimum qualifications and yet no action was taken. The award of concessions in violation of various laws and regulations has resulted in the creation of concessions of dubious legality.

Generally, the serious weaknesses in the bidding process have kept qualified companies from participating. In particular, the annual land rental bid premiums were said to be excessive. For example, Blundell (2008) notes that the FMC bids appeared unrealistically high and that the annual land rental bids for the 25-year FMCs should have been about 10 times smaller than for the 3-year TSCs. Instead, the FMC bids were, on average, four and a half times higher than those for the TSCs. Karsenty (2016) noted that with respect to the 2007 competitive bidding process, ten of the eleven bidders did not provide the required documentation on the financial capital behind their company. In addition, six bidders lacked the required valid and enforceable agreements with their financial backers suggesting that at any moment, the financier could walk away without legal recrimination. In addition, a 2010 report by Sustainable Development Initiative (SDI) uncovered nine separate instances where the Public Procurement Act, FDA regulations, and an Executive Order were violated (SDI 2010).

Given its limited capacity for regulating forest harvesting, because of limited capacity and governance failures, the FDA runs the risk of signing TSCs and FMCs with speculators who after paying high bids opt to set their new profit margins in line with actual harvest levels that are above the regulated limit. When they do not show up to sign contracts, their liability legally will be limited to their bid bonds which normally are not set at levels that reflect the real opportunity costs.

Another concern relates to social agreements and benefit sharing. There are concerns on the part of communities and community advocates, as well as among private sector companies that hold or are seeking concessions, that the current social agreement and benefit sharing framework is neither effective nor transparent. Presently, social agreements are negotiated by communities following the signing of concession contracts between the companies and government. This strongly biases the outcome of the global benefits distribution in favor of government and places the concessionaire in a position where underestimating the cost of the social agreement is greatly preferable to overestimating it.

Establishing the terms of the social agreements should be moved upstream as part of the concession process before the actual bidding on the concession begins. The social agreement is not just a benefit sharing mechanism, it is also a form of compensation payment to the communities affected by both immediate and long-term impacts of logging. Establishing the costs of compensation and additional benefits up front would be a fairer and more transparent system for communities and bidders. Agreement would need to be reached on a set of standards and criteria for establishing compensation payments and for the fair sharing of benefits. The consensus-building process should also involve those line agencies that might be responsible for social agreement investments (such as schools, clinics, and other public infrastructure for which the costs of staffing and maintenance would be assumed by GoL) (Karsenty 2016).

Non-Performance of Existing Concessions

A standard clause in FMC contracts is that the contract can be terminated if the contract holder does not make payments to GoL or local communities, as specified in the contract. When total arrears in payments approach 90 percent, action to allow the concession area to be offered in a future auction round is both justified and necessary. It is critically important that all contractual obligations made by investors are enforced, including those related to monetary obligations.

There is concern among officials that enforcing contracts might lead to FMC holders asserting counterclaims against GoL for failure to meet its commitments regarding infrastructure. GoL has no contractual obligations to provide infrastructure (such as roads, bridges, and ports) as part of the contracts for forest concessions. However, some in GoL agree with the concessioners' assertions that such commitments were made. They argue that GoL's failure to provide infrastructure undermines the concessionaires' ability to scale up harvesting operations and export, making it difficult for them to pay their overdue fees.

Some of these issues have been addressed by the creation of the National Bureau of Concessions, established as part of the part Bureau of Concessions Act in July 2011. The Bureau, which absorbed both the Bureau of State Enterprises and the Concessions Secretariat, has developed criteria, guidelines, specifications, templates, and standards for monitoring and evaluating concession holders' compliance. The Bureau also provides advice, technical assistance, and training to the agencies responsible for granting and monitoring concessions, to ensure that functional systems are in place to effectively monitor compliance (Acosta 2011). These actions are in line with the IMF recommendation that action be taken to enforce all FMC and TSC agreements to ensure timely payments and fiscal obligations and to terminate contracts after seeking appropriate legal advice (Baunsgaard et al 2011).

Concession Review

A permanent concession review mechanism is needed to ensure adequate oversight and accountability for existing concessions. The FDA's system for performance audits also needs to be strengthened.[17] The system could be organized around FDA's annual concession audits, LiberTrace's CoC system and payments reports, and the Liberian Extractive Industries Transparency Initiative's (LEITI's) annual reconciliation and audit of payments by concessionaires to government. The system could also benefit from support, as needed, from the GAC. Other government institutions to be involved in establishing the review mechanism would include the new Bureau of Concessions, Ministry of Planning and Economic Affairs (MPEA), Ministry of Lands, Mines, and Energy (MLME), Ministry of Agriculture, and the Land Commission.

There is also an important role for local communities in the ongoing monitoring and oversight of concessions and this should be defined. A system should be put in place to incorporate their inputs into FDA's ongoing concession monitoring and annual audit process. Stakeholder advisory groups which include the private sector, civil society, and community representatives need to be set up as part of this permanent review process.

Reform of the Concession Fiscal Framework

Between 2010 and 2012, GoL came under intense pressure from the industry to remove the Annual Land Rental Bid Premium (the biddable item in the auction) as part of the legal concession requirements. In response, GOL enacted an Act in 2013 which abolished the Annual Land Rental Bid Premium paid on contract areas and changed it so the export fees payment on logs and processed wood products were merged into stumpage fees.

According to Forest trends (2020), when the GOL canceled the requirement for Annual Land Rental Bid Premiums in 2013, the seven FMC logging companies were able to keep almost US$ 14 million in revenue each year from the more than 1 million hectares under concessions. Over the remaining 20 years in the FMC contracts, this would be the equivalent of more than US$ 277 million (unadjusted for inflation and assuming all companies remained operational). In addition, affected communities would have been entitled by law to more than US$ 83 million. If the arrears granted forgiveness under the Forestry Industrial Development and Employment Regime law of 2017 applied to the community entitlement too, then communities will lose even more than US$ 83 million.

During the reform process, the FDA and forest stakeholders, including the international community, agreed to implement the following set of actions in the allocation and management of concessions:

1. Transparent, credible concession review process
2. Transparent, competitive bidding process for future concession allocation
3. Simplify forestry taxes and fees to present leakage and corruption, and reflect market value of resource; Initiate land use planning process to develop zones and management regulations for the 3Cs (conservation, community, and concession)
4. Strengthen FDA's capacity to monitor flow of timber from the field to the port (training and equipment)

17 Something the NFRL, 2006 requires to be done on an annual basis.

5. Establishment of an independent concession review committee comprising public sector agencies, civil society, and international organizations with the responsibility of ensuring transparent concessions allocation processes
6. Establishment of an independent oversight committee for the FDA
7. Support for technical assistance to concession management.

ENABLING A LEGAL TIMBER MARKET

The **Forest Law Enforcement, Governance and Trade (FLEGT)** process is a European Union (EU) response to the worldwide problem of illegal logging. Logging is considered illegal when timber is harvested, transported, processed, bought, or sold in violation of national or international laws (FAO 2006).

Globally, between 20 percent and 40 percent of industrial wood production, valued at an estimated US$ 10 billion a year is derived from illegal sources, and up to 20 percent finds its way into the EU (Anon 2011).

FLEGT seeks to encourage sustainable forest management (SFM) across the World by ensuring that wood imported into the EU is sourced legally.

See: https://flegtvpafacility.org/flegt/

FLEGT

In 2003, the EU, recognizing a shared responsibility with timber producing countries in the trade in illegally sourced timber, adopted the FLEGT Action Plan in 2003. This plan envisages seven lines of intervention affecting both producing countries and EU consumer countries and seeks to bring about sustainable forest management (SFM) by ensuring that wood imported into the EU is sourced legally.

The FLEGT Action Plan focuses on two key aspects of the illegal timber market, that is (1) supply; and (2) demand. It provides the option for non-EU timber producing countries to negotiate and sign a Voluntary Partnership Agreement (VPA) with the EU and to follow the EU Timber Regulation (EUTR) (European Commission 2007).

The EUTR came into force in 2013 and requires operators in the EU to run due diligence checks on the timber products they import to ensure they are legal. FLEGT-licensed timber meets this due diligence A VPA on the other hand is a legally binding trade agreement between the EU and a timber-exporting country outside the EU.[18]

18 See: https://flegtvpafacility.org/countries/republic-congo/background/

VPAs

VPAs are a key component of the EU FLEGT Action Plan of 2003. VPAs are a bilateral agreement between the European Union (EU) and wood exporting countries, which aims to improve forest governance and ensure that the wood imported into the EU has complied with the legal requirements of the partner country. In addition to promoting trade in legal timber, VPAs address the causes of illegality by improving forest governance and law enforcement. The main purpose of a VPA is to support the reforms and policies of timber produced in developing countries. In galvanizing the interest in EU consumer markets to reinforce and back government reforms, this brings added strength to these programs. In addition, the EU Commission and Member States are, through bilateral development assistance, helping countries establish the capacity for better forest governance. From 2002 to 2008, the Commission contributed about €544 million to work with developing countries on forestry, out of which about 40 percent of the funds are committed to support African countries that have signed a VPA.[19]

VPAs provide a legal framework and compliance monitoring system to ensure that all timber imports into the EU from participating countries have been legally acquired, harvested, transported, and exported. Participating countries can expect a VPA to help promote governance reforms of the forestry sector, contribute to SFM, provide conditions that encourage investment in forest restoration and thus improve the resource base. This can help the country realize the full economic value of forests and ensure that the forest sector contributes to poverty alleviation.

A major strength of VPAs is developed through a participatory process. Stakeholders in governments, the private sector and civil society develop VPAs through a participatory process. A VPA is, therefore, a vehicle for addressing the needs of different stakeholders and for including many people who have never had a voice in decision-making.[20] A VPA is intended to guarantee that only legally sourced timber reaches the EU market. In other words, a country that has signed a VPA is under an obligation to export only timber that is accompanied by a FLEGT license to enter the EU market.

FLEGT Licenses

A VPA partner country that has implemented a timber legality assurance system (LAS) (see following section) and other VPA commitments, can issue FLEGT licenses for verified legal timber products. However, a VPA partner country can issue FLEGT licenses only after it is confirmed (by the EU and the partner country) that the country's timber LAS has been developed, fully tested, and works as described in the VPA. Confirmation by the two parties indicates that the system is robust and that FLEGT licenses will be issued only for legal timber products. This practice ensures that FLEGT-licensed products automatically meet the requirements of the EU Timber Regulation (EUTR), which prohibits suppliers to the EU from placing illegally harvested timber and timber products on the EU market (EU FLEGT Facility 2017).

While FLEGT licensing is an important goal, it is not envisaged to be the end point of a VPA process. It is expected to trigger and sustain governance, legislative and policy reforms, impact monitoring, improvements to the timber LAS. Thus, the process to achieve FLEGT licenses in Liberia will help the country meet the legality requirements of markets beyond the EU and improve legality of timber products in its domestic markets.

Legality Assurance System (LAS)

The guarantee provided by a FLEGT license is dependent on the development of a reliable and credible LAS that allows legally and illegally sourced forest products to be distinguished. An LAS is composed of five key elements:

19 See: https://ec.europa.eu/commission/presscorner/detail/es/MEMO_10_511
20 See: https://flegt-vpa.fda.gov.lr

1. A definition of legal timber based on the legislation of the partner country
2. A traceability system
3. A system to verify compliance with the legality definition and the traceability system
4. A FLEGT licensing scheme
5. An independent audit.

All VPAs contain these fundamental elements, but they are also distinct and unique. This because each VPA is drawn up jointly by the partner country and the EU and is based on existing national legislation and considers the governance issues faced by the partner country (Ozinga 2012). The participation and inclusion of a set of local stakeholders in each step of the VPA process, including non-governmental actors such as civil society organizations and the private sector, also give it a distinctive nature. Non-state actors participate and contribute from the very start of the process—a degree of involvement that is unprecedented for a trade agreement. VPAs also allow stakeholders in these countries to discuss governance issues that often go beyond the forest sector (Pearce 2012).

The Liberia-EU VPA

Illegal logging means communities end up not being compensated for losing forests in their areas. Illegal logging is also unsustainable and does not protect forests. It is also bad for revenues as taxes are not paid on the proceeds.[21]

Since the end of the conflict, different Liberian administrations have made significant efforts to reform the forestry sector to minimize illegal logging. This included a comprehensive reform of the law, the development of a national timber traceability system to track timber production and payment of revenues plus a process of institutional reform. Liberia was also the first country to include timber revenues under the Extractive Industries Transparency Initiative (EITI) and was the first African country to achieve EITI compliance in 2008. The VPA partnership with the EU was aimed at building on these successes by strengthening governance and law enforcement and, through a licensing system, provides assurance that its timber has been legally produced. EU countries are also a major destination for Liberia's timber exports. In 2003 EU countries accounted for more than half of timber exports.

Liberia and the EU negotiated the terms of the VPA through a cooperative process. Both parties shared the goals of eliminating illegality and fostering good forest governance. VPA negotiations started in March 2009 and concluded in May 2011. They involved representatives of Liberian civil society organizations, community organizations, the private sector, and GoL ministries and agencies. As a result, significant national ownership and stakeholder engagement were achieved and the VPA reflected a broad consensus among stakeholders. The EU ratified the VPA in May 2012 and Liberia formalized this in December 2013. Liberia signed the VPA voluntarily. However, once the agreement has been signed it becomes law and must be followed by both parties.

Figure 3.5 Liberia-EU VPA Negotiation Timeline

21 See: https://loggingoff.info/wp-content/uploads/2015/09/779.pdf

Now that the VPA is in force, any timber that leaves Liberia must be legal timber that has been checked by the authorities. The EU is helping Liberia to set up the systems that are needed to make sure that all timber leaving Liberia is legal (Anon 2013). In 2013 the EU and the United Kingdom (UK) Department for International Development (DFID)[22] agreed to provide support to Liberia to meet its VPA commitments by establishing the Voluntary Partnership Agreement Support Unit (VPASU).[23] The aim of the VPASU is to coordinate the capacity building for Liberian stakeholders including government ministries, agencies, and commissions (MACs), civil society, and the private sector. The VPASU is one of the three VPA implementation partners. The other two include the FDA Legal Verification Department (LVD) where the VPASU sits and the FLEGT Facilitation Unit. The VPASU actively participates in donor coordination mainly with United States Agency for International Development (USAID), World Bank and Norway. The FLEGT Facilitation coordinates activities of the implementing partners and is funded by the Foreign, Commonwealth and Development Office (FCDO) and the EU.[24] The Unit provides a FLEGT facilitation service for at least five VPA partner countries in Africa. Currently, these include: (1) Liberia; (2) Ghana; (3) Côte d'Ivoire; (4) Republic of Congo; and (5) the Central African Republic (CAR).

Barcode is applied to the stump of a felled tree as part of the CoC system chain

Liberia's Timber LAS

Liberia's timber LAS verifies that wood products conform to national laws. The FDA has responsibility to make sure that Liberia honors its commitment to the VPA. In 2013, with support from SGS, Liberia developed its own timber LAS. It also set up a new Legality Verification Department (LVD) tasked with managing the timber LAS. Liberia's LAS provides a guarantee to local and international partners that Liberian timber and timber products were sourced and produced according to Liberian laws.

LiberTrace

The country also developed LiberTrace, an automated LAS system to manage data on the CoC and legality verification. Government agencies and forest sector companies both use the system. GoL has taken over management of the LVD and LiberTrace from the service provider that developed them. Work is currently ongoing in implementing the legality verification system as it is does not capture all the legality requirements (that is principles, criteria, and indicators).

22 See: https://www.gov.uk/government/organisations/department-for-international-development
23 See: https://fda.gov.lr/general/voluntary-partnership-agreement-support-unit
24 See: https://devtracker.fcdo.gov.uk/projects/GB-COH-2394229-GHFLT/summary

Five Components of Liberia's LAS

Under the VPA, Liberia committed to developing a rigorous yet practical system for assuring the legality of its timber, through an inclusive multi-stakeholder process. The timber LAS described in the Liberia-EU VPA has five components:

1. Definition of legal timber
2. System of verification of compliance and legality
3. CoC system (supply chain controls)
4. FLEGT Licensing system
5. Independent monitoring of system.

Legal Definition of Timber

The legal definition states the aspects of Liberia's law for which the timber LAS evaluates compliance with for purposes of FLEGT licensing. The legal definition applies all along the timber supply chain and to timber products from all types of forest. Participation countries are at liberty to define legality in accordance with their laws.

Liberia's definition of legal timber is framed around eleven principles covering the essential elements of forest production and processing. These principles are:

1. Legal recognition and eligibility to operate in forestry sector
2. Forest allocation
3. Social obligation and benefit sharing
4. Forest management operations and harvesting
5. Environmental obligations
6. Timber transportation and traceability
7. Transformation and timber processing
8. Workers' rights, health safety and welfare
9. Taxes, fees, and royalties
10. Export, processing, and trade requirements
11. Transparency and general disclosure.

For each principle and criteria, indicators and verifiers have been identified in the VPA to demonstrate compliance. All criteria, indicators, and verifiers must be met for a shipment to be verified as legally compliant and for a FLEGT licenses to be issued (WWF WAFPO 2012).

Verification of Compliance

Verification of compliance means that timber has been checked in terms of VPA legality and that the supply chains are legal.[25]

25 See: https://flegtvpafacility.org/countries/republic-congo/background/

CoC System (Supply Chain Controls)

Controlling supply chains make sure that timber products stay legal all the way through the supply chain. It also stops legal products being contaminated by illegal products. When Liberia began the VPA negotiations, it already had CoC controls in place. The VPA builds on those controls.[26]

Currently, a Wood Tracking System, which incorporates a traceability control system has been developed and is being operationalized to monitor timber, starting in the forest, and continuing through the entire production chain. A credible and well-structured CoC system provides the credibility required for Liberia's exports of timber products. Failing to maintain this system will certainly erode market confidence and harm revenue collection. The CoC further enhances transparency and communications within the VPA process (Anon 2019).

FLEGT Licensing

A FLEGT licensing authority, which is based at the FDA, issues FLEGT licenses to timber consignments and have been confirmed are legal. It also cannot happen without a joint evaluation of the LAS by Liberia and the EU and that the system words as described in the VPA.

Independent Audit

The independent audit checks regularly that all aspects of the LAS work properly. An annex to the VPA provides a term of reference for the auditor. The auditor produces reports for the Joint Implementation Committee (JIC) and the public. The EU has appointed the International Tropical Timber Organization (ITTO) as an independent market monitor for all VPA countries. ITTO assesses the trade in timber products between Liberia and the EU, and the impacts of FLEGT licensing on this trade. The EU and Liberia have made a joint commitment to monitor the social, economic, and environmental effects of the VPA. Monitoring considers whether the VPA is having the desired outcomes. It also identifies unintended negative effects for the EU and Liberia to address and mitigate.

FLEGT and VPAs—Challenges

According to Tropenbos International, some challenges facing the FLEGT and VPA processes, include: (1) high and unrealistic stakeholder expectations; (2) the slow pace of policy and legal reforms that is required to provide the needed impetus to drive the REDD+ and the FLEGT policies and strategies; and (3) the increasing pressure on forest cover from several drivers.[27]

Another key challenge is that key stakeholders of the FLEGT and VPA processes (the Liberia Timber Trade Association (LibTA) and Liberia Chainsaw and Timber Dealers Union (LICSATDUN)) have capacity issues that make it difficult to implement FLEGT.[28] According to Bollen and Ozinga (2013), other key challenges affecting FLEGT and VPA, include: (1) the forestry sector is being marginalised by a growth of agriculture and mining activities, which tends to diminish the potential impact that VPAs can have on improving governance; (2) slow implementation due to lack of political will and connivance between government and private sector; (3) lack of law enforcement of existing laws listed in the VPA; (4) different interests of different stakeholder groups and different interpretations; (5) lack of effective engagement with communities and ensuring their voice is heard in the VPA process.

26 See: https://flegtvpafacility.org/countries/liberia/background/

27 See: https://www.tropenbos.org/projects/strengthening+the+capacity+of+non-state+actors+to+improve+flegt-vpa+and+redd%2B+processes+in+western+africa

28 See: https://ndfwestafrica.org/fgmc/

FINANCING COMMERCIAL FORESTRY

Current Financial Fiscal Regime

The NFRL, 2006 and the FDA Ten Core Regulations, 2007 tasked the FDA with issuing, implementing, and enforcing new forestry fees and charges. Stumpage fees (set by competitive bidding), land rental fees and forest product fees were to be included and relevant institutions had to be consulted with. In addition, the public were to be kept informed about the fees through advertising and the use of plain language, and the fees were to be structured to encourage domestic processing of wood while maintaining a fair rate of fees for forest sector activities.

All commercial operations on public lands, regardless of size, must pay the various taxes and fees. (Operations on private lands do not pay land rental to GoL but pay all the other taxes). In addition, there are several other fees levied by the FDA, but these are standard and customary, and minor in comparison to those listed in Table 3.3. In the interest of transparency, the FDA must maintain a list of all these fees.

In addition, Section 14.2 of the NFRL, 2006 stated that fees collected by the FDA were to be distributed as follows:

1. 10 percent of stumpage fees to support the operational costs of the Protected Forest Areas Network (PFAN)
2. 30 percent of land rental fees to communities entitled to benefit sharing under FRLs
3. 30 percent of land rental fees to counties
4. 40 percent of land rental fees to MoF to hold as part of the general revenues of the Republic
5. 10 percent of Forest Product fees to support operational costs for the PFAN

Forest Fees and Charges

According to Hoare and Uehara (2022), there are three overall types of fees and charges (see Table 3.3):

1. **Area-based charges**: These are calculated according to the forest land area under exploitation, often expressed as a form of **ground rent**[29].
2. **Volume-based charges:** These are calculated according to the volume of timber under consideration. These can be linked to timber production (such as stumpage fees), or processing (transport fees, and charges connected with transfer of ownership). Some charges are based on the volume harvested, while others consider the volume of timber that can be commercialized.
3. **Timber export levies and taxes:** These are usually calculated by volume. However, they are worth considering separately from other volume-based charges because the mechanisms for collecting and distributing export charges are markedly different.

29 Ground rent specifically refers to regular payments made by a holder of a leasehold property to the freeholder or a superior leaseholder, as required under a lease.

Table 3.3 Forest Sector Taxes, Royalties and Fees in Liberia

Tax and Fee	Name	Detail	Amount	Distribution
Area-based charges	Land Rental Fees	Fee paid by holders of FMCs, TSCs and CFMAs on the area of the concession. Fees are due once contract is signed, and once a year for each year the contract is in effect.	• FMC—Annual fee of US$ 2.50 for every hectare of land • TSC—Annual fee of US$ 1.25 for every hectare of land	• FMCs and TSCs • 40% to central government • 30% to counties • 30% for redistribution to affected communities. • CFMAs • 55% to the community owning the forest • Remainder to central government.
	Land Rental Bid Premium	Abolished in 2013	• Paid by concession holders based on a competitive bidding process.	• 40% to central government • 30% to counties • 30% for redistribution to communities.
Volume-based charges	Stumpage fee	Fee paid on the volume of timber harvested under an FMC, TSC or CFMA. The rate is based on the FOB price, for which there are three levels, dependent on species.	• Contract Administration Fee—US$ 1,000 • Bid Document Fee – Prequalification application US$ 10 – Prospectus—US$ 10 • Annual coupe inspection fee US$ 50 for every Km^2 block of area subject to harvest operations under the annual coupe plan • Waybill fees US$ 150 for each book of ten waybills	• 90% to central government • 10% to PFAN.
	Cubic meter fee	Fee paid by holders of FMCs and TSCs	• A minimum of US$ 1 per cubic meter, as part of their social agreements negotiated with affected communities	• 100% to affected communities
Timber export levies and taxes	Export levies	Log and wood product export fees based on the FOB price, for which there are three levels dependent on species.	• Timber Export License Fee and License US$ 100 for each license • Log Export Fee – Category A species logs—10% of the market price – Category B species logs—5% of the market price – Category C species logs—2.5% of the market price • Wood Product Export Fee—5% of the contract price.	• 90% to central government • 10% to PFAN

Source: Hoare and Uehara 2022

Timber species are divided into three categories (A-C) depending on the value of the species (spp.)—see Schedule 1 of FDA Regulation 107-07.

FOB = free on board, that is the shipment's sale price at export. Forest Product fees are only charged for exported products, both from natural forests and plantations.

FMC and TMCs: Both refer to logging licenses allocated on public forestland.

The highest contributor to the revenue is Stumpage Fee payments, which constitute almost 55 percent of Forestry Sector collections of fees and charges (LRA (2018).

Collection of Forest Fees and Charges

> The amount of forest fees and charges collected due by commercial forestry companies is rapidly falling. In addition, out of what is collected, communities are not receiving the full 30 percent due to them.

During 2019/20, the forest sector production of round logs amounted to almost 90,000 cubic meters and most of this was for exports. Twenty forest companies were responsible for these exports and the total value of the round log exports came to US$ 4,023,280, which constituted about 55 percent of the total revenue generated by the forestry sector (US$ 7,311,499), for 2019/20 fiscal year (LRA 2021). In the same period, the contribution of forestry royalties and rent was US$ 6,125,440—84 percentage of total revenue generated by the forestry sector (LRA 2021). This revenue came from the following sources: (1) auction fees; (2) stumpage fees; (3) bid premiums; (4) log export fees; (5) chain of custody management fees; (6) area fees; (7) forest product fees; (8) waybill fees; (9) NTFPs; (10) Timber Export License fees; and (11) block inspection fees.

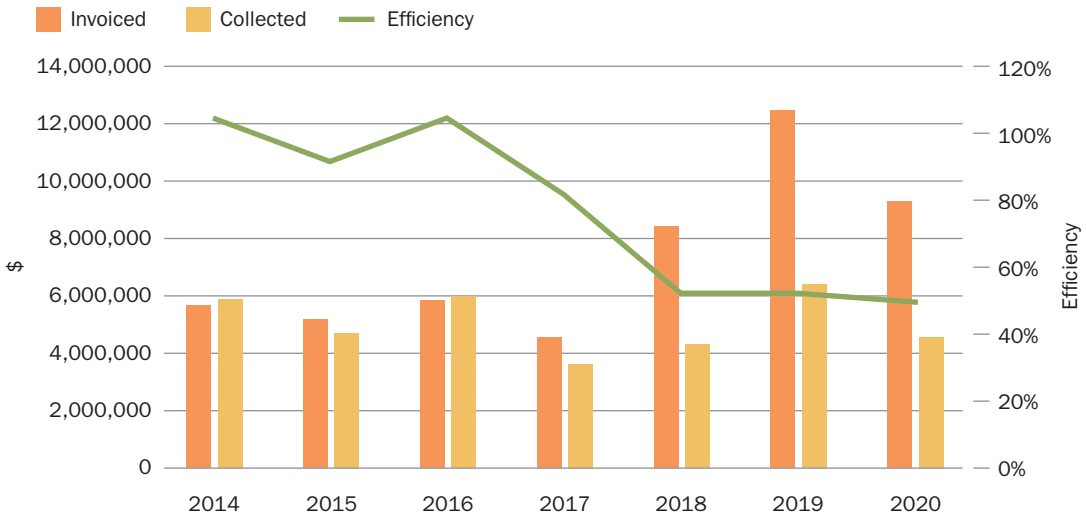
Three main challenges have been associated with forest revenue collection over the years. These are:

1. **Legislative changes resulting in loss of revenue.** Even though logging concessions were to be allocated through competitive bidding, GoL eliminated the bid premium in 2013, resulting in lost revenue of more than US$ 277 million over 20 years (SDI 2014; Forest Trends 2020). Out of this lost revenue, about US$ 83 million should have gone to communities.
2. **Inability of revenue agencies to collect total base land rental fees due from logging companies.** It was estimated that in the 2019/20 fiscal year, total land rental fees collected from logging companies should have been around over US$ 65 million (LEITI 2022). However, GoL only collected about US$ 27.7 million (42 percent) out of the total base land rental fees (LEITI 2022).
3. **Inability of GoL to pay 30 percent of revenue by law to the National Benefit Sharing Fund (NBSF).** Under Liberian law, communities in TSC and FMC areas impacted by commercial logging are entitled to 30 percent of the revenue generated from forest resources through the Land Rental Fees paid by logging companies into the National Benefit Sharing Trust (NBST).[30] If all land rental fees had been collected in the 2019/20 fiscal year, 30 percent of that (more than US$ 19.6 million) should have gone to communities. However, the amount that was disbursed to communities was not even 30 percent of the US$ 27.7 million reportedly collected. The amount should have been US$ 8.3 million (30 percent of US$ 27.7). Yet, only US$ 2.6 million has been transferred to date—GoL is more than US$ 5.5 million in arrears to the NBST.

Figure 3.6 provides a snapshot of the efficiency of revenue collections (as measured by the actual collections as percentage of invoiced taxes). It shows a dramatic decline in efficiency between 2015 and 2020. In 2014 they were collecting nearly 90 percent of revenue due. But by 2020 they were only collecting around 60 percent.

30 See: https://www.fao.org/in-action/eu-fao-flegt-programme/news-events/news-details/zh/c/1329425/

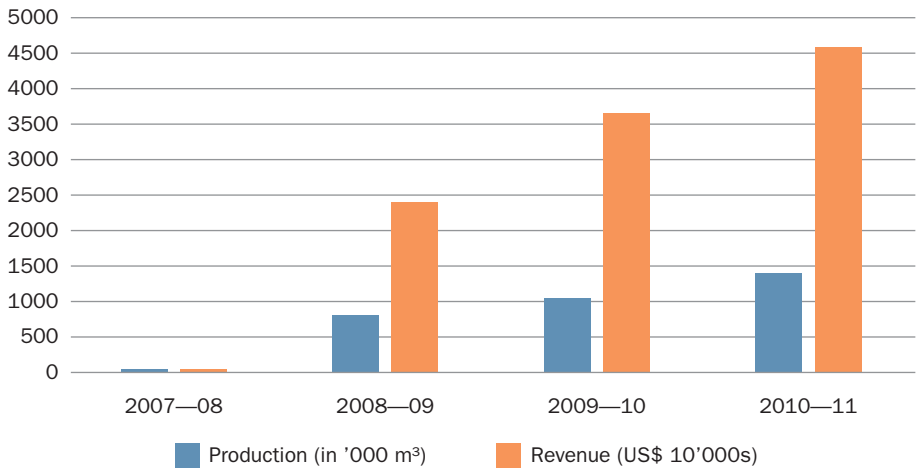
Figure 3.6 Forest Sector Revenues Versus Collections, Liberia (US$)



Source: Hoare and Uehara (2022): Data compiled from IPE Triple Line (unpublished), Using Timber Legality Assurance Systems (TLAS) and Other Nationally Available Data to Assess Changes in Behavior and Governance in the Forest Sector in Liberia; LiberTrace monthly performance reports for 2020, https://libertrace.sgs.com.

Note: Forest sector revenues reported on by LiberTrace include stumpage fees, land rental fees, export taxes, and other administrative and management charges. Where the fees collected are greater than the amount invoiced, this is most likely due to payment of arrears.

Figure 3.7 Estimated Forestry Production and Revenue between 2007 and 2011 as Presented in the Liberian Poverty Reduction Strategy (LPRS) document



Source: GoL 2008

Production-Based Fees and Taxes

There is a structure of production-based fees and taxes that provide different sources of revenue generation. Box 3.1 lists these fees and taxes, explains what they are and why they exist. The challenge though is that revenue collection focuses almost entirely on fines, penalties, royalties, and other user fees for timber concessionaires.

Box 3.1 Current Production-Based Fees and Taxes

1. **Reforestation Fee**—Tax (fee) levy on tree length irrespective of species, grade and intended use. Revenue generated from this charge is intended to be used solely for funding reforestation (artificial plantation) projects and programs.
2. **Conservation Tax**—Generated for the implementation of conservation activities.
3. **Forest Research Tax**—Levied on tree length irrespective of species, grade and intended use. Funds generated is for research and development activities.
4. **Industrialization Incentive Fee (IIF)**—Levied on designated export round logs volumes and varies according to species. High charges are levied on primary species and those on secondary species are low. This strategy supports sustainable forest management (SFM) and conservation as it is intended to slow down the market demand on common species and to encourage the harvesting of lesser-known species. In addition, this tax discourages the exportation of round logs.
5. **Forest Products Fee**—Levied on declared or designated export processed forest products. The tax decreases according to the degree of processing such as sawn timber, veneer, or plywood. Its aim is to promote domestic processing and encourage industrialization in the forestry sector.

COMMERCIAL FORESTRY—CHALLENGES

In Liberia, domestic revenues are dependent on timber more than other forest products even though the NFRL, 2006 and the 10 Core Regulations, 2007 provide for special taxes that should theoretically generate a revenue stream for community, conservation, and carbon purposes. Forest taxes apply to all wood type (species) and ownership. For instance, the FDA revenue collection has previously struggled and needs to be improved. Although this point was brought up in the context of collection of fines and penalties, there are more general issues relating to the revenue base available to FDA, and the extent to which they capture the potential income available to them from forest goods and services.

Forests and forest revenues are not only key resources for the Liberian national economy but also provide extremely important economic, cultural, and environmental service benefits for communities. Therefore, it is crucial that all the challenges faced by the forestry sector receive adequate attention as they all impact on GoL revenue collections and the overall wellbeing of the forest resource base. Some of the key challenges facing the government include the undervaluation of forest resources, a weak capacity to manage the sector, and unsustainable yields.

Undervaluing Forest Resources

Undervaluing forest resources results in management decisions that have an inherent bias in favor of commercial forest logging operations and those who stand to benefit most from these. The focus is often on short-term financial gains that benefit a few rather than longer-term social and public benefits that benefit many. Decisions are made without considering the broader opportunity costs including environmental and livelihood benefits. Yet, these broader values need to be factored into decision-making. Furthermore, it may mean that potential financing opportunities and mechanisms for capturing broader forest benefits may be missed.

However, there are substantial revenues to be gained from commercial forestry. In addition to fines, penalties, royalties, stumpage fees, concession fees, land rent and associated timber charges, there may be great potential to generate funds for the FDA (and for other forest managers) by recognizing the broader benefits forests provide within and outside Liberia. Possible funding sources include payments for environmental services, carbon finance, biodiversity markets and ecotourism. While these may not be competitive with commercial logging revenues in high-potential timber areas, they provide an untapped opportunity for FDA to diversify their revenue base from forest conservation land uses. In addition, better appreciation of the full range of forest benefits allows for a more comprehensive identification of the range of markets and enterprise opportunities, which are associated with non-commercial logging and the use of NTFPs.

Under-valuation does not only influence economic and investment planning, but it also means that the full gamut of forest values is weakly represented in the policy, market and price instruments which have been set in place to regulate and influence economic activity in Liberia. As a result, taxes, subsidies, prices, markets, investment incentives and other stimuli for economic activity tend to provide a higher level of support to other sectors, and to unsustainable forestland and resource uses. Land and resource taxes and user fees do not, for example, account for these broader social and environmental values. Varieties of credit, tax and investment incentives are targeted at activities in other sectors, while few are available for sustainable forest-based enterprises.

In some cases, subsidies and other price controls serve as perverse incentives and encourage people to use forestland and resources unsustainably. All these policy, price and market distortions result in SFM not being a profitable option as compared to other economic activities, or as compared to unsustainable forestland and resource uses (Birikorang 2008). Generally, the market prices for informal timber are relatively low compared with prices on the export market. This points to the fact that the current reform vision is likely to face potential price distortions on the domestic market for both round wood and timber.

Poor Revenue Generation

The revenue to GoL from the forestry sector is mostly generated through collection of forest taxes. This was supposed to be the full responsibility of FDA. However, due to a lack of capacity, the LiberFor program was set up to support them. SGS was the company commissioned by the United Nations to monitor the timber logging in the country and collect the taxes on timber business in Liberia. SGS initially had the contract to carry out this assignment for five years, during which time they were to train the FDA counterpart staff to take over the responsibility fully after the expiration of the contract.

However, the LiberFor program faced several challenges including low export volumes, because of poor infrastructure and inadequate human capacity, which constrained the transfer of knowledge to the FDA field staff. Revenue generation was extremely low due to FDA capacity constraints. To address these shortfalls, a follow-up program known as Chain of Custody Information System (COCIS), also known as LiberTrace, was developed in 2018.[31] LiberTrace was implemented by SGS. In 2019, the legality and traceability functions of LiberTrace—the country's timber tracking system—were transferred to the FDA, and the LVD became International Organization for Standardization (ISO) certified (ISO 9001:2015—Quality Management Systems). The new LiberTrace system is deemed to be robust enough to detect non-compliances in revenue generation and thus boost FDA revenue collection efforts.[32]

31 See: https://www.timbertradeportal.com/en/liberia/138/legal-framework
32 See: https://flegtimm.eu/country-profiles/liberia/

Weak Revenue Collection Capacity

Generally, it was observed that the tax collection structure is weak and not effective in consistently collecting all the levied taxes and fees (see Figure 3.6). This was due to inadequate capacity at both the headquarters and the regional levels. To ensure an effective tax collection structure and improvement in the future tax collection and other revenues, FDA needed to be empowered and strengthened in terms of logistics, training or capacity building and infrastructure rehabilitation. For this to be done there is the need for the empowerment and strengthening of FDA to be able to implement the forestry policies regarding revenue generation and collection.

Capacity Issues at the FDA

The FDA does not have enough people with the skills and experience, or the mindset, needed to:

1. Supervise logging operations
2. Monitor or implement management plans
3. Protect national forests and other public forests from encroachments by immigrants, farming, commercial hunting
4. Collect fees and taxes.

There is also a lack of commitment from some public sector officials and high-level government officials to SFM plus the problem of rent seeking behavior. Much more needs to be done to ensure that the FDA can regulate the sector effectively and implement the 4Cs of sustainable forest management regime.

Short Felling Cycles of 25 Years

According to the International Tropical Timber Organization (ITTO), no silvicultural system has been devised for Liberian forests other than a selective logging regime. The ITTO further indicates that the prescribed felling cycle of 25 years, under the selective logging regime is relatively short.[33] Studies in Ghana indicate that mortality associated with logging returned to normal after about 30 years, but the Apparent Extraction Network (AEN) forest was generally lower in basal area and timber regeneration. The study suggests that damage, probably compaction to the soil by logging machinery may be responsible for a medium or long-term reduction in the site productivity (Hawthorne 2002). In addition, studies in Central African Republic (CAR) showed that in forests logged for the first time, the timber stock did not recover within one felling cycle (24-year silvicultural experiment) and thinning did not foster this recovery (Goulet-Fleury et al 2013).

Resource Depletion

Existing forest resources are not able to cater for a thriving formal commercial forestry industry and the demands of informal commercial forestry (see Chapter 4). If all allocated concessions are given out and become operational, then it is estimated that the formal and informal sector harvesting together will amount to twice the AAC (biological limit). This will result in significant resource depletion and is a huge challenge for the forestry sector.

In addition, once the necessary infrastructure is put in place to facilitate large-scale timber harvesting, there is a concern that this logging could be a direct threat to forests and wildlife, and this must be controlled. The biggest threats to forests will be the improvement to access corridors and transportation (logging roads), settlement farming, and hunting in national forests.

33 See: https://www.itto.int/sfm/2005/details/id=12340000

Unsustainable Yield

In Liberia, the forest is managed under a simple system of control where, in theory, a concession is granted for a 25-year period, with the concessionaire being authorized to cut 1/25th of the area each year and only removing stems over a DBH for certain species. Currently, the 25-year cycle applies under FMCs and not in CFMAs. There are around 240 timber tree species in Liberia. In the past only a small percentage of these were considered commercial. This meant that logging tended to be low intensity. However, as more species became commercially acceptable the forest was often re-entered to take the newly commercial species. Recently the new Asian operators are much less demanding with respect to species choice and take virtually all species. The result is that the logging is at a much higher intensity. This means with a much larger removal per hectare and increased logging damage to the residual forest that the forest will not yield the same volume in subsequent cycles.

Currently there are no estimates of growth rates or the residual volumes following harvesting, so it is not possible to estimate the AAC for Liberia. However, knowing how the forest is allocated and to whom is fundamental for proper forest management. It is impossible to set yields and enforce regulations if the legitimate production areas are not defined and known. It is therefore highly probable that the annual coups are not mapped and that that there are no 100 percent stock surveys undertaken despite this being a requirement of the forest law and concession agreement. The opportunities for allocating more forest resources to either new concessionaires or communities will therefore be dependent on revocation and defining concession boundaries accurately.

Failure to Follow Resource Allocation Procedures

Currently timber is allocated through a competitive concessions award process. FMCs and CFMAs are the two types of agreements in the forest sector that produce round logs. CFMAs produced 75 percent of the round logs, while FMCs produced 25 percent of round logs in 2020 (LEITI 2022). LRA (2021) notes that for the fiscal year 2019/20, the forestry sector overperformed due to stumpage and area fees payment mainly from contract holders of CFMAs. However, the LRA (2021) report noted that FMC holders also had CFMAs causing the companies to stop FMCs activities and focus on CFMAs activities with reduced tax obligations. The LRA report also noted that while the FMCs are grossly underperforming, the CFMAs have increased activities leading to the over performance of the sector. Due to their community-based activities, these companies claimed to have limited operations that would lead to high tax-related payments. In addition, even though by Law communities had been promised 30 percent of all forest area-based fees, including the bid premium used by companies during the competitive bidding for logging concessions (FMCs and TSCs), the legislature had amended the law to eliminate annual payments of the bid premium, which reduced revenue payments to the communities. Even for the remaining area-based fees, logging companies had accrued large arrears, and even for what has been collected, the GoL failed to transfer most of the money due to the communities (Forest trends 2020).

Inefficient Timber Industry Downstream Processing Regulation

There is the need to focus any future industry performance towards increased downstream processing, reducing logging residue and mill waste, broadening of the species base for harvesting and greater processing of lesser used species (LUS).

Planning Based on Old Inventory Data

The most recent inventories at the national level were undertaken during the 1960s with German assistance. Since then, many of the concessions have been worked two or three times often with repeated re-entry. The area of secondary forest that has grown up following shifting agriculture is also not known. It is therefore clear that it is not possible to estimate either the volumes above the diameter limits available for harvesting or the possible re-growth for future harvests. A new national forest inventory (NFI) has been carried out between 2018 and 2019. The results of the NFI, 2018/19 will likely improve the potential for accurate planning and management.

Lack of Regulation and Understanding of Sector

Most of the value chain is in the informal sector. There is no monitoring or regulation of this sector. This means that there is no data to use to increase its competitiveness, manage its environmental impact, or bring the activity into the formal sector.

Lack of Industrialization and Equipment

The absence of sawmills and other processing equipment in Liberia means that downstream value addition is limited. In addition, output from construction and woodworking firms is not competitive in regional and global markets.

Does Not Consider Consumer Demand

Although the supply chain is relatively fluid, and the market centralized in Monrovia, forestry is essentially a supply-driven sector. Consumer needs and expectations, from end users and secondary processors, are not informed throughout the supply chain, and do not drive the creation of value. Domestic opportunities are not well communicated to the supply side and regional opportunities are not communicated at all.

Low Productivity

Over 80 percent of surveyed businesses do not have access to power tools and produce furniture with just hand tools. In addition, the workforce is largely unskilled, with no access to woodworking techniques or methods to improve operations.

Low Product Quality

From the beginning to the end of the value chain, products are of poor quality.

WHAT HAS BEEN ACHIEVED

Some of the key achievements under commercial forestry are:

Successful Implementation of Strategic Interventions

The post-war years have seen several strategic interventions by development partners, such as the World Bank, African Development Bank (AfDB), the EU, FAO and DANIDA to help reform the forestry sector. As part of the reform process, GoL together with the World Bank and the Government of Norway have successfully implemented several programs. These include:

1. REDD+ (see Chapter 6)
2. FLEGT
3. The Voluntary Partnership Agreement (VPA)
4. The Legality Verification Regime (LVR)
5. The Liberia Forest Sector Project (LFSP).

All these initiatives are aimed at ensuring SFM and building the capacity of FDA.

Policy and Legislative Reform on Commercial Forestry

In 2006, the National Forest Policy and Implementation Strategy (NFPIS), 2006 was approved which laid down the post-conflict framework for commercial forestry production in Liberia. The priority set of actions included:

1. Undertake a transparent, credible concession review process: As at 2022, the FDA had commissioned a review of forest concessions system. We recommend that the process should be carried out professionally and credibly without interferences and that the outcomes and action plans are quickly implemented.
2. Ensure a transparent, competitive bidding process for future concession allocations is in place
3. Simply forestry taxes and fees to prevent leakage and corruption, and that reflect market value of resource
4. Implement a land use planning process to develop zones and management regulations for the 4Cs
5. Strengthen the FDA's capacity to monitor the flow of timber from the field to the port (including training and equipment)
6. Strengthen FDA's Board of Directors for more efficient oversight responsibility.

National Forestry Inventory (NFI)

Liberia conducted her first national commercial timber survey in 1967 and was led by a German Forestry Mission. The results from the survey led to the Act that created the FDA in 1976 as a responsible institution named and styled the *Forestry Development Authority* with a general mandate to monitor and supervise forest resource management activities.

However, the German-led forest inventory was not comprehensive. Between 2018 and 2019, GoL with the support of the Government of Norway, the World Bank Forest Carbon Partnership Facility (FCPF), and the FAO), a comprehensive national forest inventory (NFI) was carried out. This will be the basis for sustainable forest management (SFM) in Liberia moving forward.

Concession Reform

GoL established an independent concession review committee in 2006, comprising of public sector agencies, civil society, and international organizations. The committee's responsibility was to ensure transparent concessions allocation processes. The work of the committee has ensured the introduction and implementation of some measure of transparent concessions system. In 2018, the Liberian president, George Weah, set up a nine-member panel to review the land and property concessions, including Forest Concessions, that were granted to businesses under the government of his predecessor, Ellen Johnson Sirleaf. The panel's mandate was to verify that all concessional contracts entered into by the previous government are compliant with Liberian law and implemented in accordance with the terms of agreement.[34] The recommendation of the nine-member Panel led to a review of the concession allocation procedure.

In addition, in 2019, the Commercial Forestry Department of FDA completed a nationwide assessment of various concession types, which includes the FMCs, TSCs, and areas awarded to holders of CFMAs. GoL, in collaboration with development partners, has provided extensive technical assistance support to concession management.

34 See: http://country.eiu.com/article.aspx?articleid=1066467890&Country=Liberia&topic=Politics&subtopic=Forecast&subsubtopic=International+relations

More Integrated Approach

The FDA has worked hard to shift from a *revenue generating* focused forest management approach to one that is more integrated. This means the forest sector vision is more comprehensive and integrates all aspects of forestry using the 4Cs approach. There has also been a move away from the largely export-oriented commercial forestry, which tended to marginalize the other 3Cs (that is conservation, community, and carbon forestry) towards the sustainable development of domestic processing capacity and markets.

WAY FORWARD

In view of the importance of the timber industry as a source of job creation and investment in the economy, policy intervention is needed to promote investments in the sub-sector. Key actions that are required to promote investments in timber industry include:

- The promotion of value addition
- Increased use of lesser-used and lesser-known timber species
- A more efficient industry
- A strong stakeholder collaborative mechanism
- Incentives for the private sector to invest in new wood processing plants and equipment
- Improved international market access for industry.

However, the biggest threat to Liberian forests and wildlife is: (1) improved access corridors and transportation for large-scale harvesting; (2) settlement farming; and (3) hunting. The commercial forestry sector has a crucial role to play in ensuring that growth happens without threat to the environment.

A set of proposed specific interventions to address these challenges include the following:

1. **Develop a forest industry development plan**—The performance of the industry can be promoted through the development of a forest industry development plan which focuses on value addition and use of residues.
2. **A medium and long-term strategy**—A strategic direction for wood industry development for the medium and long-term should be developed.
3. **Performance standards**—Standards for regulating the performance of the industry and ensuring efficiency should be formulated.
4. **Export-driven artisanal cottage industries**—GoL should promote the development of vibrant export-driven wood-based artisanal cottage industries.
5. **Develop the local sawmill industry**—The FDA should facilitate the development of a local sawmill industry that will supply wood to the domestic market. Current policy does not favor the development of domestic sawmills as they will be unwilling to sell into this low-priced wood market because of the high opportunity costs involved.
6. **Facilitate the production of timber for the local market**—Almost all the wood supplied to the domestic market is from chain saw lumber. Chain saw lumber is cheap to produce and formal timber operators are unable to complete. The lumber from timber operators is more expensive to produce and they prefer to export it to markets where it can fetch higher prices. It is important to provide incentives to encourage a sawmilling industry to supply to the local market. A short-term approach could include a system of rebates on the lumber sold domestically, to make up for its higher production costs. In the longer-term, it is important to shift domestic demand (of downstream processors and final consumers) towards use of higher quality lumber. This can be influenced through information and awareness-raising programs on the economic and environmental benefits of using higher quality lumber.

7. **Review existing financial structures**—There is the need to review the current financial structures to ensure effective mobilization of revenue and equitable distribution of revenue among beneficiaries. This calls for capacity of FDA to enable it to efficiently collect revenue accruing from its operations.
8. **Simplify forestry taxes and fees**—This should be aimed at preventing leakage and corruption, and to reflect the true market value of resources. An effective measure on timber pricing and taxation in addition to appropriate incentive frameworks that favors environmental and fiscal responsibility, local processing, and community participation in sharing forest revenue must be formulated and that calls for strong political and administrative will to implement such policies.
9. **Improve valuation of forest products and services**—Forests have not been fully valued in Liberia and that may contribute to some of the discriminating policies made against forest protection. An institutional model for determining both the product and service value of forests is needed to help obtain a more holistic idea of the total value of forests. The various stakeholders of the forestry sector need to be sensitized on the worth of forests in totality.
10. **Use economic incentives to promote sustainable timber production**—Local interventions in forest communities should be accompanied by market-based solutions to incentivize communities to sustainably manage forest resources. Innovative business models adapted to the local context should be piloted and replicated across forested communities.
11. **Provide technical assistance to micro, small and medium enterprises (MSMEs)**—While developing sustainable forestry practices and primary processing are priorities, strategic technical assistance to MSMEs is critical in supporting sustainable forestry and adding value to products currently produced for the domestic market.
12. **Promote linkages and market efficiencies**—Linkages between the informal and formal sectors will strengthen the domestic market with the introduction of standards and processes that drive value creation and increase quality. Partnerships aiming at sharing knowledge and expertise, creating shared processing facilities, or developing Technical and Vocational Education and Training (TVET) interventions should also be considered.
13. **Undertake market assessments to close research gaps**—Research should be carried out to inform policy decision-making and to identify new markets for primary, secondary, and tertiary products produced within Liberia and the region. Understanding the unknown dynamics of informal cross border trade will be critical to ensuring effective monitoring and regulation of chainsaw milling.
14. **Consider the environmental impact**—Liberia has an estimated 6.7 million hectares of forest, and informal chain saw milling (CSM) affects approximately 99,000 to 132,000 forest hectares per year (three percent of total forest area). While informal CSM does not solely or immediately appear to threaten Liberia's forest sustainability, it does have a significant environmental impact and demands more understanding and analysis to understand the potential short and long-term implications.

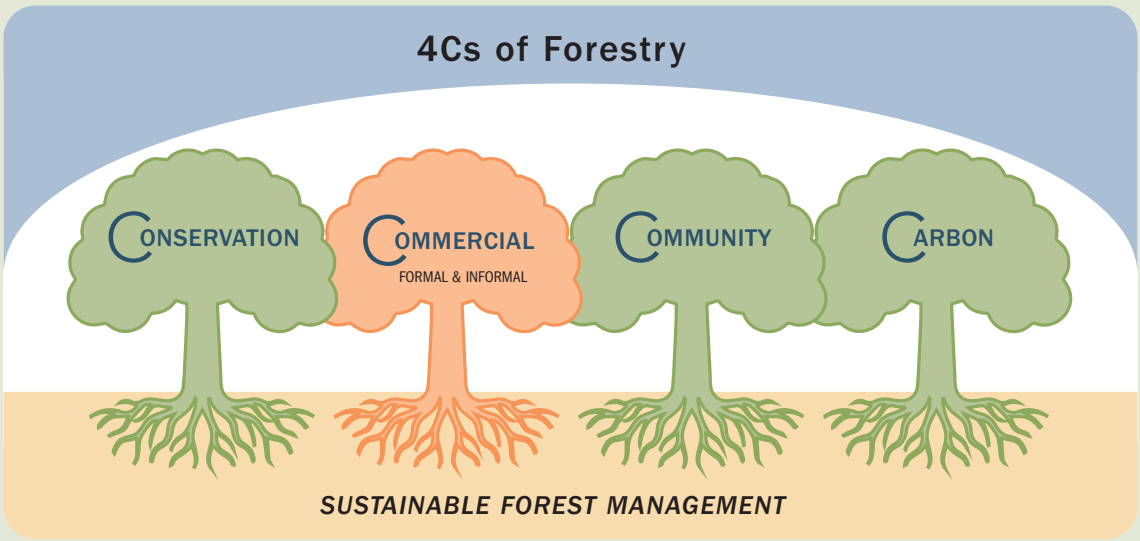
CHAPTER

4 COMMERCIAL Forestry—Informal

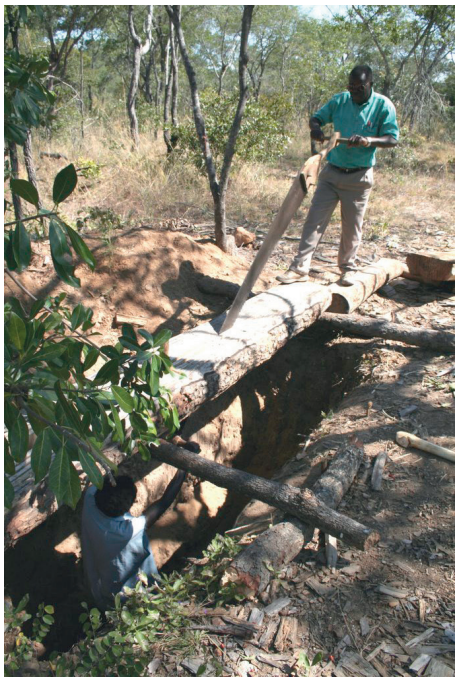
A Blueprint for Change – The 4Cs of Sustainable Forest Management (SFM)

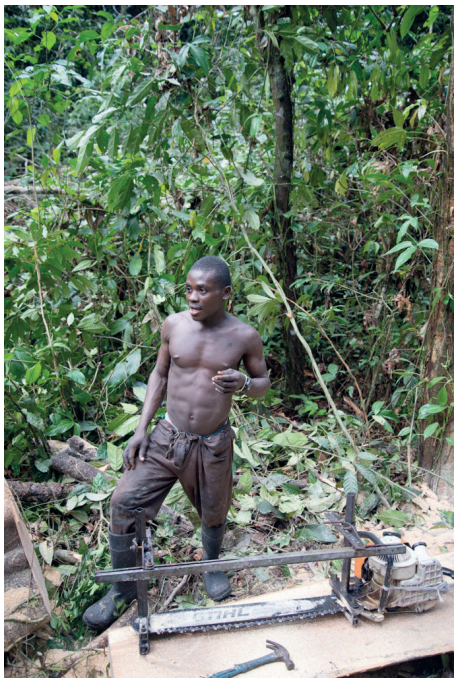
It is crucial that when making decisions about commercial forestry, all aspects of **conservation**, **community** and **carbon** forestry are given equal consideration.

Balancing and integrating the 4Cs of sustainable forest management (SFM) can make real change happen.



Liberia's forests are under threat from overexploitation, climate change and governance related challenges. There is an excessive focus on **commercial forestry** and not enough attention is paid to the other factors that play an equally significant role. Liberia's approach to forestry is **out of balance** and **a new mindset** is needed to drive a significantly more sustainable approach to how this vital natural resource is managed.





Informal pit saw and chain saw milling (CSM) caters for the bulk of Liberia's domestic market for lumber

CHAPTER CONTENT

The production of timber from the informal chain saw milling (CSM) sector is the main source of domestic timber in Liberia and provides a crucial livelihood for a large proportion of the population. Yet, it is mostly unregulated, contributes little to fiscal revenues, and is quickly driving the degradation of Liberia's forests.

This chapter presents the regulatory framework relating to this sector and reviews the Liberian chain saw timber value chain. It highlights how the limited downstream processing capacity in the country and the relatively lower prices of chain saw timber fuels domestic demand. It also explores the relationship between the CSM sector, the economy, and the environment while connecting this relationship with the important export timber industry.

In addition, it presents and evaluates the current fiscal arrangements and the barriers to ensuring this important economic sector makes the necessary contributions to the country's gross domestic product (GDP).

Finally, it explores the challenges and failures of CSM policy initiatives and concludes with a list of policy recommendations for the sustainable production of chainsaw lumber.

Commercial Forestry—Informal

Informal commercial forestry is the commercial use of forests and forest land which lacks basic social or legal protections or employment benefit. They are carried out by persons and small-scale enterprises within designated forest landscapes for personal purposes, subsistence, or infrastructure development.

In Liberia, the informal forestry sector includes activities such as pit sawing, chain saw milling (CSM), timber processed without permits, illegal logging and any other activities within the forestry sector which are forbidden by law.

The informal commercial forestry sector is important because its activities are vital to the development of rural economies and the empowerment of local communities in Liberia.

Yet, the informality of the sector deprives the State from crucial revenues needed to support conservation (see Chapter 2) and community forestry (see Chapter 5).

WHAT IS THE INFORMAL SECTOR?

The concept of *informality* was first introduced in the 1970s (Hart 1973). However, although the term *informal sector* began to be used in the 1970s, the concept was already common in economic development activities during the 1950s and 1960s (Bangasser 2000).

The International Labour Organization (ILO) defines the informal sector as a subsection of enterprises that are: (1) not legally separate from their owners; (2) that sell products in a market; (3) do not keep formal accounts; and (4) are not formalized by national legislation (ILO 2000). The ILO also classifies informal employment as jobs that may be found in the formal sector but lack basic social and legal protection and are not linked to employment benefits (ILO 2012).

> In the forest sector worldwide, an estimated 75 percent of forest work takes place in the informal economy (FAO 2014).

Most workers in the world are informally employed and contribute to economic and social development through market and non-market activities that are not protected, regulated, well-recognized or valued (OECD/ILO 2019).

COMMERCIAL INFORMAL FORESTRY—REGULATORY FRAMEWORKS

CSM is one of the most important land-use issues in Liberia. CSM provides significant social and economic contributions to Liberia's population especially to rural livelihoods. Yet, CSM has an unclear legal status (Blackett et al 2009) as it does not fall under any of the contracts, permits and Forest Resource Licenses (FRLs) recognized by the National Forest Reform Law (NFRL), 2006. This has led to a general assumption that CSM is illegal and that the collection and payment of fees related to CSM is also illegal.

However, CSM has a quasi-legal status, and remains an active and growing industry in the country (Emerton 2011). In addition, the structure and lack of Regulation and low capital needs in the CSM industry means that it is easy to participate in it. Either way, there is a consensus among stakeholders that a long-term policy response to the problems of CSM is to bring it under a formal legal and regulatory framework (Kamara 2010).

While relevant policy and legislation is sparse, there are a few Regulations that have been issued by the Forest Development Authority (FDA) that cover the informal aspect of commercial forestry (see Figure 4.1).

Figure 4.1 Informal Commercial Forestry Regulatory Framework

The development of the CSM regulatory framework over time is detailed below:

1995—FDA Regulation No. 22 Pit Sawing

In 1995 the FDA issued Regulation No. 22 permitting the conduct of pit sawing outside of national forests, environmentally threatened areas, national parks, concessions, and salvage areas. This Regulation was issued in recognition of the rising commercial nature of the activity and its ever-increasing environmental impacts (FAO 1995). Regulation No. 22 defined pit sawing as a small-scale commercial logging activity different from concession logging. The Regulation formalized it in heavily fragmented patches of forests that are not suited for a grant of concession. It required pit sawing operators to obtain a permit from the FDA for their operations. It banned pit sawing operations from national forests, environmentally threatened areas, National Parks, and salvage areas. It also imposed fees for registration, defined offences, and prescribed penalties for these offences.

2000—FDA Regulation No. 26 Pit Sawing and Chain Sawing

The second legislative instrument for the Regulation of pit sawing or chain sawing was FDA Regulation No. 26, which was introduced in 2000. FDA Regulation No. 26 imposed a ban on pit sawing and chain sawing (FAO 2000). The Regulation required the FDA to completely prohibit pit sawing or chain sawing operations and the sale of products from these operations. The Regulation also provided rules for the international trade in sawn timber and round logs. Offences were defined and penalties prescribed in the Regulation.

2012—FDA Regulation No. 115-11

The first major Regulation aimed at controlling CSM operations was passed in 2012 and was known as FDA Regulation No. 115-11. This Regulation was introduced to optimize the positive benefits of CSM and mitigate its negative effects. FDA Regulation No. 115-11 established a structured process by which authorization for CSM was requested, reviewed, and granted or denied. Its objective was to ensure that CSM activities were environmentally appropriate, and that procedures and practices promoted the mutual interests of chain saw loggers, communities, and sustainable forest management (SFM) in Liberia (FAO 2012).

The Regulation mandated the FDA to issue CSM permits for operations in only community forests and in private or deeded forest land. The permits can only be issued when all four criteria below have been addressed:

1. The area has been identified by the FDA as suitable for commercial use (subject to Section 4.4.d.i of the National Forestry Reform Law of 2006)
2. The FDA has validated the area has been validated by FDA (subject to Section 4.5 of the National Forestry Reform Law (NFRL) of 2006)
3. The FDA has issued a written commencement permission to the applicant
4. Free prior informed consent of the community has been obtained in community forest areas or that of the private landowner for private land.

The CSM permits must not be bigger than 1,000 hectares at a time for an individual chain saw operator or a group of chain saw operators. However, if the community forest is larger than 1,000 hectares, the FDA may grant multiple individual licenses each of which shall comply with the 1,000-hectare limit. The CSM permits shall not be granted in areas in a protected forest area network (PFAN), unless the FDA issues a written report explaining why the commercial use of such areas would be compatible with their protection status.

2019—Revised Regulation No. [115-2018] Regulations on Chain Saw Milling [*pending*]

The FDA Revised Regulation No. [115-2018], which is the current regulatory framework for controlling CSM and was promulgated in 2019. It has been adopted by the FDA Board of Directors. However, it is not yet effective because it has not been gazetted for approval by the President.[1]

Section 2 of this Regulation states that its purpose is to:

1. Establish a CSM permitting regime that complements the existing contracts such as Timber Sales Contracts (TSCs), Community Forest Management Agreement (CFMAs) and Private Use Permits (PUPs)
2. Prohibit CSM happening in areas or forest land suitable for or covered by Forest Management Contracts (FMCs) and Forest Use Permits (FUPs), and forest land designated as a Protected Area and Proposed Protected Area (PPA)
3. Provide for a well-defined regulatory framework to allow a transformation of informal CSM to a formal, legal, and responsible CSM in the forest sector of Liberia
4. Ensure and assure the legality and effective traceability of timber supplied by CSM from forests by harnessing the FDA's Chain of Custody (CoC) System, which means adapting the existing CoC system to the needs of CSM.
5. Ensure that CSM is carried out by Liberian nationals, primarily through legally established cooperatives or associations to maximize opportunities for local employment and value addition.

Section 3 of the FDA 2019 Revised Regulation No. [115-2018] mandates that the timber resources that would be eligible for a Chain Saw Milling Permit (CSMP) should be based on all or some of the quantity of timber already covered by an existing TSC, CFMA and PUP and that the holder of this FRL has decided to process using CSM.

The Regulation provides for strict regulatory control as applications for CSMPs must be assessed and evaluated based on the number of trees the Permit authorizes to be milled or processed. It is not based on the land area where the trees are located, the relevance of the land being only in terms of its suitability for CSM, or whether the wood comes from an authorized legal source.

It must be noted that the Regulation requires that timber harvested under a CSMP can be used only on the domestic market. This timber is not eligible for export.

DOMESTIC MARKET

Growing Informal Trade

Chain Saw Milling (CSM)

Chain saw milling (CSM) is the on-site conversion of logs into boards and lumber using chain saws. CSM means harvesting and on-site conversion of logs into boards and timber using chain saws.

1 See: https://www.fda.gov.lr/sites/default/files/documents/Chainsaw%20Milling%20Regulation%20%20Proposal.pdf

Pit Sawing

Pit sawing is a method of sawing logs or timbers, as into boards, in which the piece to be cut is laid horizontally across a pit and cut by a saw manually operated vertically by two people, one above and one in the pit below the piece.[2] It does not involve a chain saw.

CSM used to be a small-scale activity. However, between 1990 and 2003, the activity started to expand. This was during and after the civil war in Liberia when formal concession logging became erratic (Kamara et al 2010). The international ban on export of timber products in 2003 and the subsequent cancellation of concession agreements by the government in 2006 because of concession misconduct resulted in a further collapse of the export-oriented industry. More gaps appeared in the local timber supply, and this resulted in an even greater expansion of CSM activities.

Since 1990s, CSM—the harvesting of trees and converting it to lumber on the spot using a power saw or chain saw—has continued to increase. Over the last two decades, CSM has become the principal source of timber to meet domestic demands. The activity is carried out without regard to basic SFM principles and is rarely controlled and supervised by agents of the FDA. Consequently, the size, number, and species harvested are left to the discretion of the chain saw logger. Besides being counterproductive to SFM, it also:

Almost all the wood supplied to the domestic market is from chain saw lumber. Chain saw lumber is cheap to produce and formal timber operators are unable to compete.

The lumber from timber operators is more expensive to produce and they prefer to export it to markets where it can fetch higher prices.

1. Robs the Government of Liberia (GoL) of essential revenue as it is never taxed.
2. It encroaches upon the land holding of concession and private individuals.
3. CSM has a **lumber recovery rate**[3] of about 10 percent which suggests a high level of wastage and inefficiency in converting logs into lumber.

CSM processing also results in low lumber recovery rates. Generally, the efficiency rate of lumber recovery of tropical timber ranges between 40 and 50 percent (Dykstra 1992; Alviar 1993). This implies that 50-60 percent of the log volume ends up as waste usually in the form of slabs, sawdust, edges, and shavings. However, lumber recovery rates of CSM in Liberia ranges between 10 and 35 percent (Blackett et al 2009), which is relatively low compared to sawmill lumber recovery rates and suggests a high level of wastage and inefficiency in converting logs into lumber. Lumber recovery rate (also known as lumber recovery efficiency) is widely used as a measure of assessing the performance of any sawmill. The mode of estimation is by dividing the total lumber product in cubic meters by total input volume. According to Kukogho et al (2011), the reasons for the low recovery rate, includes: (1) small log diameter, length, taper and quality; (2) kerf width of the sawing machine; (3) sawing variation, rough green-lumber size, and size of dry dressed lumber; (4) product mix; (5) decision making by sawmill personnel; (6) condition and maintenance of sawmill equipment; and, (7) sawing method.

According to Bickel and Cerutti (2017), there is a growing domestic market for CSM products which far exceeds the size of the export market. They reported that annual production of sawn wood from informal CSM operations in 2016 ranges between 691,944 cubic meters and 922,591 cubic meters (in **roundwood equivalents**). By comparison, the projected annual volume of exported timber in 2016 was 200,263 cubic meters (in roundwood equivalents) or about a quarter of that of CSM products.

2 See: https://www.dictionary.com/browse/pit-sawing

3 Lumber Recovery Rate (LRR) is defined as the nominal board feet of lumber recovered per cubic foot of log input to a sawmill. There are several methods for measuring lumber recovery, including: (1) cubic volume of lumber as a percentage of total log volume; and (2) board feet of lumber from a given cubic volume of logs commonly known as lumber recovery rate or factor. Both methods of measuring lumber recovery indicate yield but in different ways. The board foot method is based on nominal, rather than actual thickness and width.

The bulk of the domestic demand of CSM comes from the capital city of Monrovia. About 30.6 percent of the Liberia's total population lives in Monrovia (and 70 percent of Liberia's total urban population).[4] Smaller amounts of CSM are consumed in other urban areas and in rural areas. Virtually all timber is supplied in lengths of 14 feet (4.27 meters) with 89 percent supplied in dimensions of 2 x 10 inches, 2 x 8 inches, and 1 x 12 inches (Blackett et al 2009).

CSM is carried out in every county of Liberia, with River Cess, Gbarpolu and Nimba providing the bulk of supplies to Monrovia. In addition, a rising demand is being driven by a high need for timber from construction and the housing sector that has accompanied rapid reconstruction efforts after the civil war.

Nearly 75 percent of the trade is concentrated on five species. These are: (1) Abura (*Hallea ciliata*); (2) Framire (*Terminalia ivorensis*); (3) Tetra (*Tetraberlinia tubmaniana*); (4) Ceiba (*Ceiba pentandra*); and (5) Niangon (*Heritiera utilis*). Both domestic and export logging focus upon the same species of trees—mainly tetra, framire, wawa, abura, niangon, and lovoa. Yet prices per cubic meter sold on the domestic market, mainly CSM products, are between 50 percent and 70 percent lower than the **free on board (FOB)** prices of industrial timber going for export (Bickel and Cerutti 2017).

Domestic CSM activity includes:

1. Production through CSM
2. Transportation of boards and lumber
3. Urban market purchases and sales
4. Woodworking and construction businesses.

Therefore, the domestic market has an extensive and complex value chain that generates direct and indirect employment throughout the country with significant downstream value addition opportunities.

Generally, chain saw operations are initiated by an outlet or plank depot manager, who contacts a chain saw operator and places a specific order for timber. The chain saw operator, who may own a chain saw, or in some instances who may rent a chain saw, proceeds to process the specific order for an outlet owner.

Working in teams, chain saw operators fell trees and use a chain saw to convert the logs into planks on the spot. The sawn timber is then carried by hand to the roadside for loading and transportation to Monrovia and other urban centers. Most CSM teams, although working independently and informally, have an arrangement with timber traders, and produce sawn timber to order.

Once the chain saw timber has been produced, the outlet or plank depot manager arranges for transportation to convey the timber to designated domestic markets. In some instances, middlemen purchase planks from multiple operations to transport to **plank fields**[5] in Monrovia.

CSM is a relatively open activity and is not dominated by any particular interest group. The sector involves many people from all over the country, in numerous small operations. The operational costs of CSM are low and this contributes to depressed domestic prices. These low prices have also led to high trade of their products, and the main source of raw materials to the large number of small-scale carpenters throughout the country.

CSM is a serious threat to Liberia's aspirations to develop a major timber product exporting industry. This is because the international community expects timber to come from legal sources. Currently, the regulatory framework, including the voluntary partnership agreement (VPA) signed between Liberia and the European Union (EU), prohibits the export of CSM lumber (see Chapter 3). It is estimated that potentially, CSM impacts on 80 percent of TSC and FMC forest areas.

4 See: https://worldpopulationreview.com/countries/liberia-population

5 A plank is a long, flat, rectangular piece of wood. A plank field is an area in which planks of wood are stacked or stored prior to sale or use.

It is estimated that a minimum of between 200 and 480 saws are currently being used for CSM—although the figure may be much higher than this if records of imports of chain saw machinery into Liberia are used as an indicator (Blackett et al 2009). As many as 70 percent of chain saw operators use their own saws and operate as free agents. This situation is leading to a fast depletion of the nation's prime timber species. This is due to the limited range of timber species like *Milicia excelsa*, *Terminalia superba*, and *Piptadeniastrum africanum* (red woods) that are popular in the domestic market.

Chain saw operators are a key part of the supply chain, contributing to about 39 percent of the product's value. Even though the domestic markets are informally driven, they operate the entire primary transformation, felling trees and sectioning them into planks using chain saws. Calibration, drying, treatment, dyeing, and quality control are either not done or are done poorly. Storage, logistics and distribution facilities are open-air, and this affects the quality of processing and value of the products.

At the other end of the domestic value chain, micro, small, and medium enterprises (MSMEs) purchase sawn wood from urban markets for construction, carpentry, and furniture making (Bickel and Cerutti 2017). Blackett et al (2009) noted that furniture making MSMEs add an additional value of US$ 44 per cubic meter to sawn wood through the production of household and office furniture. In comparison, a 2012 study in Nigeria found that the average value added by furniture making firms to a cubic meter of sawn wood was US$ 271 (Bickel and Cerutti 2017). There is significant potential to increase that amount through a more efficient process.

Growing Livelihoods—Economic Contribution of CSM

CSM forms an important component of the local economy in many parts of Liberia. It generates a variety of benefits at community level. These benefits are particularly important given the high incidence of poverty that still affects so much of the country. In addition, many rural dwellers are faced with limited opportunities to earn cash income and CSM is a beneficial livelihood option. Local wage employment is another obvious economic benefit.

Normal operational practice is for a logging team to be composed of one chain saw operator, around two helpers and five wood carriers. Some groups also employ cooks and bush managers. Each team provides employment for around 8-10 people and these people are usually local. Blackett et al (2009) found that on average that two thirds of workers come from the communities where logging is being carried out. With wage rates varying between US$ 146 and US$ 290 a month, depending on the job being performed, the industry injects between US$ 2.2 million and US$ 5.3 million a year into local economies through wages (Emerton 2011).

The domestic chain saw sector creates multiple short-term jobs with instant cash payments

Although mostly informal, CSM is an important source of employment for many Liberians. The sector provides between 19,000 and 24,000 more or less permanent jobs to urban and rural individuals and contributes each year, up to US$ 41 million, about 3 to 4 percent of the GDP of Liberia (Nthara and Srivastava 2020). Informal CSM is a well-developed economic sector, as demonstrated by a total estimated annual trading value (revenue) of between US$ 31 million and US$ 41 million, assuming an average value of US$ 152 per cubic meter of sawn wood (Hooda et al 2018).

In addition, benefits from the domestic timber sector's annual revenue are distributed along a value chain that spans rural and urban areas. Nearly half of this revenue (approximately US$ 77 per cubic meter) provides income to rural populations. In addition to those directly employed by CSM operations, those who sell their trees according to customary law and communities with forest lands also make money from this sector (Bickel and Cerutti 2017). Sawn timber generates flows of cash that contribute to poverty reduction in rural areas, at least in the short-term.

ENVIRONMENTAL IMPACTS

Vulnerable Forests—Environmental Impacts of CSM

Informal CSM has a significant environmental impact and demands more understanding and analysis to understand the potential short and long-term implications.

One of the major concerns about chain saw operations is its adverse impact on almost all type of forests in the country, including natural forest, previously logged forest, and farmlands with isolated valuable timber species. Almost all of Liberia's natural forest is vulnerable to CSM. About 80 percent of designated TSC and FMC lands lie within 5 kilometers of a road—the distance within which most CSM is being carried out (Emerton 2011). CSM teams operate along easily accessible roads, until the valuable timber is removed. They then progressively make incursions into the interior of the forests by re-opening less accessible logging roads through the clearing of trees to allow trucks to penetrate further into the forest. Beyond the roads, chain saw gangs enter on foot which makes much of Liberia's forests accessible to CSM.

Liberia has an estimated 6.7 million hectares of forest, and informal CSM affects approximately 99,000 to 132,000 hectares per year (2 percent of total forest area). All the timber supplied to the domestic market is supplied through CSM and it operates in every county of Liberia. The standing volume harvested annually by chain saw loggers is estimated to be in the range of 280,000 cubic meters to 650,000 cubic meters (and may in fact be much higher if the lumber recovery rate is lower than estimated, which is a definite possibility). This amounts to as much as half of the eventual maximum annual allowable cut and almost all the current allowable cut—which is projected by the FDA to be about 750,000 cubic meters for commercial operations in 2016, possibly rising to 1.3 million cubic meters as the formal logging sector is re-established (Bickel and Cerutti 2017).

The results of a study in Ghana by Duah-Gyamfi et al (2011) found strong evidence to indicate that in the short-term uncontrolled CSM had more negative impacts on the forest ecosystem compared to conventional milling. However, the results of the study did not support the general view that CSM is more wasteful than conventional milling in terms of residue generation. In addition, chain saw operators fell a wide range of tree sizes and they are unaware of the felling restrictions on harvestable diameters. More seriously, they do not pay attention to conservation practices.

It is argued that CSM activities are less damaging than the formal concession-based commercial forestry. Studies in Indonesia, Uganda, Nigeria, and Bolivia (Wit et al 2010) showed that CSM operations have relatively slight environmental impacts compared to the extensive deforestation and degradation associated with large-scale forest concessions in the countries. Regardless of this, Lescuyer et al (2009) observed after a study on the ecological impacts of CSM in Cameroon, that CSM must be better regulated to become a sustainable source of development at country level.

REVENUE STREAMS

FDA and Revenue Collection

The collection of revenue from sawn timber haulage is the sole responsibility of the Commercial Department of the FDA. Currently, the only revenue generated from domestic use of timber comes from chain sawing. Although CSM is not legalized, there are now sawmills operating in the country and chain saw loggers are allowed to operate to supply planks for domestic use. They are the only source of planks for different wood-based activities such as furniture making, carpentry business and building construction.

The FDA collects most of this revenue from Monrovia. Other counties are not covered because of a lack of capacity by the FDA to monitor CSM activities across the country. Until the formal industry starts domestic operations to supply timber to the domestic market, CSM will remain the source of plank supply in Liberia.

The practice of issuing official waybills for the transport of timber to Monrovia has given CSM a quasi-legal status. The FDA charges chain saw loggers a flat rate per plank of processed sawn timber that is designated for the domestic market. The rate is extremely low compared to the price they can sell the plank for at the timber markets. It was estimated in 2009 that timber traders are making profits of nearly 30 percent per cubic meter and that the FDA should be charging a significantly higher fee for the wood ensuring that the industry pays the true value for timber (Blackett et al 2009). It is argued that by charging so little, GoL is effectively subsidizing the trade indirectly.

If the profit margin to the plank sellers is as high as this, then the waybill being charged by FDA must be reviewed. The charges should conform to the size of the plank otherwise FDA will be losing a lot of money to the chain saw loggers and the plank sellers. In addition, the persistence of these *super-normal* profits will do nothing to stop the expansion of the CSM market or change the way the informal commercial forestry sector engages with conservation or community forestry.

Barriers to Value Addition and Revenue Collection

CSM is Inefficient

An issue that affects the value captured by loggers is the inefficiencies of CSM. The skills and techniques applied in CSM are rudimentary and wasteful. The routine practice is to use chain saws for felling with the additional use of a guide bar for planking. Production in standard dimensions, particularly the adoption a fixed length, results in rejection of logs shorter than 14 feet and means that wastage is considerable. A study by Blackett et al (2009) found that the recovery of sawn timber from roundwood ranged between 22 percent and 44 percent with an average of about 31 percent. Even this low figure may be an over-estimate, as many loggers only process the best grade logs, abandoning defective logs or logs less than 14 feet long.

Price

Price is also an issue which affects the value-added by timber retailing. The average retail price of timber as stated by traders is US$ 152 per cubic meter. Although there are grounds to believe that this may be an underestimate of the real price, the fact remains that this is very low as compared to the prevailing prices in neighboring countries. The International Tropical Timber Organization (ITTO) lists current prices, on average, for West African logs and timber at US$ 283 and US$ 575 per cubic meter respectively (ITTO 2019).

Lack of Fees and Taxes

Chain saw loggers and traders are not being charged any of the statutory forest fees and taxes. Instead, they only pay the FDA waybill fees of US$ 0.60 per plank—the fee that authorizes timber transport. The government earned just US$ 625,000 from waybill fees in 2008, and US$ 609,000 in 2015 (FDA 2016). However, if stumpage fees were applied at current rates, the amount payable for chain saw operations could be between US$ 6.4 million and US$ 15.0 million. The difference between what is collected and what could potentially be collected suggests that the government is effectively subsidizing the timber trade by something between US$ 5.6 million and US$ 13.2 million a year—or by US$ 65 per cubic meter on all timber sold in Liberia.

Benefit-Sharing Arrangements

Another issue is the extent to which CSM is subject to formal benefit-sharing arrangements at the local level. Waybill revenues are retained by central government, and none of this is distributed to communities. The amount of payment that chain saw loggers make to communities and to county authorities, as well as decisions about who is empowered to collect these revenues and how they are divided between the two groups, are not set, or required at any level. How much payment is made, and who benefits from this, is determined on a largely ad-hoc basis, depending on the negotiating power of the parties concerned. There are no standardized rates or levels of payments as these vary between communities.

An important source of community earnings is from the fees that are paid (either in cash or in planks) in return for granting harvesting access. CSM is carried out in a particular area by agreement between loggers and local communities. However, the amount varies widely depending on the variability in forest area and harvestable volume. It also reflects different negotiating powers of individual communities—with chain saw loggers, but also with the local authorities. In 2008, a study found that annual payments made to communities varied between US$ 130 and US$ 72,000. The highest payments were reported by communities in River Cess and Gbarpolu counties (Blackett et al 2009).

In addition, some communities complain that they receive no payment at all from the logging teams who are operating in their area, or that benefits are paid entirely to the county authorities and are not distributed or spent locally. Yet, these revenues are an important resource for communities and are used for a variety of purposes in support of local infrastructure and development activities. Emerton (2011) found several examples of the use of CSM revenues by communities included: (1) surveying and obtaining titles deeds to community land; (2) constructing schools, clinics, and community halls; and (3) building roads and bridges.

FDA Capacity

No revenue is currently generated from CSM in the rural areas by the FDA due to limited manpower and transportation to regularly patrol the forest to curb illegal commercial activities. In addition, the existing skeletal field staff of the FDA are not yet empowered or authorized to collect forest revenue on sawn timber as well as non-timber forest products (NTFPs) being commercialized in the rural areas.

The lack of capacity at the FDA is a serious matter that requires immediate intervention if it is to remain the agency for the management of the forestry sector. If the monitoring in Monrovia and other counties was effective and efficient, FDA could increase the revenue from the taxation of chain sawn timber to more than US$ 1 million per annum. In addition, this revenue could be increased if the policy on tariff to be collected from chain saw loggers included some of the taxes being paid now by the timber concession contract holders, such as the wood product fee. Other timber related industries that the FDA could also generate revenue from are wood processing and furniture industries. Currently, no revenue is being generated from these industries throughout Liberia.

CSM POLICY CHALLENGES

Several studies have been carried out with the support of the FDA to review the effectiveness of policies to address CSM in Liberia (Emerton 2011; Blackett et al 2009; Bickel and Cerutti 2017; Hooda et al 2018). In Ghana, it was noted that past policy measures to control illegal timber felling activities in the country only focused on CSM in forests and allowed the marketing of illegal products to go on unchecked.

In Liberia, it was concluded that reasons for CSM policy failures included:

1. The disparity between domestic and external market prices
2. Weak harvest control and poor supervision by the FDA which has allowed massive collusion between forestry field officers and illegal operators
3. Poor monitoring of log movements
4. High levels of waste and inefficiency in converting logs to timber
5. Loss of revenue to GoL because of non-payment of stumpage fees for trees converted into timber
6. Distorted or skewed economic rent distribution, which enables wood processors to capture the lion's share of economic rent at the expense of the forest owners and local communities
7. The construction sector and furniture makers who consume a large proportion of informal lumber (it is a source of cheap raw materials), and thus depress the demand for higher-quality and higher-priced lumber in the domestic market. Domestic sawmills are unwilling to sell into this low-priced market because of their higher costs of production.

To address the above policy failures, GoL has taken several measures (FDA 2012) including:

1. Introduction of incentives to prevent rent seeking behavior on the part of officers charged with the responsibility of controlling CSM
2. Provision of resources to state security agencies necessary for the control of overland smuggling of timber products, particularly to neighboring countries
3. Capacity building for the judiciary on the impacts of CSM and the need to enforce the law. Previously, the judges either charged low fines or freed the few suspects that were arrested.

WAY FORWARD

Problems related to CSM have their roots in: (1) poor implementation of policies; (2) inefficient management practices; and (3) a fiscal system inadequately keyed to the CSM value chain. The control of illegal pit sawing and logging aimed at guaranteeing future supply of raw materials to the timber industry for exports and to satisfy growing demands of the domestic markets should consider a focus on the following actions:

Regulate the CSM Sector

The CSM sector can be regulated by allowing CSM under permit. This is consistent with the FDA 2019, Revised Regulation No. [115-2018] which sets the parameters for the sustainable operations of CSM. Permits would be issued to communities, allowing them to negotiate with chain saw loggers for the right to harvest in the traditional areas. In addition, the policy challenges, ranging from harvesting control to monitoring and supervision to taxation and benefit sharing arrangements, as highlighted in the previous section, should be addressed.

Facilitate the Development of a Local Sawmill Industry

Almost all the wood supplied to the domestic market is from chain saw lumber. Chain saw lumber is cheap to produce and formal timber operators are unable to complete. The lumber from timber operators is more expensive to produce and they prefer to export it to markets where it can fetch higher prices. It is important to provide incentives to encourage a sawmilling industry to supply to the local market. A short-term approach could include a system of rebates on the lumber sold domestically, to make up for its higher production costs. In the longer-term, it is important to shift domestic demand (of downstream processors and final consumers) towards use of higher quality lumber. This can be influenced through information and awareness-raising programs on the economic and environmental benefits of using higher quality lumber.

Mobilize and License CSM Co-operatives

Mobilizing and licensing pit saws into co-operatives would facilitate revenue collection and control of activities. This would also prevent the current situation where there is a distorted or skewed economic rent distribution which has enabled transporters and wood processors to capture the lion's share of economic rent at the expense of the government and local communities.

Support the Liberia Chainsaw and Timber Dealers Union (LICSATDUN)

The Liberia Chainsaw and Timber Dealers Union (LICSATDUN) was established in 2008 with the mission to "*help coordinate the activities of pit-sawyers in harvesting timber for domestic and commercial purposes while observing practices on sustainable forest management as provided for in the forest law of Liberia*" (Bickel and Cerutti 2017). LICSATDUN has been involved in the VPA process and has subsequently delivered training on felling requirements and safety protocols to over 400 chain saw loggers.[6] LICDATSUN should be supported as an important institution in streamlining the CSM sector in Liberia, including in improving the quality of the chainsaw lumber.

Head office of the Liberia Chainsaw and Timber Dealers Union (LICSATDUN)

Provide Alternative Productive Ventures for CSM

These could include recovering timber offcuts in forests and assisting timber companies in timber harvesting operations in more difficult areas. It could also include the provision of wood-mizers at county level to reduce residue generation caused by converting logs to timber.

6 https://allafrica.com/stories/202012160310.html

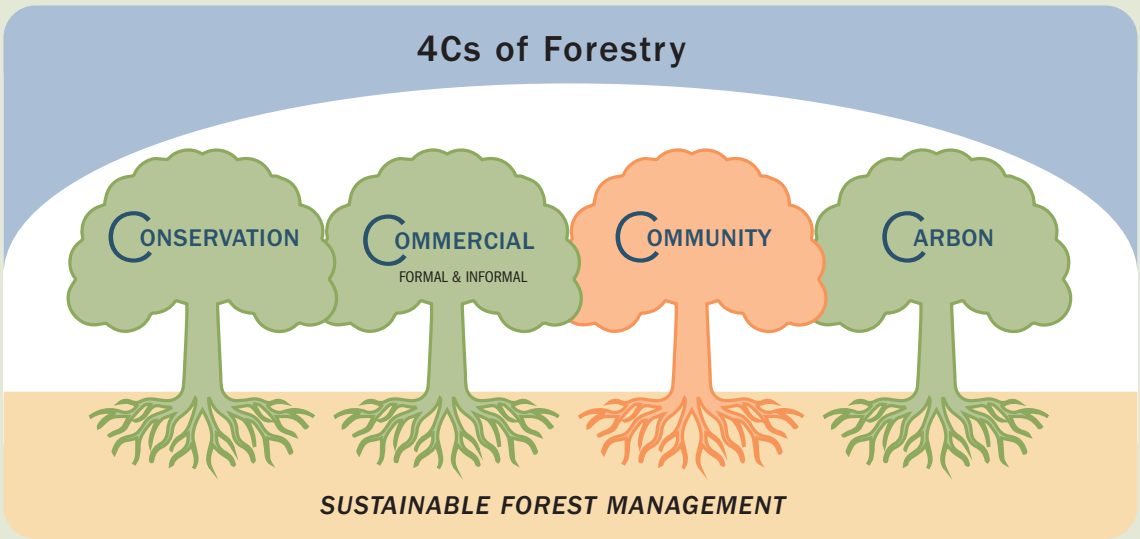
CHAPTER

5 COMMUNITY Forestry

A Blueprint for Change – The 4Cs of Sustainable Forest Management (SFM)

It is crucial that when making decisions about community forestry, all aspects of **conservation**, **commercial** and **carbon** forestry are given equal consideration.

Balancing and integrating the 4Cs of Sustainable Forest Management (SFM) can make real change happen.



Liberia's forests are under threat from overexploitation, climate change and governance related challenges. There is an excessive focus on **commercial forestry** and not enough attention is paid to the other factors that play an equally significant role. Liberia's approach to forestry is **out of balance** and **a new mindset** is needed to drive a significantly more sustainable approach to how this vital natural resource is managed.

CHAPTER CONTENT

The relationship between Liberian forests and the communities who live in the forests or nearby is closely interconnected. Forest-proximate communities are dependent on the forest for their survival and the survival of the forests is dependent on how well the communities manage the resource. This chapter presents the aims and objectives of community forestry in Liberia and while emphasizing the importance of ensuring the forestry sector supports the incomes and livelihoods of forest dependent communities.

The chapter reviews the current legislations, regulations and governance frameworks that are in place to enable local communities to manage and benefit from forest resources. There is an analysis of other forestry-related Acts, including the Environmental Protection Agency (EPA) Act and the Public Procurement and Concessions Law (PPCL), 2005. It also highlights the Community Forest Management Agreement (CFMA) process and the rights it grants to local communities. In particular, the Community Forest Contract (CFC) permit process is reviewed, and the 9-Step Application Process is described in detail.

Tenurial frameworks for land and policies can facilitate or frustrate community forestry and determine the rights of women and vulnerable groups. The chapter reviews the tenurial frameworks in place for community forestry, including the community ownership of customary land, and the customary land rights of groups, families, and individuals within forest-fringe communities. The rights of women and vulnerable groups to land and policies to access land and forest resources are discussed. The chapter recommends that to ensure equity and fairness to women and other vulnerable stakeholders, there is the need for effective consultation and a guarantee of domestic use rights. It is also important to ensure an equitable distribution of revenues.

The chapter wraps up with two sections: (1) a summary of what has been achieved so far; and (2) a discussion on the major barriers to achieving the goals of community forestry. For each challenge, a summary is provided with an outline of what can be done by the FDA and Government of Liberia (GoL) to address the problem.

COMMUNITY Forestry

Community forestry is defined as the governance and management of community forests by a community for commercial and non-commercial purposes to further the development of the community and enhance the livelihoods of community members (CRL, 2009). Community forestry can also be defined as when *"communities have the right to manage the forest resources upon which they depend, with a view to improving their living conditions"*.[1] It exists when the local community in an area plays a significant role in land use decision-making and when the community is satisfied with its involvement and benefits from the management of the surrounding forest and its resources (Roberts and Gautam 2012). The concept of community forestry is defined as a working partnership between all relevant forest stakeholders that enhances forest and wildlife resources while also equitably distributing benefits.

A community is a self-identified and publicly or widely recognized coherent social group or groups, who share common customs and traditions, irrespective of administrative and social sub-divisions, residing in a particular area of land over which members exercise jurisdiction, communally by agreement, custom, or law (CRL 2009). A community may be a single village or town, or a group of villages or towns, or chiefdom.

1 See: https://www.fern.org/publications-insight/what-is-community-forestry-2280/

COMMUNITY FORESTRY—AIMS AND OBJECTIVES

Community forestry regime in Liberia was initiated in 2001 and backed by the Community Rights Law (CRL), 2009. A community forest is an area set aside legally or temporarily by regulation for the sustainable use of forest products by local communities for non-commercial purposes, that is the conservation, management, collection, and use of non-timber forest products (NTFPs). This also includes the use of forests for other purposes such as cultural rituals, future farmland and settlement areas, and the protection of sacred sites. However, these forests can be offered for commercial purposes once communities sign a CFMA and the 9-step process of becoming an authorized forest community (AFC).

The aim of community forestry is to secure and improve livelihoods of local people dependent on forest resources by involving all key stakeholders in the forest management process. Thus, community forest management focuses more on the interests of people who live in and on the fringes of forest areas.

The objectives of community forestry as formulated under the National Forestry Policy and Implementation Strategy (NFPIS), 2006 and CRL, 2009, have been classified under three categories:

1. Enabling legal, governance and tenurial frameworks to support community forestry
2. Ensuring that local communities manage and benefit from forest resources
3. Strengthening the regulatory framework for the promotion of community rights.

Enabling Legal, Governance and Tenurial Frameworks

All the country's Constitutions have guaranteed the rights of citizens to benefit from forest resources, since they go to the core of livelihood support and are invariably linked to socio-economic development. Article 7 of the 1986 Liberian Constitution states that the Republic shall manage the natural resources of Liberia in such a manner as to ensure the maximum feasible participation of Liberian citizens under conditions of equality as to advance the general welfare of the Liberian people and the economic development of Liberia.

To implement the constitutional provision on natural resources, which includes forests, the Republic of Liberia enacted the Liberia Code of Law (1956), which envisaged the creation of native authority reserves and communal forests in addition to the creation of government reserves and national parks. However, during the formulation of the National Forestry Reform Law (NFRL), 2006 it was realized that the policies and laws governing community rights to forest resources were weak. Therefore, Section10.1.c of the NFRL, 2006 stipulated that within one year of its effectiveness date, the Forest Development Agency (FDA) had to present to the Legislature for consideration and passage a comprehensive law governing community rights with respect to Forest Lands. It took until the enactment of the CRL, 2009 that communal forests were established and the issue of community rights, benefits to, and management of community forests were prioritized in Liberia.

The goal of community forestry is to empower communities to fully engage in the sustainable management of the forests of Liberia, by creating a legal framework that defines and supports community rights in the management and use of forest resources (LRCFP 2011). The legal framework for community forestry also provides flexibility for communities and the FDA to collaborate on finding the optimal balance of rights, responsibilities, and benefits of communities in forest resource management and the recognition of community land tenure rights within communal forests. Such a provision was necessary because all forest resources on community forest lands are owned by GoL, which holds the land in trust for the local communities.

Local Communities to Manage and Benefit from Forest Resources

Another important objective of community forestry is the definition of rights and responsibilities of communities to own, manage, use, and benefit from community forestry resources whether by customary, statutory, or other tenure systems. There are three key steps needed to ensure this is achieved:

1. **The first step** is to build the capacity of communities to manage community forests. This includes the development of decision-support systems that ensure that decisions on community forests are not taken without the free, prior, and informed consent (FPIC) of the affected communities.
2. **The second step** is to establish mechanisms to promote informed and representative community participation in matters related to community forest resources governance. It is essential that a platform is created to ensure the participation of all stakeholders in the communities in the formulation of forestry policies and in the conservation and management of community forests. In addition to the need for greater involvement of local people and communities in all aspects of the forestry sector, special attention should be given to the potential for community forests to contribute more to local people and communities' livelihoods. The strategy for community forestry to maximize benefits is to focus on alternative forest livelihoods, such as the production of bushmeat, wood energy and other NTFPs (see Chapter 7).
3. **The third step** is to train local communities to manage and benefit from their community forests thereby increasing their opportunities for forest-based income generating activities. This is achieved by empowering local communities to identify opportunities, set objectives and local management rules and liaise with GoL and other interested stakeholders in the management of community forests.

Regulatory Framework for Community Forestry

The strengthening of the regulatory framework governing community forestry is another important objective. Both the NFRL, 2006 and the CRL, 2009 called for the strengthening of the FDA and defined the roles and responsibilities of the FDA as the regulatory authority and promoter of community rights in respect to community forest resources. One of such roles was for the FDA to regulate, protect, develop, and help manage forest resources located in community forests to ensure the fair and equitable distribution of their economic, social, and environmental benefits to members of the community.

Specific regulatory area that the FDA was to focus on was the management of communal forests. This included the provision for security of access by communities (Chapter 5 of CRL, 2009) to NTFPs and other forest resources plus the provision of extension and technical assistance to community foresters. The FDA was also required to establish a framework for community forest management that allows (see CRL, 2009): (1) communities to maximize benefits from all potential uses of forests and to grant user and management rights and responsibilities to them; and (2) locate and practice community forestry on communal land.

COMMUNITY FORESTRY—BACKGROUND

Community forestry is defined as any arrangement that works closely with local people in communities on activities related to forestry (FAO 1978). Community forests represent a ground-breaking recognition that communities and not the state and private companies should control forests (Global Witness 2018). Community forestry requires the development and implementation of the proper mechanisms to facilitate the process of consensus building, sharing rights, roles responsibilities and returns. In addition, community forestry creates and supports sustainable forest resource management through the strong involvement of farmers and forest fringe communities (Eben 2003).

Community forestry is a category of forestry where communities or groups of people have rights over forests or parts of forests. These rights include establishing, implementing, and enforcing rules on the access and use of those forests. These rights may be formal legal rights, traditional or customary. Customary rights may, or may not, be legally recognized by the State.

Community forestry systems may be initiated by the community or be developed because of outside intervention by governments or various development partners. Participatory Forest Management (PFM), Community-Based Forest Management (CBFM) or Joint Forest Management (JFM) can be types of community forestry if communities have rights to participate in significant decisions on how the forest is used or managed. Community forestry may include the management of natural forests and woodlands, and community or group plantations and woodlots (Blomley 2013).

The concept of community forestry is relatively new in Liberia. Yet, it is widely acknowledged to be a promising approach to participatory and decentralized forest resource management. In addition, the notion of public participation of communities in the protection and management of Liberia's natural resources (which include forests) is enshrined in the 1986 Constitution.

To operationalize this aspect of the 1986 Constitution, the FDA developed a Reforestation and Community Development Strategy (1998-2008), which recognized new challenges such as an increased demand for fuel wood and charcoal and the negative ecological effects of internationally displaced persons (IDP) camps. It also placed an increased emphasis on the practice of agroforestry and other alternative livelihood strategies to reduce pressure on forest lands (Liberia Forest Initiative 2004).

In 2001 the concept of community forestry was introduced formally in a pilot project in the Sapo National Park (SNP). This project was facilitated by Catholic Relief Services (CRS) and implemented by the Society for Conservation of Nature of Liberia (SCNL) with the support of the FDA. Community forestry was to be used on a sustainable basis to empower local communities. In collaboration with the local communities, three parcels of forest land (640 acres each) were allocated to the local communities to develop an inventory of medicinal plant species. Unfortunately, the legal instruments for the transfer of ownership to the local communities of these forest blocks were aborted by the spread of the civil war to Sinoe County in 2003.

In Liberia, the concept of community forestry and community participation in sustainable forest management was formally conceived through the forest sector reform process.

A new opportunity emerged when, in 2004, GoL launched an ambitious forest sector reform process, with one of the key highlights being participatory and community forestry. The objective of the reform process, which was led by the Liberia Forests Initiative (LFI), was to convince the international community to lift the sanctions on the forestry sector (Siakor 2017). The LFI multi-donor platform, initiated by the FDA and the US Government, brought together the World Bank and a coalition of donor governments, lending agencies, nongovernmental organizations (NGOs) and civil society participants. In committing to protect and rebuild Liberia's forest resource in a sustainable fashion, the LFI adopted the conservation, commercial, community and carbon policy model (or '4Cs') as an organizing framework for the management of Liberia's forests (see Chapter 8). Employed successfully in South Africa during reorganization of its forest policy in the mid-1990s (Underwood 1998), the approach seemed equally suitable to Liberia's particular situation. While economic hardship and income potential of timber products were perceived as integral to rebuilding the national economy, the recent conflict experience and resource degradation had revealed the urgency of balancing economic interests with ecological and livelihood considerations.

Prior to the introduction of this new concept, the FDA appeared to deal with communities in a directive top-down manner, generally employing them as hired labor to plant and care for trees rather than taking a more participatory approach to their engagement in forest management. However, following this forest sector reform process, the idea of community forestry and community participation in sustainable forest management (SFM) was formally conceived. In collaboration with the FAO, GoL developed and then published the NFPIS, 2006 (Jallah et al 2017). This was followed by the first international workshop on community forestry in Liberia. Its aim was to develop a shared vision and action framework for community forestry.

Soon after, the FDA led on the establishment of a Community Forest Management Department (CFMD). The CFMD is responsible for supporting the involvement and participation of rural communities in decision making process in the management of forest resources. Other responsibilities of CFMD include: (1) awareness creation, training and providing technical assistance to rural communities for proper management and development of communities; (2) development of community forestry extension programs for farming, marketing, business development, community organization; (3) sustainable utilization of forest resources and monitoring, evaluation and control of all extension staff; (4) establish, update and disseminate guidelines on the establishment, development, and management of community forest; and (5) collaborate with relevant government ministries and NGOs in establishing and managing community forest area and resources (Ghate 2003).

To strengthen community forestry, the FDA implemented a cross-cutting approach, which has emphasized a transparent, sustainable, and fiscally prudent forest sector management, with a view to improving the livelihood of communities in forested areas. Its objectives include building local capacity for improved forest management, establishing sustainable policies and good practices, tracking revenues, supporting a Chain of Custody (CoC) system to verify legal timber practices, while also creating a network of protected areas (GEF 2011).

COMMUNITY FORESTRY—CUSTOMARY LAND TENURE

Land tenure is commonly defined as landholding.

Customary land tenure refers to the systems that most local communities operate to express and order ownership, possession, and access, and to regulate use and transfer (Wily 2012). Customary land tenure may also refer to the rights of indigenous communities to land ownership, use and access as outlined by a related system of rules, customs and practices known as **customary law** (Knight et al 2012).

Customary law in Liberia is a dynamic system that has evolved over time, governing land relations within and between communities. Customary law is the prevailing system governing relations between forests, rural land, and the people of Liberia.

Customary land in Liberia means the land legally owned by a community which is used and managed in accordance with customary practices and norms. This land can include communal forests, wetlands, and fallow lands (Land Rights Act (LRA), 2018).

See Chapter 1 for more information on tenure.

Currently, customary land in Liberia amounts to around 55.5 percent of the total land area in Liberia. In addition, since around 90 percent of forest land deeds are collectively owned (that is under Aborigine Land Deeds), and large areas of private forestland are run according to customary law to some degree (Lomax 2008). According to Article 7.2 of the Lands Rights Act (LRA), 2018, in addition, to customary land, there are three other exclusive categories of Land ownership in Liberia: (1) public land; (2) government land; and (3) private land.

Currently, there are three types of ownership and use arrangements for customary land:

1. **Clan or Tribal Land**—Clan or tribal land is land occupied and used by native tribes according to tradition and customary law. Various Tribal Authorities administer the land on behalf of their units and may issue Tribal Certificates[2] under the provisions of the 1956 Public Lands Law.
2. **Communal Land**— According to Article 5.4 of the Lands Rights Acts (LRA), 2018, Land ownership may be held singly or jointly by individuals, or collectively by a community as a communal property or GoL as public assets. Article 33.1 of LRA, 2018 further states that a community's ownership of a Customary Land is and shall be a communal property. Communal land is one in which a **right of commons** may exist within a community where each member has a right to use independently the holdings of the community. For example, members of a community may have the right to graze cattle on a common pasture.[3] Communal land is considered a social resource and often has some religious significance. Individuals may become conscious of their place in the community through their relationship with the land. An important fact to be noted under the communal systems is that non-members of the community are excluded from using the common areas (Asperen 2007).
3. **Non-Member Usufructuary Land**[4]: Under the customary setting, this is referred to as the right to use by a community non-member. A holder of use right may not have the right to own, sell or lease the property. Non-members of a community may have rights to use communal property under certain special arrangements, including duration of use and type of activities to carry out on the land.

Under the customary tenure system, the primary basis for accessing land is through group claims held by families, quarters, or towns (Namubiru-Mwaura et al 2012). Individuals within the group gain seasonal or permanent rights to shares of land within the larger claim.

Access to land allows people to invest in growing food

2 Tribal Certificate: Means a legal document issued by a tribal authority under the provisions of the 1956 Public Lands Law.

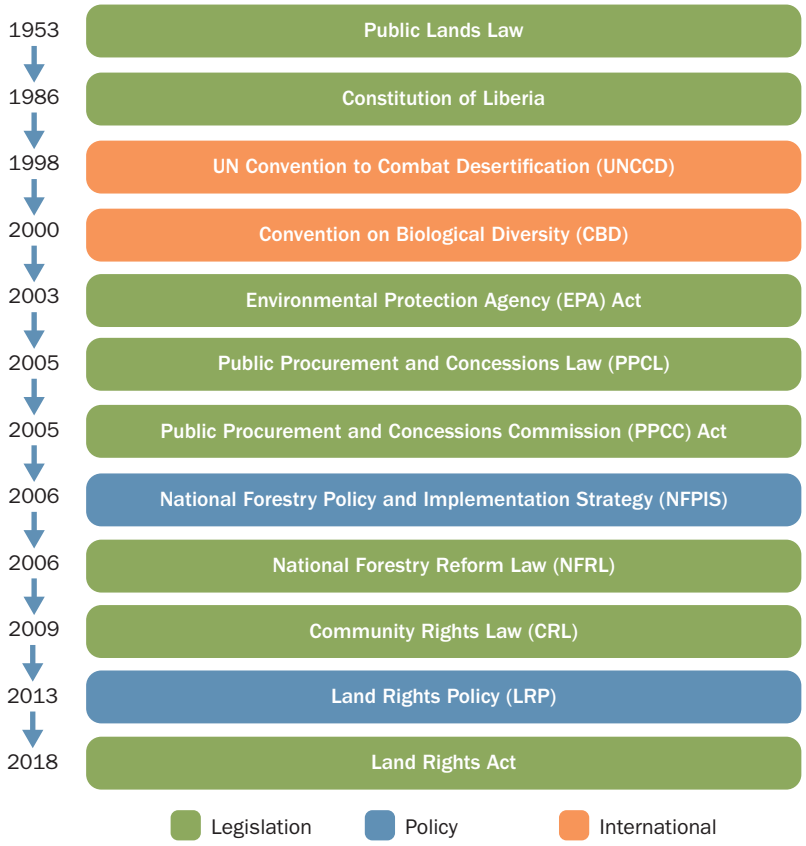
3 See: https://www.ecolandproperty.com/land-tenure-system/

4 Access to land is through the right of avail, which is a general right held by the community, but in which every member automatically participates. In this sense, under customary tenure of the communal type, land is owned by the community and the individual members enjoy only user rights, otherwise known as usufructuary rights, based on accepted membership to the community.

COMMUNITY FORESTRY—POLICY AND LEGISLATION

The following section outlines the policies and laws that have been promulgated and the objectives for which they were passed. The chronological development of policy and legislation of community forestry is presented in Figure 5.1.

Figure 5.1 Community Forestry—Policy and Legislation Timeline



Community Forestry—Policy

2006—National Forestry Policy and Implementation Strategy (NFPIS)

The 2006 National Forestry Policy and Implementation Strategy (NFPIS) came out of the forest reform process initiated by the FDA and GoL in 2004. Its objectives in relation to community forestry included maximizing the benefits of the forestry sector for the Liberian society, with a special emphasis on the contribution of the sector to poverty alleviation. It also sought to balance and integrate the commercial, community and conservation uses of Liberia's forests, so that they could continue to produce vital environmental goods and services, as well as support the economic development of the country.[5] There are three key principles embedded in the strategy: (1) it is one of the rural development and conservation approaches; (2) its implementation requires sustained investment, learning and adaptation; and (3) its benefits require maintenance and proper management of the resource (Sustainable Development Institute 2006).

To achieve these goals, increase food security, and optimize the economic, social, and environmental benefits from Liberia's forest resources, GoL has pledged to:

5 See: http://extwprlegs1.fao.org/docs/pdf/lbr148345.pdf

- Maximize the contribution of the forestry sector to income, employment, and trade through the development of appropriate processing activities
- Ensure the establishment of a framework for community forestry
- Empower local communities
- Facilitate the provision of extension and technical assistance in community forestry
- Encourage the practice of community forestry on communal land
- Initiate and implement programs to support income generating activities in rural communities as an alternative to commercial hunting.

The involvement of local people in all aspects of the forestry sector is fundamental to strategic aims of this policy. The production of bushmeat, wood energy and other NTFPs, as well as the management of forests by local communities to meet a variety of differing objectives is one of the key policy objectives. The policy encourages rural extension services to promote the use of wood energy and NTFPs as an alternative livelihood for rural communities and to adopt improved technology in the production and utilization of wood energy. The policy aims to increase community participation in wildlife management in all forest areas and to improve alternative livelihood opportunities to reduce rural dependence on forests and wildlife. It seeks to provide technical and financial support to local communities to manage wetlands and mangroves. It also aims to encourage private sector investment in community-based ecotourism and nature tourism.

Through the NFPIS, GoL is granting more equitable access to forest resources to communities to reduce the potential for future conflict and sharing the benefits from forestry development throughout Liberian society (see Chapter 3). The NFPIS facilitated the development and implementation of an effective production monitoring system, a mechanism to share the benefits from forest concession activities between GoL, private sector, and local communities. The NFPIS also ensured the development of appropriate mechanisms and incentives to encourage involvement of the private sector and local communities in reforestation.

The NFPIS also places premium on public awareness of forest conservation issues including improving the skills of all stakeholders to raise forest management to an international standard, through professional and on-the-job training. The implementation of the policy was done jointly by GoL, NGOs and community-based organizations (CBOs) so that Liberia's forests can contribute to the welfare of every Liberian citizen. GoL ensured that all stakeholders participate in the formulation of forestry policies and in the conservation and management of the forest resources for improved transparency and accountability.

2013—Land Rights Policy (LRP)

In 2013, the Land Rights Policy (LRP) was introduced. Its aim was to formalize the status of customary lands. The LRP, 2013 contained four important policy recommendations.

Community Ownership of Customary Land

This is formalized by the issuance of a deed to a legal entity, bearing the name of the community. The name of the community is decided by a process that is fully representative and accountable to all community members, including women, youth, and minorities. The community, as a legal entity, has legal personality allowing it to agree contracts, own land, and participate in court actions or proceedings before alternative dispute resolution bodies. The deed allows private ownership by the community but only if all community members (including women, youth, and minorities) are fully involved in decision-making on management, use, and transfer. Decisions or actions without this inclusive involvement are prohibited.

Ownership of Customary Land

This includes ownership of natural resources on the land, such as forests, including carbon credits, and water. In accordance with the Constitution, GoL continues to have exclusive ownership rights over minerals resources that lie on or under the land or sea and waterways. GoL also has authority to regulate natural resource use and access, consistent with customary ownership rights and legal due process.

Customary Land Rights of Groups, Families, and Individuals

This is decided by the community in a way that is fully representative and accountable to all community members, including women, youth, and minorities.

Women's Rights to Land

The policy draws attention to the need of women to have rights to land. However, it does not contain any concrete measure to guarantee that they do not lose out under customary land law.

Community Forestry—Legislation

1956—Public Lands Law

The first law in Liberia to grant concessions to customarily owned land was the Public Lands Law, 1956 (Chapter 5, Section 70). This Law gave the President authority to lease any portion of public land not appropriated for other purposes to foreigners (Wily 2007 p137).

1986—Constitution of Liberia

The Liberia Code of Law (1956) permitted the creation of Government Reserves, Native Authority Reserves[6], Communal[7] Forests and National Parks. However, few Native Authority Reserves and Communal Forests ever materialized. Consequently, GoL managed the entire forest estate, and the issues of community forestry were never properly addressed. To overcome these challenges, the 1986 Constitution of Liberia mandated the public participation of communities in the protection and management of the environment and natural resources of Liberia. Article 7 of the 1986 Constitution of Liberia states that:

"The Republic shall, consistent with the principles of individual freedom and social justice enshrined in this Constitution, manage the national economy and the natural resources of Liberia in such manner as shall ensure the maximum feasible participation of Liberian citizens under conditions of equality as to advance the general welfare of the Liberian people and the economic".[8]

6 Native Authority means a Local Authority, Village Council or area controlled by Traditional Rulers. Among the powers and functions of the Native Authority, a vital function was tax collection

7 The Land Rights Act, 2018 treats Customary (Communal) Land as private land, even though it is held under communal ownership. Customary lands held under communal ownership have and will be administered and managed according to customary norms and practices. Communal Land is a type of common pool resource.

8 See: https://constitutions.unwomen.org/en/countries/africa/liberia

2003—Environmental Protection Agency (EPA) Act

The Environmental Protection Agency (EPA) Act was enacted in 2003 to establish the Environmental Protection Agency (EPA) and to clarify its role in implementing national environmental policy and sustainably managing Liberia's natural resources. The Act also established community wildlife areas which allow some level of harvest from wildlife (Section 80). It directed the EPA to develop conservation measures to ensure the co-existence of communities and wildlife in wildlife management areas. In addition, it required the EPA to take the interests of local communities into account when designating rivers, lakes, or wetlands as protected areas (Section 75(4)).

2005—Public Procurement and Concessions Law

This law established the general provisions for procurements and concessions in community forestry and created a committee to ensure compliance. However, the law did not provide a mechanism for making sure that land granted as a concession is unencumbered[9]. It also did not provide a right of review to those whose use of the land is affected. Among many tribal communities, discontent arises when their land is granted to concessionaires, and this is made worse by various examples of tribal land being taken for purposes that never come to fruition. There is the need to ensure that the requirement for FPIC under Chapter 2, Section 2.2 (c) of the CRL is enforced.

2005—An Act Creating the Public Procurement and Concessions Commission (PPCC), Amended and Restated in 2010

The 2005 Public Procurement and Concessions Commission (PPCC) Act, which was amended and restated in 2010, creates the PPCC as an autonomous entity to regulate all forms of public procurement and concessions and provide for institutional structures for public procurement and concessions. The PPCC Law, 2005 as amended in 2010 stipulates methods and procedures for public procurement and concessions processes. Section 46.4 of the Act titled "Choice of Procurement Methods" stipulates that the local community may participate in the delivery of services, where it is established that the participation of the procurement beneficiary local community may result in enhancing the economy, quality, or sustainability of the service to be procured, or the very objective of the project is to create employment and involvement of the beneficiary community. Section 91.b of the PPCC Law, 2005 also mandated the PPCC to organize a Stakeholder Forum at which the Concession Entity shall at least provide information on the extent of investment or private resources (such as financial and human) to provide for the needs of the community.

2006—National Forestry Reform Law (NFRL)

To fulfill the obligations of Article 7 of the 1986 Constitution, GoL enacted the NFRL, 2006, which amended the National Forest law (NFL) of 2000. One of its aims was to set out the broad implementation guidelines for community participation in forest management. The preamble of NFRL, 2006 defined communal forests as areas set aside by statute or regulation for the sustainable use of forest products by local communities or tribes on a non-commercial basis. It defined community forestry as the governance and management of forest resources by communities for commercial and non-commercial purposes to further their own livelihoods and development (FDA 2009). It was also worded to allow community forestry to use forests for commercial and non-commercial use. *Community* in the sense of community forestry meant a group of locally based residents who share a common interest in the use and management of forest resources, with traditional or formal rights to the land and the forests on it (Brown Undated).

9 Unencumbered refers to an asset or property that is free and clear of any encumbrances, such as creditor claims or liens. An unencumbered asset is much easier to sell or transfer than one with an encumbrance.

Section 10.1 of NFRL, 2006 placed a duty on the FDA to use regulations to grant user and management rights to local communities, transfer control of forest resources to them and build their capacity for sustainable forest management. These regulations aimed to specify community rights, responsibilities of ownership and use of forest resources and to establish mechanisms for informed participation, access, and capacity building. The FDA was also obliged to present to the Legislature a Community Rights Law in respect of forest lands (Section 10.1c of NFRL, 2006).

However, the supremacy of GoL's rights was also expressed in Section 10.3 of the NFRL, 2006. This section superseded the rights of any traditional owners and occupiers of land in respect of prospection, extraction, usage, and exportation of forest resources. It did not give GoL the ownership of the forest land itself, but it allowed GoL (or those to whom it has sold permits to) to exploit forest resources regardless of the legal or customary landowners' wishes. In return, compensation for disturbance and damage to property was to be given, but not for the loss of the benefit and use of the land.

2009—Community Rights Law (CRL)

In 2009, a Community Rights Law (CRL) was enacted to give power to communities so that they can carry on complete and sustainable control of the forests of Liberia. The Law allowed communities to sign commercial contracts for the harvesting of timber and other forest products in community forests, while acknowledging those communities' historic right to use the land. While the law did not grant communities full ownership rights to the land, as would exist under a fee simple deed, it did recognize communities' rights to community forest land and ownership over all forest resources on that land. It also stipulated that any decisions or agreements pertaining to that land required the consent of the community to proceed.

The CRL, 2009 stated that all forest resources in Liberia, regardless of who owns them, should be regulated, promoted, and protected by the FDA for the benefit of the people (Section 2.2 of CRL, 2009). However, this did not apply to forest resources located in community forests and forest resources that were developed on private or deeded land through **artificial regeneration** (Section 2.1 of the NFRL, 2006). Any decision, agreement or activity affecting the status or use of community forest resources should also not proceed without the prior, free, informed consent of that community.

The CRL, 2009 also outlined the rights and responsibilities of local communities with respect to community forests, including the right to control the way community forest materials are used. The Law created the legal framework to support these rights and responsibilities and gave them the right to sign what is called small-scale commercial agreements or contracts with any company so that they can sustainably log their land. There are four types of forest resource licenses (FRLs):

1. Forest Management Contracts (FMCs)
2. Timber Sales Contracts (TSCs)
3. Forest Use Permits (FUPs)
4. Private Use Permits (PUPs).[10]

The Law also required the establishment of community governance structures for the sustainable management of community forest resources.

The CRL, 2009 further stated in Section 10.1 that management of natural resources should be based on principles of Conservation, Community, and Commercial Forestry. The FDA should also ensure that local communities are fully engaged in the sustainable management of the forests of Liberia, they are granted user and management rights, the control of forest use is transferred to them, and their capacity to sustainably management forests is improved.

The FDA was also bound to give formal permission in writing for any forest activities (Chapter 11, Section 11.5 of CRL, 2009). Activities that need written permission include:

10 See: https://forestlegality.org/risk-tool/country/liberia

1. Prospection, logging, or hunting
2. Clearing trees, shrubs, or other obstacles, or cut wood on land not covered by the Holder's license
3. Building hydropower facilities or otherwise harness the power of moving water
4. Building electrical plants
5. Building or operating facilities for the preparation, concentration, or chemical treatment of wood
6. Developing infrastructure such as roads and canals
7. Building seaports, river ports or airports.

Finally, the Law clarified what happens to assets when the usage rights are terminated (Section 12.3 of CRL, 2009). The Law states that:

- All fixed assets installed by FRL holders on GoL-owned forest land become the property of GoL
- All moveable assets of FRL holders remain the property of the holders.

2018—Land Rights Act (LRA)

The most recent law relevant to community forestry and customary land ownership is the Land Rights Act (LRA), 2018. This Law recognizes four categories of land ownership. These are:

1. Public
2. Government
3. Customary (clan and community forests)
4. Private lands, with customary lands sharing the status of private lands.

International Agreements

Liberia has also signed two international agreements that address community-based natural resource management and to that extent is bound by them under international law. However, Liberia has not yet taken the steps to incorporate them into Liberian law.

1998—United Nations Convention to Combat Desertification (UNCCD)

The United Nations Convention to Combat Desertification (UNCDD) aim is to protect and restore land using partnership, partnership, and decentralization.

2000—Convention on Biological Diversity (CBD)

Liberia signed the Convention on Biological Diversity (CBD) in 2000.

- Article 4 requires signatories to sustain and strengthen reforms toward greater decentralization and resource tenure and to reinforce the participation of local populations and communities in the fight against desertification.
- Article 8 requires signatories to adopt national action programs aimed at ensuring the active involvement of local populations, communities, and groups in implementation measures, with an emphasis on education, training, and the mobilization of non-governmental organizations.
- Article 14 requires signatories to promote public participation in environmental impact assessments for projects that are likely to have significant adverse effects on biological diversity.

COMMUNITY FORESTRY—RIGHTS AND PROCESSES

CFMA Process

The rights of communities within the Community Forest Lands (CFL), which is outlined in Section 3.1. of the CRL, 2009, include the right to: (1) control the use, protection, management and development of the forest resources within the CFL; (2) enter into small-scale community timber and non-timber harvesting contracts; (3) negotiate and enter into social contracts with concessionaires licensed by the FDA to operate within the CFL; (4) at least 55 percent of all revenues and incomes accruing from large-scale commercial contracts between communities, FDA and third parties for the harvesting of timbers within CFL; and (5) full management of forest resources based on policies and technical specifications issued by the FDA.

To formally claim management responsibility for its forests, the CRL, 2009 states that, a community must follow these procedures (FDA 2017):

1. Establish a Community Assembly (supervised by an Executive Committee). This Community Assembly is the highest decision-making organization in the community for matters related to forestry.
2. The Community Assembly must consist of adults over 18 who are resident in the community and be representative of gender and all social groupings.
3. Meet twice a year.
4. Develop a vision of community forest management
5. Approve a set of Constitutions and regulations that will govern the vision of community forest management. These rules and regulations must be consistent with the Constitution and Laws of Liberia and with the FDA regulations.
6. A five-member body must be appointed by the Community Assembly. Known as the Community Forest Management Body (CFMB), its role is to manage the day-to-day affairs of the AFC. They are also mandated to elect an Executive Committee which is authorized to oversee the CFMB between sittings of the Community Assembly.
7. Develop a Community Forest Management Plan (CFMP) approved by the Executive Committee, the Community Assembly, and the FDA. The CFMP must establish how a specified area of forest resources will be accessed, used, managed, and protected, as approved by the FDA.
8. The CFMB with the approval of the Executive Committee shall establish a Community Forest Fund sourced from commercial uses of forest resources, for the purpose of depositing and disbursing funds accrued from forest-related activities.

CFC Permit—9-Step Application Process

The CFC is one of three active forest permits given out by the FDA. The CFC recognizes communities as permit holders and provides managerial rights over the forest for a period of 15 years with the freedom to choose forest use.

To apply for a CFC forest permit, communities need to submit to a 9-step participatory application process.[11] This process requires them to do a socio-economic and resource survey, select the area for the permit, ensure there is a process for conflict resolution, set up community governance bodies, and create a CFMA. Upon successful completion of the CFC application process and the signing of the CFMA, the authorized communities, through their community governance bodies, decide upon the preferred forest use which is worked out in more detail in a CFMP. If approved by most of the community and the FDA, the 15-year CFMP is then implemented with technical assistance from the FDA and implementing partners (Gill 2017).

11 See: https://www.darwininitiative.org.uk/documents/DAR13008/3153/13-008%20AR1%20Ann%201%20CF_Manual_LFRfinal.pdf

The detailed 9-step application procedure to AFC status is as follows:

Step 1

Application to FDA for AFC status

The regulations of the CRL, 2009 outline that the process to establish an AFC, is initiated by either by the community through the submission of a written application letter to the FDA or *suo moto*[12] by the FDA. The community must state in the letter the location of the forest land area. It must also provide information on the community's way of life, including information on how the community uses, preserves, and develops forest resources in the area. Chapter 2, Section 5 of the RCRL, 2009 indicates that the community must pay a US$ 250 application fee prior to the processing of their documents. Once this application is submitted, an FDA official and the Community Forest Working Group will assess the application and advise the Managing Director of FDA whether the community has met all application requirements. The Managing Director of the FDA issues a letter to indicate whether the community can proceed to the other steps.

Step 2

Notice to undertake a socio-economic and resource survey

A 30-day notice is given to the community and neighboring communities prior to the period of the socio-economic survey. The notice is served on the recognized leader of the community by the FDA. This notice must conform to the requirement for FPIC under Chapter 2, Section 2.2 (c) of the CRL. It is also an explicit requirement under Section 2.6 of the CRL Regulation (Meadows and Litz 2017).

Step 3

Socio-economic and resource survey

Chapter 2, Section 6 of RCRL, 2009 requires the FDA to collaborate with community members to undertake a socio-economic profile reconnaissance survey of the area which the community wants to use for its forestry program. Representatives of adjacent communities are allowed to cooperate with the FDA in the socio-economic reconnaissance survey. The survey should cover the land, resources on the land, the people and their livelihoods, and their relationship to the land and its forest resources.

Step 4

Notice to undertake a demarcation and mapping survey

Chapter 2, Section 9 of RCRL, 2009 mandates the FDA to grant a 30-day notice to the community and adjacent communities prior to the date of the demarcation and mapping survey. The notice, which should be in a form that the communities usually receive public information, must be served on the recognized leaders of the communities by the FDA. According to Meadows and Litz (2017), the notice is to ensure there is no confusion, conflicts or competing claims on or about the area of forest resources being proposed as a community forest.

12 An action taken by a regulatory body of its own accord, without any request by the parties involved, in this case the community.

Step 5

Demarcation and mapping survey

Following the end of the thirty (30) day notice period, the RCRL, 2009 mandates the FDA to collaborate with the community to survey and demarcate the community forest area that the community wants to be given management and user rights. The survey must result in a map scaled 1:5000 that shows the exact area delimited and shows the adjacent areas must be produced. Chapter 2, Section 8 of RCRL, 2009 further mandates the FDA to identify other relevant government agencies to involve in the demarcation process, including but not limited to, the Ministry of Internal Affairs (MIA), the Ministry of Lands, Mines and Energy (MLME), the Land Commission (LC), and the Ministry of Agriculture (MOA).

Step 6

Survey results

After completing the two surveys, the results of these two exercises are posted by the FDA to the applicant and nearby communities to review for a period of 30 days (Global Witness 2018). Next, the FDA arranges a meeting with communities to explain the results and technical details, answers any questions that community members may have, and to verify that the data from the survey and report on the demarcation and mapping are accurate.

Step 7

Third party objections

At the end of the required 30 day period, communities may either proceed to Step 7 or Step 8 depending upon the outcome of posting the results from the survey and report on the demarcation and mapping of the areas of forest resources proposed for the community forests (Meadows and Litz 2017). Chapter 2, Section 11 of RCRL, 2009 states that third parties may object to the application and objections must be dealt with by the FDA within 30 days of receipt if they relate solely to forest resource matters. If there are wider issues, then other relevant agencies (such as MIA, MOA, LC, Ministry of Justice, and MLME) must respond within 90 days.

Step 8

Application for AFC status

In the absence of any official objections and following the successful identification, assessment, and demarcation of the forest area, the FDA directs the community to apply for AFC status. This step allows the community (in collaboration with the FDA) to develop the governance structures needed to implement a CFMP. These structures include: (1) the Community Assembly (CA); (2) Executive Committee (EC); (3) Community Forest Management Body (CFMB); (4) the development of governance instruments (constitution and by-laws); and (5) the establishment of CA committees.

Step 9

Development and ratification of CFMA

Once the applicant community has formed its CA, EC, CFMB, and adopted a constitution, governing bylaws and forest rules, the FDA will issue a CFMA for review and signature—the ninth and final step of the process (Meadows and Litz 2017). Chapter 2, Section 13 of RCRL, 2009 mandates the FDA to develop and sign a contract that spells out the understanding between the community and the FDA relative to a community forestry program within a specific geographic area that the community intends to implement.

Not all applications for AFC status are approved. However, there are currently 49 approved AFCs with CFMAs in place (FDA 2022).[13]

Role of the FDA

Community forestry is aimed at re-establishing local communities as primary clients of the FDA with an absolute right to benefit from the wise stewardship of their resource. Collaboration is also expected to improve the cost effectiveness of forest management prescriptions through consultation, needs assessment, investigation, synthesis, and consensus building.

The FDA has been using a learning process which concentrates on devising effective strategies at the conceptual stages, reviewing the effective phase to make it more efficient and finally expanding the lessons learnt to cover the target area. This learning process has led to the conclusion that to ensure equity and fairness to landowners there are three main areas of concern that need to be addressed:

1. Consultation
2. Domestic use rights
3. Fair distribution of revenues.

To ensure domestic use rights and the fair distribution of revenues from timber, the FDA has instituted a Social Responsibility Agreement (SRA) aimed at ensuring that all forestry operations are carried out in a socially responsible manner with due respect for all the rights of the land-owning communities. The SRA is signed by the investor or timber contractor and representatives of the landowners and is composed of two parts:

1. **Code of Conduct**— This stipulates the way the investor or contractor must operate to ensure that all forest operations are conducted with due respect for the rights of the local communities. The code of conduct includes provisions to ensure respect for local customs and beliefs, local infrastructure, and livelihoods.
2. **Social Obligations**—These are specific agreements drawn up between the community and the contractor for the supply of materials or services over and above the legally controlled royalties and fees.

SECURITY OF FOREST TENURE

Security of land tenure in Liberia is weak to non-existent.[14] Thanks to the impacts of the civil conflict, insecurity of tenure is endemic in most parts of the country, and this impinges on both poverty reduction and economic growth. Yet, easy access to land and security of tenure are the key prerequisites for: (1) rural economic development (Deininger et al 2011); (2) enhancement of community rights; (3) reduction of disputes and conflicts; (4) minimization of uncertainty and vulnerability of the poor; and (5) promotion of sustainable forest management (SFM) (Debabrata 2016). In Liberia, local communities with secure land tenure achieve similar if not better conservation outcomes than private or state-managed protected areas and do so at a lower cost (RRI 2016; RRI 2021).

Local communities with secure land tenure can conserve forests better and cheaper than private or state-managed protected areas (RRI 2016).

13 2022. Word of mouth. Commercial and Community Forestry Departments.

14 See: https://documents.worldbank.org/en/publication/documents-reports/documentdetail/158491468050694915/liberia-insecurity-of-land-tenure-land-law-and-land-registration-in-liberia

Securing tenure is important because ownership of land in Liberia appears to have been dissociated from the forest growing on it. In addition, the use rights of communities over forests on their land are unclear. Thus, land and forest tenure and use rights are contentious issues for the communities and public agencies in productive natural resources-based sectors such as forestry, agriculture, and mining (USAID 2010).

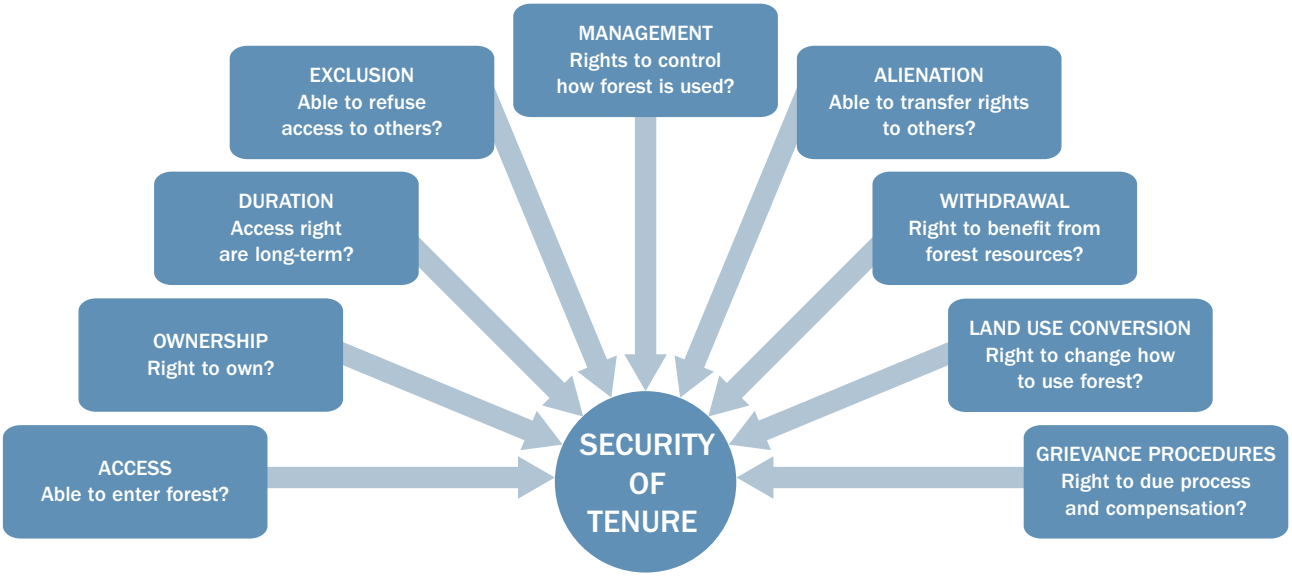
The disincentives to land investments in Liberia stem primarily from tenure insecurity resulting from conflicts between formal and customary tenure systems, and poor land administration system (Unruh 2007). Current insecurity reaches beyond groups normally identified as particularly vulnerable (that is the poor, illiterate, displaced communities after the conflict, rural communities, forest-based communities, tenants, sharecroppers, and women. The inability of land rights institutions to perform in an effective, legitimate, equitable manner also promotes insecurity of tenure (Unruh 2009), lack of protection of land rights, weakening of domestic use rights (DURs) and abuse of traditional and institutional procedures (Unruh 2009).

However, both policy and law in Liberia is strong when it comes to supporting security of tenure. The Land Rights Policy (LRP), 2013 highlights the principle of tenure security as the basis for sustainable economic growth and development in Liberia (LTS and NIRAS 2016). In addition, the Land Rights Act (LRA), 2018 establishes the legal framework for securing customary collective community land and resource rights for Liberians strengthening the security of tenure for them.

Enabling security of tenure needs more than just strong policy and legal frameworks, a broad framework of community rights to manage, use and extract must also be in place. Figure 5.2 presents nine questions that can be used to identify the level of security of tenure a community is experiencing, and the existence of FPIC during expropriation of community Forests. The ideal is a positive response to all nine questions. The more negative responses there are, the less empowered a community is to manage the forests it is dependent on.

Members of the Jogbahn Clan learning about land rights

Figure 5.2 Security of Tenure Questions



Source: Personal communication with Thea Hilhorst, World Bank 2022

GENDER DIMENSIONS

Gender is understood as the socially constructed ideas and practices of relations of power between women and men that are sanctioned by cultural, political, and economic institutions (Elmhirst 2011). The 1986 Constitution of Liberia prohibits discrimination based on ethnic background, race, sex, creed, place of origin, or political opinion, but gender-based discrimination still exists in the country. See Chapter 1 for more information on the history of gender and forestry in Liberia.

Gender and Forestry

Gender-based discriminations are encountered within the forestry sector. Although women's knowledge and use of forests are important for forest conservation and management, their voices have long been devalued in forest management decisions (Mai et al 2012). Different social groups in local communities have a variety of conflicting interests with respect to community forestry. For migrants, who have limited access to lands outside protected areas, participation in community forestry has enormous benefits. Similarly, landless indigenes in local communities, especially young people who are yet to inherit any family land, see participation in community forestry as a means of establishing themselves. Traditional authorities and older more established indigenous people may claim priority access to community forest areas and have an interest in marginalizing migrants and young people, as these groups are a source of labor (Milton 1994; Lindberg 2014).

A deeper understanding of local power relations and social dynamics is needed to foster gender and social equity in the forestry sector in Liberia.

Such an analysis can help decision-makers avoid risks to already vulnerable people and the forest resources on which they depend (Onzere et al 2020).

Women farmers are often marginalized because they are viewed as less capable and are regularly excluded from decision-making processes on forest resources. They tend to have few rights to forests or ownership of forests, and they benefit less than men from forest use, especially commercial wood harvesting. In addition, women are financially less sound as men and therefore command fewer labor resources to invest in forest-based enterprises. However, women play an important role in managing the forests that support their lives, livelihoods, and households. In addition, they possess unique knowledge and skills that can help improve forest management, because they tend to use different forest resources (such as forest food, plant medicine and other NTFPs) than men.

Beneficiary of women economic empowerment scheme, Lofa County

Significant regulatory and social changes are needed to change these gender-based discriminations. A deeper understanding of local power relations and social dynamics is needed to foster gender and social equity. Such an analysis can help decision-makers avoid risks to already vulnerable people and the forest resources on which they depend (Onzere et al 2020).

There is increasing recognition of gender-differentiated roles and responsibilities in community forestry in the country. Women are more and more being identified as change agents and ecofriendly managers who can influence the development and deployment of solutions. Nevertheless, there are still multiple gender gaps that need to be addressed. These include gender gaps related to participation, leadership, tree and land tenure rights, forest use, division of labor and workloads, skills, ecological knowledge, access to technologies and inputs, access to information, access to benefits, control over project benefits and income, access to credit, access to markets, access to employment opportunities, and policy engagement (Kristjanson et al 2019).

Barriers to Participation

As Liberia takes steps to enhance community forestry and strengthen local forest governance mechanisms, it is important that the barriers faced by women are understood. Decisions made at both national and community levels need to protect women's access to forest resources. Community forestry can also benefit from women's wisdom on sustainable management. Barriers to women's participation in community forestry include the following:

- **Gender-based discrimination**—The Constitution prohibits discrimination based on ethnic background, race, sex, creed, place of origin, or political opinion, but gender-based discrimination still exists in Liberia.
- **Poor educational status**—Before the outbreak of the civil war, women held 25 percent of the professional and technical jobs in Monrovia. But women have not recovered from the setbacks caused by the civil war, when most schools were closed, and they could not carry out their traditional roles in the production, allocation, and sale of food to students on educational campuses.
- **Tenure and rights**—Women married under civil law can inherit land and property. However, women married under traditional law are considered the properties of their husbands and are not entitled to inherit from their husbands or retain custody of their children if their husbands die.
- **Highly centralized political structure and weak administrative governance**—This has affected governance and participatory development at the local level and has hampered also the involvement of women and other disadvantaged groups in decision-making at the local level. Local governments lack institutional capacity, structured local administration, and qualified staff to support women and other disadvantaged groups (The Hunger Project 2020).

WHAT HAS BEEN ACHIEVED

Strengthened Legal framework for Community Forestry

The legal framework for community forestry in Liberia has become more robust and efficient (O'Hagan et al 2020). In addition, the legal framework now enables GoL to confer community forest titles to communities (Yiah 2020).

However, its implementation needs to be further strengthened to address conflicts over land and resources that have pervaded the Liberian Community Forestry sector for decades, especially in instances of expropriation of land (O'Hagan et al 2020). In addition, the relative ease with which community forests are co-opted by logging companies and local elites for narrowly commercial and unsustainable ends urgently needs to be addressed.[15]

Establishment of Community Forests

The CRL, 2009 established community forests across the country. To date:

- A total of 49 Community Forest Management Agreements (CFMAs) have been signed, as required by the CRL, 2009. Together, these CFMAs cover a total of about 1,075,508 hectares.
- Of the 49 signed CFMAs, five CFMAs (25,367 hectares) are focused purely on conservation.
- Two CFMAs statuses have not been fully defined yet.
- The remaining 42 CFMAs have signed Commercial Use Contracts (CUCs) or third-party.
- A total of 128 applications are pending.[16]

15 See: https://www.globalwitness.org/en/campaigns/liberia/changes-needed-liberias-legal-framework-governing-community-forestry/
16 Saah David, National REDD+ Coordinator and Author. FDA, Liberia

Strengthened Local Communities Engagement

In the post-conflict environment of Liberia, community forestry has been identified as a means of maximizing the engagement of local communities in forest management initiatives (O'Hagan et al 2020). The FDA in collaboration with the Sustainable Development Initiative (SDI) and local communities facilitated the formation of the National Union of Community Forestry Management Bodies (NU-CFMB). The NU-CFMB has contributed to the evolution of a progressive community forestry model and platform for engagement in Liberia (SDI 2017). The strengthening of community engagement by FDA has resulted in strengthening of community governance structures and formalization of genuine control of community operations in their forests. This includes access on their own terms to expertise on legal issues, forest management planning, mapping, and resource assessment.

Enhanced Participatory Forest Management

The community forestry framework in Liberia has facilitated Participatory Forest Management (PFM) in the country. With the help from NGOs, the local communities have been able to launch sustainable forest-based enterprises that provide additional income generating employment opportunities and help to achieve poverty alleviation (Clement 2019). The PFM approach ensures that the implementation of the community forestry programs is in the best interest of the local community. The NGOs are guaranteeing, under the implementation of the PFM approach, that a full and effective regulatory framework is in place, along with associated guidance, templates, technical assistance, transparency, and accountability mechanisms (Global Witness 2018).

COMMUNITY FORESTRY—CHALLENGES AND WAY FORWARD

The implementation of community forestry is now well accepted at the policy level. In addition, Liberia has one of the most effective legislative enactments to support community forestry. Nonetheless, the successful implementation of community forestry in Liberia faces a range of challenges. This section discusses ten key challenges and provides recommendations on how best to address them.

> Forestry governance reforms that recognize the rights of communities are a key to the goal of sustainable forest management.

Gender Rights

Local power relations and social dynamics have a huge impact on the potential success of community forestry. It is crucial that gender disparities are addressed. This is discussed in greater detail in the section above.

WAY FORWARD

To bridge gender disparity and to alleviate women's vulnerabilities in natural resource utilization and management, nine recommendations are suggested:

1. **Inclusive participation**—Promote mechanisms for the active and full participation of women in community forestry.
2. **Gender responsive communication**—Develop a gender responsive forestry and natural resources (FNR) communication strategy. Ensure that information relating to project activities reach both men and women, as well as preparing women to effectively participate in the resource management process.

3. **Target women in communities**—Education and awareness building on FNR issues should target all women in the community including existing women's organizations.
4. **Economic and social empowerment**—Support the economic and social empowerment of women and girls and help them to develop livelihood enhancing activities.
5. **Strengthen the health sector**—Support the health sector to provide a more effective and efficient response to gender-based violence (GBV) case management, documentation, and reporting on clinical evidence within forest fringe communities.
6. **Reform the legal system**—Reform the legal system to deal more efficiently and expeditiously with violence, particularly with the security of women and girls.
7. **Appropriate gender-focused FNR skills development**—Provide appropriate gender-focused skills to FNR, social and health professionals.
8. **Provide gender-inclusive project information**—Ensure that information relating to project activities reach both men and women, as well as preparing women to effectively participate in the resource management process.
9. **Promote alternative energy sources**—Alternative sources of energy and more efficient use of fuel wood will free up women's time so that they can engage in other productive and income generating activities.

Community Rights Procedures

Almost 3 million hectares of forest (in the 'non-designated' category of forested land) have the potential to come under community management (Hooda et al 2018). While it is too early to say how much of this land would be allocated for commercial logging by communities, it is possible that more than 1 million hectares could be placed under active commercial concessions (Hooda et al 2018). Commercial timber harvesting in the AFCs is subject to almost the same requirements as under the FMCs. Therefore, community forests have the potential to significantly contribute to the development of communities through the provision of secure incomes and employment, as well as providing revenue for GoL.

WAY FORWARD

Make the 9-Step AFC application process easier and build the capacity of the FDA to implement this process.

It is crucial to build the capacity of the FDA, particularly the Community Forestry Department, to manage efficiently the AFC application process, including through outsourcing activities to technical service providers. In addition, there is the need to promote investments in building the capacity of the governance structures at the community level to facilitate the AFC application process. It is important to strengthen the policy and legislative frameworks by ensuring coherency (removing contradictions) of existing legal and regulatory frameworks. There is also the need to provide transportation, access to markets, and the promulgation and enforcement of appropriate regulations to establish community forests. These actions are needed if communities are to realize the economic benefits and sustainably manage their forest resources.

Security of Tenure

In the past, traditional land and tree tenure systems were incorporated through cultural norms, traditions, and beliefs into everyday life (Marfo 2009). This ensured that forests and trees were protected. However, increasing population pressure, land shortage and cultural changes have reduced the effectiveness of these systems (Agyeman 1994). The legitimate quest for land by local communities and migrant farmers to meet their basic needs in face of limited land supplies in certain forest fringe communities, partly brought about by the arbitrary creation of protected areas, is likely to result in massive deforestation in some areas (Kasanga 2002).

GoL passed the LRA, 2018 to rationalize the plurality of rules and sources of authority (both customary and statutory) to encourage security of tenure among all people. However, according to O'Mahony (2019) the LRA, 2018 has some challenges. For example, even though the LRA, 2018 has converted Customary Land into Private Property, the legislation is flawed for those living on the quarter of the country's land set aside for concessions, as the law does not take retroactive effect. The law will not apply to individuals residing in thousands of villages situated close to oil palm concessions in the country. This is due to the fact, GoL wanted to preserve the sanctity of Private Property Contracts, and thus was reluctant to abrogate Oil Palm Private Property Contracts or Concessions.

WAY FORWARD

Strengthen the LRA by addressing its flaws, including its possible retroactive application to those living on the lands earmarked for agricultural concessions.

Compulsory Acquisition of Land

A critical land-related issue, which influences the development of community forestry, is the compulsory acquisition of land and its tendency to promote conflict. Even though the powers of compulsory acquisition have not been fully used by various governments in Liberia, the provisions in respect of compensation payments have been largely ignored or inadequately catered for (Kasanga 2000). Even where compensation has been paid it has been found to be inadequate.

The lack of rationalization of procedures for the equitable distribution of customary beneficiary rights to natural resources to individual members of the community is another challenge. The LRA, 2018 was enacted to address these challenges by setting out the basic framework for the regulation of compulsory acquisition of land by the State. The LRA, 2018 makes provision for the prompt payment of fair and adequate compensation for any land so acquired. The LRA, 2018 also provides the right of access to the Court by any person with an interest in or right over a property for the determination of the person's interest or right or the amount of compensation to which the person is entitled to. These provisions have been enshrined in the LRA, 2018 to help reduce conflicts caused by the compulsory acquisition of land and facilitate poverty reduction.

WAY FORWARD

The provisions on compulsory land acquisition in the LRA appear to be well conceived and should be adhered to when the state is contemplating compulsory acquisition of land.

Customary Land Rights

Another major challenge relates to the weak legal status of customary land rights (World Bank 2008). In 1974, the Land Registration Law was incorporated into Chapter 8 of the Property Law. Section 8.52(d) of the Law strengthens customary land rights. The Property Law described customary land rights as an aspect of public land that must be recognized and protected as 'tribal reserves' or 'communal holdings' in the event of systematic land registration (Wily 2007).

To further enhance these protections enshrined in the Property Law, the LRP, 2013 was prepared. The LRP, 2013 highlighted the benefit of strong customary land rights to include: (1) increases in investment in land; (2) improvement in livelihoods because of increased community access to natural resource use; (3) improved local governance; and (4) promotion of legal certainty for small and medium scale enterprises (SMEs) at community level.

Customary land rights have been strengthened further with the enactment of the LRA, 2018. The LRA, 2018 included making sure there was community level management of customary land rights, with equal representation of male, female, and youth. The LRA, 2018 also strengthened the enforcement of customary land rights in the courts.

There is need for FDA and the Land Commission to rapidly implement the provisions of LRA, 2018 to effectively address: (a) the challenges associated with government's long asserted ownership of and the right to alienate large areas of land occupied by traditional communities, and those communities, who regard this land as their own; and b) the lack of human and technical capacity of the FDA and key land agencies which affects their operations.

WAY FORWARD

Over time, customary land rights have been considerably strengthened by the enactment of various laws, of which the LRA, 2018 is the latest. **Going forward, the provisions of the LRA on customary land rights must be adhered to and any emerging weaknesses be addressed through an accepted process of consultation and consensus.**

Ownership of Trees and Forest Resources

The issue of ownership of trees and other forest resources on community forest lands poses another challenge to community forestry. All trees and other forest resources are owned by the State, except for those in communal forests and those that have been developed on private or deeded lands through **artificial regeneration**. A weakness in the system is the lack of a strong definition of rights to the use and ownership of trees and wildlife by local communities (Hoyt 2014). In this context the issue of tree tenure is not clearly addressed by the current policy and legislative frameworks. Tree tenure splits the rights of management (*legal rights*) from rights to benefit from resource ownership (*benefit rights*). The FDA, on behalf of the State, has the right to manage the land and to control, use and grant access, to execute deeds and to act as trustee (NFRL 2006). Local communities and resource owners only have consultation and beneficiary rights.

WAY FORWARD

Strengthening tree tenure to hand-over legal and benefit rights to local communities may encourage them to conserve communal forests, and trees on agricultural land. There is the need for the FDA to design options for tree tenure regimes with accompanying benefit sharing mechanisms. This should be done in consultation with a wide range of stakeholders for and for naturally occurring trees in forest reserves, areas outside forest reserves, planted forests in forest reserves, and areas outside forest reserves. A similar framework has been established in Ghana and could provide guidance for Liberia. (MLNR 2016).

Benefit Flows

Benefit flows are the ways in which local communities can benefit from forest resources. However, there are some challenges faced by individuals and communities regarding these benefit flows.

Admitted Rights

These are customary rights held by individuals or communities to the proposed protected areas (PPAs) at the time of reservation. These rights, especially, when they were considered as not being harmful for the forest, were upheld and documented. These rights included indigenous cultural or religious rights. In some instances, such rights included access to a specified quantity of forest resources.

Unfortunately, even though these rights are always written into PPA management plans, now they are hardly ever respected. In addition, most communities and even FDA staff appear reluctant to enforce these rights.

Domestic Use Rights

The right of forest fringe communities to access some forest products in the PPAs for domestic purposes (such as medicinal purposes, home consumption, and poles for construction) is also recognized. However, even though domestic use rights are recognized, in practice it is difficult for local communities to obtain permits for the extraction of these forest products.

Revenue Sharing

This is by far the most widely talked about benefit. It is the share of revenue that goes to local communities from the incomes accrued from the management of the PPAs. The local communities and counties are named as the recipients of 30 percent each of stumpage payments. However, most of these local communities have either not received any disbursements to date or they have received very little revenues due to the inefficient disbursement mechanisms. Even, if this fund is provided, it is only meant for the development of the community and not as income for the individual members of the community to reduce their poverty level and put food on their tables.

Unless alternative livelihood activities are provided that would have a direct impact on the lives of individuals in the communities, there will always be encroachment of the forest by people to support their livelihood and take care of their immediate needs. Currently, from the social perspective, forest management has not brought substantial benefits to the people at the local community level.

WAY FORWARD

1. **A transparent and equitable system of granting permits to households to gather timber and NTFPs should be put in place.** To ensure sustainability these permits should specify the maximum amounts that a household could collect and the time of the year when such collection is permitted (consistent with seasonal availability of forest products). Communities should be given the responsibility for monitoring and ensuring that its member households comply with all the provisions of such permits.
2. **Ensure that the revenue sharing arrangements specified by law are implemented.** A priority should be those relating to revenue sharing between concessionaires and communities.
3. **Strengthen community governance systems** so that these revenues can be utilized to maximize the welfare of all community members and not just a privileged few.
4. **Support livelihood activities for forest-proximate households.** There is need to provide alternative means of livelihood activities for people to live on and diversify household income sources. These can be in agricultural production and agro-industry (such as processing, agro-forestry, and other small-scale industries). Grass-cutter farming, poultry and small ruminant production, beekeeping and snail and mushroom farming also hold promise as alternative livelihood activities in Liberia (see Chapter 7).

Relationships and Attitudes

The FDA is primarily viewed by local communities as a restraining organization than as an implementation partner. This is because the FDA is probably more focused on commercial forestry than people. In addition, FDA officers tend to view local communities as forest encroachers (FDA 2007). This is largely because forest managers see their job primarily in terms of protecting the forest from the demands of local people and of promoting and sustaining the timber industry.

In response to this management approach, local communities nearer protected areas across the region feel alienated from the management and use of forests. The opinion of some professional foresters in the country are that the forests in Liberia are among the most protected in the tropics probably because of these strict regulations and attitudes. However, such strict attitudes have not necessarily been beneficial to the communities living inside or near the forest reserves (Hall and Swaine 1981). According to Global Witness (2016), building the capacity of forestry professionals to engage local communities in forest management, as well as, fostering an attitude of working with communities as active partners will ensure sustainable forest resource management.

WAY FORWARD

1. **FDA needs to initiate more local community-friendly forest management policy frameworks** (Agyeman 1994).
2. **FDA staff should be trained to follow good consultation practices particularly when dealing with communities.** Their mindset needs to change from a traditional top-down approach to one where they consider communities as their valued clients.

Stakeholder Consultations

Liberia is divided into 15 counties, with each county being subdivided into 68 Districts, Districts into Chiefdoms, Chiefdoms into Clans, and Clans into towns or villages. County Authorities, City Mayors, and Township Commissioners are appointed by the President (Volt 2013). This suggests there are many different types of community forestry stakeholders. They include: (1) Ministries, including: MIA, Ministry of Lands, Mines and Energy, Ministry of Agriculture, Ministry of Finance and Development Planning, Ministry of Justice, and Ministry of Labor; (2) central government agencies such as the FDA, and the Land Commission; (3) traditional authorities; (4) Township Commissioners; (5) forest fringe communities; (6) NGOs coalitions, including National Union of Community Forestry Development Committees (CFDC); (7) the Union of Community Forest Management Bodies (CFMB); and (8) Private Sector Organizations, including the Liberia Timber Association (LTA).[17]

The challenge is how to accommodate and manage the diverse and sometimes conflicting interests of these numerous stakeholders to engage and sustain their goodwill, commitment and in some cases their active participation in community forestry. The representation of civil society in sector consultations is done mainly through the Liberian Civil Society Organizations (CSOs) under the banner, NGO Coalition of Liberia[18]. This group leads civil society opinion in the stakeholder dialogue advocates for community interests. Other NGOs, many of which focus on field implementation, are not well represented in stakeholder dialogue. Although private sector associations are active, there is a lack of representation from academia.

Importantly, the FDA has logistical and representational problems in communicating directly with communities. First, in much of Liberia there an almost non-existent road infrastructure especially during the wet season. This results in the FDA relying on consultation with accessible communities. Second, cost constraints limit the number, scope, and duration of field consultations. Both factors result in an urban bias in stakeholder consultations.

WAY FORWARD

1. **Launch a national campaign to change the mindset of all stakeholders** (government and non-government) to consider a FPIC, consultative and consensual approach as an integral part of all legislative and policy reform processes.
2. **Promote a landscape approach to forestry**.[19] Sensitize staff of government agencies and non-government stakeholders to take a landscape approach to their work so that they are more inclined to look beyond their own mandates and areas of expertise and are open to intersectoral coordinated actions.

17 See: https://fda.gov.lr/general/stakeholders
18 See: https://www.tropenbos.org/news/csos+in+liberia+launch+national+advocacy+strategy
19 See this YouTube Video: https://www.youtube.com/watch?v=LYxSygwJ8TM

3. **Support effective stakeholder participation**. Helping stakeholders to effectively participate needs: (1) participating stakeholders to feel safe; (2) coordinating participation opportunities to limit scheduling conflicts and fatigue; (3) bringing in a motivated partner, such as an NGO to represent the stakeholder; (4) training (including study tours); (5) providing communications equipment; and (6) supporting travel to consultation meetings.
4. **Train and support agencies**. Provide forestry-sector agencies (both public and private) with training and support for soliciting public comments, including training in meeting facilitation and training in listening skills.
5. **Create an office to support public engagement.** Encourage government agencies to create an office or bureau (or strengthen if they already exist) to support public input and participatory decision-making.
6. **Record and evaluate stakeholder consultations.** Agencies (such as the FDA and EPA) should produce clear and accurate records of stakeholder consultations, and these should include examples of how stakeholder engagement has impacted on both practice and policy.

Community Management of FNRs

Even though livelihoods depend on forests, the community ability to manage FNRs is weak. This is due to the absence of the appropriate enabling environment that communities need to develop local systems of management for such resources. Owing to marginalization from education and economic opportunities, communities lack the capacity to undertake their roles as actors or to ensure their benefits. Moreover, there is no comprehensive local governance structure in place, and their passive role may permit other groups or individuals to represent them or advocate on their behalf—rightly or wrongly. In addition, the management of financial resources at local level tends not to be transparent and effective. This can result in individuals or groups declaring they represent local communities but doing it for their own interests. There is thus, the need to build the capacity of local community to manage their resources to optimize benefits to them.

The CRL, 2009 empowers local communities to fully engage in the sustainable management of forest by creating a framework that defines and supports community rights in the management and use of forests in Liberia. However, even though the CRL, 2009 is regarded as one of the best in the sub-region, its implementation has not been efficient. As a result, the community forestry concept has been mainly state-driven and has focused on programs that secure the integrity of forest resources and not so much on devolution of power, tenurial rights reforms, and poverty alleviation. The problem is that even though a comprehensive CRL and community forestry program have been developed, their implementation is still largely at the pilot stage.

WAY FORWARD

Review the community forest management strategy

A review of the community forest management strategy needs to be done to maximize benefits from forests to beneficiary communities. The review should be a continuing process which gathers experiences from implementation and makes regular adjustments to streamline and improve. Factors that need to be addressed include: (1) tenure and resource use rights; (2) social equity; (3) efficient distribution of costs and benefits; (4) the strengthening of the involvement of local communities in decision-making; and (5) integrated community development and capacity building.

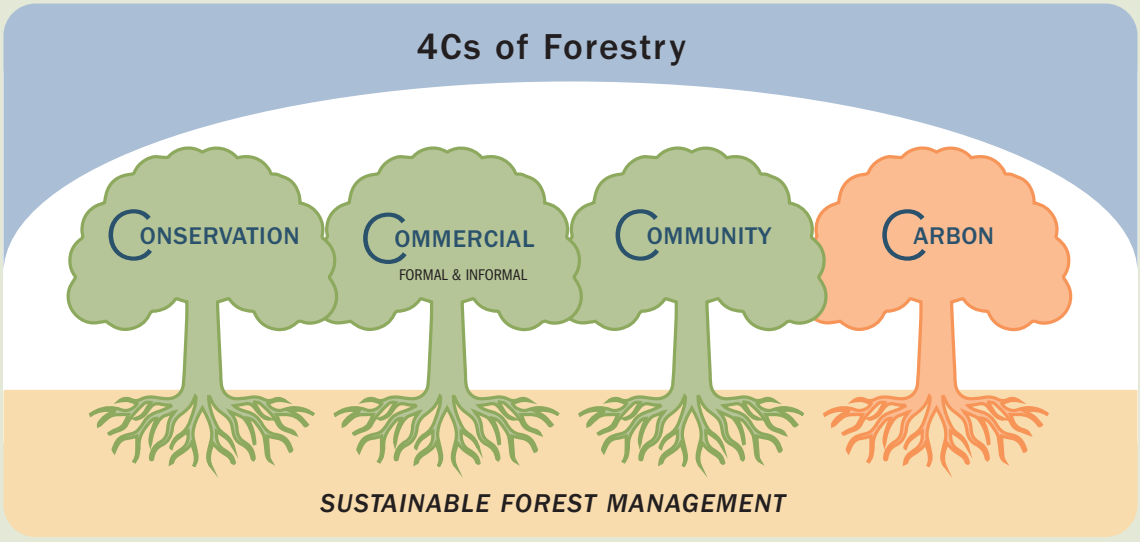
CHAPTER

6 CARBON Forestry

A Blueprint for Change – The 4Cs of Sustainable Forest Management (SFM)

It is crucial that when making decisions about carbon forestry, all aspects of **conservation**, **community** and **carbon** forestry are given equal consideration.

Balancing and integrating the 4Cs of sustainable forest management (SFM) can make real change happen.



Liberia's forests are under threat from overexploitation, climate change and governance related challenges. There is an excessive focus on **commercial forestry** and not enough attention is paid to the other factors that play an equally significant role. Liberia's approach to forestry is **out of balance** and **a new mindset** is needed to drive a significantly more sustainable approach to how this vital natural resource is managed.

CHAPTER CONTENT

This chapter discusses carbon forestry—that is the relationship between forests, climate change and carbon emissions. It provides a background to the story of Liberia, carbon and climate change including the kind of mitigation measures that are being implemented. This is followed by a discussion on the key policy and legislative documents that refer to carbon forestry and allow it to be implemented in Liberia.

A section presents a full description of Reducing Emissions from Deforestation and Forest Degradation (REDD+), while also tracing the evolution of international thinking on climate change and carbon markets through the relevant Convention of the Parties (CoP) meetings over the last few decades. It then describes how REDD+ is being implemented in Liberia including a presentation on the new and developing operational monitoring, reporting and verification (MRV) system in place.

The chapter concludes with recommendations on how REDD+ benefits can be made equitable, and its implementation be scaled-up in Liberia.

CARBON Forestry

Carbon forestry is the management of forest for climate change. It focuses on actions for mitigation, adaptation, and resilience and harnesses initiatives such as Reducing Emissions from Deforestation and Forest Degradation (REDD+) and Voluntary Partnership Agreements (VPAs). Carbon forestry also aims to alleviate global warming caused by greenhouse gases (GHGs).

Prior to 2014, Liberia forest policy and legislation advocated for the 3Cs of forest management: (1) conservation forestry (Chapter 2); (2) commercial forestry (Chapter 3—*formal* and Chapter 4—*informal*); and (3) community forestry (Chapter 5).

Carbon Forestry Formal Status in Liberia

In 2014, the management of the Forestry Development Authority (FDA) advocated for the implementation of the 4th C, that is carbon forestry. The FDA is implementing carbon forestry in Liberia through the REDD+ program and the Voluntary Partnership Agreement (VPA) signed with the European Union (EU).

Until now there are no written policy statements or legislative instruments that deal specifically with carbon forestry. All policy statements on carbon forestry outlined in this book are inferred from official documents of the Environmental Protection Agency (EPA) and FDA.

CARBON FORESTRY—AIMS AND OBJECTIVES

The aim of carbon forestry is to increase the environment's ability to sequester carbon dioxide (CO2) by implementing sustainable forest management (SFM) practices. This allows the environment to naturally offset carbon emissions, which is one of the many benefits of well-managed forests (West 2002). The objectives of carbon forestry in Liberia include:

- **Mainstreaming climate change adaptation and mitigation issues into key sectorial and cross-sectorial policies and development efforts:** The Forest Development Agency (FDA) and related agencies seek to build the capacity of stakeholders to integrate climate change in national development planning.
- **Conserving Forest-Carbon Stocks:** In 2006, the Government of Liberia (GoL) made a commitment to conserve at least 30 percent of the nation's remaining forest estate under the national forest reform law (NFRL), 2006. At that time, it was estimated that there about 1.5 million hectares of forests, amounting to the equivalent 451.5 megatons of carbon stocks per hectare of forests in Liberia. By 2019, Liberia had less than a million hectares of forest (about 67 percent of commitment) under conservation (RoL 2019).
- **Reducing greenhouse gas (GHG) emissions:** Liberia Institute of Statistics and Geo-Information Services (LISGIS) and the macroeconomic reports from the Central Bank of Liberia (Liberia's baseline emission projections) show that if no new climate change mitigation measures are implemented, Liberia's net GHG emissions are projected to increase sharply (EPA 2021). Between 2015 and 2050 it will rise by nearly 60 percent, reaching over 8,500 kilotons of CO2 equivalent (kt of CO2e) by 2050 (compared to over 5,300 kt CO2e in 2015), with land-use change and deforestation remaining the largest contributor to the country's GHG inventory throughout the period. The year 2030 targets listed in Liberia's nationally determined contributions (NDCs) include: (1) reducing GHG emissions by at least 10 percent; (2) improving energy efficiency by at least 20 percent; (3) raising the share of renewable energy to at least 30 percent of electricity production and 10 percent of overall energy consumption; (4) replacing cooking stoves of low thermal efficiency (5-10 percent) with higher-efficiency (40 percent) stoves; and (5) 5 percent biofuel use in transport (EPA 2021). Implementation of these activities can contribute significantly towards Liberia's long-term goal of achieving carbon neutrality by 2050.

- **Enhance Forest-Carbon Stocks**: The most significant forest carbon pool is typically aboveground live tree biomass, with belowground live tree biomass contributing a relatively smaller percentage of the carbon pool. Dead wood and litter usually contribute a much less significant percentage of the total forest carbon, and often require a significant investment of resources to measure with accuracy (Goslee et al 2016). Thus, Liberia's efforts at enhancing forest carbon stocks includes embarking on activities such as reforestation, afforestation, and growing trees on farms.

CARBON, CLIMATE CHANGE, AND LIBERIA

Carbon and the 4Cs

Article 7 of the 1986 Constitution of Liberia mandates the Republic to manage the countries natural resources, which is inclusive of environmental resources, in such manner as to advance the general welfare of the Liberian people and the economic development of the country. In line with this constitutional mandate, the FDA had managed forest resources for livelihoods enhancement, food security, and pro-poor growth (see Chapter 7). To achieve this constitutional objective, a National Forest Policy Implementation Strategy (NFPIS), 2006 and the National Forestry Reform Law (NFRL), 2006 were formulated. They mandated the FDA to provide the people of Liberia with sustaining and sustainable forest benefits, based on the integration of community, conservation, and commercial forest management—also known as the 3Cs of forest management.

Cognizant of the impacts of climate change, Liberia expressed her interest to join other countries in reducing emissions from deforestation and forest degradation under the auspices of the United Nations Framework Convention on Climate Change (UNFCCC) in 2014. Later that year, Hon. Harrison Karnwea (Managing Director of the FDA) stated at the signing of a grant letter of intent for a Reduce Emissions from Deforestation and Forest Degradation (REDD+) program at the World Bank that Liberia plans to apply the 4Cs approach (that is conservation, community, commercial, and now, carbon forestry) to SFM. This, in his view, would provide a balanced system on how to use Liberia's forests for poverty reduction, shared prosperity and long-term sustainability in collaboration with local communities, as mandated by the Constitution.[1]

The FDA policy of balancing multiple forest management objectives, including carbon forestry, for the achievement of SFM is important to provide for optimal forest management decision-making. In addition, the policy decision has been strengthened by the introduction of an international mechanism to compensate countries to follow the REDD+ program. This international initiative offered Liberia the opportunity to achieve its policy objective of managing its forests in a balanced way across the 4Cs for long-term sustainable economic growth. At the same time, it supports the livelihoods of local and rural communities, and ensures that its important national and global environmental services (like biodiversity and carbon) are conserved (Agostini and Srivastava 2014).

However, caution is necessary as the trade-offs inherent in balancing multiple management goals need to recognize that it may not be possible to meet all goals, including those for carbon, in a single forest stand or at a single point in time (Ryan et al 2010). In fact, Janowiak et al (2017) assert that setting a forest aside for just carbon storage will always be worth less money than managing the area for other products. However, non-monetary values may be significant. In addition, it is argued that a new multi-objective paradigm must be adopted that leads to more innovative silviculture based on developing synergies and overlaps between objectives—in other words, an integrative and sustainable forest management model (Smith et al 1997).

1 See: https://blogs.worldbank.org/voices/liberia-norway-and-world-bank-partner-sustainable-forest-management

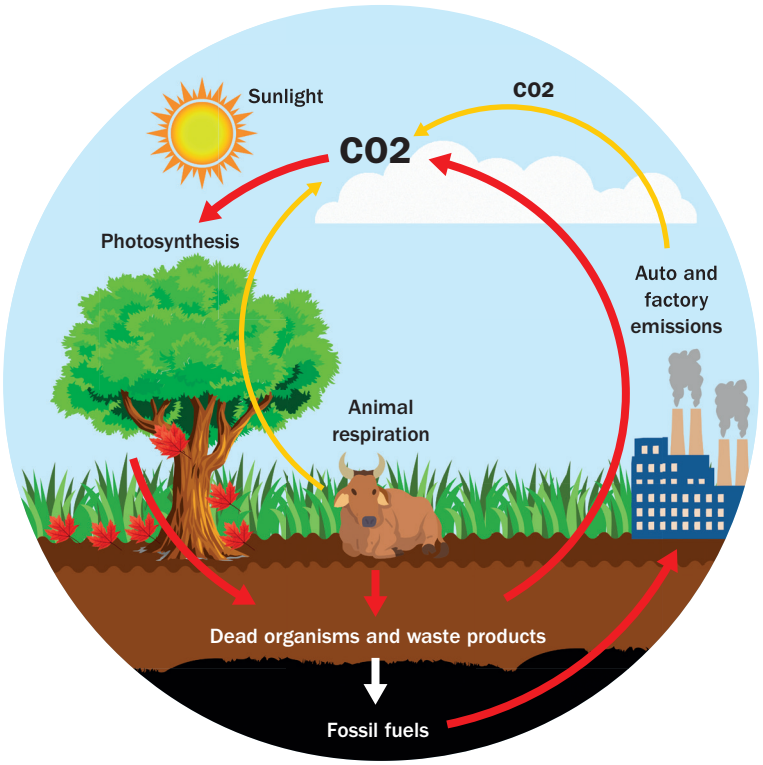
To further strengthen environmental management in the country, including the implementation of carbon forestry, in 2018 GoL with the support of the United Nations Development Programme (UNDP), launched a National Policy and Response Strategy on Climate Change (NCCPRS). The NCCPRS seeks to enable better coordination of climate change work in Liberia. This includes: (1) carbon forestry; (2) providing cooperation and collaboration opportunities between the government and stakeholders; and (3) enhancing Liberia's potential for carbon sequestration by promoting conservation, sustainable forest and wildlife management, community forestry and curbing key drivers of deforestation and forest degradation. The NCCPRS further commits GoL to the development of a climate-resilient economy by implementing strategic short- and medium-term actions under a National Adaptation Plan (NAP), National Adaption Action Plan (NAPA) and NDCs.

Liberia submitted its updated NDCs to the UNFCCC in August 2021 after a careful in-country review by all relevant stakeholders. NDCs are at the core of the Paris Agreement (PA), under which 191 countries, including Liberia, committed to limit global warming to "well below 2 degrees above preindustrial levels," and to pursue efforts to limit the temperature increase to 1.5°C (EPA 2021).

Carbon and Forests

Forest management for climatic benefits, that is carbon forestry, has within the last decade assumed international prominence (Bellassen and Luyssaert 2014). This is because forests serve as **carbon sinks** and are an important part of the **carbon cycle** (see Figure 6.1).

Figure 6.1 Trees are an important carbon sink



Source: Adapted from Byju's 2022[2]

2 See: https://byjus.com/biology/carbon-cycle/

According to Harris et al (2021), between 2001 and 2009, the world's forests sequestered about twice as much CO2 as they emitted. This means that Liberian forests provide a carbon sink that absorbs a net 7.6 billion metric tons of CO2 per year (Harris et al 2021). Natural forests also store more carbon than plantation forests. This is because natural forests have grown over a longer period, have complex stand structures and accumulate more carbon on the forest floor and belowground compared to planted forests (Waring et al 2020).

Forests absorb more carbon than they release

Unlike other sectors, where carbon makes a one-way trip to the atmosphere, forests act as a two-way highway emitting CO2 into the atmosphere, when they are destroyed, either by burning or through the degradation of organic matter, and absorbing CO2 in the atmosphere and emitting oxygen (O2), through a process known as photosynthesis when one grows trees (Harris et al 2021). These processes form part of the carbon cycle, which refers to the constant movement of carbon from the land and water through the atmosphere and living organisms. Forests are an integral part of the carbon cycle, as they both store and release this essential element.[3] At a global scale, forests help maintain Earth's carbon balance by sequestering carbon in living biomass, deadwood, and forest soil, as well as in products prepared of wood. However, harvesting decreases the carbon stocks of forests and increases emissions from decomposing harvest residues (Pukkala 2017).

3 See: https://www.nrcan.gc.ca/climate-change-adapting-impacts-and-reducing-emissions/climate-change-impacts-forests/forest-carbon/13085

The international community has noted that by reducing global deforestation and increasing reforestation rates, significant GHG savings can be achieved. Both mitigation and adaptation strategies are thus needed to combat the effects of climate change. Forests play a significant role in mitigation as one of the quickest and most cost-effective methods of reducing atmospheric GHG concentrations.

Climate Change

Climate change can be attributed directly or indirectly to human activities. There are two main contributing human activities: (1) burning fossil fuels; and (2) changes made to the land surface (such as deforestation, reforestation, urbanization, and desertification). These activities release CO2 and other GHGs altering the composition of the global atmosphere and resulting in changes to natural climate variability observed over comparable time periods (United Nations 1992).

The earth is warming faster than at any time in the past. There is broad consensus that climate change poses a major threat to countries and populations around the world, including those in Africa. By 2100, the Earth's overall temperature could rise by as much as 6°C putting millions of people at risk of death due to malnutrition (Anaman and Osei-Amponsa 2009).

This warming and resulting changes in climate are being driven by the increasing amount of CO2 and other GHGs which are being emitted into the atmosphere because of human activities. CO2 is one of the most potent GHGs and the primary component of polluting emissions. Globally, the conversion of forests to other land uses is responsible for around 10 percent of net global carbon emissions. In addition, deforestation is the third largest contributor to climate change (after industry and energy supply) and is responsible for approximately 17 percent of GHG emissions.

Liberia's Emissions

Liberia is classified as a carbon sink and its contribution to global emissions has been minimal. Using 2000 as the base year, its emissions amounted to 8,022 gigagram (Gg) CO2 equivalent (e) while the uptake from the land use, change, and forestry (LUCF) sector was 69,991 Gg CO2e equivalent resulting in net emissions removal of -61,969 Gg CO2e (EPA 2021). The energy sector was the main source of emissions in 2000, accounting for 67 percent of GHG emissions in the country, emanating mainly from the use of traditional fuels such as firewood, charcoal and palm oil and the use of fossil fuels, especially petroleum products (EPA 2021).

However, in 2017, Liberia's total emissions was 5,990.7 Gg CO2e (that is 75 percent of the 2000 emissions), made up of 4,860 Gg CO2e, of CO2, followed by 857 Gg CO2e methane (CH4), 271 Gg CO2e nitrous oxide (N2O) and 3 Gg CO2e hydrofluorocarbons (HFC) (EPA 2020). The agriculture, forestry, and other land use sector contributed 67 percent of the total emissions for Liberia in 2017 followed by energy (16 percent), industrial processes and product use (9 percent) and waste (8 percent) sectors. When the emission from the land category is excluded, energy was the largest source of GHG emissions in 2017. Electricity generated from diesel powered generators is also quite common, contributing to the high GHG emissions by the energy sector in the country (EPA 2012). Access to electricity in Liberia was reported at 27.53 percent of the population in 2020,[4] with the main source of energy being biomass. Charcoal is used mainly in urban areas and wood fuel in the rural areas and among poor households in urban centers.

On the other hand, the forestry sector, sequesters annually 12,305.45 Gg CO2e of carbon, which reduces the total emissions from the country (EPA 2020). The per capita GHG emissions in the country in 2020 was 0.25 tons of CO2. Between 1971 and 2020 the GHG emissions have tended to fluctuate but have largely decreased over the period. The country has committed to reduce its GHG by 64 percent below the projected business-as-usual (BAU) level by 2030.[5] Unconditional GHG reductions of 10 percent below BAU will result in an absolute emissions level of 11,187 Gg CO2e in 2030 while an

4 See: https://tradingeconomics.com/liberia/access-to-electricity-percent-of-population-wb-data.html
5 See: https://ndcpartnership.org/news/liberia-significantly-increases-ambition-revised-ndc

additional 54 percent reduction conditional upon international support would result in an absolute emissions level of 4,537 Gg CO2e in 2030. This will be achieved by reducing GHGs in the methane-heavy livestock and agricultural sectors by 40 percent and in the waste sector by 7.6 percent by 2030. This is a positive shift from Liberia's first NDC submission, which aimed for a 15 percent reduction below the projected business as usual levels by 2030.

Forestry and Climate Change Mitigation Measures

Even though, Liberia is classified as a carbon sink, with a per capita GHG emissions of 0.25 tons of CO2 in 2020, the country has committed to ensuring that its potential as carbon sink is maintained in the years to come. The forestry sector is one of the important areas for climate change mitigation in Liberia. The contribution of the forestry sector to climate change mitigation is to significantly enhance Liberia's potential for carbon sequestration by promoting conservation, SFM, community forestry and curbing, key drivers of deforestation and forest degradation, which in turn will contribute to sustainable wildlife management (EPA 2018). The country also has policies and laws (see the sections below on Carbon Forestry—Policy and Legislation), which if properly implemented, would ensure that the country's target of remaining as a carbon sink is realized. In addition, the Government has also committed, to reducing emission levels, through several national programs, such as: (1) the national readiness program under REDD+; (2) the sustainable agriculture programs to discourage the use of more forest land (reducing shifting cultivation); and (3) policy on developing a green carbon economy.

GoL has outlined five forestry-related climate change mitigation strategies to reduce emissions and expand Liberia's forest sinks. These are:

SFM

This includes: (1) promoting the development of REDD+ activities across Liberian forest landscapes; (2) providing adequate and sustainable support for conservation and engage nationally to increment the number of areas set aside as protected areas within forested landscapes; and (3) ensuring the sustainable use of forest and wildlife resources to contribute to the livelihoods of the rural communities as they adapt to climate change and contribute to mitigation.

The FDA is promoting the implementation of traditional conservation methods such as the conservation of sacred forests and groves, which also promote emissions reduction at the local community level.

Conservation and Protected Forest Areas Management (PFAM)

According to a USAID factsheet, Land use, change and forestry (LUCF) is responsible for over 90 percent of Liberia's net total emissions and overall releases more emissions than trees and vegetation absorb. Yet, another source in the same factsheet states that LUCF uptakes and stores more CO2 than it releases. However, Liberia's rich tropical forest resources was estimated to have a carbon intensity, which was almost 17 times the world average, giving the country substantial potential to reduce its GHG emissions.[6]

The forest cover of Liberia, which is estimated to be 6.6 million hectares (FDA 2021) contains 585 million metric tons (MT) of carbon in living forest biomass.[7] Therefore, the commitment by GoL to conserve 30 percent of the total forest of Liberia as per the NFRL, 2006, means that 176 million MT of carbon will be permanently stored in the forests of Liberia. As a result, conservation, and protected forest areas management (PFAM) in Liberia, is expected to lead to reductions of 19,301.78 Gg CO2e of emission reduction per year (EPA 2020).

6 See: https://www.climatelinks.org/resources/greenhouse-gas-emissions-factsheet-liberia
7 See: https://rainforests.mongabay.com/deforestation/2000/Liberia.htm

Forest management is important as it supports the provision of a complete range of goods and services for all Liberians. Forests contribute to poverty alleviation and help maintain environmental stability. They can also support the country's commitments of GHGs reductions. In this regard, the Environmental Protection Agency (EPA) in collaboration with FDA and other public agencies, have created a national carbon registry and accounting system, which is also aimed at clarifying the issues of carbon rights, ownerships, and tenure (EPA 2020).

Forest Landscape Restoration (FLR)

This mitigation action includes: (1) the enrichment of degraded forests; and (2) the restoration of existing plantations.

Enriching Degraded Forests

The FDA is expected to provide adequate regulation and enforcement of forest and wildlife policies and laws related to the 4Cs and climate change. In addition, the government will strengthen stakeholders through capacity building programs, gender equity and social inclusivity programs. In 2017, GoL, with funding from the Norwegian Government and implementation support by the World Bank, initiated the Liberia Forest Sector Project (LFSP) to improve the forest ecosystem, build livelihoods, and increase benefit sharing in forest landscapes earmarked for restoration. It is projected that the successful implementation of the LFSP, through forest landscape restoration (FLR) activities will result in an emissions reduction of 6,996.33 Gg CO2e per year (EPA 2020).

Restoring Existing Plantations

The FDA is expected to help develop and facilitate the sustainable management of community forests by strengthening forest governance and institutions, including wildlife, to ensure better stewardship. For example, the FDA has initiated a Foya afforestation Project, which aims to replant about 100 ha of degraded forests in the savanna landscape in the Foya District, Lofa County. This action is expected to result in an emissions reduction of 0.23 Gg CO2e per year.

Afforestation and Reforestation Actions

The FDA is expected to promote activities that enhance carbon sequestration, such as reforestation, afforestation, and agroforestry initiatives across the country, which also brings benefits to reduce the stress and pressure on natural forest and ecosystems.

Carbon Markets, Green Bonds, and Fiscal and Regulatory Measures

GoL is currently implementing actions such as the issuance of green bonds, and the promotion of access to carbon markets. These activities are expected to generate financing to maintain and protect tracts of forest reserves and receive the lowest benefits for these ecosystem services.[8] In addition, GoL has adopted fiscal and regulatory measures to reduce unsustainable wood utilization, particularly in constructions and charcoal production, leading to a reduction in carbon emissions.

The forestry-related GHG mitigation actions are necessary because Liberia's baseline emission projections show that if no new climate change mitigation measures are implemented, Liberia's net GHG emissions are projected to increase by 59.3 percent between 2015 and 2050, reaching over 8,500 kt CO2e) by 2050 (compared to 5357.7 kt CO2e in 2015), with land-use change and deforestation remaining the largest contributor to the country's GHG inventory throughout the period. The total cumulative impact of the mitigation scenario for the period 2015 to 2050 amounts to 64,588 kt CO2e. Reforestation is the highest contributor at 66 percent, followed by biogas production in wastewater treatment plants at 8.2 percent. The least contributor is the introduction of efficient cookstoves (EPA 2021).

8 See: https://www.liberianobserver.com/liberia-access-carbon-market-issuance-green-bonds

In 2011, a review of the investment and financial flows needed for mitigation in the forestry sector between 2005 to 2030 was published (Kantor and UNDP 2011).[9] The study calculated the cost per hectare of each mitigation measure and estimated the total amount needed to reduce emissions of GHG in the forestry sector. For sequestration of carbon by the enhancement of forest cover through afforestation and reforestation a cost of US$ 150.00 per hectare was projected. Enrichment of degraded forest was expected to cost US$ 100.00 per hectare. Restoration of existing plantations was projected to cost US$ 250.00 per hectare while sustainable forest management was expected to cost US$ 2.50 per hectare. Based on this, it was calculated that a total of US$ 0.19 billion will be needed to reduce emissions of GHG in the forestry sector (EPA 2013). In addition, in 2009, a team of international conservation economists concluded in a study that the carbon market in Liberia could generate revenues of up to US$ 55 million annually, using a price for carbon of US$ 5 per ton. The study further concluded that the production of carbon credits can create opportunities for entrepreneurs and could be a source of employment in the environmental sector (Lawrence et al 2009).

Forestry and Climate Adaptation and Resilience in Liberia

Climate adaptation is the process of adjusting to current or expected effects of climate change.[10] According to EPA (2018), climate adaptation refers coping with climatic changes that cannot be avoided and reducing their negative effects. Adaptation measures include preventing losses, changes in land use, relocation, and restoration. Adaptation also involves reducing risk and vulnerability, building capacity at individual and community level and across natural systems and mobilizing that capacity by implementing decisions and actions. Adaptation is not a one-off action but is a process that requires adaptive management (EPA 2020).

Climate resilience on the other hand is the ability to prepare for, recover from, and adapt to climate change impacts. Generally, resilience is the ability of a system to adapt to climate change, whether by taking advantage of the opportunities, or by dealing with their consequences. Climate resilience captures activities which build the ability to deal with current and future climate variability situations. Examples of climate resilience actions include many existing development investments, including those in the agriculture, energy, water, food security, health, land management and infrastructure sectors (Chandrasekharan et al 2015). Thus, adaptation is a process, action, or sometimes the result of the action, whereas resilience is a condition or capacity (Leggett 2021).

The EPA, FDA and other partners formulated the National Adaptation Program of Action (NAPA) in 2008 to help reduce the climate change risks. The NAPA outlined Liberia's most urgent and immediate needs for climate change adaptation. The EPA, in collaboration with other public agencies and development partners, formulated the National Adaptation Plan (NAP) in 2010 and developed the National Policy Response Strategy of Climate Change (NPRSCC) in 2018. This was designed to establish a nationally coordinated approach to addressing the country's medium and long -term adaptation needs (EPA 2020). The NAP was developed to provide a national direction in the reduction of climate change vulnerability. It also provided a mechanism to build adaptive capacity by mainstreaming adaptation into all sector-specific and national development planning. Liberia followed the guidelines and benchmarks developed by the Least Developed Countries Expert Group (LEG) in coming up with its NAP (LEG, 2012).

9 See: https://www.ndcs.undp.org/content/dam/LECB/docs/iff/iff results/Liberia/undp-iff-liberia-assessment forestry-en.pdf
10 See: https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-AnnexII_FINAL.pdf

The broad objectives of NAP in the country include: (1) the provision of a framework and procedure for sharing of information of scientific, technical, and traditional knowledge on climate change risk management and develop capacity-building measures; (2) the coordination of sectors and related government and private land-use institutions on climate change risk management using awareness with a focus on the improvement of climate risk management actions; and (3) working with the priority sectors to identify and propose measures to promote adaptation to reduce climate change risk.

The capacity of forests to recover after disturbance (that is their resilience), determines their ability to persist and function over time. Many variables, natural and managerial, affect forest resilience. Thus, understanding the role of forests is critical for the development of sound forest conservation and management strategies, especially in the context of climate change (Ibáñez et al 2019). Forests can play an important role in climate change resilience through the provision of services (for example, wood, fodder, non-timber forest products (NTFPs), and fuel), regulating services (for example, of water, of soil erosion, microclimate), and supporting services (for example, nutrient cycling and primary production) that enhances the social resilience of vulnerable communities (Russell et al 2012). Forests can also provide resilience by offering a diversification of revenue sources and product supplies,[11] absorbing harmful CO2 emissions, providing resources to local populations, and through forest-landscape design to protect communities from increasingly erratic weather.[12] Social resilience can be enhanced by access to forests due to its role of provision of safety nets to vulnerable communities. Building resilience also requires efforts to ensure that adequate technical knowledge and expertise, an enabling policy and legal framework, responsive and effective institutions and governance mechanisms that can support timely, appropriate, and equitable decision-making and action are all in place.[13]

In this context, the specific objectives of the adaptation strategies of the forestry sector in Liberia include:

1. The strengthening of the capacity of the FDA
2. Implementation of sustainable alternative livelihood initiatives for forest-dependent communities to enable them to become less reliant on forest resources
3. Strengthening community forest activities beyond timber extraction as a management tool using indigenous species and knowledge
4. Strengthening of forest policies, governance systems and arrangements
5. Implementation of reforestation and afforestation activities in degraded areas to increase rural income, and improve biodiversity richness, including wild fauna
6. Consolidating the protected forest area network (PFAN) using a landscape approach, while also ensuring that the PFAN includes many forest types, various environmental gradients and enhances connectivity between habitats (EPA 2020).

Climate Change Vulnerability and Impacts in Liberia

Vulnerability is the degree of susceptibility to the negative effects of climate change. It is a function of the type, magnitude, and frequency of climate events to which a system is exposed (*exposure*), as well as its ability to adapt (*adaptive capacity*) (EPA 2018).

Liberia is highly vulnerable to globally driven climate change, variability, and uncertainty because of its location in the world's hydro-climate zone, socio-economic conditions, and dependence on climate sensitive livelihood activities. It is located at the intersection of three hydro-climatic zones, and subject to the impact of El Niño Southern Oscillation (ENSO), the Inter-Tropical Convergence Zone (ITCZ) and West Africa monsoon leaving Liberia at the mercy of climate change impacts.

11 See: https://www.profor.info/node/2032
12 See: https://www.iied.org/forests-resilience-climate-change
13 See: http://foris.fao.org/wfc2015/programme/session/55b206757abbed0405328ede

Historical climate data[14] for Liberia clearly shows a progressive rise in temperature and a decrease in mean annual rainfall in all agro-ecological zones in the country. Between 1960 and 2006, the mean annual temperature has increased by 0.8°C, an average rate of 0.18°C per decade (McSweeney et al 2014). Future climate predictions include an increase in annual temperatures of up to 2.6°C by the 2060s, more high-heat events, increasing wet and dry seasonal precipitation extremes and rainfall irregularity, and a rise in sea level of 0.13-0.56 meters by 2100. Mean annual rainfall over Liberia has also decreased since 1960, but it is difficult to determine whether this is part of a long-term trend because of the variable nature of rainfall in this region. Projections of mean annual rainfall in Liberia from different models project a wide range of changes in precipitation, but tend towards overall increases, particularly in July-September (JAS) and October to December (OND) periods. By 2090s, the mean annual rainfall amount in JAS is projected to vary from a potential decrease of 15 percent to an increase of 23 percent. Whereas the mean rainfall amount in OND is expected to decrease by 12 percent or increase by 32 percent (McSweeney et al undated).

Climate change has resulted in increasing incidences of drought, erratic rainfall and rising temperature thereby affecting crop productivity. This phenomenon negatively affects livelihoods and deepens the poverty levels of food crop farmers in the country which is why it is important to invest in robust adaption measures. The five climate changes include: (1) temperature; (2) precipitation; (3) sea level rises; (4) atmospheric CO2 content; and (5) increased incidence of extreme events. These affect forestry, natural resources, and agriculture sectors in the following ways (Topor et al 2011):

1. **Reduced forest and agriculture productivity**—There is growing evidence that in the tropics and subtropics, forests and agricultural crops have reached their maximum tolerance to temperature.
2. **Increased incidence of pest attacks and diseases**—An increase in temperature is conducive to a proliferation of pests and diseases that are detrimental to forest and agriculture productivity.
3. **Reduction in the availability of water**—The rain-fed farming system depends on weather prediction and indigenous knowledge. However, the unpredictability of weather because of climate change is impacting negatively on crop yields.
4. **Worsened drought periods**—An increase in temperature and a change in the climate throughout Africa, including Liberia, is causing more frequent and intense droughts.
5. **Reductions in soil fertility**—An increase in temperature is resulting in reduced soil moisture, moisture storage capacity and the quality of the soil, which are vital nutrient for agricultural crops.
6. **Lower livestock productivity and high production costs**—The changing balance between heat dissipation and heat production is changing the availability of livestock feed and fodder which can lower livestock production and increase costs.
7. **Increase in human disease**—Climate change is causing the manifestation of vector and vector borne diseases, where an increase in temperature and humidity is creating ideal conditions for malaria, sleeping sickness and other infectious diseases in the country.
8. **Damage to crops and soil erosion**—Inability to cultivate land due to water logging of soils in some areas and drought in other areas.

Climate change is also expected to impact food security in Liberia. With projected average temperatures showing a rising trend and highly variable rainfall pattern, the impacts of climate change are likely to be more severe in the food production sector of the economy. Studies done by the International Food Policy Research Institute (IFPRI) show that, even though food prices in Liberia will rise soon, climate change will make it worse. Considering that approximately 75 percent of the country's population are engaged either directly or indirectly in smallholder subsistence farming, fisheries and the forest sector for timber and non- timber products, any adverse impact of climate change on these sectors will therefore increase food insecurity and reduce livelihoods (Topor et al 2011; USAID 2012)). Key economic assets such as rubber, oil palm, cocoa, and timber, cassava, rice, and sugarcane among others, are subject to shifting climatic trends and unpredictability, and thus compromise the main source of livelihoods of most of Liberia's population.

14 See: https://climateknowledgeportal.worldbank.org/country/liberia/climate-data-historical

Water resources in the country also face significant challenges because of more frequent and intense climatic events. Periods of drought and flooding pose stress on the availability of water for domestic use, which in turn has been linked to the spread of diseases, negative impacts on industrial applications, hydro-electric generation, and food security. Reduction is also expected in the groundwater recharge of the country resulting in a future increase in demand for irrigation water. Under climate change, the quality of freshwater in rivers and other water bodies will also be impacted negatively as the expected increased floods would carry pollutants into water bodies, restricting their use and putting further constraint on water availability to meet growing demand and increased cost of water treatment (USAID 2012). In addition, climate change will affect the fish stocks, resulting in depletion of fish in the country. The decline of the fishing sector is expected to limit the country's ability to meet domestic demand and threatens the economic and food security of many Liberians.

Another effect of climate change in the country would be the increasing incidence of drought. The direct influence of drought on agriculture, especially crop productivity is well documented (EPA 2019). The effects include: (1) poor water availability and quality; (2) loss of plant and animal species; (3) famine; (4) migration; and (5) socio-cultural break downs. However, the effects of drought on plant performance and its consequences for population dynamics and species distribution in Liberia remains largely speculative because quantitative studies linking the experimental, demographic, and landscape scales have been missing.

Within a given forest, a range of species coexist which differ in their drought resistance. Drought resistance can be defined as the ability of species to survive drought while minimizing reductions in growth, and ultimately, fitness. Habitat change and biodiversity loss are other negative effects of climate change in Liberia. The 2005 Millennium Ecosystem Assessment (MEA), as cited in Secretariat of the Convention on Biological Diversity (2006) report, identified five major drivers of biodiversity loss: (1) climate change; (2) habitat change; (3) invasive alien species; (4) overexploitation; and (5) pollution (SCBD 2006). The expansion of agriculture itself, in large part due to the direct and indirect effects of a growing and increasingly urbanized human population, is one of the biggest threats to habitat loss.

Future Predictions

All the climate models of the Intercontinental Panel on Climate change (IPCC) predict that conditions for forestry and agriculture in the future will be dramatically different from those that prevail today. The distribution of forest types in the forest zone of Liberia have been well documented and broadly follow rainfall distribution patterns. Some tree species appear to be limited in their distribution depending on levels of rainfall, others are everywhere, and some are absent from areas with higher rainfall. Reductions in rainfall because of climate change are likely to impact forests. These impacts would include:

1. An increase in tree turnover
2. Reduced growth
3. Decreased forest biomass
4. An abundance of liana
5. Profound shifts in species composition (UNDP [undated]).

In turn, these changes could lead to extinction of many endemic rain forest species, as these are generally drought intolerant. As a result, reductions in rainfall may lead to a severe loss of biodiversity.

Increases in temperature because of climate change will also have an impact. Increased temperatures are likely to expand the ranges and survival rates of forest pests including armyworm caterpillars. In 2009, there was a large outbreak of moth caterpillars in rural Liberia. There was concern this would threaten harvests and contaminate water supplies. In this case Liberia was lucky and the caterpillar was not armyworm.[15] However, the United Nations Food and Agriculture Organisation

15 See: https://news.un.org/en/story/2009/02/289862-liberia-un-led-team-gives-new-hope-containing-devastating-caterpillar-plague

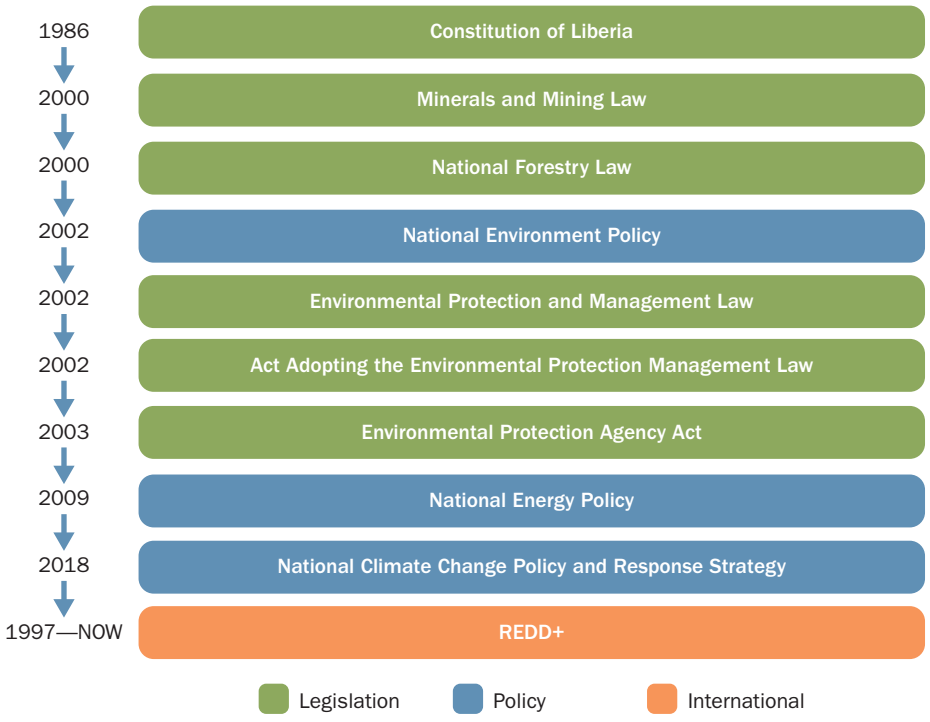
(FAO) has speculated that climate change would result in abnormal behavior of armyworms to reach in the foliage of the tall *Piptadeniastrum africanum* (Dahoma) trees (EPA 2018). In addition, it is predicted that climate change will result in more frequent outbreaks of armyworms (Timilsena et al 2022).[16] This could lead to deepening poverty, deteriorating public health, a breakdown of traditional institutions, and social conflict as people seek to migrate to more productive areas locally or even to already overcrowded urban centers like Monrovia. In addition, the accumulated impact of the above factors will, in the long-term, result in depletion of forest and wildlife resources and the loss of national income (FDA 2006).

Over the last decade, Liberia has achieved considerable socio-economic growth. Yet, there are issues of deep poverty, rapid population growth, unemployment, health, and the degradation of ecosystems that cannot be overlooked. The impacts of climate change are likely to intensify these pre-existing socio-economic challenges. The heavy dependence of its economy on forests and natural resources (The International Trade Centre 2015), which are sensitive to climate change and variability, makes the Liberian economy even more vulnerable to climate change (EPA 2018). Thus, diversifying the economy to reduce the current dependence on extraction of natural resources, controlling the deforestation rate and investing in reforestation and afforestation will also make Liberia more resilient to the threats posed by climate change (World Bank 2018).

CARBON FORESTRY—POLICY AND LEGISLATION

The following section outlines the policies and laws that have been promulgated and the objectives for which they were passed. The chronological development of policy and legislation of carbon forestry is presented in Figure 6.2.

Figure 6.2 Carbon Forestry—Policy and Legislation Timeline



16 See: https://www.nature.com/articles/s41598-021-04369-3

Policies and Strategies

2002—National Environment Policy (NEP)

The National Environment Commission of Liberia (NECOLIB), which was established in 1999, and transformed by an act of the Legislature into the Environmental Protection Agency (EPA) in 2002 initiated the formulation of the National Environment Policy (NEP) in 2002. The objectives of the 2002 National Environment Policy (NEP) are to improve the physical environment and the quality of life of the people. It is also to ensure reconciliation and coordination between economic development and growth with sustainable management of natural resources. The policy focused on the following areas: (1) socio-economic dimensions and cross-cutting issues; (2) sustainable management of sectoral systems; (3) working with and through people; and (4) policy implementation. It recognized the role forests play in maintaining food security, preserving of medicinal plants, enhancing livelihoods, and averting global and regional climate variability. It also mandated GoL to take climate change mitigating measures to reduce forest degradation and the rate at which Liberian forests were disappearing. The policy statement observed that environmental challenges were complex in nature and do not respect national boundaries. It obliged GoL to enter into international agreements for the implementation of regional and global approaches to address the environmental and climate challenges, which are wide-ranging and have wide-area effects.

2009—National Energy Policy (NEnP)

The aim of the National Energy Policy (NEnP), 2009 was to ensure universal access to modern energy services in an affordable, sustainable, and environmentally friendly manner to foster the economic, political, and social development of Liberia (Milne 2009). The NEnP, 2009 stated that the long-term strategy of Liberia to address climate change challenges was to achieve carbon neutrality by 2050. The policy stated that GoL must leverage the country's biomass and water resources, as sources of carbon credits, for sustainable energy development.

The long-term energy policy as enshrined in the NEnP, 2009, noted that global warming through GHG emissions is the collective responsibility of all countries and hence Liberia must put in place mitigative actions to reduce emissions and protect the environment. The policy instructed GoL to conserve its tropical forests which serve as a carbon sink for GHGs. It also mandated the relevant agencies to enactment a sustainable carbon regime, which may lead to financial benefits from the global community, while contributing to the benefit of Liberia. The policy stated that the nation's extensive renewable hydro, biomass, wind, and solar resources may contribute to making Liberia one of the least fossil fuel dependent nations in the world.

2018—National Climate Change Policy and Response Strategy (NCCPRS)

Liberia's main national strategy to combat climate change is outlined in the 2018 National Climate change Policy and Response Strategy (NCCPRS) which was launched by the Environmental Protection Agency (EPA) and supported by the United Nations Development Programme (UNDP) in 2018.[17] The aim of this policy and strategy was to enable better coordination of climate change work and provide cooperation and collaboration opportunities between the GoL and stakeholders. It was also aimed at ensuring the implementation of an effective and coherent climate change adaptation process and to serve as the pillar for comprehensive sectoral strategies and action plans. The policy has recognized forestry and wildlife, agriculture, coastal areas, water resources, fishery, energy, mining, industry, transport, tourism, infrastructure, urbanization and settlement, and health as priority sectors for adaptation (EPA 2018).

17 The other strategies that address climate change and improvement responses include: The Food and Agriculture Policy and Strategy (FAPS) of 2008; The National Energy Policy (NEP), 2009; This Agenda for Transformation, 2012; and The National Disaster Management Policy (NDMP), 2012.

The NCCPRS, 2018, was also developed to guide national response measures in addressing climate change. The strategy provides guidance on integrating climate change issues into national development planning processes at national, county, district, and local levels. It outlines policies for adaptation and mitigation in key sectors in the country and assesses the country's vulnerabilities to climate change including poverty and forest management. The NCCPRS, 2018 also identified five enabling policy pillars for climate response including (EPA 2018):

1. Improved climate change governance
2. Finance mechanisms
3. Capacity building and knowledge management
4. Technology innovation and infrastructure
5. Integrated planning and data management.

Legislation

1986—Constitution

Article 9 of Chapter II of the 1986 Constitution of Liberia encourages bilateral and regional co-operation in environmental protection. It also recognizes that the country is party to treaty law and is as a result is a member of international and regional organizations for the attainment of the global protection of the environment and the promotion of sustainable use of natural resources. Carbon forestry is an important part of environmental protection.

In 1999, a National Environmental Commission of Liberia (NECOLIB) was established and given the executive authority over all programs and activities relating to environmental management in the country. NECOLIB served as the focal point for international environmental agreements Liberia is signatory to including: (1) the Convention on Biological Diversity (CBD); (2) the UNFCCC; and (3) the Ramsar Convention on Wetlands of International Importance. It was intended that NECOLIB would eventually evolve into a formal Environmental Protection Agency (EPA).[18]

2000—Minerals and Mining Law

Liberia's environmental policy was enhanced with the passing of the 2000 Minerals and Mining Law which included provisions for the sustainable management of the environment.

2000—National Forestry Law (NFL)

The enactment of the National Forestry Law (NFL) of 2000 also provided for an improvement in environmental protection. It is stated in Chapter 8 that all forestry activities must avoid waste and protect biodiversity while also preventing environmental pollution and contamination. The law provided for the establishment of protected areas, research in the conservation of forest resources, reforestation and afforestation programs, and the conduct of education and awareness programs on forest resources conservation and management. A provision in the NFL, 2000 also prohibited the waste of forest resources (An Act Adopting the National Forestry Reform Law of 2006).

18 The EPA was formally established in 2003 and began functioning as an entity in 2006. See: https://postconflict.unep.ch/liberia/index_2a.php?m=2&sm=2a

2002— Environmental Protection and Management Law (EPML)

The Environmental Protection and Management Law (EPML), 2002 established a legal framework for the sustainable development, management, and protection of the environment by the Environmental Protection Agency (EPA) in partnership with regulated Ministries and organizations. The law also established a basis to provide high quality information and advice on the state of the environment and for related matters.

Section 77, on the protection of forests, stated that guidelines issued by the EPA must consider the fact that forest land acts as a sink for GHGs. Part 5, Section 83 (1g) mandated the EPA to measure the value of unexploited natural resources in terms of watershed protection and influences on climate and other potential genetic value. In addition, Section 89 recognized the role of rain forests as a **carbon sink** for GHGs.[19]

2002—Act Adopting the Environmental Protection and Management Law (EPML)

To strengthen the EPA and harmonize environmental laws in the country, an Act Adopting the Environment Protection and Management Law (EPML), 2002 was promulgated as the principal legislation covering environmental protection and management in Liberia. The EPML, 2002 which is derived from Article 9 of the Constitution, established a legal framework for sustainable development, management, and protection of the environment by the EPA in partnership with regulated Ministries and organizations and in a close and responsive relationship with the people of Liberia. The law also provided high quality information and advice on the state of the environment and for matters connected therewith. The EPML, 2002 provided the legal framework for sustainable development, management, and protection of the environment by EPA in partnership with relevant ministries, autonomous agencies, and organizations, and stresses inter-sectorial coordination while allowing for sector specific statutes (Ministry of Foreign Affairs 2003).

Section 4 of EPML, 2002 established the principles of environmental management and objectives as:

- The principle of sustainable development
- The precautionary principle
- The polluter-pays principle
- The principle of inter-generational equity
- The principle of public participation
- The principle of international co-operation in the management of environmental resources shared by two or more states
- Other principles of natural resources and environmental management.

In addition, Section 4 upheld the sustainable or wise use of natural resources in pursuance of social and economic development without undermining the ecosystem's renewal and re-supply process. It also provided for a legal framework for Liberia's international cooperation with other states as well as relevant international organizations in environmental protection and the sustainable utilization of natural resources.

Section 6 of EPML, 2002 stated that an environment impact assessment (EIA) license or permit must be acquired before the start of all projects and activities. These projects and activities included: agriculture, livestock and range management; forestry activities; wildlife, tourism and recreational development; energy industry; petroleum industry; food and beverage industries; textile and leather industry; wood, pulp and paper industries; building and civil engineering industries; chemical industries; extractive industries; non-metallic industries (products); metal and engineering industries; waste treatment and disposal; municipal solid waste and sewage; water supply; health projects, land reclamation and land development; multi-sectoral projects; importation and exportation of hazardous chemicals and waste; and urban and rural development.

19 See: https://www.climate-laws.org/geographies/liberia/laws/environmental-protection-and-management-law-of-the-republic-of-liberia

2003—Environmental Protection Agency (EPA) Act

The Environmental Protection Agency (EPA) Act was enacted in 2003 to establish the EPA and to clarify its role in implementing national environmental policy and sustainably managing Liberia's natural resources.

The mandate of the EPA as outlined under the EPA, 2003, is to coordinate, monitor and supervise all activities in the field of the environment. Though established in 2003, the EPA was not fully operationalized until 2006. The main bodies created under the EPA, 2003 are the Policy Council, the Agency, the Board of Directors, and County and District Environmental Committees.

EPA, 2003 also provided for the formulation and periodic update of a National Environment Action Plan (NEAP), which incorporated county and district environmental action plans. NEAP was intended to be an integral part of the national plan for sustainable economic development in Liberia (UNDP 2004). In addition, the act tasked the institution with enforcing the law and providing the tools through which the environment will be managed. It provided for an Environmental Administrative Court to hear cases from aggrieved parties.

The EPA is the primary agency responsible for coordinating climate change efforts in Liberia. It oversaw the preparation of the National Adaptation Program of Action (NAPA, 2008), Liberia´s first set of actions to address climate change adaptation. In 2014 Liberia began preparing a climate change policy which was finalized in 2018 (EPA 2018).

REDUCING EMISSIONS FROM DEFORESTATION AND FOREST DEGRADATION (REDD+)

Incentives for Low Carbon Emissions

Reducing Emissions from Deforestation and Forest Degradation (REDD+), including the role of the conservation and sustainable management of forests, is an effort to offer incentives for developing countries to reduce emissions from forested lands and invest in low-carbon paths to sustainable development. REDD+ was developed under the umbrella of the UNFCCC. The concept has evolved over time through a negotiation and approval process including the signing of the Kyoto Protocol and Marrakesh Accord, the setting up of finance systems, and agreements on the implementation process. See Box 6.1 for a summary of the three development phrases of REDD+.

1997—Kyoto Protocol

Concrete coordinated international level action to address deforestation and forest degradation was first addressed under the 1997 Kyoto Protocol. Article 2 of the Kyoto Protocol called for:

1. Global action for the protection of forests and the enhancement of sinks and reservoirs of GHGs
2. Implementation of SFM
3. Enhancement of afforestation and reforestation activities.

2001—COP 7, Marrakesh Accord

In 2001, at the conference of parties (COP 7) of the UNFCCC in Marrakesh, Morocco, an Accord was signed by the international community which responded to concerns that the use of land use, change and forestry (LUCF) activities should not undermine the environmental integrity of the Kyoto Protocol. The Accord underscored the need for sound science and consistent methodologies, as well as the importance of conserving biodiversity. The COP 7 Accord, also agreed methods to monitor, calculate and report changes in carbon stocks and anthropogenic GHGs by sources and removals by sinks resulting from land use, land-use change and forestry activities. The Accord also mandated that naturally occurring removals of GHGs, including removals caused indirectly human activities, should be excluded from the system and that any re-release of GHGs (such as through forest fires) must be promptly accounted for (Ngom 2015).

2005—COP 11, Montreal

In 2005, at COP 11 in Montreal, Canada, the international community formally adopted the Marrakesh Accord, formalized emissions trading, and launched two mechanisms under the Kyoto Protocol:

1. **Joint Implementation**—Allows developed countries to invest in other developed countries and earn carbon allowances which they can use to meet their emission reduction commitments.
2. **The Clean Development Mechanism (CDM)**—Allows industrialized countries to invest in sustainable development projects in developing countries and earn carbon allowances.

Carbon now had a market value and investing in projects that provide sustainable development and reduce emissions made sound business sense.

COP 11 also discussed the concept of reducing GHGs from deforestation which was named Reducing Emissions from Deforestation (RED). In addition, the Conference finalized the rule book of the 1997 Kyoto Protocol but which entered into force on 16 February 2005.

2007—COP 13, Bali

The major decision on RED was taken in 2007 at COP 13 in Bali, Indonesia. Decision 2/CP.13 titled "*Reducing Emissions from Deforestation in Developing Countries: Approaches to Stimulate Action*" called for countries to demonstrate actions on reducing emissions from deforestation to developing countries and took the RED concept to REDD.[20] In addition, a roadmap was adopted to support this process. The Bali plan[21] introduced the ability to create specific tools to develop or strengthen the conservation, sustainable or increasing forest carbon stock management. This invitation also led to the creation of a large number of programs and projects, including the Forest Carbon Partnership Facility (FCPF) of the World Bank, the UN-REDD Program and small grants launched by the Norwegian International for Climate and Forest Initiative (NICFI).

2008—COP 14, Poznan

In 2008, at COP 14 of UNFCCC in Poznan, Poland, it was agreed to expand the scope from REDD to REDD+. At the meeting, the European Union (EU) called for a halt of the loss of global forest cover by no later than 2030, and for gross tropical deforestation to decline by at least 50 percent by 2020. The EU further urged countries to develop jurisdictional programs to reduce emissions from deforestation and forest degradation (REDD+).

20 See: https://unfccc.int/sites/default/files/resource/docs/2009/sbsta/eng/l09.pdf
21 See: https://unfccc.int/process/conferences/the-big-picture/milestones/bali-road-map

2009—COP 15, Copenhagen

COP 15 held in Copenhagen, Denmark in 2009 gave full recognition of REDD+ and pushed for the development of operational structures guiding the implementation of REDD+, including defining the monitoring, reporting and verification (MRV) of carbon forest (monitoring system). The concept now covered activities relating to REDD by incorporating the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries. This expanded on the REDD phrase and led to the adoption of the acronym REDD+. COP 15 also called for the identification of drivers of deforestation and safeguards.

2010—COP 16, Cancun

At the COP 16 held in 2010 at Cancun, Mexico, a decision was adopted which stated that policy approaches and positive incentives (combined with the role of conservation and sustainable management of forests and enhancement of forest carbon stocks) must be accompanied by guarantees. This was so the implementation of REDD+ at national level did not produce adverse effects on the environment or on the local population. COP 16 also agreed to a phased approach for the implementation of REDD+. These steps included: (1) development of national strategies; (2) implementation of national strategies; and (3) a full MRV process.

2011—COP 17, Durban

In 2011, COP 17 held in Durban, South Africa described: (1) the sources of financing for REDD+; (2) the financing options (that is bilateral agreements, market-based systems, and the private sector); (3) the frameworks for safeguards reporting; and (4) the guidelines for setting up reference levels.

2012—COP 18, Doha

In 2012, COP 18 held in Doha, Qatar initiated discussions on the form for MRV and financing options. A work program on funding sources of REDD+, including 'Result-based payments' and 'No Carbon payments' was initiated.

2013—COP 19, Warsaw

In 2013, COP 19 held in Warsaw, Poland introduced seven key decisions on REDD+ including: (1) a work program on results-based financing; (2) the coordination of the support of donors for implementation; (3) the modalities for national forest monitoring systems (NFMS); (4) information System on guarantees Geographic Information System (GIS) or safeguard REDD+); (5) the technical evaluation of emission baselines or national reference forests (NRF); (6) the procedures for MRV consistent with the guidelines established at COP 15; and (7) information on the factors and causes of deforestation and forest degradation noting that indigenous peoples are not deforestation agents.

2014—COP 20, Lima

At COP 20 in 2014, held in Lima, Peru, a decision was taken to invite the Council of the 'Green Climate Fund' to support relevant decisions REDD+.

2015—COP 21, Paris

The twenty-first session of the Conference of the Parties (COP) and the eleventh session of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP) took place from 30 November to 11 December 2015, in Paris, France. The Paris Agreement is a legally binding international treaty on climate change. It was adopted by 196 Parties at COP 21 in Paris, on 12 December 2015 and entered into force on 4 November 2016. Its goal is to limit global warming to well below 2 degrees Celsius, preferably to 1.5 degrees Celsius, compared to pre-industrial levels.[22] The Agreement also seeks to increase the ability of countries to deal with the impacts of climate change, and at making finance flows consistent with a low GHG emissions and climate-resilient pathway.[23] Signatories to the Paris Agreement are required to develop country-specific NDCs on how the country seeks to reduce GHGs.

2016—COP 22, Bab Ighli, Marrakech

The twenty-second session of the Conference of the Parties (COP 22) and the twelfth session of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP 12) took place in Bab Ighli, Marrakech, Morocco from 7 to 18 November 2016. It was agreed that the Adaptation Fund established under the Kyoto Protocol, which provides adaptation support to developing countries, would continue under the Paris Agreement, pending decisions on governance and other issues.

2017—COP 23, Bonn

COP23, the second Conference of the Parties since the Paris Agreement was struck in 2015, mainly involved the negotiation of parties on the finer details of how the Paris Agreement will work from 2020 onwards.[24] A key outcome from a gender perspective was the adoption by the Parties to the Convention of the first Gender Action Plan (GAP) to support the implementation of close to 60 gender-related decisions in the UNFCCC process over a two-year timeframe.[25]

2018—COP 24, Katowice

The 24th session of the Conference of the Parties (COP 24) to the UNFCCC, the 14th session of the Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol (CMP) was held in Katowice, Poland. It was agreed that all countries will have to report their emissions—and progress in cutting them—every two years from 2024.

2019—COP 25, Madrid

The 24th session of the Conference of the Parties (COP 24) to the UNFCCC was held in Madrid, Spain, under the presidency of Chile. Countries failed to agree many of the hoped-for outcomes under COP 25, including rules to set up a global carbon trading system and a system to channel new finance to countries facing the impacts of climate change. Generally, big emitting countries blocked efforts to advance pragmatic solutions to reduce emissions. [26]

2021—COP 26, Glasgow

The COP was not held in 2020 due to the COVID-19 pandemic. However, COP 26, was held in Glasgow, Scotland, United Kingdom. An outcome of COP 26 was the agreement by 190 countries to phase down coal power, resulting in a 76 percent decrease in planned new coal power plants. Over 40 countries, several states and organizations declared their support for the global coal to clean power transition statement.[27]

22 See: https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement
23 See: https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement/key-aspects-of-the-paris-agreement
24 See: https://www.carbonbrief.org/cop23-key-outcomes-agreed-un-climate-talks-bonn/
25 See: https://www.unwomen.org/en/how-we-work/intergovernmental-support/climate-change-and-the-environment/united-nations-framework-convention-on-climate-change/cop-23
26 https://www.climatechangenews.com/2019/12/16/cop25-achieved-next/
27 https://commonslibrary.parliament.uk/what-were-the-outcomes-of-cop26/

REDD+ Readiness, Implementation and Payments

Box 6.1 REDD+—How the Concept Developed

The development of international level actions on reducing emissions from deforestation and forest degradation has evolved through three phases:

1. **RED**: This is the phase where the international community considered reducing emissions from deforestation. This stage was considered easily manageable since it is possible to observe the evolution of forest land surfaces by satellite imagery between two specified dates.
2. **REDD**: This phase introduced tackling forest degradation as a category for reducing emissions. This phase was considered more difficult to implement but highly beneficial because, beyond the rate of deforestation, there is a need to identify degradation of forest land and to evaluate it. This involves a combination of techniques that combine the evaluations from satellite imagery, a stratification of ecosystems, and field inventories.
3. **REDD+**: This phase involves reducing emissions from deforestation and forest degradation in developing countries, including the role of conservation and sustainable management of forests and enhancement of forest carbon stocks. This phase introduced a tool that considers the preservation, sustainable management of forests and enhancement of forest carbon stocks, as defined by the Clean Development Mechanism (CDM). The technical tools set for REDD can also be used to address the evolution of the biomass under REDD+. The tools already developed under the Bali Roadmap were enhanced under REDD+ for the assessment of carbon budgets and financing.

A REDD+ country participant is a developing country located in a subtropical or tropical area that has signed a participation agreement to participate in the Readiness Fund. By 2021, forty-seven developing countries had been selected to join the Forest Carbon Partnership Facility (FCPF) (18 in Africa, 18 in Latin America, and 11 in the Asia-Pacific region). Through the REDD+ program, developing countries are receiving financial, logistical, and technical support from the World Bank, the United Nations via the FCPF and the UN-REDD Program, and from other institutions. For example, Liberia has received support from the FCPF and other development partners for REDD+ readiness preparation and implementation.

The REDD+ program progresses in three stages based on the Cancun agreements at COP 16 in 2010 in Mexico (Minang et al 2014):

1. **Readiness**—The design and development of readiness preparation proposals (R-PP) and a national REDD+ strategy (NRS). The R-PP outlines studies, key processes, systems, stakeholder consultations, and capacity building activities required for a country to effectively implement the REDD+ mechanism, while the NRS defines the vision and goals for achieving REDD+, along with specified strategies and interventions for avoiding deforestation and forest degradation, forest conservation, SFM, and forest carbon stock enhancement. It also outlines the mechanisms for reference-level establishment, monitoring, MRV of carbon emissions reductions, infrastructure development, benefit-sharing, conflict resolution, and safeguard information systems depending on national circumstances.
2. **Implementation**—Results-based demonstration activities, institutional reforms, and capacity enhancement.
3. **Results-based payments**—The MRV of REDD+ carbon impacts before payment.

REDD+ IMPLEMENTATION IN LIBERIA

Liberia is party to the UNFCCC and is committed to REDD+. The country first engaged in the REDD+ readiness process in 2007, with funding from the FCPF. A national REDD+ Technical Working Group (RTWG) was established as a platform for GoL and nongovernmental organizations (NGOs) to engage in the preparation of a Readiness Program Idea Note (R-PIN) which was submitted to the FCPF in May 2008. This was followed by the draft Readiness Preparation Proposal (R-PP) which was finalized in April 2012. Since then, the FDA and the EPA have led the work to complete the REDD+ readiness phase of the FCPF process.

In Liberia, the REDD+ strategy was developed based on the three pillars of SFM in Liberia (FDA 2020). These pillars are:

1. Build the 4Cs of SFM: (1) Commercial; (2) Conservation; (3) Community; and (4) Carbon Forestry
2. Ensure the benefits from REDD+ are fair and sustainable
3. Protect high carbon stock (HCS) and the high conservation value (HCV) of forests in agricultural and mining concessions.

In addition to the development of the National REDD+ Strategy[28], the FDA also carried out a National Forest Inventory (NFI) which was used to develop the Forest Reference Emission Level (FREL). The FREL was validated and formally submitted to the UNFCCC in December 2020.

Readiness and Implementation Activities

Liberia's REDD+ readiness and implementation activities are led by the FDA and co-led by the EPA. REDD+ policy and technical program coordination is led by the REDD+ Technical Working Group (RTWG). The RTWG is chaired by the FDA and co-chaired by the EPA. It is the platform which brings together stakeholders and channels technical support to the FDA for all REDD+ activities. The RTWG is an off shoot of the Carbon Consultative Group (CCG) which was established in 2007 and supported Liberia to engage internationally in REDD+ issues. It is one of such multi-stakeholders' structures that have emerged as an interim arrangement, to provide technical support to the FDA for REDD+ readiness. However, in 2019, when Liberia completed its REDD+ readiness, the RTWG was repositioned to continue to leverage technical support to implementation of the second phase REDD+ in Liberia.

Under the national arrangements, the FDA is the designated authority for managing the forest sector and is implementing and managing the REDD+ Program. However, due to the cross-cutting nature of the REDD+ program, the National Climate Change Steering Committee (NCCSC) chaired by the Ministry of Finance and Development Planning (MFDP) is providing the strategic policy direction and support to FDA at the highest level of government. The NCCSC has a secretariat called the National Climate Change Secretariat (NCCS) which provides coordination, monitoring of programs and ensures the implementation of policies as well as carrying out the administrative supervision functions on relevant climate change matters. The Secretariat of the NCCSC was originally hosted by the Office of the President but is now hosted by the EPA. The creation of the NCCSC at the Presidency is indicative of the high level of support given to climate change and REDD+ in the country.

28 See: https://www.unredd.net/announcements-and-news/2785-liberia-s-redd-strategy-to-protect-forests-means-to-protect-its-people.html

Participatory Consultations

Between 2013 and 2016, the FDA held a wide range of inclusive and participatory consultations across Liberia with stakeholders, including local communities, government actors, civil society organization (CSOs), development partners and private sector actors. These dialogues concluded with the development of a National REDD+ strategy in 2016, which was then approved by the National Climate Change Steering Committee (NCCSC) (Ngom 2015). All activities were conducted through a strong participatory process. As such, the building blocks for REDD+ and overall sustainable management of the sector are happening together at the same time (Halton 2013).

Safeguard Systems

A Safeguard Information System (SIS), a Feedback Grievance Redress Mechanism (FGRM) and an MRV system have also been developed and rolled out. Currently, a Forest Monitoring System (FMS) is in place with the data collection for the first post-NFI forest monitoring completed (FDA 2020). The Safeguard Information System (SIS), which is a free public web-based platform, is hosted by the EPA. The SIS gathers national information and provides information to stakeholders on how social and environmental safeguards are being addressed and respected in the context of REDD+ in Liberia. Liberia's SIS was developed through a transparent and participatory process that involved broader consultations.[29] The principles, criteria, and indicators (PCIs) for Liberia's SIS align with the seven Cancun safeguards. This was accomplished by first conducting a comprehensive legal analysis to clarify elements of the Cancun safeguards in Liberian policies, as well as other conventions on land and forest use, including the Voluntary Partnership Agreement (VPA) with the European Union.

Liberia's SIS was also developed to align with the REDD+ policies and measures identified through the country's Strategic Environmental and Social Assessment (SESA).[30] The SESA of the REDD+ Strategy Options was conducted through extensive research and consultations. The SESA is a requirement of the FCPF REDD+ process. It is an important tool to improve the implementation and monitoring of social and environmental safeguards. The SESA has informed changes in strategy to mitigate negative impacts and strengthen positive impacts. It also provides the basis for an Environmental and Social Monitoring Framework (ESMF) which identifies the social and environmental risks arising from REDD+ interventions that are to be monitored on an ongoing basis (FDA 2016).

Carbon Financing

In 2014, the prospects for REDD+ and SFM in Liberia were greatly improved by the signing of an agreement between Liberia and Norway to cooperate on REDD+ and develop Liberia's agricultural sector. Under this agreement, Norway intended to contribute funds to Liberia's REDD+ efforts up to an amount of US$ 150 million, if verifiable deliverables for REDD+ were achieved. The first phases of this funding were for the preparation and demonstration of REDD+ interventions (US$ 37.5 million). The final phase, from 2020 onwards, is for payments for verified emission reductions. The payments will reward actions that result in a reduction of emissions from deforestation and forest degradation, and support Liberia's green economic growth (FDA 2016).

In 2012, GoL, through the FDA, received an original grant of US$ 3.6 million from FCPF to finance implementation of activities needed to enable the country REDD+ Readiness activities. Some activities were completed but some key activities required for readiness remain. In 2015, FCPF granted additional funds in an amount of US$ 5 million to the GOL for the additional REDD+ readiness preparation activities that Liberia needed to carry out. This has helped GoL achieve REDD+ readiness.

29 See: https://www.forestcarbonpartnership.org/news-story/liberia-finalizes-its-redd-readiness-phase
30 See: https://www.forestcarbonpartnership.org/news-story/liberia-finalizes-its-redd-readiness-phase

Liberia successfully completed the preparation of the roadmap for REDD+ readiness. This roadmap has been endorsed by the governing body of the FCPF and additional funding for REDD+ readiness was built on the ongoing REDD+ readiness activities. It consolidated and strengthened achievements and completed aspects of REDD+ readiness that had not yet been completed at the time. In total, Liberia has already benefitted from over US$ 46 million of committed investment for REDD+ preparations and implementation.

Operational Monitoring, Reporting and Verification (MRV) system

For Liberia to benefit from REDD+ achievements, and the potential for Results Based Payments, Liberia needed to develop and operationalize a durable and transparent Monitoring, Reporting and Verification (MRV) system for its REDD+ program. With financial assistance from Norway and international technical expertise, the country has developed and operationalized its MRV system. This system will track emissions and sustainable management policies in two selected REDD+ landscapes for possible results-based payments.

Liberia's MRV system enables it to firstly understand the extent of our carbon emissions and removals and to inform discussion on what policy and measures could address these emissions. Furthermore, the MRV system enables the country to account for its NDC to benefit from result-based payments under the REDD+ program.

REDD+—PROGRESS AND CHALLENGES

REDD+ gives economic value to the carbon embedded in forests, so it is essential that there is clarity on who owns the carbon and who can benefit. Yet, this clarity is dependent on how carbon rights are treated in existing land and forest tenure regimes. There are also many challenges faced with implementing REDD+.

Land and Forest Tenure

According to Cotula and Mayers (2009), tenure generally relies on, and is conditioned by, governance, and the viability and security of tenure depends on the strength of the governance system (Cotula and Mayers 2009). Land and forest tenure represent major challenges in Liberia. To deal with this, the country had a lengthy and complicated land tenure reform process which culminated in the formulation of a Land Rights policy (LRP), 2013 and the Land Rights Act (LRA), 2018, which established the legal framework for securing customary collective community land and resource rights.

The enactment of the Land Rights Act (LRA), 2018 has brought about great change in Liberia regarding the status of land and forest tenure. This change is likely to have significant implications for how carbon rights are defined in future (FDA 2016). The strategy of the LRA, 2018 has been to clarify land, forest, and carbon rights as have other regulations controlling forest management in the country. The changes that have been introduced include treating carbon rights as a component of wider land law, rather than a new and separate topic. This approach is in line with the Land Rights Policy (LRP), 2013, which states that the ownership of customary land should extend to ownership of natural resources on the land, including forests, carbon credits, and water. The LRP, 2013 and LRA, 2018 provide the framework for acquisition of land ownership rights; address historic inequalities by giving customary lands equal protections to those of private lands; and recognize customary land rights and forest tenure that provides a strong foundation for the 4Cs.

With respect to carbon forestry, there is a need for clarity of land, tree, and carbon tenure. Currently, there is no internationally accepted definition of carbon tenure and rights, and very few countries, including Liberia have adopted definitions in their national legal systems (Cotula and Mayers 2009).

The term carbon tenure comprises two fundamental concepts: (1) the property rights to sequester and store carbon, contained in land, trees and soil; and (2) the right to benefits that arise from the transfer of these property rights (that is through emissions trading schemes). The rights to carbon benefits refer to fair and equitable arrangements aimed at distributing revenues in the forest sector to key stakeholders, including local communities. Currently, there are different types of financial incentives or *benefits*, ranging from monetary and non-monetary, productive, and non-productive, conditional, and input-based livelihood development and community facilities (Peskett 2011; Gill 2017). However, several of these forest sector benefit-sharing mechanisms may not work for carbon forestry. The challenge is to be able to provide carbon benefits at a scale that is likely to impact livelihoods and poverty reduction of vulnerable communities (Murdiyarso et al 2005). This will require carbon tenure reform including recognition, clarification, and security of community forest tenure rights at the national policy and planning levels.

Changes in Forest Loss Trends

Since the national REDD+ strategy was endorsed in 2016, there have been some significant changes in the trends of drivers of forest loss, which may have resulted in a reduction in carbon emissions. For example:

1. Logging, palm oil and mining concessions have developed at a slower pace than expected because of low commodity prices, land rights disputes and the high costs and bureaucratic obstacles to doing business in Liberia. Only seven out of 17 forest management contracts (FMCs) are active and less than 10 percent of planned palm oil plantations have been developed.
2. Concessions have not delivered the expected level of national income or community benefits.
3. Community-level activities, shifting agriculture, chain saw milling (CSM) and charcoal production have become more significant drivers of deforestation and degradation, as concessions have stagnated and as community rights to a larger area of forest land have been recognized with the passing of the LRA, 2018.

It is worth noting that Liberia is committed under REDD+ to the following: (1) creation of financial values for the carbon stored in forests; (2) offering incentives for the reduction of emissions from forested lands; (3) promotion of low-carbon and green-carbon paths to development; (4) and supporting forest conservation in commercial concessions.

To achieve these objectives, the country has outlined a number of strategic priorities. These include: (1) the reduction of forest loss from pit sawing; (2) charcoal production and shifting agriculture; (3) the reduction of the impact of commercial logging; (4) the development and sustained management of a network of Protected Areas; (5) the prevention or offset clearance of high carbon stock and high conservation value forest in agricultural and mining concessions; and (6) the fair and sustainable sharing of benefit from REDD+ (FAO 2016).

Most countries that are participating in the REDD+ program have only reached the implementation stage. In addition, many of these countries have reported challenges with MRV, financing, benefit-sharing, policies, laws, and institutional mechanisms. Other challenges reported include the lack of extensive stakeholder participation, weak institutional capacity, and unclarified property or tenure rights (Fischer et al 2016). Jagger et al (2010) also cited displacement of land use pressures to other parts, interference with tenure rights of the poor, and reduction in biodiversity protection and livelihoods as negative impacts arising from REDD+ implementation. However, these challenges can be addressed through an effective, efficient, and equitable mechanism through institutional transformation and policy changes.

Liberia too is facing these challenges and GoL and other actors implementing REDD+ policies and activities should be informed about these challenges and the outcomes of possible solutions. This will allow them to use that information to revise and improve the policy environment in which REDD+ implementation can progress. In addition, information on the potential positive and negative impacts could also be important inputs in the assessment of social performance and cost-effective impacts of REDD+ projects (Richard and Panfil 2011).

WAY FORWARD

Reform and Streamline Legal and Policy Aspects

All carbon stakeholders (landowners, communities, project developers, investors, and carbon credit buyers) need clarity via specific, carbon-related national policies and regulations, with clear associated guidance, to underpin any investment in the generation of carbon credits. A formal law should be developed for the introduction and implementation of carbon forestry. Relevant policy and regulation clarifications which GoL needs to provide, include:

- Ownership of trees grown in carbon financed plantations
- All rights, such as timber rights, over the trees, and any restrictions on rights
- Ownership of carbon rights for planted trees on forest reserves taking account of duration of rights as conferred via the 50 year plus 50 year lease arrangements currently in force for foreign investments in forest reserves
- Status of carbon rights and whether these are fully transferable, separable, and enforceable
- Treatment of carbon credits as exports
- Carbon trading regulations
- Treatment of financial transaction in carbon rights (for example, whether this falls under securities law) and clarification of fiscal issues
- Policy and regulation in off-reserve areas
- Forest reserve land use (for example, multiple use of forest reserve land which is severely degraded).

Include Communities Centrally into Forest and Climate Change Initiatives

There is an urgency to integrate climate change issues into national development planning processes at national, county, district, and local levels for effective coordination. This includes developing awareness among the people on the contribution of forests to mitigation, adaptation, resilience and to community livelihoods and welfare. Ensuring that communities fully understand that their livelihoods and welfare are intertwined with that of healthy forests will result in their commitment to sustainable management of their community forests. In addition, a robust benefit-sharing system and a flow-of-funds mechanism should be put in place so that carbon payments can be rapidly transferred from the point of collection (GoL in the case of REDD+, for example) to the targeted beneficiaries (the communities).

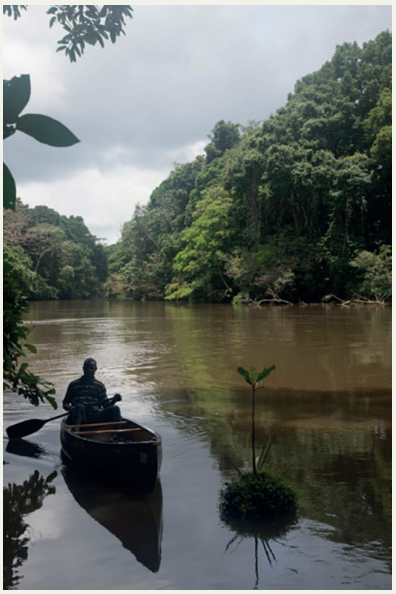
Aggressively Address the Underlying Drivers of Deforestation and Forest Degradation

As this chapter points out, the underlying drivers have shifted in importance since 2016, and community-level activities in forests related to food, fodder, medicines, and construction materials, shifting agriculture, chain saw milling (CSM) and charcoal production have become the most prominent drivers of deforestation and degradation. These have been incorporated into the country's priorities for REDD+ action. However, urgent attention needs to be paid to their future implementation to reduce the pressure on Liberian forests.

CHAPTER

7 Forests for Pro-Poor Growth

Liberia's rich forest resources must be respected, promoted, and protected to ensure effective pro-poor policies


Liberia is heavily forested and a crucial source of livelihood

The Liberian people have been blessed with a heavily forested terrain which could provide large and sustainable incomes.[1] Liberia is endowed with a rich, renewable natural resource base, including timber, fuel wood, poles, wildlife, rich biodiversity, wildlife, and numerous non-timber forest products (NTFPs). These forests and forest resources contribute significantly to the livelihood strategies of the rural poor who account for about 50 percent of the population.

One of the most important forest and natural resource (FNR) sectoral issues facing the country is the 'poverty-forest resource depletion cycle'. In 2021, over 50 percent of Liberians were living below the poverty line.[2] And most of these vulnerable groups are fully dependent on forest resources.

This **dependency**, plus the **lack of appropriate environmental enforcement**, is leading to mass forest degradation and deforestation.

CHAPTER CONTENT

The chapter is a discussion on the relationship between forests and pro-poor growth. It presents a summary of the poverty profile of Liberia and outlines the poverty status of rural communities. It is noted that the livelihoods of most poor rural communities are intrinsically intertwined with lands and forests. This means that the challenges of forest access, security of tenure, and ownership impact on the rights of these vulnerable communities to forest goods and services. These issues are discussed along with how the forestry agenda, as outlined by the 1986 Constitution and sector-related policies and strategies, impact on the lives of poor people.

1 See: https://digitalcollections.sit.edu/cgi/viewcontent.cgi?article=4244&context=capstones
2 See: https://www.undp.org/liberia/news/time-liberian-'marshall-plan'-poor

The national pro-poor agenda is examined within the context of Liberia's poverty reduction strategy and the contribution of the forestry sector in pursuing the national pro-poor agenda is outlined. The key forestry actions for the alleviation of poverty and securing livelihoods for forest-proximate households are discussed as is the extent to which forest resources help reduce vulnerability to external shocks and act as a safety net in lean or troubled times. The chapter further reviews food security and nutrition challenges and the importance of the sustainable use of diverse forest foods to tackle these challenges.

The chapter reviews policy actions for the achievement of transformative changes in agriculture, together with sustainable use of forest resources, and provision of alternative livelihood options, to augment rural household incomes. In particular, the use of alternative livelihood micro-enterprises at the community level to enhance the incomes of farmers and vulnerable groups are examined. However, the apparent disconnect between forestry and agricultural policies and the lack of policy coherence and weak multisectoral coordination in the implementation of the pro-poor forestry sector agenda are also acknowledged.

The chapter concludes by reemphasizing the key issues that Liberian planners must keep in central focus while implementing policies and programs to maximize the role of forests for poverty reduction and food security.

POVERTY PROFILE OF LIBERIA

Poverty is a widespread problem in Liberia. In 2016, nearly 60 percent of the population were living in poverty and 44 percent (2 million people) of them living in extreme poverty on less than US$ 1.90 per day.[3] Close to 70 percent of the population live in rural areas. In addition, rural populations account for almost three quarters (73.4 percent) of the poor (World Bank 2020). Much of this rural poverty occurs among small-scale farmers and the self-employed (Backiny-Yetna et al 2012). The livelihoods of most of these poor rural communities are intrinsically interwoven with lands and forests. To alleviate rural poverty and create wealth, rural income generation is needed along with the equitable distribution of wealth.

In addition to extreme poverty and lack of income, there are other poverty indicators that must be considered. In 2017, the Universal Health Coverage (UHC) Index Score (a measure of the coverage of essential health services based on tracer interventions for Liberia) was 39. This was lower than both the average for its region (46) and the average for its income group (42). In addition, the Social Safety Net Coverage for the country was only 21 percent for 2016, much lower than the 30 percent Africa Human Capital Target for 2023.

Box 7.1 An Extreme Lack of Human Capital

Human Capital is the level of economic productivity a person can achieve due to factors such as education, health, knowledge, and resilience.

Liberia has one of the lowest Human Capital values in the World (see Figure 7.1). It sits at 0.32—which means that someone born in Liberia today is likely to produce as an adult just 32 percent of what could have been possible if they had received the full benchmarks of health and education.

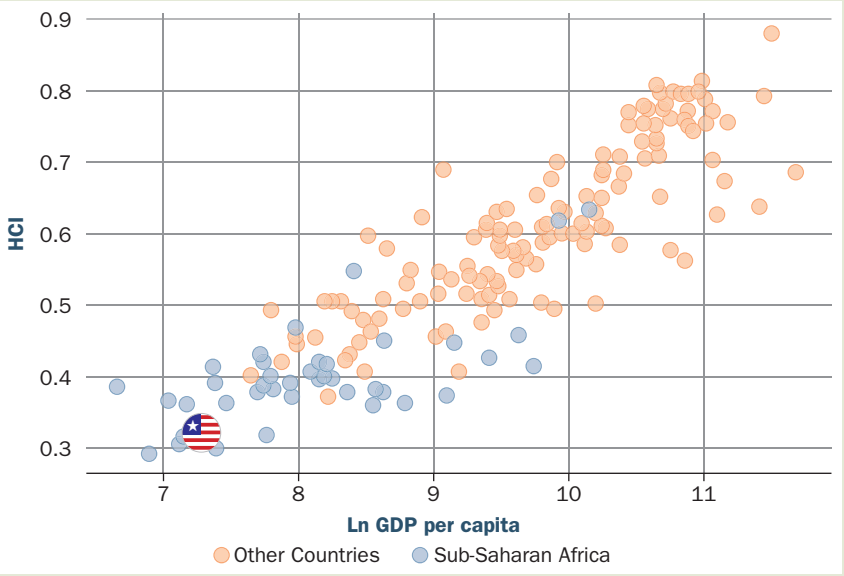
In Liberia, the average child completes around 4.2 years of education. When the quality of education is considered, this is considered the equivalent of 2.2 years of schooling.

Out of 100 children born, seven will die before they reach five and 30 will be stunted by the age of five due to lack of nutrition. Poor nutrition results in lower cognitive skills and a reduced ability to learn which further contributes to a lack of capacity and skills.

3 See: https://databank.worldbank.org/data/download/poverty/987B9C90-CB9F-4D93-AE8C-750588BF00QA/AM2020/Global_POVEQ_LBR.pdf

Most adults do work but only 20 percent are in paid employment. In addition, 87 percent of Liberians are in informal employment.

Figure 7.1 Liberia's Human Capital Index is Among the Lowest in the World



Source: HCI, 2020

Source: World Bank 2022[45]

According to the 2018 human development index, out of a population of about 5 million, about 27 percent was without access to safe water and 83 percent had no access to sanitation. In the same year:

- Average life expectancy (at birth) was around 60 years (same as the regional average)
- The maternal mortality rate was at 640 per 100,000 live births (higher than the regional average of 538 per 100,000 live births)
- The infant (under five) mortality rate was at 71 deaths per 1,000 live births (regional average was slightly higher at 78 deaths per 1,000 live births).[6]
- Comparatively, higher child mortality was 6 per 1,000 live births.
- Electricity access rate for 2018 was 26 percent and 27.53 percent in 2020,[7] both of which were lower than the average for the region (50 percent) and the average for its income group (41 percent).
- Only 18 percent of the population had internet connectivity, which is lower than the average for its region (24 percent) (Rodriquez-Castelan et al 2021).

The above figures indicate that the human development index was lower for Liberia compared to most of the countries in the West African Region. Liberia is also one of the poorest countries in West Africa (MFWA 2021). The primary reason for the lower human development index and poverty levels in Liberia compared to most countries in the West African Region is that households are unable to afford necessities such as food and electricity.[8]

4 See: https://blogs.worldbank.org/opendata/shedding-light-liberias-human-capital-outcomes
5 See: https://databank.worldbank.org/data/download/hci/HCI_2pager_LBR.pdf?cid=GGH_e_hcpexternal_en_ext
6 See: https://data.worldbank.org/indicator/SH.STA.MMRT?locations=LR
7 See: https://tradingeconomics.com/liberia/access-to-electricity-percent-of-population-wb-data.html
8 See: https://borgenproject.org/tag/poverty-in-liberia/

FORESTS AND FOOD SECURITY

Income, food prices and economic inequality are major factors that determine how much access people have to food. Rising income levels and low food prices improve a country's food security, although the impact of these gains can depend on the distribution of income within a country. Conversely, disruptions to income, prices, or food supply can increase food insecurity, especially for the poor (Baquedano et al 2020).

Since the prolonged civil war, food security in Liberia has improved dramatically. However, even now, approximately only one in five households in Liberia is food secure and only two in five are marginally food secure (42 percent) (CFSNS 2018). This shows how vulnerable the population is to food insecurity due to a shock or emergency.

Food and nutrition security exists when:

- All types of access to food are available, such as social and economic access
- There is enough food, and the quality of the food is sufficient, and
- This is backed up by adequate access to water, sanitation, and hygiene (WASH).

(FAO 2021)

Maintaining food security is critical to the social stability of the country.

Liberia is food vulnerable because it has not fully recovered from the impacts of the 14 years of civil war. The 1989 to 2003 civil war resulted in rural-urban migration and a breakdown of the agricultural infrastructure of the country. Rice is the staple food of Liberians, but they import more rice than they produce. The United Nations Food and Agriculture Organisation (FAO) estimated that in 2020 rice production was at 270,000 tons and rice imports were estimated at 540,000 tons (that is rice production was 50 percent of imports).[9] Rice for human consumption accounts for over 80 percent of imports, while wheat and maize account for about 13 percent and 6 percent, respectively. Meanwhile, poor road networks across the country and the dependence on rice imports have made food prices especially sensitive to international fluctuations.

In 2021, the Government of Liberia (GoL) took steps to mitigate the impact of price increases of rice by re-issuing an Executive Order (#105) which removed the tax on imported rice.[10] The suspension of import tariffs on rice has been recurring since 2008. Taxes and duties are generally introduced, changed, or renewed yearly in Liberia. It is worth noting that over the years, the policy measures to suspend rice tariffs have not had the desired impact.

What is clear is that food commodity price spikes appear to hit the poorest hardest (Mattinen et al 2009). This makes rural Liberia even more vulnerable as rural residents in Liberia are at least three times more likely to consume below acceptable nutritional levels than urban residents. Similarly, 38 percent in rural areas have borderline food consumption versus 13 percent in urban areas. In addition, more than 76 percent of rural households have a low diversity of diet, which suggests that actions to improve access to food should focus on promoting the inclusion of vegetables, fruits, pulses, and animal source foods in diets (GoL 2018).

Liberia's economy and levels of food insecurity are also vulnerable to global factors. Over the period of 2017 to 2019, economic shocks affected the trajectory of the Liberian economy. From mid-2018 through to 2019 Liberia experienced high food-price inflation driven by a rapid depreciation of the national currencies which reduced economic access to food. In addition, between 2017 and 2019, cereal output (particularly rice) in Liberia was volatile and this further contributed to high food prices (FAO 2020). As a result, before COVID-19 hit in 2020, food insecurity had already reached 55 percent. The shock to GDP from the pandemic increased the share of the population that is food insecure in 2020 by an additional 2.7 percent in Liberia (Baquedano et al 2020).

9 See: https://www.fao.org/giews/countrybrief/country.jsp?code=LBR&lang=es

10 See: https://web.facebook.com/executivemansionliberia/photos/a.622167858131996/1551030585245714/?type=3&_rdc=1&_rdr

Box 7.2 Forest Proximate Households in Liberia and Food Security

In Liberia, 47.5 percent of all households are considered **forest proximate** (*forest-proximate households and communities are situated within 2.5 kilometers of a forest*).

In 2020, it was estimated that 46 percent of these households were food insecure with the average period of food insecurity lasting approximately three months.

However, forest products played a crucial role in enabling these two-thirds of these households which relied on forest products to meet their needs. Bushmeat, bush yam and fish were the three top products used to cope with food insecurity (World Bank 2020).

Bushmeat seen on the roadside including cane rat, giant pouched rat, and red-flanked duiker.

Source: World Bank 2020

Higher agricultural production and forest conservation are both vital for achieving food security and improving the well-being of farmers and local communities. In addition, growing evidence supports the idea that agriculturally driven growth reduces poverty, improves income distribution, and contributes to food security (Mellor 1999). For the country to guarantee food availability and improve food security, it needs to focus its attention on the local cultivation of rice and cassava and the rearing of livestock. These three activities will add significantly to rural household incomes as well as improving food security. However, despite the steady progress in achieving food security, there is still the need for urgent attention to be paid to addressing the weak food and agriculture infrastructure, particularly in the context of the catastrophic Ebola outbreak, and more recently the COVID-19 pandemic (see Box 7.3).

Box 7.3 Impacts of Pandemics and Epidemics on Food Security

Ebola Virus Disease (EVD)

Ebola Virus Disease (EVD) was first discovered in 1976 near the Ebola River in the Democratic Republic of Congo (DRC). Since then, there have been several large EVD epidemics in Africa, including Liberia. Between 2014 and 2015, there was an outbreak of the EVD in Guinea which quickly spread to other countries including Liberia.[11] The 2014 and 2015 EVD crisis took thousands of lives and devastated the economy (Nyenswah et al 2016).

COVID-19

When the COVID-19 pandemic started, Liberia was still recovering from the EVD crisis. Coronavirus disease (COVID-19) is an infectious disease caused by the SARS-CoV-2 virus and the first known case was identified in Wuhan, China, late in 2019. The disease quickly spread worldwide, resulting in the COVID-19 pandemic. The first case of COVID-19 in Liberia was confirmed on 16 March 2020. To control the spread of COVID-19, the Liberian Government declared a nationwide state of emergency on 8 April 2020, with mandatory lockdowns in the capital city of Monrovia and several regions, for a total period of 90 days.

The lockdowns and the fear of transmission slowed down the economy substantially, including agriculture. Gross domestic product (GDP) declined by 2.5 percent in 2019 and a further decline of 3 percent in 2020. The findings of a recent COVID-19 specific survey undertaken by the Liberia Institute of Statistics and Geo-Information Services (LISGIS) revealed that 67.5 percent of households reported loss of income since the outbreak. Food situation was made even more dire by an increase in the prices of major food items as reported by 66.4 percent of the households. Nearly 84 percent of households were worried about not having enough food to eat because of lack of money or other resources.[12]

Forest Safety Nets

Forests have been shown to provide important safety nets for disasters such as floods, droughts, fires, and food shortages. This is also the case during pandemics and epidemic outbreaks, when the economy goes through a severe economic downturn. At these times, households fall back on forests to meet their basic minimum needs. It is imperative that Liberia's forests are managed sustainably to protect this crucial household resource.

Deforestation and Epidemics of Infectious Diseases

Wilcox and Ellis (2006) noted that there was a link between deforestation and outbreaks of zoonotic and vector-borne diseases as well as evidence that reforestation and plantations may also contribute to epidemics of infectious diseases. Between 1990 and 2016, the combination of human population growth and deforestation in tropical countries has been linked to increases in outbreaks of zoonotic and vector-borne diseases from 1990 to 2016 (Morand and Lajaunie 2021). Thus, forests need to be managed sustainably and deforestation controlled, to minimize the risk of outbreaks of zoonotic diseases such as malaria, Ebola, severe acute respiratory syndrome, and Zika virus disease (World Bank 2020).

11 See: https://en.wikipedia.org/wiki/Western_African_Ebola_virus_epidemic

12 See: https://frontpageafricaonline.com/news/liberia-statistics-houses-survey-shows-covid-19-negative-impact-on-households-businesses/

FORESTS AND FOOD SECURITY CHALLENGES

Unsustainable Consumption of Forest Goods and Services

Liberia has one of the highest population growth rates in the world. In 2006 it reached a high of 4.6 percent and is currently rising by 2.7 percent a year.[13] Uncontrolled population growth has placed significant stress on the sustainability of forest resources because the increasing demand for food runs in parallel with the escalating demand for forest products and services, including traditional wood products, water, and electricity from hydro-electric projects.

Safeguarding natural resources is critical to sustainable food security. Many of the nutrient-rich foods eaten by large numbers of Liberians come from the forests and waterways of the country—especially bushmeat and fish. In addition, much of the formal employment opportunities through which many households assure their access to food and better nutrition are linked to the exploitation of Liberia's natural resources. If these households are to enjoy long-term food security, Liberia's natural resources must be managed in a sustainable way (Ministry of Agriculture 2008). The challenge has been how to balance the need to improve the standard of living and food security with the environmental requirement of sustainability.

Access, Availability and Vulnerability

Availability and access to forest foods present a highly complex challenge because these foods, such as bushmeat and some roots and tubers, are consumed by large numbers of the rural communities (Toledo and Burlingame 2006). In addition, much of the formal employment opportunities and long-term food security are achieved by many households through their access to food and better nutrition, which are linked to the exploitation of non-timber forest products (NTFPs) by local communities. The NTFP sector is generally dominated by the rural poor and labor-intensive small-scale industries. This makes it important for policy mechanisms to carefully differentiate between subsistence and commercial forest food activities (Arnold 2008).

However, equitably managing forest access becomes a key challenge for policy due to the generally low barriers to market entry and broad participation by both women and men in forest food collection (Kleinschmit et al 2015). Another challenge is that, while the subsistence-based forest food sector tends to have less impact on forest resources than the commercial sector, it is often difficult for policy frameworks to effectively separate these activities due to the dynamic nature of forest food markets. Forest food markets are often highly seasonal, products classified as *traditional* can quickly become commercial, and commercial products can be replaced by substitutes (Neumann and Hirsch 2000).

Access to Food

Food insecurity is predominantly caused by the inability of people to access food, including forest foods, especially in rural areas. This compromises their food intake frequency and variety below levels needed for an active and healthy life.[14] Access to food is a daily struggle as households rebuild and strive to develop more sustainable livelihoods, including dependence on forest foods (Murphy et al 2016). The challenge is that restrictions to physical, economic, and social access to forests for vulnerable groups and rural communities' restrictions exacerbates their access to diversified and nutritious foods.

Levels of Food Supplies

The adequate supply of food at national level does not in itself guarantee household level food security. Recognizing that forest ecosystems play an essential role in household food security through diversifying diets and providing essential sources of nutrients will contribute enormously to meeting the nutritional and health needs of local resource users (Ministry of Agriculture 2007).

13 See: https://worldpopulationreview.com/countries/liberia-population
14 See: https://wocatpedia.net/wiki/Definition_and_Dimensions_of_Food_Security#Access

Food Vulnerability

Another critical challenge is that of food vulnerability which arises from exposure and sensitivity to livelihood shocks and risks (Ellis 2003). The more often they are exposed to a livelihood shock or risk, and the greater the consequences, the more food vulnerable they will be (Benson and Clay 2005).

The resilience of vulnerable groups and local communities is mainly developed through their effective use of forest resources. The challenge is that currently, in Liberia's forest-proximate communities, they do not have effective resilience strategies to avert or mitigate the vulnerability of rural communities (Ministry of Agriculture 2015). This is important because Liberia is especially food vulnerable because it has not fully recovered from the impacts of the 14 years of civil war (1989-2003). The civil war resulted in rural-urban migration and a breakdown of the agricultural infrastructure of the country.

Rural Versus Urban

Rural communities in Liberia appear to be more vulnerable and are at least three times more likely to consume below acceptable nutritional levels than urban residents. Similarly, 38 percent of those in rural areas have borderline food consumption versus 13 percent in urban areas. Again, it is the forests that play an important role as safety nets.

However, the challenge is that poor inter-ministerial and inter-sectoral collaboration has resulted in the lack of provision of adequate skill sets, poor availability of tools and lack of informed choices about forest resources available to the vulnerable groups to help build their resilience to food shocks (Wilson 2012).

Deforestation

Shifting cultivation and climate change are the two most significant environmental threats in Liberia. Due to the availability of land and forests and the unavailability of fertilizer, farmers tend to practice shifting cultivation to maintain their crop yields. Shifting cultivation, illegal and uncontrolled logging, mining, charcoal production, and establishment of palm oil plantations, contributes to deforestation.

Small-scale miners digging in a forest concession

National concerns about the impact of deforestation on food security is rising. Forest clearing contributes to climate change, biodiversity loss, reduced timber supply, flooding, and siltation and soil degradation. This in turn affects the economic activity of people's livelihoods and leads to food insecurity. To prevent deforestation-related food insecurity, an efficient co-management system is needed which allows communities and other local stakeholders to be directly involved in the management of all aspects of forested areas and to promote sustainable use and stewardship for future generations. However, this needs to be done in conjunction with the development of alternative means that will guarantee the livelihood of the people. Currently, forest management has not brought substantial benefits to the people at the local community level, and this needs to change.

A Policy Disconnect

Other challenges to the attainment of food security include the apparent disconnect between agricultural and forestry policies and the general lack of policy coherence and weak multisectoral coordination. While agriculture and nutrition policies and strategies exist, they are not generally aligned with or sufficiently linked to policies and strategies in other areas that also affect food security and nutrition such as forestry, health, water and sanitation and education (WFP 2019).

GoL will need to develop systems to monitor the food security situation, identify food insecure groups, and design and implement safety net programs. Establishing this capacity will inevitably begin with an inventory and analysis of data collected from stakeholders and the creation of institutions to be responsible for vulnerability analysis and safety net programs. Given the severe capacity constraints and the arguable need for decentralized local governments to assume responsibility for development actions, Liberia will undoubtedly need an institutionally nimble system that facilitates collaboration between ministries as well as national and decentralized structures (Tefft 2005).

Access roads in and around forests are a huge barrier to building livelihoods

ADDRESSING FORESTS AND FOOD SECURITY CHALLENGES

The National Food Security and Nutrition Strategy (NFSNS)

To address the issue of food insecurity and its impacts, in 2008, GoL formulated the National Food Security and Nutrition Strategy (NFSNS) with the aim of ensuring that all Liberians have reliable access to the food they need and can use that food to live active and healthy lives. The NFSNS states that the right of all Liberians to food security and good nutrition is not a policy choice of government that it can decide to accept or reject, but a right which the government is obligated to respect, promote, and protect (Ministry of Agriculture 2008). GoL recognizes that to further its ambitions of peace, reconciliation, stability, and development, the nation as a whole and each Liberian household must achieve food security and improved nutrition.

However, as the NFSNS is implemented, GoL needs to recognize the important role of forests in contributing to food security and commit to addressing the various (above-mentioned) challenges that impact on food security. This will go far in ensuring that Liberian citizens have reliable physical and economic access to sufficient safe and nutritious food to meet their dietary needs and food preferences. It will also create a strong foundation for not only a prosperous nation, but also a more peaceful and secure one.

Safeguarding Community Resources and Community Development

In Liberia, local production of food is generally enhanced through the strategic protection of key communal resources that are important for food security. These resources include forests, rivers, the ocean, and other ecosystems important to produce wild food plants, bushmeat, and fish. However, most of these communal resources are being over-exploited and under-protected due to poor involvement of local communities in decision-making about their resources.

Recognising that forest ecosystems play an important role in household food security through diversifying diets and providing essential sources of nutrients, some observers have called for greater policy integration focused around meeting the nutritional and health needs of local resource users (Arnold 2008). However, improving the sustainable use of diverse forest foods to support food security and nutrition will need to involve:

1. Local users in research and decision-making processes
2. Facilitating information flows
3. Enabling access to credit and markets
4. Developing community-based education programmes
5. Supporting the development of user and producer organisations
6. Improving efficiency by reducing transaction costs or encouraging technology adoption and innovation. (Shumsky 2014).

Improving livelihoods and sparking change that lasts require engagement on a whole community level, not just the individual.[15] Section 2.2c of the Community Rights Law (CRL), 2009 states that "*Any decision, agreement or activity affecting the status or use of community forest resources shall not proceed without the prior, free, informed consent of the said community*." Section 2.1a also mandates the Forest Development Authority (FDA) to "*define rights and responsibilities of communities to own, manage, use and benefit from forest resources whether by customary, statutory, or other tenure systems, hereafter referred to as community forest resources*". As a result, the FDA is required to develop a strategic platform of action, in collaboration with community groups to ensure that community resources contribute to food security within forest fringe communities and at the national level (Ministry of Agriculture 2008).

Securing Bundle of Community Rights to Forests

The *bundle of rights* concept is widely used to describe rights to land and resources in any community. According to Schlager and Ostrom (1992), the bundle of rights confers five different forest rights to communities. These include the right of:

1. **Access**—the right to enter an area and enjoy non-subtractive use
2. **Withdrawal**—the right to use resources and extract products (also known as usufruct rights)
3. **Management**—the right to regulate internal use patterns and transform the resource by making improvements
4. **Exclusion**—the right to determine who will have access and withdrawal rights
5. **Alienation**—the right to sell or lease management or exclusion rights.

On the other hand, ClientEarth (2013) distinguishes three bundle of rights. These are:

1. **Control rights**—the right to manage and to alienate a property
2. **Management rights**—the right to manage the property)
3. **Use rights**—the right to use the property, in terms of accessing it and exploiting it.

Securing the bundle of rights for local communities would give them more equitable access to forest resources to enhance their food security.

FORESTS AND LIVELIHOODS

Understanding the interactions between households and forests is crucial if we want to make sure that communities benefit sustainably from forests. Social and economic impacts of forests in Liberia, include:

- Forestry is the fourth largest contributor to the economy after services, agriculture, and fisheries, mining, and panning.
- The formal forest sector contributes 10 percent to gross domestic product (GDP) and employs 39,880 full-time equivalent workers, of whom 35 percent are women (See Chapter 3) (FAO 2020).
- The informal sector brings countless benefits to communities.
- Chain saw milling (CSM) provides up to 24,000 regular jobs and contributes each year, up to US$ 41 million, about 3 to 4 percent of GDP (see Chapter 4).
- The charcoal industry employs up to 28,000 people on a regular basis.
- NTFPs, such as fruits, honey, meat, nuts, and plants are vital to the livelihoods of most of the rural population.

15 See: https://www.solidaridadnetwork.org/region/west-africa/

In monetary terms, forest-proximate households get 37 percent of their total income from forest products (World Bank 2020). Most people dependent on the forests and on farming are poor. They have an annual income of US$ 783, which is far below the national average of US$ 2,440.

Forests also provide indirect livelihood benefits, such as watershed, protection, erosion control, enhanced soil fertility and windbreaks for farmland (Thoms 2008). Forests are essential to the livelihoods of Liberians as they protect communities, provide food, offer a peaceful place for cultural practices, and allow for revenue generation from the harvesting of forest resources (Hooda et al 2018).

Forest Activities, Products, and Income

Well over one-third of Liberia's population lives in forest areas and depends on forests for their livelihoods and welfare to varying extents (Yiah 2020). Forest activities impact on the lives of poor people in three ways:

1. Revenue generation, employment, and social provision through large-scale, commercial timber harvesting
2. The creation of wood-based small enterprises development
3. Dependence on the subsistence use of forest products. (Angelsen and Wunder 2003).

Products derived from forests and trees are important sources of cash income and employment for the rural poor. A great number of timber and NTFPs, including sawn wood, building materials, wood-based fibers, furniture, foodstuffs, medicines, household utensils (such as baskets, mats, and dyes) and agricultural implements are sold on the local and national markets. Several local communities in the country get their main source of income from forest-based microenterprises, such as fuelwood sales, charcoal making, small-scale chain saw milling, carpentry, furniture making, handicrafts and commercial hunting. Many of these activities are important especially for the most vulnerable groups, including women and children. The poorest households and women and children are generally the most forest-dependent and obtain a major share of their subsistence from a diverse set of forest products, including many of the same products that are also sold for cash income.

NTFPs provide a crucial source of income for the rural poor

Safety Nets

Rural households in the country rely heavily on forest resources for more than just daily income and subsistence (Lebbie 2009). Forests and trees help reduce the vulnerability of the rural poor to external shocks. In addition, forests play important *safety net* functions for poorer families and communities in lean or troubled times (Shackleton et al 2007). For example, forests allow the rural poor to survive through hardships and recurrent *hungry seasons* after families have finished the previous year's crops, and new crops are yet to come. Forty-three percent of households use forest products to recover from shocks and two-thirds that experienced food insecurity relied on forest products to meet their needs (Shackleton et al 2007).

NTFPs

NTFPs provide small but significant sources of income, particularly for women and families that do not have access to agricultural markets. NTFPs are defined as all products derived from biological resources found on forest land other than timber, wood-residue and plants harvested in whole for medicinal purposes (Wong 2000). Other NTFPs include food products such as root-tubers, fleshy fruits, nuts, seeds, mushrooms, edible herbs, medicinal herbs, construction materials, animal products, charcoal, fuelwood, round poles and rafter, raffia palm, bitter root, rattan, chewing stick, and cane wood for handicraft or rural industries. These products are collected in varying quantities, both for commercial and individual household purposes.

Oil palm nuts, Grand Bassa County, Liberia

In terms of economic value, these NTFPs may even outweigh the revenue accruing from timber (Parren 1992). NTFPs support a variety of handicraft and cottage-based industries, such as canes (rattan) and bamboo for basketry and garden furniture, tannins for leather works, dyes for textiles, timber for carving and palm wine (a local gin). Many rural families also receive a major proportion of their cash income from the sale of NTFPs collected from forest reserves, fallow, and farmlands (Falconer 1992).

Fuel Energy

For most Liberians, wood remains the main source of energy. It is estimated that over 95 percent of the population depends on firewood and charcoal for cooking and heating needs and palm oil for lighting (Government of Liberia 2009). In addition, the production, transport and sale of fuelwood and charcoal to rural and urban centers of consumption is a major source of employment and cash income for the poor. Because of the linkage with rural poverty and nutrition and the fact that wood is mainly collected by women and children over long distances, fuelwood collection and consumption make significant contributions to GDP and to raising the basic standard of living of rural communities.

Girl studies while her aunt works packaging charcoal to sell to neighbors

In rural areas firewood is the most common fuel. However, in urban areas charcoal dominates. The last national census found that 70 percent of urban households use charcoal as their primary cooking fuel (rising to 85 percent in Monrovia). Only 5 percent of rural households use charcoal (Amavie 2019). However, charcoal demand in Liberia is growing rapidly from an estimated 337,000 metric tons worth US$ 46 million in 2018 (Hooda et al 2019). And it is expected that charcoal demand will exceed 350,000 metric tons in 2021 due to ready availability, desirable performance characteristics and a lack of affordable alternatives (Amavie 2019). The industry is also thought to employ up to 28,000 people on a full-time equivalent basis, though many more in practice due to seasonal or part-time involvement (Hooda et al 2019).

Collecting Forest Products

About 70 percent of the households collect forest products for self-consumption or to sale. Every day, on average, they spend over three hours collecting fuelwood, bushmeat, and shelter products. Despite the time spent on the collection of NTFPs, only 24 percent of households process the products they collect for value addition.

Although the Liberian people have been blessed with a heavily forested terrain which can provide large and sustainable incomes, this dependence on forest resources plus a lack of appropriate environmental enforcement is leading to mass forest degradation and deforestation in Liberia.[16]

AGRICULTURE AND RURAL LIVELIHOODS

A livelihood is deemed sustainable when it can cope with and recover from stresses and shocks, maintain, or enhance its capabilities, assets, and entitlements, while not undermining the natural resource base (Chambers and Conway 1991). While forests play fundamental roles in supporting livelihoods, dependence on forests is almost always complementary to agriculture, livestock herding, trading, or wage laboring. To understand how rural people are using and benefiting from forests, it is essential to be aware of all the other components of their livelihoods and to reform their governance arrangements (Agyeman et al 2010). This section looks at the contribution of agricultural activities to rural livelihoods.

By the end of 2020, there were more than 600,000 farm families engaged in farming activities.

The total land area of Liberia is 11.2 million hectares, more than half of which is covered by natural forest. Out of the total land area, about 3.4 million hectares is agricultural land. The agricultural land is divided into lowland and upland areas, with potential lowland areas representing roughly 0.6 million hectares and upland areas representing the remainder 2.803 million hectares of arable land (Kiazolu and Tucker 2008). Before the war, 0.6 million hectares of this land was cultivated, with 0.22 million hectares under permanent rotation or in plantation (FAO 2007). In any given year up to 2.8 million hectares of land is in a fallow period, under shifting cultivation system, bringing the total estimate of land used by smallholder farmers to an estimated 3.4 million hectares. In 2008, there were 274,070 farm families with an average range of 1.17 to 2.06 hectares of land each for arable crops (Ministry of Agriculture undated). Assuming a 10 percent growth rate, by the end of 2020 we can estimate that there were over 600,000 farm families engaged in farming activities as at the end of 2020.

Agriculture accounts for 61 percent of GDP, and the sector is a significant net contributor to the economy in terms of employment and foreign exchange earnings and a primary determinant of nutrition, poverty reduction, and rural transformation. The sector provides over 50 percent of the country's requirements of its staple food rice, over 100 percent of tubers and about 80 percent of local vegetables (FAO 2012). Large-scale commercial rubber and oil plantations are also important contributors to the sector.

Agriculture is also the primary source of livelihoods for two-thirds of Liberia's people. Most rural households are engaged in agriculture, primarily smallholder and subsistence farming, as well as cash crop plantation (rubber, oil palm, cocoa, sugarcane, and coffee). Crop production is estimated to contribute 32 percent of the total household incomes of forest proximate households, and agricultural and forestry wage incomes contribute another 2 percent.[17] Improving the value addition of the sector's commodities possesses tremendous potential for improved access to food, remunerative employment, and livelihoods of the population.

Cropping and Fallow Periods

Liberia's agriculture sector is mainly based on forestry and involves traditional subsistence farming systems mainly in the uplands. This is characterized by labor intensity, shifting cultivation, low technologies, and productivity. Most Liberian farmers use shifting cultivation or rotation cropping system of farming. Under this system, a portion of land is cleared (using the slash-and burn method) and farmed for two to four years. This is followed by a fallow period for the land to regain its fertility.

16 See: https://digitalcollections.sit.edu/cgi/viewcontent.cgi?article=4244&context=capstones
17 See: https://microdata.worldbank.org/index.php/catalog/3787

In the past, the fallow period was about twenty years during which time the farmer would be cultivating other areas. However, increased population pressure has reduced the fallow period to one to three years, which is inadequate for soil rejuvenation. This has led to a situation in which the land does not revert to its former fertility before it is cropped again. This results in in soil degradation, reduced per-hectare crop yields, and increases rural poverty.

Food crops such as rice, cassava and other vegetables are the predominant crops grown. Some families also have small plots of cash crops such as rubber and cocoa. Shifting cultivation is the dominant farming strategy used in the uplands where land is cleared and used as crop land for one or two years and left uncultivated for 8-10 years. In more populated areas fallow periods tend to be shorter and in less populated areas fallow periods are longer with nearly abandoned farmland in some cases. Although rice, cassava, and vegetables production accounts for about 87 percent of cultivated land, the output of the staple foods remains below national requirements. Small acreages of tree crops are maintained for generating cash income.

Commercial Agriculture

Commercial agricultural activities are mainly plantation estates of rubber, oil palm, coffee, and cocoa. The latter two are produced exclusively for export, and little or no value is added to rubber and oil palm. Besides the plantation estates, little private sector investment has been made in the agriculture sector, except for limited commodity trading which has persisted over the years. The livestock sub-sector was decimated by the civil conflict, and current livestock population is below 10 percent of national consumption requirements. The fisheries sector is under-developed with only about 6.8 percent of sustainable yield harvested annually. Yet, Liberia is rich in land and water resources, and there is potential for significant expansion of agriculture production. An estimated 600,000 hectares of land for irrigation exist, yet less than 1 percent of it is developed (Ministry of Agriculture undated). Livelihood activities include rice, cassava, rubber, oil palm, cocoa, coffee, ruminants, poultry, and livestock.

Dynamic Smallholder Sector

Liberia's agricultural sector was largely developed as dual system consisting of: (1) a commercially oriented plantation sector; and (2) subsistence producers. Most rural Liberians have either worked as laborers on commercial plantations or on small subsistence farms. A relatively small number of farms have been involved in cash crop production. This situation presents a striking contrast to that found in most neighboring countries. These are characterized by a dynamic smallholder sector in which farm households manage an integrated and diversified cash crop food crop production system. If Liberia was to build a more commercial smallholder sector, Liberia's agricultural potential would be enormous. There exist numerous opportunities for both food and cash crops and this development could serve as the basis of rapid growth in incomes as well as a trigger for de-urbanization of major cities and the return of people to rural areas.

Achieving the transformative changes in agriculture, together with sustainable use of forest resources, to augment rural household incomes will depend, to a significant extent, on how well the rural households are provided with alternative livelihood options. The next section provides some details on alternative livelihood options for rural areas in Liberia.

BARRIERS TO FOREST LIVELIHOODS

The design and implementation of a smallholder-focused forest livelihood strategies will require attention to numerous issues that include rural infrastructure, research, extension, farmer organizations, input supply, marketing, and credit. Experience to date suggests that in all areas and for most of the activities, the common constraints to implementing sustainable forest livelihood activities include the following:

Policy and governance barriers—The main policy and governance barriers to forest livelihoods enhancement include: (1) poor policy implementation; (2) inadequate institutional capacity; (3) market and policy failures; (4) excessive focus on timber to the neglect of non-timber livelihoods; (5) poor governance frameworks and weak law enforcement; (6) rent seeking behavior (see Chapter 1); and (7) insecure land tenure and lack of intersectoral coordination.

Lack of adequate financial assistance—Arguably this is the most important constraint to developing forest livelihood activities. The real cost of capital from existing credit systems operating in rural areas, including forest fringe communities, is extremely high with loans and credits available at over 50 percent interest. Credit from the banks is not considered a viable alternative by farmers because for them, it is impossible to secure bank loans. The assigned reasons for not being able to access or secure credits from the banks or others credit agencies include: (1) lack of commitment on the part of banks; (2) no bank account to facilitate the credits; (3) lack of collateral securities; (4) interest attached to the credits or loans; (5) not belonging to a group to secure credits; and (6) lack of initial capital to invest in farms to be used as collateral securities.

Poor community access to forest land—Access to land within forest-fringe communities is a major constraint to improving livelihood in many communities. This challenge is an issue for youth, who particularly have challenges with access to land.

Loss of production—Adequate rainfall, access to farm implements and fertilizer are important factors of production of forest livelihoods. Farmers depend on rainfall, making them increasingly vulnerable to erratic rainfall patterns and other climate-change-induced adverse weather conditions. Erratic rainfall is noted to have been increasing with deteriorating environmental conditions in the areas (FAO 2012). However, these threats are usually ameliorated through community collective action. Climate change may exacerbate food insecurity by reducing agricultural yields due to already erratic rainfall patterns (EPA 2012).

Transportation, markets, and prices—The combined effect of long distances from available markets, the poor nature of access roads coupled with the short shelf life of many of the alternative livelihood products have collectively put farmers at the mercy of middlemen who dictate prices of their commodities, pay them pauper prices, and prevent them from moving out of poverty.

ADDRESSING BARRIERS TO FOREST LIVELIHOODS

Strengthen the Rights of Forest-Dependent Households

As outlined in Chapter 5, forests and trees have always been an integral part of the livelihoods of rural communities as they provide vital assets for safety net functions in rural livelihoods and serve as sources of additional household income. Yet, not having the right to access and use these resources can be a significant barrier to forest livelihoods.

The 2006 National Forestry Policy and Implementation Strategy (NFPIS) outlined strategies for enhancing community access to forests. Strategies for addressing the barriers to forest livelihoods enhancement by vulnerable groups and communities include: (1) the introduction by FDA of strong regulatory frameworks for clear community access and utilization rights for the rational exploitation of wood energy and non-wood forest products; and (2) strengthening and improvement of alternative forest-based livelihoods to agriculture at community level to reduce rural dependence on forests and wildlife. Forest reserve access and security of tenure are the key prerequisites for forest fringe community development and poverty reduction.

According to Brown (2008), the FDA must promote the participation of communities in the management of forests and other natural resources, as part of a broader process of local government reform. Stronger participation of communities in the forest governance approach is imperative as it will safeguard the forest assets and strengthen community rights over their traditional land and forest resources.

Integrate Local Communities into Forest Reserve Management

There is generally a lack of trust of FDA by local communities due to delays in disbursement of forest revenues to them and prevention of community access to forests. This has led in some cases to local communities colluding with chain saw operators to illegally harvest trees within reserves primarily because they have limited or no legal access to forests they require for their livelihoods. The FDA should promote the integration of local communities in forest reserve management beyond the scope of community forest areas (CFAs) into integrated or collaborative management of protected forest areas (PFAs).

Strengthen the Implementation of Forest Livelihoods-related Policies and Laws

The FDA should be strengthened to enable them to manage the forest resources of the country in such a way as to guarantee the sustainable future economic growth and livelihood security of rural communities through their continuous dependence on forests for their livelihoods. In addition, the Land Commission (LC) and the FDA should be resourced to: (1) implement Liberia's Land Rights Act (LRA), 2018, especially the provisions which deal with customary land ownership and management; and (2) implement the Community Rights Law (CRL), 2009, which provides recognition of communities' conditional use of forest resources, including a provision enabling them to sign small-scale contracts for harvesting timber and non-timber forest products (Rights and Resources Initiative 2021).

Support Local Governance Institutions

Local and national governance institutions and structures should be strengthened and supported in their decision-taking functions. Incentives should be provided to enable them support forest livelihoods decision-making and grievance redress as well as development of equitable benefit-sharing frameworks.

Promote Alternative Livelihood Micro-Enterprises

The purpose of developing sustainable alternative livelihood support and investment schemes for local communities is to alleviate poverty by reducing the reliance of communities on forest products whilst ensuring sustainable management of forest resources. The promotion of sustainable alternative livelihood options seeks to reduce unemployment and improve income levels of beneficiaries. It also aims to halt the decline of forest products since the local communities will have other sources of income and reducing pressure on forest resources.

The provision of viable alternative livelihood systems and access to inputs and marketing opportunities will promote agricultural productivity and market competitiveness. Experiences throughout the world have shown that broad-based, productivity-driven agricultural growth can increase income, improve livelihoods, capitalize the rural economy, and provide the basis for sustainable economic growth in Liberia.[18]

Some alternative livelihood micro-enterprises have been found to be beneficial for local communities. See Table 7.1. These alternative livelihood activities improve the economic situation of rural households. As a result, people will have less need to encroach into reserved forest or continue to deplete the forest through CSM.

18 See; https://newspublictrust.com/rwanda-and-liberia-how-patriotism-focused-leadership-vs-progress-and-retrogression/

Table 7.1 Potential Livelihood Micro-Enterprises

Type of Livelihood	Information
Grasscutter farming	Grasscutter rearing is a rapidly growing micro-enterprise for rural farmers in diversifying their source of income. Grasscutters are a common African rodent also known as the Cape Rat. The animal is prolific, and the meat is a much sought-after delicacy throughout Liberia. Farming grasscutters is easy to do and there is a ready market.[19]
Poultry production	Most households in forest fringe communities' rear poultry around their compound. However, there is the need to assist these households with improved cockerels to mate local hens to help increase body size, egg weight and clutch size. These improved products would attract better prices than what they have been getting previously.
Small ruminant production	Many farmers have stocks of sheep and goats in the selected communities which serve as sources of food, income generation and short-term cash reserve. Materials for feeding these animals are plentiful (crop residues, household wastes and pasture) in these communities. Due to their rapid attainment of marketable weights, returns on small ruminants are quick and attractive. There should be a program to support some local community households with improved and well-adapted rams and billy-goats to improve stock performance.
Snail farming	The supply of snails to markets remains inconsistent since they are seasonal and are only easily available during the wet season (rainy season). This is when rural dwellers handpick the slow-moving, brown-shelled creatures from thick bushes to supply the urban market. Supply of snails during the dry season stays low while the price doubles at this season of the year (Harris 2020). In addition, due to forest degradation, snails are losing their habitat. Communities have always collected snails from the wild for home consumption. Snails command attractive prices throughout the year and would be a stable source of income for households. Its meat also lends itself to further processing and can be stored for several months without loss of quality or the price it commands.
Mushroom farming	This is another micro-enterprise which is catching on well with farmers in the rural communities. The reason is that mushroom is a delicacy in many communities including those selected. It needs small start-up resources to begin and produce the mushroom. Returns on investment are quick and attractive to producers. It would also improve the producers' access to mushroom throughout the year instead of being seasonal in the wild.
Beekeeping	Beekeeping is an activity with low production cost. It is not labor intensive and can generate high incomes. Beekeeping can be easily integrated with other farm activities to add sources of income for a sustainable livelihood. The pollination services result in increased crop and improved product quality. In addition, bees produce wax which can be transformed into candles, skin creams, wood polish and other products and this can be used to generate extra income (Forest and Farm Facility undated).[20] This enterprise would be particularly attractive in communities with existing high bee populations. The honey and allied products have an immediate market, and the prices are attractive.

NATIONAL PRO-POOR AGENDA

Liberia's PAPD

Liberia's PAPD assumes that Liberia is rich in human and natural resources but is deprived of development mainly because its human capital lacks the knowledge to transform the natural resources into wealth. These wealth opportunities include farming, mining, fishing, forestry, or other productive ventures that require technology or financial investments (Government of Liberia 2018a).

The national pro-poor agenda marks a paradigm shift from sectoral-based national development planning to spatially integrated multisectoral planning, with a major focus on addressing disparities and inequality between demographic groups and regions of Liberia.

19 See: https://www.agri4africa.com/6-reasons-why-you-should-raise-grasscutters-or-cane-rats/
20 See: https://www.fao.org/3/aq075e/aq075e00.pdf

The Lift Liberia Poverty Reduction Strategy Paper (PRPS) (2008-2011) states that the Pro-Poor Agenda is about strengthening the capacity of Liberian to thrive and that the PRPS is aimed at:

1. Building the capacity of state institutions so that they could contribute to the building of a stable, resilient, and inclusive nation embracing its triple heritage and anchored on its African identity.
2. Providing greater income security to an additional one million Liberians and reducing absolute poverty by 23 percent across five out of six regions. This was to be achieved through sustained and inclusive economic growth driven by scaled-up investments in agriculture, in infrastructure, in human resource development, and in social protection (Government of Liberia 2018a).

To make progress towards the PAPD and eventually the Liberia RISING 2030 goals, the strategies, and interventions of the PAPD were built around the four PRPS pillars providing pathways out of poverty between 2018 and 2023 and beyond.

Liberia's PAPD aims to bring prosperity to all and draw all Liberians at home and abroad into a transformed process of nation building, leaving no Liberian behind. Over the five years, addressing the basic needs of Liberians for income security, better access to basic services, and greater opportunities for self-improvement in a peaceful, inclusive, and stable environment is at the core of the pro-poor approach. Over the long term, raising income levels and economic status to a middle-income country as outlined under the Liberia RISING 2030 framework remain a focus. The national pro-poor agenda also marks a paradigm shift from sectoral-based national development planning to a spatial integrated multisectoral planning, with a major focus on addressing disparities and inequality between demographic groups and regions of Liberia.

Rural inhabitants of poorer communities in the country depend in complex ways on natural resources. Often the poorer the household, the more diverse the sources of its livelihood and the more likely they are to depend on natural resources. Forests play fundamental roles in livelihood support, and dependence on forests is almost always complementary to agriculture and collection of non-timber forest products. To understand how rural people are using and benefiting from forests, it is essential to be aware of all the other components of their livelihoods.

Steps Towards a Pro-Poor Agenda

The national *pro-poor agenda* and its implementation evolved in a series of steps (see Figure 7.2). These are discussed below:

Figure 7.2 Liberia's Pro-Poor Agenda

2007—The Interim Poverty Reduction Strategy (IPRS)

The Interim Poverty Reduction Strategy (IPRS) policy statement outlined key elements of the poverty reduction strategy for Liberia, and was developed around four priority pillars:

1. National security
2. Revitalizing the economy

3. Strengthening governance and the rule of law
4. Rehabilitating infrastructure and delivering basic services. The IPRS also incorporated an indicative 'road map' for developing the full Poverty Reduction Strategy Paper (PRSP).

Lift Liberia Poverty Reduction Strategy Paper (PRSP) (2008-2011)

The Lift Liberia Poverty Reduction Strategy Paper (PRSP) was aimed at raising Liberia from post-conflict emergency reconstruction and to position it for future growth. The PRSP was aligned with the *Liberia RISING 2030* vision which set out the government's long-term social and economic development objectives, including the goal to achieve middle-income status within the next twenty years. The four pillars of the PRSP were:

1. **Power to the people**—to reduce developmental inequalities so the people can prosper
2. **The economy and jobs**—economic stability and job creation through effective resource mobilization and prudent management of economic inclusion
3. **Sustaining the peace**—promoting a cohesive society for sustainable development
4. **Governance and transparency**—an inclusive and accountable public sector for shared prosperity and sustainable development. (IMF 2021).

Liberia RISING 2030

The Liberia RISING 2030 vision, which is dubbed *One people, One Nation, United for Peace and Sustainable Development* was developed in 2012 as a national strategic vision (Government of Liberia 2020). Liberia RISING 2030 was designed to enable Liberia to achieve middle-income country status by 2030 through peaceful and inclusive politics, stable institutions, economic diversification, and accelerated human capital formation (World Bank 2018). The overarching goal of this vision is to achieve middle-income status by the year 2030 (Government of Liberia 2012). The goals include the diversification of the economy, poverty reduction, food security enhancement and reduction of the rate of deforestation.[21] These objectives were to be achieved through: (1) infrastructure and human capital development that will enable expanding production of tradable goods and services for export or to replace imports; (2) agricultural development; and (3) enhanced competitiveness and modernization of the economic sectors.

The Agenda for Transformation (AfT) 2012-2017

The Agenda for Transformation (AfT) 2012-2017 was the first step in achieving the goals set out in Liberia RISING 2030, Liberia's long-term vision of socio-economic development.[22] The AfT (2012-2017) took a results-focused approach working towards ensuring that a greater proportion of the population share in the growth and prosperity of the nation and thereby experience a better quality of life. The guiding principles of AfT (2012-2017) are that:

1. It builds on the gains made and lessons learned from the Lift Liberia PRPS (2008-2011)
2. It is informed by evidenced-based diagnostics developed in collaboration with stakeholders
3. Achievement of middle-income status by 2030 is possible but that GDP growth is not a panacea to Liberia's development challenges
4. There is the need for the country to prioritize investment
5. It recognizes the importance of the private sector and civil society in the achievement of national development goals

21 See: https://www.fao.org/faolex/results/details/en/c/LEX-FAOC169062/
22 See: https://www.undp.org/liberia/publications/liberia-agenda-transformation

6. The concession economy will continue to be the major driver of economic growth in the short term but that it requires a different model of administration than in the past
7. The economy will have to be diversified in the medium and long term if growth is to benefit all.

Pro-Poor Agenda for Prosperity and Development (PAPD) 2018-2023

The Pro-Poor Agenda for Prosperity and Development (PAPD) (2018-2023) was the second in the series of five-year National Development Plans (NDP) anticipated under the Liberia RISING 2030 framework.[23] The PAPD (2018-2023) is aimed at addressing the basic needs of Liberians for income security, better access to basic services, and greater opportunities for self-improvement. This will be done within the frameworks of a stable and inclusive enabling environment and the removal of binding constraints to the achievement of prosperity for all.

FORESTRY PRO-POOR AGENDA

Prior to 2003, the forestry sector was a major contributor to economic growth in Liberia. Total log and timber production per annum peaked at 1 million cubic meters, with a value of approximately US$ 100 million. An average of 7,000 people were employed in the sector. Forestry contributed to approximately 50 percent of Liberian export earnings and about 20 percent of GDP.

After the civil war, GoL sought to accelerate economic development and reduce poverty through the implementation of several different pro-poor agendas. These pro-poor policies recognized the importance of forestry in alleviating poverty. However, in all these instances, even though the policy statements were strong, their implementation did not substantially reduce poverty.

GoL's vision for the forestry sector is adequate protection, sustainable management and use of the nation's forest resources for national growth and development that would benefit current and future generations. In support of this vision, GoL has identified two key priorities:

1. Strengthening human and institutional capacities to provide needed services
2. Creating a strong and enabling environment and sustainable forest resource management practices that would ensure sustainable forest productivity, ecological stability, and promotion of national growth and stability. (FAO 2012).

For many local communities in Liberia, the dependence on forests is a function of their poverty, because they lack better alternatives. Therefore, helping meet subsistence and survival needs can be as important a role for forestry as supporting those able to increase their incomes through forest activities. However, it is important to avoid encouraging forms of forest dependence that could lock the poorest into continued poverty.

With this recognition, the central goal of the forestry sector for poverty reduction is to become a source of higher incomes for the rural population, ensuring that the benefits are shared equitably, and that adequate environmental and other regulatory safeguards are in place to ensure sustainability. To achieve this goal, community-based natural resource management reforms were initiated with the aim of boosting economic activity through the sustainable use of timber products, NTFPs, and agro-forestry products, while also improving environmental management and conservation.

23 See: https://www.imf.org/en/Publications/CR/Issues/2021/01/07/Liberia-Poverty-Reduction-and-Growth-Strategy-49996

The immediate objectives of the pro-poor growth agenda strategy of the forestry sector were to:

1. Generate a broader range of perspectives as inputs into the policy process
2. Enhance the likelihood of effective implementation of sector reforms by broadening the range of actors involved in implementation
3. Increase the political viability of sector reforms through broadened participation and commitment, and because of all of the above
4. Increase the likelihood that sector reforms will have significant social and economic impacts (such as poverty reduction).

At the Rio+20 summit in June 2012, member states agreed to create a set of universal and integrated sustainable development goals (SDGs) to ensure the promotion of an economically, socially, and environmentally sustainable future, framed in the context of the *Future we Want—Outcome Document*.[24] The latter expressed strong support for eradicating poverty and mainstreaming sustainable development to tackle other major challenges such as hunger, health, and climate change, as well as to transition to a green, inclusive economy. It has been noted that seven of the Sustainable Development Goals (SDGs) are directly concerned with forest ecosystems (see Box 7.4).

Box 7.4 The Nexus Between Forests and the SDGs

- **SDG 1** enjoins all countries to "*end poverty, in all its forms*". It is worth noting that more than 2 million people in Liberia depend on forests for their livelihoods, but weak governance and community land rights has resulted in most forest-fringe communities being poor.
- **SDG 2** has the objective to "*End hunger, achieve food security and improved nutrition and promote sustainable agriculture*." Forests support financially poor rural communities. When their land rights are secure, and they have access to markets, these communities are best able to provide for themselves.
- **SDG 7** makes a commitment to "*Ensure access to affordable, reliable, sustainable and modern energy for all*". Wood fuel is the major energy source in Liberia, leading to unsustainable pressure on forests.
- **SDG 12** has the objective of "*Ensuring sustainable consumption and production patterns*". Production of commodities such as palm oil, cocoa, timber, and livestock rearing, if not managed properly, can pose serious threats to the sustainability of Liberian forests.
- **SDG 13** directs countries to "*Take urgent action to combat climate change and its impacts by regulating emissions and promoting developments in renewable energy*". The best and safest way to extract carbon dioxide from the atmosphere is to restore existing forests.
- **SDG 15** has the objective of "*Protecting, restoring and promoting sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss*". SDG 15 is the only goal that specifically focuses on forests. It sets a target to promote sustainable forest management, halt deforestation, restore degraded forests and substantially increase afforestation by 2020.
- **SDG 16** commits countries to the promotion of "*peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable, and inclusive institutions at all levels*". Governed well, forest lands can be harnessed to enhance peace and equity.

24 See: https://sustainabledevelopment.un.org/futurewewant.html

Strategic Objectives

Forestry offers real opportunities for sustainable economic growth, poverty reduction, improved governance, enhanced public sector performance, and the development of empowered communities and a competitive forest industry. To utilize the forest sector's potential for national development there is a need to agree and implement a pro-poor growth agenda that aligns with Liberia's poverty reduction strategy. Forest-based pro-poor growth programs must focus on improving the livelihood and income levels of rural communities, whose existence depends largely on access to, abundance and use of these forest resources. Any such programs will also have to be integrated into existing rural development programs and should target disadvantaged groups.

To achieve the objectives of the pro-poor agenda of the forestry sector, the FDA introduced the 4Cs concept of forest management (see Chapter 1 and Chapter 8), which is aimed at balancing conservation, commercial, community and carbon management. This approach focuses on the following strategic objectives to:

1. Develop **commercial forestry**, including by encouraging value-added forestry products, to be a significant source of revenue generation and growth for local people, small, medium, and micro enterprises (SMMEs), and the nation at large.
2. Use **community forestry** management approaches to identify viable economic opportunities for communities from forest resources and providing extension and technical assistance in community forest management.
3. Conserve protected and important biologically diverse areas (**conservation forestry**), with an emphasis on providing sustainable livelihoods for communities at the fringes of the forest and promoting tourism.
4. Enhance environmental benefits from forestry reserves through an analysis of potential markets for trading in carbon credits (**carbon forestry**).
5. Implement a **Chain of Custody (CoC)** management system to induce transparency and protect revenue generation, as well as to maintain a forestry database of pertinent information on available fauna and flora species.

Other pro-poor strategies of the forestry sector include: (1) devolving forest resource ownership and management to local communities and removing excessive regulations which discriminate against the poor for empowerment and increasing the political capital of the poor; (2) de-regulation of the use of forest resources and improved accountability of public officials to prevent corruption which usually harms the poor; and (3) consolidation of legitimate government structures and investment in social services to avoid violent conflict, illegal activities and a general weakening of the rule of law.

Pro-Poor Policy Challenges

Even though the Government's pro-poor growth agenda has been implemented since 2008, the effective contribution of forestry to pro-poor growth has been hindered by several constraints. These include:

1. **Forest policies and legislations constraints**—The early forest policies and legislation were not drawn in consultation with local people.
2. **Forest management is excessively centralized in the state**—GoL is too focused on generating revenues for central government. This revenue does not readily flow to the forest resource owners and local communities living in proximity to forests.
3. **Lack of effective collaborative forest management—**Most local people have the misconception that forestry and plantations are the responsibility of state forestry agencies. The implementation of community forestry needs to be strengthened.
4. **Customary tenurial and management constraints**—Land access and ownership rights are important in motivating people to plant trees and to conserve forests. However, tenurial arrangements need to be clear and well-respected.

5. **Ineffective benefit sharing**—Shares of local communities in timber revenue should be promptly disbursed and appropriately used for the benefits of the communities.
6. **Inappropriate institutional structures and arrangements**—Currently, the institutional framework for local community to be involved and to benefit from forestry is weak.

To overcome these policy constraints, policy and decision-makers need to put in place mechanisms to prevent the marginalization of stakeholders within the sector in forest management.

To alleviate rural poverty, there is a need to increase access to forest resources, provide security of tenure, and optimize revenue and income generation to create wealth. This can be done through the sustainable use of forest resources, improving farming methods and ensuring a fast and equitable distribution of that wealth to alleviate rural poverty. The next two sections discuss some of the issues related to tenure and access, and to those related to the contribution of agriculture to rural development and poverty alleviation.

ADDRESSING PRO-POOR AGENDA CHALLENGES

Forest access and security of tenure are key prerequisites for community development and poverty reduction since most Liberians depend on the forests for their livelihood. Secure tenure is a prerequisite for increased productivity, dispute resolution, strengthened business environment, women's empowerment, and revenue generation.

Strengthening Tenure and Securing Rights to Land

2018—Land Rights Act (LRA)

Recognizing the importance of secure tenure, the Land Rights Act (LRA) 2018 was facilitated by the Lands Commission. The purpose of the Act (as stated in Article 3) was to:

1. Define and delineate the different categories of land ownership and rights recognized in Liberia
2. Prescribe how each of the categories of land may be acquired, used, transferred, and managed
3. Ensure that all communities, families, individuals, and legal entities enjoy secure land rights free of fear that their land will be taken from them, except in accordance with due process of law
4. Confirm, declare, and ensure equal access and equal protection with respect to land ownership, use and management, including ensuring that Customary Land and Private Land are given equal legal protection and that land ownership is provided for all Liberians, regardless of identity, custom, ethnicity, tribe, language, gender or otherwise.

> The right of an individual to own land and the trees on it, the freedom to use these trees and the likelihood of their children inheriting them affects the persons willingness to conserve forest lands and plant trees.

Article 2 of LRA, 2018 sets out a wide range of protections for customary land rights, and Article 5 defines land ownership as consisting of the right to possess, the right to use, the right to include or to exclude, and the right to transfer singly or jointly by sale, devise, gift or otherwise. The ownership of land does not extend to mineral resources on or below the surface of the land and that land ownership may be held singly or jointly by individuals, or collectively by a community as co-communal properly or by GoL.

Strengthening Ownership—Government or Community

The ownership of land appears to have been dissociated from the forest growing on it and the use rights of communities over forests on their land is unclear. For example, in accordance with the Constitution, GoL has exclusive ownership rights over "*any mineral resources on or beneath any land or any lands under the seas and waterways*." GoL also has the authority to regulate natural resource use and access, consistent with customary ownership rights and legal due process. This includes private land owned by private individuals, entities, corporations, or cooperatives obtained by the granting of a public land deed or long leasehold by GoL and the process of the collection of deeds and the survey of entitlements is in progress. The latter issues have resulted in conflicting tenure arrangements and persistent clashes of customary and statutory rights over the management, authority, and control of the forest resources, especially on communal lands. Land tenure, land use rights and forest tenure are consequently contentious issues for the communities, and such public sectors as forestry, agriculture, mining, and the local government.

> Land means the soil itself, as well as the sub-soil and anything under the soil, such as minerals. It does not include things on or attached to the soil, such as forests, trees, houses, or other permanent fixtures. Thus, there is a distinction between interest in the land itself and interest in things on or attached to the land.

According to the 2000 Forest Law, all forest resources remain as the property of the Republic, except communal and forest resources privately developed through artificial regeneration. GoL's rights as owner of forests are absolute and supersede the rights of any owners or occupiers of land in respect of forest resources. However, Liberia had a lengthy and complicated land tenure reform process which concluded with a Land Rights Policy (LRP) in 2013 and an updated Land Rights Act (LRA) in 2018. This reform process was necessary to improve the investment climate of Liberia, ensure maximum use efficiency of land, increase land-based revenues, improve equity in the access and use of land, and reduce social polarization and violence.

Pro-Poor Friendly Tenure

The impact of forestry for pro-poor growth has not been effective in the past due to the failure of GoL to transfer full traditional property rights and resource management prerogatives to local communities. For forestry to contribute significantly to growth and poverty reduction, an effort should be made to review tenurial issues which serve as disincentives to plantation development and forest conservation. If communities and GoL draw up a system of tenurial rights, acceptable to most people, then local people will be encouraged to plant, protect, and reserve trees for their own benefit, their children, and the national economy. This would make a significant contribution to poverty reduction.

Unfortunately, current forest management policies and programs have failed to provide for the protection of land rights, domestic use rights (DURs) of forests and the prevention of abuse of traditional and institutional procedures. This has placed the vulnerable groups in the rural communities, including women, physically challenged (disabled), migrants and tenants at the most risk.

Promoting Gender Equity and Social Inclusivity

With respect to gender-based pro-poor policies, the rights of women under customary systems vary from place to place. However, it is recognized that even though no customary law in the country distinguishes between men and women in their rights to own and use land or trees, women are extremely disfavored by the land and forest access rights process. While conceding the fact that conditions are changing and that in some customary situations, women are achieving firmer rights and recognition of their major contributions to household incomes and livelihoods, the fact remains that gender inequalities in relation to access to and control over forest resources remains a major problem.

Substantive shifts in social and power relations as well as wider changes in socio-cultural attitudes and the strengthening of women's rights under family and inheritance laws are required to help create an enabling environment and framework within which women could effectively participate in a forest-based development project. If women's social security is jeopardized, their engagement in long term investment such as tree planting and forest protection will be limited.

Facilitating Community Forestry

Another issue which has contributed to the low contribution of forestry to pro-poor growth is the fact that foresters have in the past perceived traditional systems as one of the problems for forest management leading to the marginalization of local communities in forest management. The failure to integrate local communities into forest management has led to a mistrust of GoL's policies and a lack of encouragement for people to plant and conserve forests. In some cases, local communities have colluded with chain saw operators to illegally harvest trees within reserves and commercial concessions. Even the Community Rights Law (CRL) (2009), which seems to strengthen local community participation, does not have sufficiently strong action programs to addresses weaknesses in customary laws, practices, and land and tree tenure systems.

One particular concern is that local leaders and communities are not direct beneficiaries of forest revenues. Counties receive 30 percent of land rent that the Ministry of Finance (MoF) considers as part of its development budget. This is initially paid into a Central Bank of Liberia (CBL) Escrow Account and released to Counties after meeting appropriation criteria and related procedures. Meanwhile, the community beneficiaries of forest revenues remain remote from the decision-making process and continue to have little access to these benefits. Forest owners receive no share of stumpage fees. This is a recipe for chiefs and communities to turn a blind eye to forest illegalities (Birikorang 2008).

The right of an individual to own land and the trees on it, the freedom to use these trees and the likelihood of their children inheriting them, affects the person's willingness to conserve forest lands and plant trees. A focus on community forestry must recognize the critical role that forest products currently play in alleviating poverty and in providing for the basic needs of communities.

Community forestry builds a strong basis for capturing the opportunities that exist to reduce poverty and permanently improve community livelihoods through transferring an economic asset that has significant potential for further value-added (for example through the development of small and medium-scale forest enterprises and processing). However, there is also a strong potential for disconnect, and rivalry, between managing forests for commercial profits, livelihood gains and conservation benefits. A similar tension exists between the urgent mandates to resurrect industrial forest output, generate public revenues, and gain demonstrable development benefits. The likelihood of economic conflict will arise when there are competing economic claims over forest land and resources, between these different use and management options and between the different stakeholder groups who stand to benefit from them (Meadows and Litz 2017). These will have to be addressed properly, to enable community forestry to contribute to its full potential in Liberia (see Chapter 5).

WAY FORWARD

While forests play an important role in supporting livelihoods, dependence on forests is almost always complementary to agriculture, livestock herding, trading, or wage laboring. To understand how rural people are using and benefiting from forests, it is essential to be aware of all components of their livelihoods and to consider holistic reforms to maximize the benefits flowing to them. The following three areas require particular attention.

Draw up a System of Tenurial Rights

This chapter has discussed the dominant challenges in implementing a pro-poor forestry development strategy and identified specific policy and program interventions as concrete ways forward. An example of an important policy intervention discussed related to a full transfer of traditional property rights and resource management roles to local communities. For forestry to contribute significantly to growth and poverty reduction, an effort should be made to review tenurial issues which serve as disincentives to plantation development and forest conservation. If communities and GoL draw up a system of tenurial rights, acceptable to most people, then local people will be encouraged to plant, protect, and reserve trees for their own benefit, their children, and the national economy.

In securing the bundle of community rights to forests, outlined in the paragraph above, the FDA needs to work towards the realization of the rights of all Liberians to sufficient safe and nutritious forest food. In addition, the FDA should facilitate without any discrimination, sustainable and secure access to forest resources that are important for people's livelihoods, including land, water, fisheries, and livestock within protected forest areas. The FDA should also facilitate forest tenurial reforms (see Chapter 5 for details) to enhance forest access and usufructuary rights.

Promote Small-Scale Forest Enterprises

There is the need for the FDA to promote the establishment of diversified small-scale enterprises, based on forest products and non-forest tree products. The realization of a dynamic smallholder forestry sector will enhance food security as well as contribute significantly to livelihood enhancement. Recognizing the importance of good governance and community involvement in forestry, the FDA should promote equitable access to forest resources by vulnerable groups and local communities[25] and enhance the commercial use of Liberia's forests by these vulnerable groups to produce a range of goods and services for the benefit of all Liberians.

Another important program intervention is to develop sustainable alternative livelihood support and investment schemes for local communities. The promotion of sustainable alternative livelihood options seeks to reduce unemployment and improve income levels of beneficiaries. It also aims to halt the decline of forest products and result in reduced pressure on forest resources as the local communities will have other sources of income. For Liberia, grass-cutter farming, poultry and small ruminant production, beekeeping and snail and mushroom farming are considered promising alternative livelihood activities.

Implement the PAPD

To use the forest sector's potential for national development, Liberia needs to agree and implement a pro-poor growth agenda that aligns with Liberia's poverty reduction strategy. It also needs to tackle the disconnect between forestry and agricultural policies and an apparent lack of policy coherence and weak multisectoral coordination in the implementation of the pro-poor forestry sector agenda.

The national PAPD marks a paradigm shift from sectoral-based national development planning to a spatial integrated multisectoral planning, with a major focus on addressing disparities and inequality between demographic groups and regions of Liberia. Going forward, this shift in approach should be harnessed to bring about a fully coordinated approach to pro-poor poverty reduction.

25 http://sdg.iisd.org/news/first-ever-forestry-policy-for-liberia/

CHAPTER

8

Balancing the 4Cs of Forest Management

Liberia's forests are under threat from overexploitation, climate change and poor management. There is an excessive focus on **commercial forestry** and not enough attention is paid to the other factors that play an equally significant role. Liberia's approach to forestry is '**out of balance**' and **a new mindset** is needed to drive a significantly more sustainable approach to how this vital natural resource is managed.

Balancing and integrating the 4Cs of Sustainable Forest Management (SFM) can make real change happen.

CHAPTER CONTENT

This chapter describes the 4Cs sustainable forest management (SFM) regime. It looks at the extent to which the 4Cs should be balanced and offers advice on the best approaches to use. The chapter emphasizes that there is a current lack of balance in the implementation of the 4Cs and that the implementation of the 4Cs is skewed towards commercial forestry due to its immediate monetary benefits. The implementation challenges of balancing the 4Cs are also highlighted.

The chapter notes that there is an urgent need to *put policies into action* to ensure the realization of the objective of balancing the 4Cs. In addition, the chapter advocates for capacity building of public sector agencies, including the Forestry Development Authority (FDA) to deliver on the promise of balancing the 4Cs.

The chapter discusses the six guiding principles, which are necessary to guide the implementation of the policy on balancing the 4Cs. These are:

1. Ensuring sustainability and SFM
2. Ensuring equal weighting of the 4Cs in decision-making
3. Managing trade-offs
4. Providing for the greater good of the majority of Liberians
5. Giving a voice to local communities in the management of forest resources
6. Improving stakeholder coordination.

The chapter concludes with a section on a way forward, which emphasizes the mindset changes, together with other actions, that are required to effectively implement the policy of balancing the 4Cs.

Key Recommendation

This chapter recommends that in view of the importance of carbon forestry to Liberia (see Box 8.1), the **Forestry Development Authority (FDA)** take the necessary steps to **incorporate carbon forestry into law**. This will give the public sector agencies and key stakeholders the authority to implement **all four forestry regimes** in a fully integrated and sustainable manner. It will also allow for the sanction of those who are in breach of the regulations.

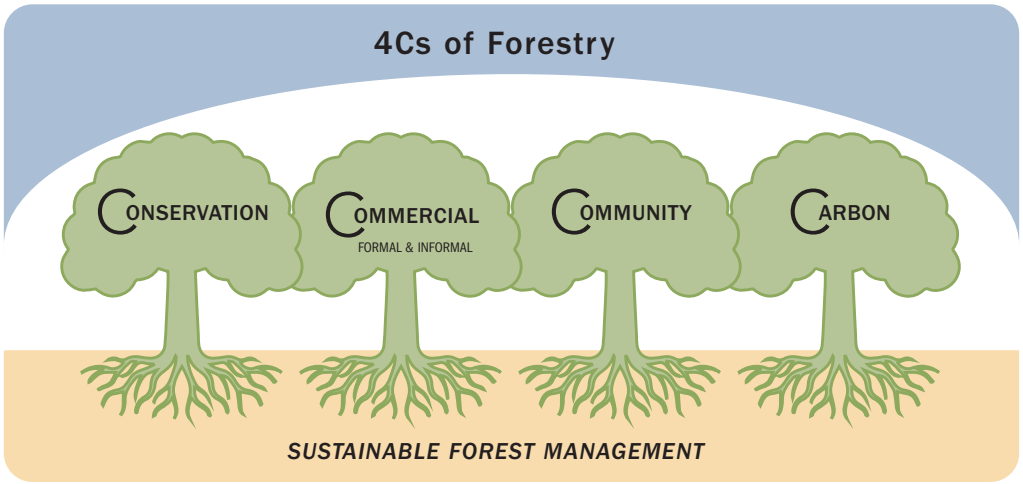
INTEGRATED 4Cs FOREST POLICY

4Cs of Forest Management

The country has committed to four different types of regimes around how it manages its forests. These forestry regimes are known as the 4Cs (see Figure 8.1):

1. Conservation
2. Commercial
3. Community
4. Carbon

Figure 8.1 The 4Cs of Forest Management



Earlier chapters in this book discuss these regimes in detail. However, it is important to note that:

1. **The 4Cs began as 3Cs.** The National Forestry Reform Law (NFRL), 2006, comprehensively set out the legislative framework for ensuring that the 3Cs (that is **conservation**, **commercial**, and **community** forestry) of forest management were integrated and balanced to optimize national socio-economic development.
2. **Carbon forestry (the 4th C) was proposed in 2014.** Its aim was to ensure the sustainable management of forests in Liberia.
3. **There is commitment to SFM and the role of carbon in forest management.** See Box 8.1.

Box 8.1 Virtual statement by His Excellency Dr. George Manneh Weah, President of the Republic of Liberia

"Our forests are the last remaining untouched tracts of forested land in this region and contain some of the highest above-ground carbon stocks of any forest in the world, even higher than the carbon stocks in the great Amazonian Forest. As one of the last reserves of such high carbon stocks, it is imperative that Liberia's forests are maintained in the future. My government reiterates its commitment to do so.

Nevertheless, we know that many of the highest carbon stock forests in Liberia contain essential natural capital and ecosystem service benefits; benefits which have so far eluded us as a developing nation. Liberia has a youthful population and faces enormous pressures for rapid development that provides decent jobs and livelihoods, especially in our productive sectors of agriculture and mining.

Our economy needs to develop, and we want to do so sustainably. We want to continue to maintain our forest and ecosystem endowments, and our incredible biodiversity, as we embrace climate-smart approaches to agriculture and mining, which are our economic mainstays.

However, in order to do so, Liberia needs meaningful partnerships on this journey of sustainable development; partnerships with the United States, as well as with the rest of the developed world, including the private sector, to allow us to leave our forests intact because of their extraordinary capacity to capture carbon for the benefit of the industrial world.

We are therefore looking forward to constructive engagements with all interested parties in this regard".

(23 September 2021—During the general debate of the seventy-sixth regular session of the United Nations General Assembly, at the headquarters of the United Nations, New York).

Ranger on Patrol, Sapo National Park

Conservation Forestry

Conservation forestry (see Chapter 2) includes protection of specific forest areas as well as measures to enhance the environmental quality of other forest areas. The strategic challenges for forest conservation include sustainability of forest and wetlands conservation, protection of national parks and reserves and threats to the coastal ecosystem biodiversity.

Commercial Forestry

Commercial forestry includes the production and processing of wood and non-wood forest products for profit. The aim is for sustainable production of forest products and the development of viable forest-based industries. There are two components of commercial forestry:

1. Formal commercial forestry which mainly caters for the export market and whose participants are legally recognized (see Chapter 3)
2. Informal commercial forestry which supplies the domestic market, is unregulated, and is mostly in the form of chain saw milling (CSM) (see Chapter 4).

Within this management regime, there are strategic challenges. These include a lack of skilled labor and capacity to manage timber, the overexploitation and undervaluation of non-timber forest products (NTFPs), and the poor status of commercial plantation development.

Community Forestry

Community forestry was initiated in 2001 and supported by the 2009 Community Rights Law (CRL) (see Chapter 5). Community forests are areas set aside legally or temporarily by regulation for the sustainable use of forest products by local communities on a non-commercial basis. The key challenges faced by this regime include poor participation of local communities in resource management and the performance of community plantations' establishment.

Management plan meeting, Konobo

Carbon Forestry

Carbon forestry is the most recent of all the forest management regimes (see Chapter 6). Carbon forestry has become important due to the major contribution of forests to climate change mitigation. Forests are carbon pools. They become sources of CO^2 when they burn or when they are disturbed by natural or human action. They absorb CO^2 (a **CO^2 sink**) when they grow biomass or extend their area.

Carbon forestry faces several challenges. First, there is no formal law backing the introduction and implementation of carbon Forestry (although policies and implementation actions guiding the implementation of carbon forestry in Liberia have been through internal FDA Administrative Policies), Regulations and Memoranda. Secondly, there is the difficulty of integrating climate change issues into national development planning processes at national, county, district, and local levels for effective coordination. Forest dependent communities have a low level of adaptive capacity to meet their basic food requirements. This is due to a reduction in the amount of productive land and pest infestation of crops. It is also caused by a lack of access to clean water, medicinal products, and fuel wood which they get from the forest. Other challenges include the disruption to the agricultural system resulting from climate change induced changes in patterns of rainfall (EPA 2018).

Rubber tapping can extend the life of forests

Balancing the 4Cs

The 4Cs approach integrates conservation, community, commercial and carbon uses while emphasizing job creation and community incentives. The aim of balancing the 4Cs is to sustain and enhance the functions of the four forest management regimes for current and future generations (UNDP 2011).

Forest management is interdependent on the 4Cs. For example, ecologically intact forests: (1) store and purify drinking water; (2) mitigate natural disasters such as droughts and floods; (3) help store carbon and regulate the climate; (4) provide food and produce rainfall; and (5) provide a vast array of goods for medicinal, cultural, and spiritual purposes. The health of forests and the provision of these and further forest ecosystem services depend on the diversity between species, the genetic diversity within species, and the diversity of forest types (Secretariat of the Convention on Biological Diversity 2009).

> Liberia has the largest intact portion of the Upper Guinean Forest Ecosystem. Therefore, it is urgent that the FDA balance conservation and extractive uses.

The 4Cs forest management approach is connected to achieving the Sustainable Development Goals (SDGs), which underline the need to balance objectives and potential trade-offs between poverty reduction, growth, and sustainability. SDG Goal 15 outlines the need to "*Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss*"[1] and SDG Goal 13 mandate states to "*Take urgent action to combat climate change and its impact*".[2] These two SDGs place forest management and sustainability into the international development framework and underscore the importance of ensuring sustainable and coherent management of these resources (Morrison-Métois and Lundgren 2016).

A Lack of Balance

The NFRL, 2006 called for the integration and balance of commercial, conservation and community forestry activities (the 3Cs) and mandated the FDA to integrate and balance these forestry regimes. The FDA then brought in the concept of carbon forestry (the 4th C). However, the FDA has had limited success in managing Liberian forests to contribute in a balanced way to long-term sustainable economic growth, livelihoods enhancement, and forest conservation (World Bank 2010).

With its resource and human capacity constraints, it has been difficult for the FDA to change its management philosophy, from a focus on commercial forest management to a management policy of integrating all the aspects of forest management. This has led to the situation where the FDA has primarily focused on deriving maximum economic benefits from the forest sector, to cover its operational costs and justify its relevance to the Government of Liberia (GoL), rather than balancing them with the community and conservation values. Hooda et al (2018) reiterates that over the last three decades, the forestry sector has focused on extracting maximum commercial benefits from the forests, cognizant of GoL's goals of sustainable management of forests and their enhanced contribution to Liberia's economy.

Forestry sector actions to integrate conservation and extractive uses, in other words balancing the 4Cs, will need the support of GoL to succeed. According to the World Bank (2018), GoL will need to strike a balance between macroeconomic stability and growth to prevent a further increase in the risk of debt distress, which is likely to result in the country exploiting greater quantities of natural resources, including timber. Civil society groups also allege that logging companies exploit weak monitoring and enforcement of Liberia's forestry laws to engage in illegal logging,[3] which further complicates the efforts of the forestry sector to balance the 4Cs.

1 See: https://unstats.un.org/sdgs/report/2016/goal-15/
2 See: https://unstats.un.org/sdgs/report/2016/goal-13/
3 See: https://news.mongabay.com/2021/11/liberia-loggers-felling-trees-outside-concession-as-government-stands-by/

The lack of integration of the 4Cs is a conservation challenge since Liberian forests are considered biodiversity hotspots and contain critical habitat for biodiversity as well as valuable timber. Liberia has the largest intact portion of the Upper Guinean Forest Ecosystem. Therefore, there is an urgent need for the FDA to balance conservation and extractive uses as the protection of its forest and wildlife heritage is likely to depend on the successful integration of conservation objectives and prudent timber harvesting practices (McAlpine et al 2006).

Community rights and empowerment are also an integral part of ensuring the sustainable management of forests yet in practice the focus remains on the commercial forestry. The FDA is mandated by the NFFL, 2016 and the CRL, 2009 to strengthen the tenurial rights of communities and empower them to fully engage in the sustainable management of the forests of Liberia, including the conservation of forests. However, current practices within community forest areas (CFAs) have tended to remain on commercial extraction of timber primarily for revenue generation. The focus on commercial exploitation by the local communities in their CFAs, may be because they have few viable alternative livelihoods available to them.

While, on paper, the legal framework for community forestry is strong, conflicts over land and resources make it difficult to implement. In addition, increased investment in oil palm expansion, artisanal agriculture, and broader government-supported logging activities within the CFAs, all threaten the implementation of community forestry (Nikolakis and Innes 2020). At the same time, a fundamental lack of capacity at the community level and within the FDA have prevented the balancing of the 4Cs within the CFAs. A major reorientation of the forestry sector institutions and the local community organizations is required if it is to successfully balance the 4Cs to achieve SFM. There is also the need to substantially improve forest governance at the community level and build the capacity of local communities to enable them deliver on their mandate (O'Hagan 2020).

Implementation Challenges

Despite decades of consensus on the interdependence of the four forest management regimes, there remains a lack of clarity and relatively little agreement on what balanced integration conceptually means and which strategies and policy frameworks would achieve the best sustainable development results. However, it is recognized that strong political commitment and leadership are needed to establish and steer core institutions with the mandate to pursue multidimensional, multisectoral policy coordination functions. Institutions with this mandate and a strengthened capacity have proven effective in balancing short-term and long-term development objectives in an integrated manner, across development planning sectors and national financing (United Nations 2015).

A review of the National Forest Management Strategy (NFMS), 2007 revealed that while there are minimal conflicts among the 4Cs at policy level, there is the potential for conflicts to arise during implementation. This is largely because the parameters of each of the 4Cs are not well defined. The lack of regulation of numerous other elements and the lack of specific and complete definitions on key issues are a source of confusion and conflicting interpretations. There are several activities under each of the 4Cs, some of which overlap. In addition, there does not appear to be a strong coordinating mechanism among the different public sector agencies coordinating forestry, natural resources, and environmental actions.

There are also potential conflicts between the NFRL, 2006 and other laws. For example, an Act to establish the Land Commission, 2009 was passed by the national legislature a few days before the enactment of the CRL, 2009. The two laws present differing approaches by GoL to the same tenurial issues. The land and forest tenure functions assigned to the FDA under the CRL, 2009 also overlap with the broad national functions of the Land Commission under the Act, to establish the Land Commission, 2009. For example, the Land Commission may recommend the same or an amended approach to customary land tenure, which will presumably have to recognize any community lands that are documented. Such a situation would result in conflict within the CFAs and at the inter-sectoral level (Keyser 2013).

The land areas deemed suitable for each of the four forest management regimes have been set out in the NFMS, 2007. However, they are difficult to interpret as large areas of land have been identified as suitable for long term multiple sustainable use. Several areas have been allocated Forest Management Contracts (FMCs), but these FMCs do not clearly meet conservation principles and have limited community involvement. The land use suitability assessment also refers only to potential uses of forest and does not reflect on ownership of the land areas.

Putting Policy into Action

For Liberia to reduce its deforestation rates and achieve SDG Goals 13 and 17, the country must adopt strong policies aimed at balancing the 4Cs and strive to formulate clear, coherent implementation actions. Three actions are needed:

1. Develop a long-term vision for progress (or theory of change) to better define and measure the delicate balance between the 4Cs.
2. Define the intermediate outcomes and objectives that are expected to lead to greater integrations of the 4Cs and enhanced long-term impacts.
3. Design and implement programs to increase synergies among the 4Cs (Miteva et al 2012).

HOW TO BALANCE THE 4CS—BEST PRACTICE

Six principles have been identified to guide the implementation of the policy on balancing the 4Cs. The principles are as follows:

1. Ensuring sustainability and SFM
2. Ensuring equal weighting of the 4Cs in decision-making
3. Managing trade-offs
4. Providing for the greater good of the majority of Liberians
5. Giving a voice to local communities in the management of forest resources
6. Improving coordination among different public sector agencies and other stakeholders.

Ensuring Sustainability and SFM

Sustainability—development that allows economic, social, and environmental progress in the short-term while also ensuring this progress does not endanger the wealth and prosperity for future generations.[4]

Sustainable Forest Management (SFM)—"*The process of managing forest to achieve one or more clearly specified objectives of management with regard to the production of a continuous flow of desired forest products and services without undue reduction of its inherent values and future productivity and without undue undesirable effects on the physical and social environment*" (ITTO 2022)[5]. The definition outlines three dimensions of SFM:

1. Production of a continuous flow of desired forest goods and services (commercial forestry)
2. Preservation of inherent values and future productivity without undue undesirable effects on the physical environment (conservation and carbon forestry)
3. Enhancement of socially beneficial management (community forestry).

4 See: https://eur-lex.europa.eu/EN/legal-content/glossary/sustainable-development.html
5 See: https://www.itto.int/sustainable_forest_management/

There are multiple links between the economy and the environment. The environment provides resources to the economy, and acts as a sink for emissions and waste. Natural resources are an essential part of production for many sectors, while production and consumption also lead to pollution and other pressures on the environment.[6] Poor environmental quality affects economic growth and wellbeing by lowering the quantity and quality of resources and negatively impacts on health.

In this context, environmental policies can curb the negative feedbacks from the economy on the environment (and vice-versa). However, how effective they are and whether they generate a net benefit or a net cost to society is the subject of much debate and depends on the way they are designed and implemented (OECD 2016). The practical issues of SFM in Liberia, as outlined in the NFRL, 2006, include the institutional, legal, and regulatory frameworks, the sustainable production of forest goods, services, and products, the protection of the environment, community well-being, and the management of tree plantations.

Article 7 of the 1986 Liberian Constitution provides for public participation of all citizens in the protection and management of the environment and natural resources in Liberia. The 1986 Constitution further binds state organizations, including the FDA, to adopt and activate environmental policies and to formulate national development plans that are environmentally sustainable (UNEP 2004).

However, Liberia's Medium Term Economic Growth and Development Strategy (MTEGDS) 2010-2017 notes that the major constraints facing the forestry sector at the national level is the lack of a balance of the 4Cs. The MTEGDS states that the forestry sector places an *"overemphasis on the commercial and export side, and maintains a largely unregulated informal forestry sector, with inadequate monitoring and regulatory capacity, lack of adequate transport infrastructure, unclear land-use rights in forest areas, and insufficient stakeholder engagement and public understanding of the importance of sustainable forest management"* (Ministry of Planning and Economic Affairs 2013 p122).

Balancing the 4Cs effectively would address the constraints identified by the MTEGDS and ensure that the clearly specified objectives of forest management are achieved sustainably. This would include the production of a continuous flow of desired forest products and services without undue reduction of its inherent values and future productivity and without undue undesirable effects on the physical and social environment (ITTO 2005).

The 4Cs are aimed at ensuring that forest benefits include high-quality timber, NTFPs, environmental protection services, and satisfy the basic needs of all Liberians. Of particular importance is the fact that the implementation of the 4Cs should lead to an enhancement of the quality of life by providing opportunities for recreation and maintenance of cultural values related to forests (FDA 2020). Policies and measures to implement the 4Cs are expected to contribute to the overall well-being and socio-economic development at local, regional, and national levels. Balancing the 4Cs are expected to lead to sustainability over the longer term and maximization of the social net benefits for the Liberian society in the short to medium term.

To implement a more balanced policy on the 4Cs, GoL has facilitated the creation of new partnerships between the FDA and the civil and private sectors aimed at creating win-win situations in support of poverty reduction and SFM. The challenge is to reduce transaction costs while maintaining the drive for equitable local governance and sustainability. It is envisaged that partnerships between industry and local producers can enable the forestry industry to secure forest product supplies with competitive cost structures and prices while providing extension and skill development to poorer producers.[7] This will be done through contracts on tree production and trading and other forms of contractual arrangements.

A key GoL goal is to strengthen the capacity of the FDA to allow it to successfully implement the 4Cs and deliver on its mandate of achieving SFM and equitable benefit sharing to all relevant stakeholders. In 2020, a strategic plan was published providing a two-stage roadmap to enhance the effectiveness and efficiency of the FDA. Its stated mission is that the "*FDA is a credible forestry institution that promotes best forestry practices and guarantees sustainable forest management for the benefit of Liberians*" (FDA 2018).

6 See: https://www.oecd.org/environment/indicators-modelling-outlooks/global-forum-on-environment-2016.htm
7 See: https://www.fao.org/3/Y2172E/Y2172E05.pdf

The road to Voinjima in Lofa County, a region of high ecological importance

Ensuring Equal Weighting of the 4Cs in Decision-Making

The concept of the 4Cs and the principles of multiple-use forest management regime are the same. They both aim to maximize the economic returns and values at commercial level, local level, and for the broader economy. The challenge lies in translating these four forest management regimes into effective decision-making, including economic decision-making, and making sure that they are given equal weighting by financial and economic planners. However, even though the policy objective seeks to balance the 4Cs of forest management, decisions made on finance and land allocations differ from the priority objectives. For example, 67 percent of forests are earmarked for commercial forestry, while only 30 percent of forests have been set aside for conservation, and only 1 percent for community forest management. Conversely, carbon forestry covers 100 percent of the entire forest area.

Too Much Focus on Commercial Forestry

In practice most of the emphasis has been placed on commercial forestry. In the National Forestry Policy and Implementation Strategy (NFPIS), 2006, the measures, strategies, and actions required to implement the commercial forestry objective are well emphasized and explicitly stated. The measures to implement conservation, community, and carbon forestry have been weak. A critical analysis of the policy document indicates that measures for ensuring the transparent and economic development of commercial forestry far outweigh considerations for the development of the remaining 3Cs.

Liberia's MTEGDS (2012-2017), dubbed Agenda for Transformation (AfT), notes that the major constraints facing the forestry sector at the national level "*are overemphasis on the commercial and export side, a largely unregulated informal forestry sector, the Government's inadequate monitoring and regulatory capacity, the lack of adequate transport infrastructure, unclear land-use rights in forest areas, and insufficient stakeholder engagement and public understanding of the importance of sustainable forest management*" (Government of Liberia 2012 p122). To address these constraints, and reduce the focus on commercial timber, the AfT (2012-2017) set the following developmental objectives: (1) to develop private sector-led forest-based enterprises to increase incomes, provide jobs, and increase government revenues; (2) to preserve the integrity of biodiversity resources and maintains critical ecological service; and (3) to build the technical and institutional capacity of organizations to implement the 3Cs approach.

The AfT (2012-2017) was subsequently followed by the development of another five-year national development plan, titled "*Pro-Poor Agenda for Prosperity and Development, 2018 to 2023*" (PAPD II). This new program aims to address the basic needs of Liberians for income security, better access to basic services, and greater opportunities for self-improvement in an enabling environment that is inclusive and stable (Government of Liberia 2018b). PAPD II was formulated around four pillars:

1. **Power to the people**—to reduce developmental inequalities so the people can prosper
2. **The economy and jobs**—economic stability and job creation through effective resource mobilization and prudent management of economic inclusion
3. **Sustaining the peace**—promoting a cohesive society for sustainable development
4. **Governance and transparency**—an inclusive and accountable public sector for shared prosperity and sustainable development.

See Chapter 7 for more information.

The challenge with the implementation of the 4Cs is the lack of strong policies and legislations that articulate all the 4Cs. The current situation is that forestry sector policies and legislation strongly articulate the 3Cs (conservation forestry, commercial forestry, and community forestry), but there is no formal policy and legislation that supports carbon forestry, which is the 4th C. For example, the implementation of the 3Cs is supported by NFRL, 2006, NFPIS, 2006, FDA Ten Core Regulations and the CRL, 2009. Another challenge is the lack of capacity of FDA and forestry-related institutions to implement the policies, legislations, and regulations.

The establishment of an international mechanism to compensate countries to reduce emissions from deforestation and forest degradation (REDD+) offers an opportunity for Liberia to accomplish the common interest in managing its forests in a balanced way along the 4Cs for long-term sustainable economic growth. This would support the livelihood of local and rural communities and ensure that its important national and global environmental services (like biodiversity and carbon) are conserved (Agostini and Shrivastava 2014). In addition, it is important to strengthen and build the capacity of FDA to implement these policies, legislations, and regulations.

A Need for a Paradigm Shift in Forest Management

The successful operationalization of the 4Cs policy calls for shifting planning paradigms in both the forestry and economic development sectors. However, there is lack of clarity on how this can be achieved. It seems that the only balancing act achieved so far has been in the development of an institutional structure for the FDA. In addition, there is concern among stakeholders that commercial forestry, especially timber harvesting, is being promoted at the expense of the other priority areas. It is perceived that conservation forestry has been receiving an increasing amount of attention.

However, the reality is that the attention given to conservation forestry lags far behind that of commercial forestry in terms of applied resources and applicable conceptual models. By contrast, community forestry and carbon forestry are by far the least developed in terms of available resources, conceptual frameworks, and practical implementation. This is largely due to inadequate economic data on these two forest management regimes compared to what is available for conservation and community forestry. As a result, economic decision-making in the forestry sector almost certainly excludes the actual and potential benefits of some forest management options, which contribute towards these goals (Birikorang 2008).

Lack of Data

A key challenge facing the forest sector is to find ways of factoring all the 4Cs into economic and financial planning. Despite a stated policy of coherence between the 4Cs, there remains a severe lack of economic data on the conservation, community, and carbon aspects of forestry. Lack of data makes it difficult to plan future activities and economic decision-making excludes the actual and potential benefits of forest management options (Hooda et al 2018). The result is the undervaluation of forest resources.

Short-Term Financial Pressures

Balancing forest management regimes also comes into conflict with the pressures faced by short-term financial objectives such as commercial and community forestry. The longer-term financial objectives such as conservation and carbon forestry receive less attention. In addition, national macroeconomic and sectoral policy instruments tend to focus unduly on commercial forestry at the expense of the other 3Cs. The fact that commercial forestry is currently being promoted more than the three other pillars puts the current measures being implemented to achieve sustainable forestry in the country at risk of failure.

Achieving Equal Weighting

To ensure a balance of the 4Cs, GoL has instituted a series of fiscal reforms aimed at providing an economic climate and system of incentives to encourage economic growth in the forestry sector. However, with sectoral policies still out of balance, there is a risk that these reforms will only benefit commercial forestry. GoL needs to focus significant attention and resources to shift perceptions among economic and financial planners towards the broad development and economic returns from the remaining 3Cs (that is conservation, community, and carbon forestry). It is essential that public budgets and policy provide an economic rationale for investing in all the 4Cs equally. It is also crucial to make sure that the FDA and other public environmental sector agencies receive sufficient budget to allow them to fulfil their mandate. This includes:

1. Strengthening compliance in commercial forestry operations
2. Enforcing environmental and conservation regulations
3. Making adequate investments in developing community forestry
4. Effectively managing carbon forestry.

Managing Trade-Offs and Conflicts

A trade-off between ecosystem services means that the use of a service or the management of an ecosystem to increase the supply of a service leads to the deterioration of another service. According to Fouladbash (2013), the decision by the NFRL, 2006 to set aside 30 percent of the forest estate for conservation is really a decision between tradeoffs. For example, should these proposed protected forest areas be managed for the 4Cs and its associated economic benefits, while at the same time displacing thousands from their livelihoods in commercial forestry? Or should local communities be allowed to use the forests for shifting cultivation, as they have for thousands of years, despite its perceived relationship to deforestation? The World Bank (2010) acknowledges the tradeoffs concept by noting that the designation of land into protected areas, as proposed by NFRL, 2006, will provide certain environmental, social, and economic benefits while at the same time will threaten the livelihoods of vulnerable groups and local communities who depend on forests for hunting, fishing, fuel wood, forest products, and land for shifting cultivation. However, trade-offs between ecosystem services can be evaluated quantitatively by indices that incorporate the loss in one service under management that targets other services (Rodríguez et al 2006).

Disconnect and Rivalry

It is well noted that there are significant economic, social, and environmental benefits to implementing a balanced 4Cs strategy. However, each option involves major economic trade-offs of some kind from which some players will benefit but others will lose. In Liberia, these trade-offs have the potential to generate open economic conflict as the players involved come from different positions of power and influence. The concept of **opportunity costs** is key to resolving these economic trade-offs. Simply defined, opportunity costs are the resulting economic losses (that is reduced benefits) of choosing to use forest land and resources in one way rather than another.

Operations in a specific site with a focus on one of the 4Cs tend to exclude the other 4Cs. However, there can be overlaps. For example: (1) prioritizing local employment and revenue generation through commercial logging activities; (2) community forestry can be managed in such a way that it is compatible with sustainable use; and (3) forest conservation can generate considerable commercial and livelihood benefits.

Yet, there is a strong potential for disconnect and rivalry, between managing forests for commercial profits, livelihood gains, and conservation benefits. A similar tension exists between the urgent mandates to resurrect industrial forest output, generate public revenues, and demonstrate development benefits. The likelihood of economic conflict will arise when there are competing economic claims over forest land and resources, between these different use and management options and between the different stakeholder groups who stand to benefit from them.

Low Value of Forest Ecosystem Services

The extent to which this potential for economic conflict and competition happens will be tied intimately to the way in which such economic trade-offs and returns are calculated for the forest sector. Forest land and resource choices, when calculated in terms of relative profitability and returns, are currently biased heavily towards commercial forestry. This is because the data and methods for calculating the returns to logging are well-established. In contrast, little or no data exist on the economic benefits associated with forest ecosystem services, with community-level utilization and with other forest land and resource uses which take place outside, or are not priced in, formal markets.

If these benefits continue to be under-valued in the economic calculations which underpin economic planning, decisions on implementing the 4Cs will remain out of balance. Investment decisions and appraisal of the returns to alternative forest land and resource uses must place higher value on these benefits or it will be nigh-on impossible to ensure that the full benefits and opportunity costs of alternative forest management options are factored into decision-making. Although better methods and information to assess economic trade-offs in the forest sector will not necessarily favor forest conservation and community forestry, it will at least allow conservation and community forestry trade-offs to be considered and weighed up on equal terms to commercial forestry, as economically productive land, and resource use options.

Conflict Between Forestry and Other Environmental Services

There appear to be clear and challenging conflicts between the forestry sector and other environmental services in Liberia. Forest management measures have both negative and positive effects on ecosystem services. For example, a study in Germany observed a mix of effects from climate change on ecosystem services (Gutsch et al 2018). It found that climate change had a minimal impact on ecosystem services over the whole forest area, that ecosystem services (especially carbon and timber) benefited from climate change, and that water and habitat lost out. The research team detected clear trade-offs between timber and all other ecosystem services, as well as synergies between habitat and carbon.

Forest and environmental landscapes are not static. They are dynamic systems with significant feedbacks between people and the different landscapes. Therefore, there is a need to maximize the delivery of services in these landscapes to make sure maximum societal and environmental benefits are derived from them. However, trade-offs between the land-uses required to deliver different services mean decisions must be made regarding which services to prioritize in a landscape (Scholes et al 2018). These decisions may need to be made collaboratively across departments and with different stakeholders.

For example, the Act creating the Environmental Protection and Management Law (EPML), 2002, authorizes the Environmental Protection Agency (EPA), in consultation with the relevant line ministries and agencies, to legislate for procedures and measures to protect the environment. Section 77 of EPML, 2002 focuses on the protection of forests and mandates the EPA to issue guidelines and prescribe measures for the sustainable use and protection and management of all forests in Liberia. Section 78 of EPML, 2002 also contains provisions specific provisions on reforestation and afforestation. Of particular interest is the fact that the provisions on forests in the EPML, 2002 appear to conflict with that of the Act Creating the Forest Development Authority, 1976, which gives FDA primary authority for forest management and protection. To ensure the sustainable management of forests and the environment, trade-offs need to be negotiated (FDA 2010).

Managing Trade-offs

Approaches to creating different enabling conditions for better managing trade-offs vary, depending on social and political contexts. First, incentives are needed but these incentives should be designed to explicitly reduce the competition between land-use objectives. It must be noted that incentives alone are not enough but must be combined with regulatory actions or penalties for those who fail to carry out their responsibilities or undermine sustainable land-use management. Second, market-based value-chain approaches combined with effective national-level policies should be introduced to manage trade-offs. Third, there is the need to build the capacity of stakeholders to understand the trade-offs as they juggle with these competing demands daily. Fourth, multistakeholder engagement is critical for managing forestry and environmental sector trade-offs and should be institutionalized (Hou-Jones et al 2019). In addition, GoL needs to put in place policies to ensure that companies (concessionaires especially) whose activities degrade the environment should be responsible for putting in place actions to prevent or mitigate that degradation.

Providing for the Greater Good for the Majority of Liberians

"*Where conflicting interests must be reconciled, the question shall always be answered from the standpoint of the greatest good of the greatest number in the long run*" (James Wilson, US Secretary of Agriculture, 1905).[8] The forestry sector in Liberia also believes in this philosophical and ethical approach. It is enshrined in the Constitution which guarantees citizens the right to enjoy their natural resources (see Chapter 1). However, to create the greatest good of the greatest number in the long run, there is the need for the sector to build the necessary physical infrastructure and human capacity building for sustainability. Such services require an unstinting commitment to balance and integrate the four dimensions of sustainability, that is the 4Cs of forest management.

8 See: https://www.fs.usda.gov/greatestgood/press/mediakit/facts/pinchot.shtml

There are two values that are key to ensuring the forestry sector achieves this goal: (1) shared resources; and (2) collective management.

Shared Resources

The balancing of the 4Cs is designed to ensure an inclusive, resilient, and prosperous future for all local communities. The FDA places sustainability at the heart of forest sector development to guarantee benefits for all Liberians. The NFRL, 2006 mandates the FDA "*To manage natural resources based on principles of Conservation, Community, and Commercial Forestry, and to ensure that local communities are fully engaged in the sustainable management of the forests of Liberia, the Authority shall by Regulation grant to local communities' user and management rights, transfer to them control of forest use, and build their capacity for sustainable forest management*" (NFRL 2006 p54).

Collective Management

One of the major gaps of the NFRL, 2006 is that it does not effectively address community rights to forested lands (Brown 2008). Local communities have limited capacity to participate efficiently in the implementation of the 4Cs. This is due to widespread confusion and limited awareness about what community-based forest management entails and how to encourage it. Local communities were aware of the NFRL, 2006, but often, were unable to differentiate it from the CRL, 2006. Within communities, commonly marginalized groups such as elders, youth, and women were aware of the individual Cs. However, few had heard about the concept of integrating the 4Cs. There was also confusion regarding the social obligations of concessionaires in relation to building community forestry (such as support to community clinics, primary schools, road building, or job provision) (DAI 2008).

Authorized Forest Community (AFC) Status

The 9-step process of applying for Authorized Forest Community (AFC) status (see Chapter 5) is designed to partly address the issue of community empowerment. Local communities must first self-identify and seek approval from the FDA. The approval process includes participatory resource mapping, harmonizing, and demarcating the boundaries of the proposed CFA. It also involves dispute resolution and setting up community governance structures (Global Witness 2018). A Community Forest Management Agreement (CFMA) is issued once the nine steps have been completed and is the document that confirms AFC status.

The 9-step process to secure these rights is enshrined in the law and provides a framework for communities to fully understand their legal rights to manage community forests, resolve conflict, and identify sustainable uses (Kindberg 2017).[9] The nine steps involve various stages in which communities receive technical support from the FDA. The application process requires the preparation and submission of documents stating the location of the forest land area, the way the forest resources will be used, together with a list of objectives related to using forest resources sustainably in such a way as to "*conserve the environment and biological diversity*" (USAID 2015).

Community Participation

Community participation in forest management is a means of empowering forest communities and the current legal framework for local participation in forest management is robust. However, implementation is falling short due to conflicts over land and resources that have affected the Liberian forestry sector for decades. At the same time, a fundamental lack of capacity both at community level and within the FDA has reduced the effect of the participation of local communities on forest management in the country (O'Hagan 2020).

9 See: https://www.tetratech.com/en/markets/international-development/news-and-impact/insights/conservation-community-and-commercial-realizing-the-3-cs-in-post-conflict-liberia

To address these shortfalls, there is the need to: (1) understand who the possible stakeholders and actors are in terms of aspirations, needs, capacities and constraints; (2) understand the institutional and governance frameworks within which these stakeholders and actors operate; and (3) understand the nature of tenure, access rules and regulations, representation, collective action, and local governance within which the local communities operate.

Giving a Voice to Stakeholders and Civil Society Groups

A stakeholder is any individual, organization, agency, or company that affects or is affected by a program. Relevant forestry sector stakeholders in Liberia include:

- FDA
- Forest fringe communities
- Traditional authorities and landowners
- Non-governmental organizations (NGOs)
- Other relevant civil society groups
- Liberia Institute of Statistics and Geo-Information Services (LISGIS)
- EPA
- Ministry of Agriculture (MOA)
- Ministry of Lands, Mines and Energy
- Land Authority.

> Giving greater voice to stakeholders, especially the rural poor, should be done together with increased institutional access and incentives to ensure their effective participation in forest management (Sabates-Wheeler et al 2008).

One of the major conclusions in the sectoral analysis of community forestry in Chapter 5 is that even though the forestry sector policy and legal frameworks are strong, the sector is plagued with poor forest governance and law enforcement implementation. This view is also reiterated in the recommendations of the Economic Stabilization and Recovery Plan (ESRP), 2015, which stated that the major challenges facing the forestry sector were the lack of stakeholder capacity and weak governance.

Governance and Stakeholder Capacity

Governance issues that relate to stakeholder participation in forest management include: (1) weak sectoral (especially institutional) systems that fail to support an open or transparent mechanism for stakeholder and civil society participation; (2) poor working partnerships between different stakeholders; (3) lack of an effective local civil society voice to promote pluralism in forestry; (4) inadequate provision for participation of local communities in forestry management, especially commercial forestry; and (5) weak property rights. It is also recommended roles and responsibilities between key actors in the forestry sector, especially between the Ministers, public servants, civil society groups, and development partners are clarified.

Unbalanced Voices

In most African countries, including Liberia, there is a strong and generally authoritative voice from donors, the Executive, public sector agencies and the timber industry to forestry sector policy formulation and decision-making. In particular, the timber industry has maintained and established itself as a pressure and strong lobbying group with tremendous influence on policy direction (Asante 2005). However, the representation and voice of local communities and civil society is weak, and involvement is not transparent or consultative. In most cases, community voices have not been able to influence policy directions (Marfo 2002). There is a lot of potential for increased consultation and voice of civil society in forest policy planning. Nonetheless, there seems to be massive administrative and political bottlenecks to harness this potential.

The importance of voice and influence over people with power cannot be overstated. It is critical in determining whether rural poor people will be able to cope with disasters and disaster risk on their own or can count on external assistance in times of stress. Giving greater voice to stakeholders, especially the rural poor, should be done together with increased institutional access and incentives to ensure their effective participation in forest management (Sabates-Wheeler et al 2008).

Women, Girls, and Vulnerable Groups

Another important measure is to develop programs that specifically target women and vulnerable groups by giving them a voice in forest management. This will help prevent gender-based discriminations which are prevalent in the forestry sector. For example, although women's knowledge and use of forests are important for forest conservation and management, their voices have long been devalued in forest management decisions (Mai et al 2012). In this regard, there should be a strengthening of structures to promote gender-based and vulnerable group-based voices to support pluralism in forestry.

Women's knowledge and use of forests are important for forest conservation and management

Improving Stakeholder Coordination

Lack of Coherence

Effective stakeholder and civil society participation and an enlightened population with the necessary capacity is necessary to make meaningful contributions and to strengthen forest sector governance. In part, the lack of coherence in policies, aimed at ensuring stakeholder and civil society participation in forest management, stems from poor understanding among key players of best practices in stakeholder engagement, as well from poor coordination of well-intentioned efforts. Failure to bring coherence to stakeholder engagement processes is a major threat to effective stakeholder participation and benefit-sharing arrangements, because incoherent and poorly coordinated processes breed misunderstanding and distrust. Lack of coordination, duplication of effort, and poor communication by FDA and other public sector agencies in the forestry sector has created an environment of cynicism and distrust of stakeholders and civil society groups (Waugh 2010). These actions have been exacerbated by political interference in decision making and the lack of full professional judgment on forestry issues. Proper democratic and professional processes need to be adopted to protect the rights of the various forest stakeholders and civil society at large.

Multi-Stakeholder Partnerships

The Growing Forest Partnerships (GFP) initiative, which ran from 2009-2012[10], recommended the facilitation of partnerships through multi-stakeholder and bottom-up processes to help the rural poor to improve their livelihoods and support the maintenance of ecosystem services. In addition, the GFP also established a platform to give a voice to the marginalized, voiceless, and minority forest-dependent groups, to develop national dialogues as well as to link local needs and concerns with international dialogue on forests. GFP was facilitated by a Catalytic Group of partner institutions, namely the United Nations Food and Agricultural Organisation (FAO), the International Union for the Conservation of Nature (IUCN), and the World Bank, which provided financial support for the initiative. The Catalytic Group was supported by a group of experts, known as the Reference Group. The work of the GFP focused on the following: (1) capacity building of the FDA; (2) promotion of NTFPs; (3) linkage of decision-makers with communities; (4) facilitating the regulatory management of chain sawing; and (4) promotion of stakeholder consultation processes.

Strong and functioning stakeholder groups and institutions are needed to ensure that services are delivered, conflicts are resolved, voices are heard, lives and properties are protected, and the wealth of the nation is distributed equitably. Liberia's task of overturning years of institutional weakness must continue and substantial investments are required to reform and strengthen institutions to enable them to deliver on their mandates (Ministry of Planning and Economic Affairs 2013). It is also necessary to create an enabling capacity building environment to increase the voice and communication channels for local actors to exert increased upward social accountability for the implementation of SFM.

WAY FORWARD

A New Mindset

Balancing the 4Cs in Liberia is crucial but challenging. The forestry sector faces many challenges which require new thinking and approaches to problems. The sector has failed to take opportunity of the many programs to increase the participation of stakeholders, civil society, and vulnerable groups in forest management decision-making. For example, the uptake of research results, commissioned studies and numerous donor projects are not adequately demonstrated in policy. Management decisions and capacity development has not kept pace with the expanded needs and aspirations of the different stakeholder and civil society groups. Neither have they succeeded in giving these groups a strong voice to change the status quo.

Forest workers in a concession area in River Cess County

10 See: https://www.iied.org/growing-forest-partnerships-initiative

Stakeholder Consultation Forums

What is needed is the creation of a permanent stakeholder consultation forum that incorporate the 'voices' of different stakeholders into the policy process creating a space for interaction and dialogue between representatives of the state and the civil society. These forums should provide a platform for interaction, discussion, and debate. This will open the door for the voice of different stakeholders to be incorporated into the forest policy and decision-making process. The main purpose of these permanent forums will be to strengthen the dialogue and interactions between representatives of the state and the civil society to:

1. Create a new mindset for all stakeholders so that balancing the 4Cs becomes a core focus of all decisions related to legislation, policy, and implementation.
2. Improve the quality of policy by allowing the government to tap wider sources of information, perspectives, and potential solutions
3. Meet the challenges of the emerging information society by establishing venues for greater and faster interactions with citizens
4. Integrate public input into the policy-making process, to respond to citizens' expectations that their voices (especially those of the poor and marginalized) are heard, and their views considered in decision-making by government
5. Respond to calls for better governance, greater government transparency and accountability, as public and media scrutiny of the forest sector increases
6. Ensure equity in benefit flows from the sector taking account the interest of marginalized groups.

Glossary

Many of the definitions in this glossary are drawn directly from other sources. Most of them come from five key sources including: (1) United Nations (UN) REDD+ online glossary; (2) Goldstandard Glossary of Acronyms; (3) Carbon, Community, & Biodiversity (CCB) Standards; (4) Liberia Land Rights Law, 2018; and (5) Natural Capital Advisors, LLC. If it is important to know where the definition came from, please contact the authors.

Abatement: Reducing the degree or intensity of greenhouse gas (GHG) emissions.

Aboveground biomass: Living vegetation above the soil, including stem, stump, branches, bark, seeds, and foliage.

Adaptation benefits: The avoided damage costs or the accrued benefits following the adoption and implementation of adaptation measures.

Adaptation costs: Costs of planning, preparing for, facilitating, and implementing adaptation measures, including transition costs.

Adaptation Fund: The Adaptation Fund was established to finance concrete adaptation projects and programs in developing countries that are particularly vulnerable and are Parties to the Kyoto Protocol. The Fund is financed with a share of proceeds from clean development mechanism (CDM) project activities and receives funds from other sources. It is operated by the Adaptation Fund Board.

Adaptive management: A philosophy that accepts that management must proceed even without complete information. It views management not only to achieve objectives, but also as a process for probing to learn more about the resource or system being managed. Learning is an inherent objective of adaptive management. Adaptive management is a process where policies and activities can adapt to future conditions to improve management success.

Agroforestry: An integrated approach of using the interactive benefits from combining trees and shrubs with crops. It combines agricultural and forestry technologies to create more diverse, productive, profitable, healthy, and sustainable land-use system.

Annual Allowable Cut (ACC): The ACC is the annual amount of timber that can be harvested on a sustainable basis within a defined forest area. The AAC is measured in cubic meters and is based on what the forest will grow. Forest managers use a variety of sample plots and statistical methods to predict the future growth.

Annual coupe: A specific area of forest, usually a part of a concession area, that is identified annually for the purposes of timber harvesting and regeneration.

Artificial regeneration: The removal and replacement of forest crops. f this removal and replacement are done by artificial methods such as the involvement of human activities, it is called artificial regeneration?

Benefit-sharing mechanism: The principles, model and processes developed and applied to distribute benefits, both direct and indirect, of project activities, including project funding, between different participants and stakeholders.

Biodiversity hotspot: This is a biogeographic region that is both a significant reservoir of biodiversity and is threatened with destruction.

Biodiversity: The variability among living organisms from all sources including, inter alia, terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are part. This includes diversity within species, between species and of ecosystems.

Biomass: The total mass of living organisms in a specified area or volume. Recently dead plant material is often included as dead biomass. The quantity of biomass is expressed as a dry weight or as the energy, carbon, or nitrogen content.

Capacity building: In the context of climate change, the process of developing the technical skills and institutional capability in developing countries and economies in transition to enable them to effectively address the causes and results of climate change.

Carbon accounting: The tracking of changes in carbon pools associated with human-induced sources and sinks of GHGs.

Carbon benefits: The quantity of emissions avoided, or carbon sequestered above the business-as-usual scenario, after appropriate deductions are made for leakage and impermanence. Usually measured in tons of carbon dioxide equivalent (tCO2e).

Carbon credit: A generic term for any tradable certificate or permit representing the right to emit one ton of carbon dioxide or the mass of another greenhouse gas with a carbon dioxide equivalent (tCO2e) equivalent to one ton of carbon dioxide.

Carbon cycle: The term used to describe the flow of carbon (in various forms, such as CO2) through the atmosphere, ocean, terrestrial biosphere, and lithosphere.

Carbon dioxide (CO2): A naturally occurring gas, is a by-product of burning fossil fuels from fossil carbon deposits, such as oil, gas, and coal. It is also a by-product of burning biomass, land use changes, and other industrial processes. It is the principal anthropogenic greenhouse gas that affects the Earth's radiative balance. It is the reference gas against which other greenhouse gases are measured and therefore has a Global Warming Potential of 1.

Carbon dioxide equivalent (CO2e): The universal unit of measurement used to indicate the global warming potential of each of the seven greenhouse gases. It is used to evaluate the impacts of releasing (or avoiding the release of) different greenhouse gases. For global warming potential's (GWP's) of relevant GHGs refer to relevant decisions of the CDM Executive Board or the Verified Carbon Standard.

Carbon market: A popular (but misleading) term for a trading system through which countries may buy or sell units of greenhouse gas emissions to meet their national limits on emissions, either under the Kyoto Protocol or under other agreements, such as that among member states of the European Union. The term comes from the fact that carbon dioxide is the predominant greenhouse gas, and other gases are measured in units called "carbon-dioxide equivalents".

Carbon offset: Credits issued in return for a reduction of atmospheric carbon emissions through projects such as the provision of renewable energy to replace fossil fuel energy or reforesting cleared land to create a carbon sink. By paying for such emission reducing activities, individuals and organizations can use the resulting credits to offset their own emissions, either voluntarily or under the rules of most emissions trading schemes. One offset credit is equivalent to an emission reduction of one metric ton of CO2e.

Carbon pools: A reservoir of carbon. A system that has the capacity to accumulate or release carbon. Carbon pools are measured in terms of mass (such as metric tons of carbon). The major carbon pools associated with forestry projects include live biomass (including above and below ground components, such as roots), dead biomass, soil, and wood products.

Carbon sequestration: The process of removing carbon from the atmosphere and depositing it in a reservoir.

Carbon sink: Any process, activity or mechanism that results in the net removal of greenhouse gases from the atmosphere.

Carbon stock enhancement: A component of a REDD+ strategy that could include both the restoration/ improvement of existing but degraded forests and increase of forest cover through environmentally appropriate afforestation and reforestation.

Carbon stock: The quantity of carbon held within a pool at a specified time.

Carbon trading or Emissions trading: A sale or purchase of 'permits' or allowances' to emit GHGs, certificates that prove a certain reduction in emissions from a particular activity beyond what would otherwise have been the case (such as business as usual emissions), or certificates that indicate a certain amount of actual emissions have been 'offset' somewhere else, through for example, carbon sequestration.

Certification: A phase in the certification process for sustainable forest management (SFM), Clean Development Mechanism (CDM) or JI (Voluntary) project when permits are issued based on a series of agreed standards, verified by an accredited third party.

Certified forests: A forest that is issued with a certificate showing compliance with an agreed standard.

Chain of custody: A system for tracking individual logs from their stump through to the point of sale/export to ensure that illegal logs do not enter the legal supply chain and that taxes are paid.

Chain saw milling (CSM): On-site conversion of logs into boards/lumber using chainsaws.

Chain saw: Any portable power saw or similar cutting device, rendered operative by an electric or internal combustion engine or similar means that can be used for the felling of trees or the cutting of timber.

Chain sawyers: Persons engaged in CSM.

Clean Development Mechanism (CDM): A facility created under the Kyoto Protocol, which allows Annex I countries to finance emissions reducing projects in developing countries that are party to the Kyoto Protocol then to use the resulting 'certified emissions reductions' ('CERs') to offset their own emissions.

Climate adaptation: This is the process of adjusting to current or expected effects of climate change.

Climate Change Adaptation: A response to climate change that seeks to reduce the vulnerability of biological systems to climate change effects.

Climate change mitigation: The reduction of GHG emissions to achieve stabilization of greenhouse gas concentrations in the atmosphere and subsequently a cessation of further climate change.

Climate change: A change in the state of the climate that can be identified (by using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forcings such as modulations of the solar cycles, volcanic eruptions, and persistent anthropogenic changes in the composition of the atmosphere or in land use. Note that the Framework Convention on Climate Change (UNFCCC), in its Article 1, defines climate change as: "*a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods*". The UNFCCC thus makes a distinction between climate change attributable to human activities altering the atmospheric composition, and climate variability attributable to natural causes.

Climate resilience: Refers to the ability of a system to prepare for, recover from, and adapt to climate change impacts. Generally, resilience is the ability of a system to adapt to climate change, whether by taking advantage of the opportunities, or by dealing with their consequences.

Community (communal) forest: A community forest is a forest that is managed collectively by local people, usually with timber and non-timber forest product extraction.

Community (communal) land: Means customary land owned by a particular community.

Community Forest Management Agreement (CFMA): A CFMA allows the community to access, manage, use, and benefit from the forest resources.

Community groups: Are defined as groups whose members derive similar income, livelihood and cultural values and other contributions to well-being from the Project Area and whose values are different from those of other groups, such as indigenous peoples, women, youth, or other social, cultural, and economic groups. The number of appropriate groups will depend on the size and complexity of the community. Indigenous peoples are defined as distinct social and cultural groups whose members identify themselves as belonging to an indigenous cultural group.

Community: Means a self-identifying coherent social group or groups comprising of community members.

Conference of the Parties (COP): The supreme body of the Convention. It currently meets once a year to review the Convention's progress. The word "conference" is not used here in the sense of "meeting" but rather of "association". The "Conference" meets in sessional periods, for example, the "fourth session of the Conference of the Parties".

Confidence interval (CI): A confidence interval is computed at a designated confidence level. When you make an estimate in statistics, whether it is a summary statistic or a test statistic, there is always uncertainty around that estimate because the number is based on a sample of the population you are studying. The confidence interval is the range of values that you expect your estimate to fall between a certain percentage of the time if you run your experiment again or re-sample the population in the same way. The confidence level is the percentage of times you expect to reproduce an estimate between the upper and lower bounds of the confidence interval and is set by the alpha value.

Conservation: The preservation, management, and care of natural and cultural resources.

Convention on Biodiversity (CBD): The CBD entered into force on 29 December 1993. It has three main objectives: (1) the conservation of biological diversity; (2) the sustainable use of the components of biological diversity; and (3) the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.

Corruption: The abuse of entrusted power for private gain.

Cost-benefit analysis: Monetary measurement of all negative and positive impacts associated with a given action. Costs and benefits are compared in terms of their difference and ratio as an indicator of how a given investment or other policy effort pays off seen from the society's point of view.

Customary land: The land owned by a community and used or managed in accordance with customary practices and norms, and which include, but is not limited to residential land, farmland, communal forestlands, and fallow lands. Unless expressly stated otherwise, the term "Customary Land, " in the Lands Right Act (LRA), 2018, is inclusive of all categories set forth in Article 38(1) of the Lands Right Act (LRA), 2018.

Customary rights: 'Customary rights' to lands and resources refers to patterns of long-standing community land and resource usage in accordance with Indigenous Peoples' and local communities' customary laws, values, customs, and traditions, including seasonal or cyclical use, rather than formal legal title to land and resources issued by the State.

Deforestation: Deforestation is the conversion of forest to non-forest. Deforestation refers to the decrease in forest areas across the world that are lost for other uses such as agricultural croplands, urbanization, or mining activities. Deforestation is thus, the conversion of forest to non-forest.

Degradation: The term used to describe the condition of a forest that has been reduced below its degradation, natural capacity, but not below the 10 percent crown cover threshold that qualifies as deforestation.

Designated National Authority (DNA): An office, ministry, or other official entity appointed by a Party to the Kyoto Protocol to review and give national approval to projects proposed under the CDM.

Diameter at Breast Height (DBH): This is the diameter of a tree measured at 1.4 meters up the stem from the ground, measured from the uphill side on the tree from the level of mineral earth.

Diameter Cut Limit: The practice of harvesting all merchantable trees above a specified diameter. DCL is the minimum diameter at breast height, defined for each species, above which a tree can be harvested. Diameter limit cutting is a form of high grading. Different tree species have different diameter cut limits.

Ecosystem services: The benefits people obtain from the environment. Ecosystem services are the transformation of natural assets including soil, plants and animals, air, and water, into things that we value. They can be viewed as *provisioning* such as food and water; *regulating*, for example, flood and disease control; *cultural* such as spiritual, recreational, and cultural benefits; or *supporting*, like nutrient cycling, that maintain the conditions for life on earth.

Ecosystem: A system of living organisms interacting with each other and their physical environment. The boundaries of what could be called an ecosystem are somewhat arbitrary, depending on the focus of interest or study. Thus, the extent of an ecosystem may range from very small spatial scales to, ultimately, the entire Earth.

Effective consultation: Effective consultation informs and engages broadly with the communities and other stakeholders using socially and culturally appropriate methods to enable meaningful influence. Consultations must be gender and inter-generationally sensitive with special attention to vulnerable and marginalized people and must be conducted at mutually agreed locations and through representatives who are designated by the groups themselves in accordance with their own procedures. Different approaches may be appropriate for different community groups or other stakeholders.

Eminent domain: Means the authority and power of the Government to take private land and customary land for public purposes after complying with the procedural and substantive due process requirements as established in the Constitution of Liberia and other applicable laws.

Empty forest syndrome: Empty forests are characterized by an otherwise excellent habitat, and often have large, fully grown trees, although they lack large mammals because of human impact. Empty forests syndrome show that human impact can destroy an ecosystem from within as well as from without.

Endemic species: Species for which the entire global range is restricted to the site, the region, or the country (the level of endemicity must be defined).

Enrichment planting: The process by which one plants trees to increase the population density of existing tree species or increase tree species richness by adding tree species to a degraded forest.

European Union (EU): As a regional economic integration organization, the EU is a Party to both the Convention and the Kyoto Protocol. However, it does not have a separate vote from its member states. Because the EU signed the Convention when it was known as the EEC (European Economic Community), the EU retains this name for all formal Convention-related purposes.

Food security: A situation that exists when people have secure access to enough safe and nutritious food for normal growth, development, and an active and healthy life. Food insecurity may be caused by the unavailability of food, insufficient purchasing power, inappropriate distribution, or inadequate use of food at the household level.

Forest certification: This is a mechanism for forest monitoring, tracing and labeling timber, wood, and pulp products and NTFPs, where the quality of forest management is judged against a series of agreed standards, verified by an accredited third party.

Forest concession: A lease or contract for the extraction and use of forest resources within a specified period for a given area of forest

Forest Management Contract (FMC): Licenses awarded by the Forest Development Agency (FDA) to private companies to log large areas (>50, 000 hectares) of public forest over a long time (25 years).

Forest management: A branch of forestry concerned with the management (or sustainable management, as opposed to destructive logging) of existing forests. In the context of a carbon project, this is usually to enhance carbon stocks in the forest. This is different from afforestation and reforestation, although it equally represents a sink activity.

Forest Use Permit (FUP): Timber from community-owned natural forests. The area must be less than 1, 000 hectares.

Forest: A vegetation type dominated by trees. Many definitions of the term forest are in use throughout the world, reflecting wide differences in biogeophysical conditions, social structure, and economics. Particular criteria apply under the Kyoto Protocol. For a discussion of the term forest and related terms such as afforestation, reforestation, and deforestation see the IPCC Special Report on Land Use, Land-Use Change, and Forestry (IPCC 2000). See also the Report on Definitions and Methodological Options to Inventory Emissions from Direct Human-induced Degradation of Forests and de-vegetation of Other Vegetation Types (IPCC 2003).

Forestry Development Authority (FDA): The agency with the mandate to manage forests in Liberia. The FDA has a semi-independent status with its own Board of Directors.

Fragmentation: The transformation of a contiguous patch of forest into several smaller, disjointed patches surrounded by other land uses.

Free On Board (FOB): The 'FOB price' is the price paid for a shipment when the seller fulfills his or her obligation to deliver the goods over the ship's rail at the port of shipment. The buyer must bear all further costs and risks to loss of or damage to the goods.

Global warming: Global warming refers to the gradual increase, observed or projected, in global surface temperature, as one of the consequences of radiative forcing caused by anthropogenic emissions.

Governance: The way government is understood has changed in response to social, economic, and technological changes over recent decades. There is a corresponding shift from government defined strictly by the nation-state to a more inclusive concept of governance, recognizing the contributions of various levels of government (global, international, regional, local) and the roles of the private sector, of non-governmental actors and of civil society.

Government land: Means the land owned by the Government, including land used for the buildings, projects, or activities of the Government, including, but not limited to, lands on which the ministries, agencies, parastatal bodies, military bases, roads; ports, airports, public schools, public universities, public hospitals, public clinics, public libraries, public museums, and public utilities. Government Land also includes Government Protected Areas and Proposed Protected Areas (PPAs) as of the Effective Date of this Act.

Greenhouse Gases (GHGs): The atmospheric gases responsible for causing global warming and climate change. The major GHGs are carbon dioxide (CO2), methane (CH4) and nitrous oxide (N20). Less prevalent—but very powerful—GHGs are hydro fluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF6).

Gross domestic product (GDP): GDP is the monetary value of all goods and services produced within a nation.

Ground rent: Means regular payments made by a holder of a leasehold property to the freeholder or a superior leaseholder, as required under a lease.

High Conservation Values (HCVs): HCVs are biological, ecological, social, or cultural values which are considered outstandingly significant or critically important, at the national, regional, or global level.

Human rights: The fundamental rights and freedoms that belong to every person in the world, based on core principles like dignity, fairness, equality, respect, and autonomy, including but not limited to the rights enshrined in relevant international treaties, conventions, and other instruments.

Illegal logging: Forestry practices that violate domestic laws and regulations—such as harvesting without authority or avoiding taxes and fees.

Indigenous peoples: No internationally accepted definition of indigenous peoples exists. Common characteristics often applied under international law, and by United Nations agencies to distinguish indigenous peoples include: (1) residence within or attachment to geographically distinct traditional habitats, ancestral territories, and their natural resources; (2) maintenance of cultural and social identities, and social, economic, cultural and political institutions separate from mainstream or dominant societies and cultures; (3) descent from population groups present in a given area, most frequently before modern states or territories were created and current borders defined; and (4) self-identification as being part of a distinct indigenous cultural group, and the desire to preserve that cultural identity.

Invasive species: Invasive species are defined as non-native species that threaten ecosystems, habitats, or species.

Kyoto Protocol: An international agreement standing on its own, and requiring separate ratification by governments, but linked to the UNFCCC. The Kyoto Protocol, among other things, sets binding targets for the reduction of greenhouse gas emissions by industrialized countries.

Land rent: An economic term defined as the total net revenue or benefits received from a parcel of land.

Land rental: An annual tax paid on each hectare of a logging concession.

Land tenure: The relationship, whether legally or customarily defined, through which people, as individuals or groups, own or hold rights to use land.

Land use: The total of arrangements, activities and inputs undertaken in a certain land-cover type (a set of human actions). The social and economic purposes for which land is managed (such as grazing, timber extraction, and conservation). An example includes when forest is converted to agricultural land or to urban areas.

Landscape: Landscapes are mosaics of natural and human-modified ecosystems. They provide multiple benefits, such as food, rural livelihoods and well-being, energy, fiber and building materials, medicines, ecosystem services and biodiversity.[1]

1 See: https://ecoagriculture.org/about-landscapes/

LiberTrace: This is a project funded by the UK Department for International Development (DFID) and European Union (EU). In the scope of the EU FLEGT initiative, the aim of the project is to establish and operate a Timber Legality Verification Department (LVD) with Liberia´s Forestry Development Authority (FDA) as described in the Voluntary Partnership Agreement (VPA) signed between the EU and the Republic of Liberia.

Livelihood: A means of making a living. It encompasses people's capabilities, assets, income, and activities required to secure the necessities of life.

Low recovery rate: A low recovery rate is where the lumber recovery rate of a timber processing method results in a relatively lower lumber yields compared to the conventional method. The efficiency rate of lumber recovery of sawmilled tropical timber ranges between 40 and 50 percent, whereas the lumber recovery rates of CSM ranges between 10 and 35 percent. Thus, the lumber recovery rates after CSM can be referred to as low recovery rates. The reasons for the low recovery rate, includes: (1) small log diameter, length, taper and quality; (2) kerf width of the sawing machine; (2) sawing variation, rough green-lumber size, and size of dry dressed lumber; (3) product mix; (4) decision making by sawmill personnel; (5) condition and maintenance of sawmill equipment; and (6) sawing method.

Lumber recovery rate (LRR) or lumber recovery efficiency (LRE) is widely used as a measure of assessing the performance of any sawmill. Lumber recovery rate is defined as the nominal board feet of lumber recovered per cubic foot of log input to a sawmill. There are several methods for measuring lumber recovery, including: 1) cubic volume of lumber as a percentage of total log volume, and 2) board feet of lumber from a given cubic volume of logs commonly known as lumber recovery rate or factor (LRR/LRF). Both methods of measuring lumber recovery indicate yield but in different ways. The board foot method is based on nominal, rather than actual thickness and width.

Mitigation: In the context of climate change, a human intervention to reduce the sources or enhance the sinks of GHGs. Examples include using fossil fuels more efficiently for industrial processes or electricity generation, switching to solar energy or wind power, improving the insulation of buildings, and expanding forests and other "sinks" to remove greater amounts of carbon dioxide from the atmosphere.

Moist forest: This is a convenient term that describes rain forests (usually in the tropics) plus seasonal forests (that is the forests of the wetter tropics).

Monitoring: The collection and archiving of all relevant data necessary for determining the baseline and project-based measuring of anthropogenic emissions by sources (or sinks) of GHG within the project boundary (and leakage of emissions).

Montreal Protocol: The Montreal Protocol on Substances that Deplete the Ozone Layer, an international agreement adopted in Montreal in 1987. The Protocol regulates (phasing out) the production and consumption of nearly 100 man-made chemicals referred to as ozone depleting substances (ODS).

Native Authority means a Local Authority, Village Council or area controlled by Traditional Rulers. Among the powers and functions of the Native Authority, a vital function was tax collection.

Natural regeneration: The recovery of a forest following disturbance, in the absence of human intervention.

Non-Timber Forest Products (NTFPs): Any product or service other than timber that is produced in forests. They include fruits and nuts, vegetables, fish and game, medicinal plants, resins, essences and a range of barks and fibers such as bamboo, rattans, and a host of other palms and grasses.

Nongovernmental organizations (NGOs): Organizations that are not part of a governmental structure. They include environmental groups, research institutions, business groups, and associations of urban and local governments. Many NGOs attend climate talks as observers. To be accredited to attend meetings under the Convention, NGOs must be non-profit.

Opportunity costs: REDD+ opportunity costs are the difference in net earnings from conserving or enhancing forests versus converting them to other, typically more valuable, land uses.

Participatory exclusions: They refer to exclusions within seemingly participatory institutions that stem from systemic factors and can, in turn, unfavorably affect both equity and institutional efficiency.

Payment for Ecosystem/Environmental Services (PES): The voluntary payment by a (minimum one) buyer to a (minimum one) provider to "buy" an environmental service (or a land use likely to secure that service), if, and only if the provider secures the environmental service.

Pioneer species: Species which colonize previously bare or disturbed land, usually leading to ecological succession. Since uncolonized land may have thin, poor-quality soils with few nutrients, pioneer species are often plants with adaptations such as long roots and root nodes containing nitrogen-fixing bacteria and tend to grow well in open high-light environments.

Pitsawing: A method of sawing logs or timbers, as into boards, in which the piece to be cut is laid horizontally across a pit and cut by a saw operated vertically by two people, one above and one in the pit below the piece.

Plank field: A plank is a long, flat, rectangular piece of wood. Thus, a plank field is an area in which planks of wood are stacked or stored prior to sale or use.

Private land: Means the Land that is owned or otherwise held by private person(s) under the provisions of this Act and other applicable laws of Liberia.

Private Use Permit (PUP): Timber from private land, with the consent of the landowner.

Protected Area: An area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means equivalent to IUCN Protected Area Management Categories I-VI[2] as well as areas that have been proposed for protected area status by the relevant statutory body but have not yet been officially declared, and including areas protected under international conventions (such as Ramsar sites, World Heritage Sites, UNESCO Man-and-Biosphere Reserves).

Public land: Means land which is not Government land, private land, or customary land.

REDD+: The extra consideration in reducing greenhouse emissions beyond deforestation and forest degradation (REDD) being given to sustainable forest management and afforestation/reforestation in developing countries.

Reduced Impact Logging (RIL): Logging techniques that result in significantly less damage to the surrounding forest and forest ecosystem. Examples of RIL include directional felling, trimming of inter-crown vines, and careful road planning

Reforestation: Replanting of forests on lands that have previously contained forests but that have been converted to some other use.

Remote sensing: A method of measuring deforestation and forest degradation by a recording device that is not in physical contact with the forest, such as a satellite.

Reserve bid on the minimum: Bid that the government will accept for land rental FMCs/TSCs in an auction for an FMC or TSC. The reserve is calculated by an independent party, and kept confidential from all parties, including the FDA. The reserve bid ensures that the state receives fair compensation for the license to harvest timber even if collusion exists among bidders.

Resilience: The ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organization, and the capacity to adapt to stress and change.

Resource curse: The paradox that states with an abundance of natural resources tend to have less economic growth than those without such resources. This may arise for many reasons, including a decline in the competitiveness of other economic sectors (caused in large part by currency appreciation as resource revenues enter the national economy), volatility of revenues from the natural resource sector, government mismanagement, and/or political corruption (provoked by the inflows of easy windfalls from the resource sector in such a rentier state).

Respiration: The process by which animals and plants use up stored foods (mostly complex carbohydrates) by combustion with oxygen to produce energy for body maintenance.

2 See: https://www.iucn.org/about-iucn

Right of commons: Common land is land subject to rights enjoyed by one or more persons to take or use part of a piece of land or of the produce of a piece of land which is owned by an individual or community – these rights are referred to as 'rights of common'. Those entitled to exercise such rights were called commoners.

Rio Conventions: Three environmental conventions, two of which were adopted at the 1992 "Earth Summit" in Rio de Janeiro: the United Nations Framework Convention on Climate Change (UNFCCC), and the Convention on Biodiversity (CBD), while the third, the United Nations Convention to Combat Desertification (UNCCD), was adopted in 1994. The issues addressed by the three treaties are related—in particular, climate change can have adverse effects on desertification and biodiversity—and through a Joint Liaison Group, the secretariats of the three conventions take steps to coordinate activities to achieve common progress.

Round wood equivalent (RWE): This is a measure of the volume of logs (roundwood) used in the manufacture of wood-based products, including wood pulp, paper, wooden furniture, joinery, and plywood.

Royalty: A payment made for the use of a natural resource. The amount is usually a percentage of revenues obtained through its use.

Secondary forest: A forest or woodland area which has re-grown after a major disturbance but is not yet at the end point of succession (climax forest). It is usually distinguished by differences in ecosystem functionality, vegetation species diversity, and structural complexity.

Sequestration: The process of increasing the carbon content of a carbon pool other than the atmosphere. There are various opportunities to remove atmospheric CO2, either through biological processes (such as the growth of plants and trees), or geological processes (such as storage of CO2 in underground reservoirs).

Shifting cultivation: A form of agriculture, used especially in tropical Africa, including Liberia, in which an area of ground is cleared of vegetation and cultivated for a few years and then abandoned for a new area until its fertility has been naturally restored. Many Liberian farmers practice shifting cultivation, a practice of mainly growing upland rice intercropped with vegetables that helps combat poor soil fertility.

Silviculture: The practice of controlling the establishment, growth, composition, health, and quality of forests to meet diverse needs and values of landowners.

Social agreement: An agreement negotiated by the logging company and the affected community under free prior informed consent. The agreement articulates the rights (including access) and responsibilities of both the communities and the logging company and its employees and details the benefits the communities will receive in exchange for allowing the logging.

Social license: Local stakeholder acceptance of the legitimacy of a company's business so that normal operations are not disrupted

Stakeholder: A person or an organization that has a legitimate interest in a project or entity—or would be affected by a particular action or policy.

Stumpage: Taxes and royalties paid to the government based on the volume and value of the timber harvested. In Liberia, stumpage is calculated on a percentage of the FOB value of the harvested logs—that is stumpage is not paid on waste wood left in the forest.

Sustainable development: Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Sustainable forest management (SFM): The management of forest areas designated to produce timber in such a way as to effectively balance social, economic, and ecological objectives.

Taungya: Means the practice of growing food crops between trees in plantations.

Thinning: The common term for the process of judiciously removing certain individual trees to improve the remaining quality and tree vigor in the plantation or forest. Thinning can reduce the risk of a reversal of carbon sequestration due to fire, windthrow, insect infestations and disease.

Timber Sale Contracts (TSC): Licenses awarded by the FDA to private companies to log from state owned natural forests (Public Forest) from concessions no greater than 5, 000 hectares. The contract must not exceed three years.

Transboundary: Some environmental problems span administrative boundaries and are felt regionally and globally, such as ozone layer depletion, loss of biodiversity, and climate change. Population growth, industrialization and globalization are intensifying these global or trans-boundary environmental problems and their impacts on the East Asia and Pacific region. Organic Pollutants (POPs).

Transfer pricing: The practice of undervaluing goods or services sold to an overseas subsidiary (usually wholly owned) to repatriate profits or reduce tax or duty bills in the company's favor.

Tribal Certificate: Means a legal document issued by a tribal authority under the provisions of the 1956 Public Lands Law.

Voluntary Agreement: An agreement between a government authority and one or more private parties to achieve environmental objectives or to improve environmental performance beyond compliance to regulated obligations. Not all voluntary agreements are truly voluntary; some include rewards and penalties associated with joining or achieving commitments.

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