# Liberia GHG and MRV Training Plan

Report to Environment Protection Agency Liberia and Conservation International

Consultancy to Develop Liberia's National GHGI and MRV System

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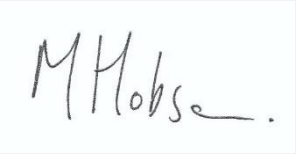
| **Signature** |  |
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# Contents

# 1 Introduction

This document has been prepared for individuals involved in Liberia's GHG inventory and climate action monitoring, reporting and verification (MRV) system. It was prepared during the 2020 'Consultancy to Develop Liberia's National GHGI and MRV System' project funded by Conservational International. The objective of this report is to document the plan and timelines for training activities for all national stakeholders involved in the project. The training will encompass general climate change monitoring and reporting sessions. The project team will deliver specific training on GHG inventories focused around the compilation of an inventory alongside national sector experts. Simultaneously, the project team will be working to develop Liberia's MRV system through a series of activities linked to outputs defined in the Pilot Study.

This document covers the following elements:

- A description of GHG Inventory training methods and approach
- A description of MRV system development activities
- A training and delivery timetable
- Training topics and schedule

## 1.1 Who should read this training plan?

This training plan provides an overview of the activities and approach taken for different Training Groups. The focus of these sessions is to tutor national stakeholders so that they become familiar with greenhouse gas inventory and MRV terminology and the methodologies undertaken. For the GHG inventory training, participants should be allocated to one of the four Training Groups (see Table 1) and should refer to Table 5 for an indication of which training sessions are relevant for them. For the MRV system development, stakeholders who've indicated interest in engaging with the MRV system should also be allocated to one of three roles (Table 2).

*Table 1 GHG Inventory training groups*

| Training Group | Description of group |
|---|---|
| 1. Observer | Optional attendance at all training webinars for chosen specialism |
| 2. Participant | Stakeholders that will learn the basics of GHG inventories |
| 3. GHG inventory compiler | Stakeholders that will be given hands-on experience compiling an inventory |
| 4. Experienced GHG inventory compiler | Experienced GHG inventory compilers for specific and technical training |

*Table 2. MRV System Roles*

| MRV role | Description of group |
|---|---|
| 1. Sectoral Focal Points | Sector experts involved with some aspect of the GHG inventory or climate action data collection. |
| 2. Support team | Thematic and technical IT experts involved with the upkeep and management of the MRV system data flows and data management platform. |
| 3. Coordination team | MRV coordinators responsible for ensuring MRV system outputs (e.g. national and international reporting) are produced on time and to a high standard. |

# 2 Training methods and approach

The training will be delivered by international MRV and GHG inventory experts that will provide a wealth of knowledge from their experiences working with countries and organisations across the world. They will be supported by the e-learning experts within the team to ensure that this knowledge is distilled and communicated to the stakeholders in an effective manner. The allocation of training responsibilities is given in the table below.

*Table 3: Allocation of trainers*

| Training team | Name of trainer |
|---|---|
| Energy and Transport | Melanie Hobson |
| IPPU | Emma Salisbury |
| Agriculture | Richard German |
| FOLU | Rosie Brook |
| Waste | Philip Acquah |
| MRV and institutional arrangements | Laurence Opie |

The training will be achieved by the following means:

- A Stakeholder Workshop at the beginning of the project
- A series of cross-cutting training sessions that will be conducted remotely
- Sector specific mentoring throughout the capacity building phase of the project
- An in-country Validation Workshop at the end of the project

The individual training sessions will use the Zoom web conferencing platform as this is considered the most used platform amongst the project stakeholders. Zoom has features including session recording, screen sharing, a versatile chat, and breakout rooms that will help to provide an interactive and engaging learning atmosphere.

A remote training platform based on the Moodle system will be used for the sessions. This provides a centralised resource for the trainees including recordings of all the training sessions and copies of presentation slides.

PetroMall and VUU will provide timely online user support for troubleshooting all issues related to Moodle and Zoom to ensure a favourable learning experience for all.

## 2.1 Stakeholder workshop

The **Stakeholder workshop** took place in July following the completion of the baseline study. Individuals engaging with the capacity building were invited to the workshop. They submitted an initial questionnaire to the project team prior to the event to explain their level of experience and knowledge, and their training group and role under the programme. The workshop was conducted online using Zoom hosted by VUU. It included some simple overview training for all stakeholders regarding GHG inventories, MRV and the online platforms that we will use during the project (included in the Cross

cutting training sessions section below.) It also included discussions regarding the findings under the baseline study.

## 2.2 Cross cutting training sessions

The project team will deliver a series of cross-cutting training sessions. These sessions will be delivered during the initial stakeholder workshop, and in three subsequent sessions, at the start of August, as the inventory compilation process begins, at the start of September, once a preliminary inventory has been compiled, and at the start of October, once the draft final inventory has been compiled and is ready for QA/QC. All cross-cutting training is available for observers, participants, GHG inventory compilers and experienced GHG inventory compilers (i.e. training groups 1, 2, 3 and 4). Cross-cutting training sessions will be delivered remotely via webinars using Zoom. The table below outlines the sessions and proposed dates for cross-cutting training. These dates are subject to change depending on the progress of the compiled inventory.

*Table 4. Cross-cutting training plan*

| Training Session | Proposed date | Duration | Trainer |
|---|---|---|---|
| Introduction to GHG Inventories | 7th July 2020 | 1 hour | Emma Salisbury |
| Completeness assessments | 7th July 2020 | 30 minutes | Emma Salisbury |
| Introduction to MRV systems | 7th July 2020 | 1 hour | Laurence Opie |
| Excel training | 6th August 2020 | 30 minutes | Rosie Brook |
| Data collection processes and requirements | 6th August 2020 | 30 minutes | Richard German |
| Data management platform training (Moodle / SharePoint / EKMS) | 6th August 2020 | 30 minutes | Emma Salisbury |
| Key category analysis | 3rd September 2020 | 30 minutes | Melanie Hobson |
| Uncertainty analysis | 3rd September 2020 | 30 minutes | Rosie Brook |
| QA/QC | 8th October 2020 | 30 minutes | Richard German |
| Improvement Plan | 8th October 2020 | 30 minutes | Laurence Opie |
| Sustainable institutional arrangements for long term success | 8th October 2020 | 30 minutes | Laurence Opie |
| UNFCCC reporting and GHG inventory outputs | 8th October 2020 | 30 minutes | Emma Salisbury |

## 2.3 Sector specific mentoring

These sessions are available for observers, participants and GHG inventory compilers, although each group will need to interact with the mentors to varying degrees.

Observers and participants can attend mentoring sessions and provide insight / input into data collection processes. GHG Inventory Compilers will work practically with the project team sector mentors to compile the GHG inventory and perform the necessary calculations and quality control. As part of this process, sector mentors will support national experts through mentoring sessions and tailored training content. Each sector is different and has different training needs. The focus of this mentoring will be the production of a GHG inventory (proposed timeline agreed at the stakeholder workshop is for the years 2017 – 2019 inclusive). Sector teams will be working to set deadlines for the production of a preliminary inventory (beginning of September), a draft final (beginning of October) and a final inventory (end of October). These set dates will help structure the training and help focus inventory experts on learning practical compilation skills. Sector specific approaches are outlined below.

### 2.3.1 Energy

From the questionnaires returned, the majority of participants are new to compiling greenhouse gas inventories for the energy sector. Therefore, the first session will be an introduction to the energy sector before moving on to more detailed aspects. It is proposed that the training sessions are provided in short (1 – 2 hour) training sessions over the August to October period. The sessions will consist of a mixture of presentations and hands on training and additional tasks will be given out for completion between the sessions to reinforce learning. The following training sessions are proposed:

- Introduction to compiling greenhouse gas inventories for the energy sector with a focus on data collection and discussion on ideas as to where activity data could be collected from for each of the sub-sectors or how it could be estimated in the absence of any information being available.
- Compiling GHG estimates for fuel combusted in the electricity production sector
- Compiling GHG estimates for fuel combusted in the industrial sector
- Compiling GHG estimates for fuel combusted in the transport sector
- Compiling GHG estimates for fuel combusted in the residential, commercial / institutional, agriculture/forestry/fishing sector
- QA/QC, recommendations for future GHG inventory compilations for the energy sector, summary and conclusions.

### 2.3.2 Industrial processes and product use (IPPU)

The exact format of the training will be determined following discussions with the finalised list of observers, participants and compilers for the IPPU sector. This team currently consists of two compilers. The IPPU sector is currently a minor source of emissions within Liberia but is expected to increase in significance over the coming years as Liberia industrialises.

The two national compilers have different levels of general GHG inventory knowledge. However, regarding sector specific mentoring for the IPPU sector, they will both need an introduction to the fundamentals: “Introduction to compiling GHG inventories for the

IPPU sector with a focus on those categories applicable to Liberia and the data required for each one".

Following this introduction, the sessions will focus on the completion of the inventory providing support through one to two-hour sessions. They will focus on practical inventory compilation discussions regarding the data, methods and assumptions needed to estimate a complete IPPU GHG sectoral inventory. The specific topics for these sessions will be defined during the training programme dependent on the needs of and requests from those participating.

The training will be highly practical, and it is envisaged that the mentoring sessions will include extensive use of screen-sharing and involve detailed discussions with (rather than presentations to) the participants. There will be an open channel throughout the programme via WhatsApp and email through which the participants can ask any questions to the mentor.

### 2.3.3 Agriculture

The programme of training for the agriculture sector will be finalised through discussion with the finalised list of observers, participants and compilers for the agriculture sector. However, the proposal below is based on the responses to the initial questionnaire received so far. Currently, the confirmed team consists of:

- Two to three compilers with experience of GHG compilation and agriculture data collection from the BUR, but with little specialist experience in agriculture
- One observer and one participant from the Ministry of Agriculture familiar with agriculture activity data, but no experience with GHG inventory compilation
- One participant from the University of Liberia

Given the mix of experience, an introductory seminar to the agriculture sector is proposed initially, intended for all observers, participants and compilers, with discussion around the activities occurring in Liberia and confirmation of the best data sources or expert judgement. This kick off seminar will also introduce trainees to the specific methods, relevant sections of the IPCC 2006 Guidelines, and the format of the compilation spreadsheets. The overall flow of work will be introduced, and learning and compilation tasks set. Specific sub-sectors covered will include:

- Livestock enteric fermentation and manure emissions
- Emissions from soils
- Emissions from crop residues, biomass burning and rice cultivation

After the kick-off sessions, a series of 1-2 hour mentoring sessions will be run weekly for compilers, and participants if relevant for data provision or expert judgement. These will be practical sessions with screen-sharing to discuss progress and work through questions the trainees have, rather than seminar presentations. The exact format will be decided with participants, but it may be most efficient to focus each mentoring session on a particular subsector, as required. It is envisaged one mentoring session will be held jointly with the LULUCF team, to cover areas of overlap in activity data; biomass burning and mineralisation of soil organic matter.

It is envisaged that some support in developing Excel skills will be needed following on from the main Excel training session, as this is a high priority for some trainees, although skills-sharing in this regard amongst trainees is encouraged.

Trainees will be able to send questions to the sector lead from Aether at any time via email or WhatsApp, so that the sector lead is aware of topics to cover in mentoring sessions in advance.

### 2.3.4 Land Use and Land Use Change and Forestry (LULUCF)

The exact format of the training will be determined following discussions with the finalised list of observers, participants and compilers for the LULUCF sector. It is proposed that the majority of the training is delivered in short (1 – 2 hour) practical training sessions which will be held over a series of weeks. The compilers will be given tasks to complete in between the training sessions to progress the compilation of the LULUCF inventory. The following training sessions are proposed:

- Introduction to the LULUCF sector (for those with no/little previous experience)
- Translating land use area data into land use matrices
- Input data: country-specific parameters, disturbances and wood removals
- Calculating emissions and removals using the gain-loss method (living biomass)
- Calculating emissions and removals using the gain-loss method (DOM & SOC)
- The harvested wood products pool
- QA/QC of the FOLU sector
- Improvements

### 2.3.5 Waste

The exact format of the training will be determined following discussions with the finalised list of observers, participants and compilers for the waste sector. However, the course for the waste sector training will include the following content:

- National circumstances Waste “Resources” Sector
- 2006 IPCC Guidelines Sector Activities, Disaggregated Categories and Definitions
- Notation Keys and Identification of Emitting Sectoral disaggregated categories
- Decisions Trees and Section of Methods appropriate to national circumstances
- Decision Trees and Activity Data Requirements for identified categories
- Category-specific Activity Data Needs and Activity Data Collection
- Emission Factor (EF) Database and Selection of appropriate EFs
- Estimation of Emissions from all Categories Occurring
- Introduction of IPCC Inventory Software and Application to GHG Inventory compilation
- Compilation of Sector Inventory: Input of Real time collected AD and Selected Default EFs into IPCC Inventory Database and the Solid Waste Model.

- Cross -cutting issues -Completeness, Uncertainty Assessment, QA/QC, Reporting and Documentation and Waste Sector Inventory Improvement Plan (NIIP)

## 2.4 Validation workshop

The **Validation workshop** will take place in October towards the end of the capacity building sessions after the GHG Inventory compilers have compiled a draft GHG inventory and prior to the finalisation of this work. All stakeholders involved in the training programme will be invited. It is envisaged that the workshop will take place in-person in Liberia, but this is dependent on travel policies, and the workshop can be conducted online similarly to the Stakeholder workshop if required or a combination of the two. A final decision on the format for the workshop will be made at least 2 months before the event. A GHG Inventory compiler from each sector team will make a presentation on the draft GHG inventory outlining the trends, methods, assumptions, data gaps and potential improvements. They will facilitate break-out groups by sector to discuss the draft inventory and gather further input and information from relevant stakeholders.

## 2.5 MRV system development activities

The Pilot Study Report outlines several key outputs for the MRV system. These outputs will form the basis of building capacity on MRV within Liberia. Where possible, the national coordination, support and sectoral focal point teams will be engaged in the development of the MRV system outputs to build an understanding of Liberia's MRV system. This will also support the training of relevant stakeholders in the underlying concepts and practical considerations for maintaining the national system. The MRV system outputs include:

- Roles, responsibilities and legal frameworks identified and mapped in relation to the **GHG Inventory and climate action tracking**, including the roles of the NDC hubs, BUR and NC coordination teams to ensure one coordinated voice.
- Mapping of the data flow for climate actions.
- **Database tool for tracking climate actions** and engagement with the data management and coordination team.
- Development of an **Improvement Plan**, a list of identified improvements for the MRV system to help coordinate future support programmes.
- Facilitate a meeting with the NCCSC.

Table 6 illustrates the timeline for these activities.

# 3 Training and delivery timetable

Table 5 below outlines the timeline for developing the GHG inventory and associated training. Table 6 outlines the timelines for MRV system development and related activities.

*Table 5. Timeline for developing the GHG Inventory*

| Event | Proposed dates | Format | Training groups |
|---|---|---|---|
| Stakeholder workshop | 7th July | Remote workshop on Zoom | Observers, participants, GHG inventory compilers |
| Cross-cutting training sessions (See table 4 above) | 6th August | Webinars | Observers, Participants, GHG inventory compilers |
| Sector specific mentoring | 3rd August – 3rd September | Remote mentoring (sector specific approaches detailed below) | Observers, participants, GHG inventory compilers |
| Presentation of preliminary GHG inventory and cross-cutting training (See table 4 above) | 3rd September | Webinars | Observers, participants, GHG inventory compilers |
| Sector specific mentoring | 4th September – 8th October | Remote mentoring (sector specific approaches detailed below) | Observers, participants, GHG inventory compilers |
| Presentation of draft final GHG inventory and cross-cutting training (See table 4 above) | 8th October | Webinars | Observers, participants, GHG inventory compilers |
| QA/QC | 9th – 26th October | QA/QC performed by different sector leads within the project team | Project team, GHG inventory compilers |
| Presentation of final GHG inventory (Validation workshop) | Week beginning 26th October | TBC (in-country workshop or remote delivery using Zoom) | Observers, participants, GHG inventory compilers |

*Table 6. Timeline for MRV system development*

| Event | Proposed dates | Format | MRV roles |
|---|---|---|---|
| Stakeholder workshop | 7th July | Remote workshop on Zoom | All |
| Cross-cutting training sessions | Week beginning 3rd August | Webinars | All |
| Mapping of **roles, responsibilities** and **legal frameworks** | 6th August | Virtual meeting | Coordination team, sectoral focal points |
| Mapping of the **data flow for climate actions** | 13th August | Virtual meeting | Coordination team, support team, sectoral focal points |
| Development of **climate action tracking database tool** | 3rd August – 5th October | Project team development with feedback from national stakeholders | Project team, coordination team, support team |
| Presentation of preliminary MRV system outputs | 3rd September | Webinars | All |
| Development of **Improvement Plan** | 8th October | Project team will set up structure, webinar with national experts to fill in | Coordination team, support team, sectoral focal points |
| Presentation of draft final MRV system outputs | 8th October | Webinars | All |
| Integration and handover of **climate action tracking database** | 5th – 26th October | Ad-hoc meetings with coordination and support team | Coordination team, support team |
| Proposed **NCCSC meeting** | Week beginning 26th October | TBC (in-country workshop or remote delivery using Zoom) | Coordination team |
| Presentation of MRV system (Validation workshop) | Week beginning 26th October | TBC (in-country workshop or remote delivery using Zoom) | All |

# 4 Training schedule

*Table 7. Training schedule*

| | Week | 06-Jul | 03-Aug | 10-Aug | 17-Aug | 24-Aug | 31-Aug | 07-Sep | 14-Sep | 21-Sep | 28-Sep | 05-Oct | 12-Oct | 19-Oct | 26-Oct |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Workshops** | Stakeholder workshop | | | | | | | | | | | | | | |
| | Validation workshop | | | | | | | | | | | | | | |
| **Cross cutting training** | Introduction to GHG Inventories | | | | | | | | | | | | | | |
| | Completeness assessments | | | | | | | | | | | | | | |
| | Introduction to MRV systems | | | | | | | | | | | | | | |
| | Excel training | | | | | | | | | | | | | | |
| | Data collection processes and requirements | | | | | | | | | | | | | | |
| | Data management platform training (Moodle / SharePoint / EKMS) | | | | | | | | | | | | | | |
| | Improvement Plan | | | | | | | | | | | | | | |
| | Key category analysis | | | | | | | | | | | | | | |

| | Week | 06-Jul | 03-Aug | 10-Aug | 17-Aug | 24-Aug | 31-Aug | 07-Sep | 14-Sep | 21-Sep | 28-Sep | 05-Oct | 12-Oct | 19-Oct | 26-Oct |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Uncertainty analysis | | | | | | | | | | | | | | |
| | QA/QC Training | | | | | | | | | | | | | | |
| | Sustainable institutional arrangements | | | | | | | | | | | | | | |
| | UNFCCC reporting and GHG inventory outputs | | | | | | | | | | | | | | |
| **Sector mentoring** | Energy | | | | | | | | | | | | | | |
| | IPPU | | | | | | | | | | | | | | |
| | Agriculture | | | | | | | | | | | | | | |
| | LULUCF | | | | | | | | | | | | | | |
| | Waste | | | | | | | | | | | | | | |
| **Presentation of GHG Inventory drafts** | Presentation of preliminary inventory | | | | | | | | | | | | | | |
| | Presentation of draft final GHG inventory | | | | | | | | | | | | | | |

| | Week | 06-Jul | 03-Aug | 10-Aug | 17-Aug | 24-Aug | 31-Aug | 07-Sep | 14-Sep | 21-Sep | 28-Sep | 05-Oct | 12-Oct | 19-Oct | 26-Oct |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MRV development activities** | Mapping of roles, responsibilities and legal frameworks | | | | | | | | | | | | | | |
| | Climate action data flow mapping | | | | | | | | | | | | | | |
| | Climate action tracking database tool development | | | | | | | | | | | | | | |
| | Presentation of preliminary MRV system outputs | | | | | | | | | | | | | | |
| | Improvement Plan | | | | | | | | | | | | | | |
| | Presentation of draft final MRV system outputs | | | | | | | | | | | | | | |
| | Integration and handover of climate action tracking database | | | | | | | | | | | | | | |
| | Proposed NCCSC meeting | | | | | | | | | | | | | | |

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