



# Caribbean Cooperative Measurement Reporting & Verification Hub

July 15, 2022

## Call for Participation Work Crews – Development Teams



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## Introduction

The Caribbean Cooperative MRV Hub (“MRV Hub”) has developed and continues to work collaboratively to develop guidance documents, tools and other regionally-pooled institutional arrangements to support member countries in enhancing their national measurement, reporting and verification (MRV) systems. We would like to invite you to participate in the work of this cooperative Caribbean initiative, as a member of one or more of our work crews. Participation will provide training opportunities and enhance technical capacity among your country’s MRV and inventory experts. The MRV Hub’s work crews will generate MRV outputs directly relevant to your national data needs and UNFCCC reporting requirements.

**With this *Call for Participation***, we are now inviting nominations for participation in three work crews –Forestry and Other Land Use, On-Road Mobile Source and Agriculture.

**If you are interested in participating in one or more of these work crews, please read the information in this document and do the following:**

Contact the MRV Hub Focal Point within the relevant ministry with responsibility for climate and the environment in your country and submit your name for nomination

or;

Submit your application with a relevant Ministry or affiliate institution officiate as reference.

In each case submit the following to Ms. Ahyana Bowen, MRV Hub Work Crews Coordinator, at [ahyana.bowen@mrvhub.org](mailto:ahyana.bowen@mrvhub.org) by close of business Friday 19<sup>th</sup> August 2022<sup>1</sup>:

1. Your CV.
2. A cover letter with
  - The work crew(s) you would like to participate in;
  - A few details about yourself and the sector and region you work in;
  - Why you are interested in the MRV Hub and the specific work crew(s);
  - How your experience, expertise or current job responsibilities are relevant to the work crew(s).

We will review candidates on a rolling basis as your expression of interest is received. If you have any questions, please contact us.

The remainder of this document has three sections. Sections 1 and 2 provide an overview of the MRV Hub and its goals. If you are already familiar with the MRV Hub, you can skip straight to Section 3, which describes the work crews and the steps for participation. Appendices provide details on each of the work crews conducting recruitment in this Call for Participation – their purpose, scope of work, main outputs, and roles and responsibilities.

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<sup>1</sup> This is the deadline set out in the “Call for Participation” for these work crews, however, further requests for expression of interest in new work crews are subject to be announced.

## 1. Caribbean Cooperative MRV Hub

The Caribbean Cooperative MRV Hub is a regional service institution established to support national climate change data systems in 12 English-speaking CARICOM countries. These systems will support Paris Agreement reporting and evidence-based climate policymaking.

Through cooperative activities (outlined below), the MRV Hub will enhance national MRV systems, and support Enhanced Transparency Framework (ETF) reporting of GHG inventories, NDC progress tracking, mitigation assessment (including projections and scenarios), and data management tools. By improving technical capacity, the MRV Hub aims to: prepare member countries for Paris Agreement reporting, improve country access to climate finance, enhance national data systems (making reporting less burdensome and faster for countries), enable domestic (non-reporting) uses of data, improve data quality and analysis, and train and specialize country experts. By regionally pooling expert capacities and institutional arrangements, The MRV Hub will function as a true learning and mentoring cooperative and produce high-quality national climate reporting outputs.

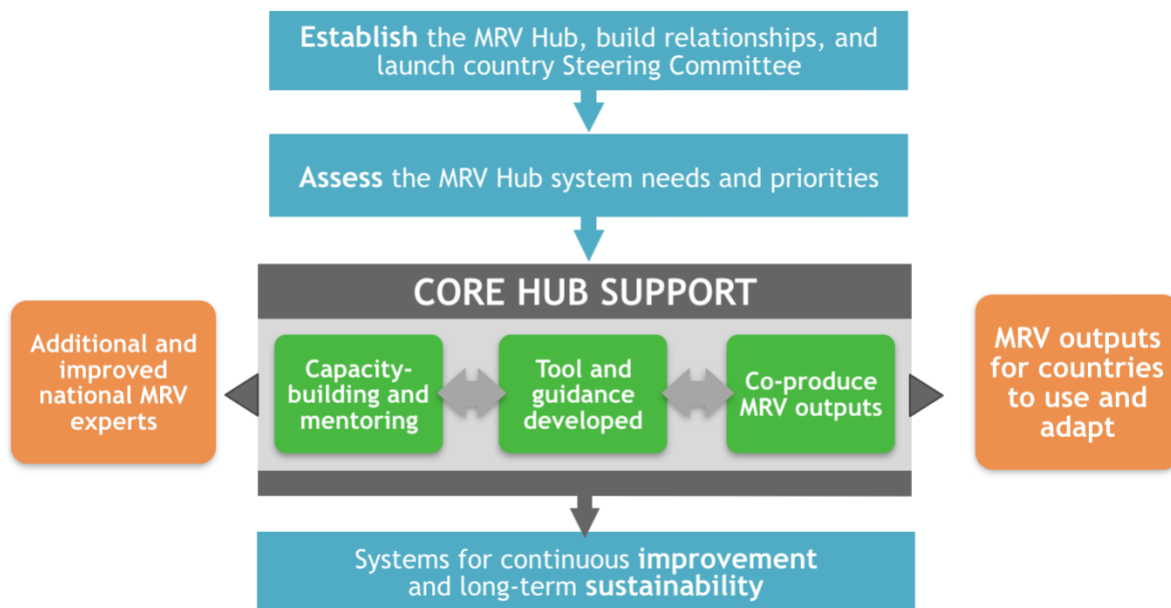
The MRV Hub is supported by a partnership between the GHG Management Institute (“GHGMI”), the UNFCCC Regional Collaboration Centre for the Caribbean (“RCC-St George’s”), and the Windward Islands Research and Education Foundation (“WINDREF”). The MRV Hub is funded for five years through the International Climate Initiative (IKI) of the German Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety (BMU). The MRV Hub Secretariat is physically based at WINDREF’s offices at the St. George’s University (SGU), in Grenada. The MRV Hub is directed by a Steering Committee and holds an Annual Meeting of all participating countries and project partners.

## 2. MRV Hub Goals

The mission of the MRV Hub will be achieved through six intermediate goals:

3. **Goal 1.** Establish the MRV Hub as a permanent institution in the region
4. **Goal 2.** Assess country needs and priorities and build into workplan of the MRV Hub
5. **Goal 3.** Increase human capacity of Caribbean technical MRV and mitigation experts
6. **Goal 4.** Conduct MRV Hub working sessions and share transparent and complete GHG data and documentation
7. **Goal 5.** Develop and disseminate tools and guidance and promote use by countries
8. **Goal 6.** Create a generalized sustainability and replicability MRV Hub package and actively present to other countries and regions with similar conditions

Figure 1: The MRV Hub process and core hub support



### 3. Description of Work Crews

Member countries of the MRV Hub continue to face technical capacity challenges at each step of the GHG emission inventory process as well as issues in choosing the most appropriate quantitative/qualitative indicators for tracking the implementation and progress of NDC actions at the sectoral and policy level. These challenges include establishing national systems for data flows, data collection, data processing, emission calculations, report generation, and data archiving. Additional needs and challenges relate to meeting broader MRV functions including dealing with projections, mitigation planning and analysis, adaptation planning and analysis, NDC tracking, climate finance tracking, supporting local air quality programs and supporting domestic policy making.

Member countries of the MRV Hub also face institutional challenges. The number of specialists dedicated to the GHG inventory team are often too few, capacity is insufficient, training opportunities infrequent, and staff turnover is often too high, thereby demanding more time from already small teams. Many of the MRV Hub member countries are forced to outsource the inventory development tasks to external organizations, with retention of primary data files, draft documents, and calculation tools highlighted as a barrier.

The work crews are central to the MRV Hub's implementation approach and will help to address these challenges.

### 3.1. Previous work crew cycles

The MRV Hub Management & Staff thanks and congratulates the Leads and Members of the MRV Hub 2020-2021 work crews cycle on their dedication to making this collaborative effort to build regional sectoral MRV resources and expertise a success.

The 2020-2021 work crews membership and outputs is summarized below:

| Work crew                   | Lead                                           | Members                                                                                                                                                                                                                                                                                                                                          | Outputs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data Management Systems     | Dr. Olia Glade                                 | <ol style="list-style-type: none"> <li>1. Algie Fletcher</li> <li>2. Ayanna Griffith</li> <li>3. Derionne Edmeade</li> <li>4. Judlyn Telesford-Checkley</li> <li>5. Julien Checkley</li> <li>6. Kareem Reynolds</li> <li>7. Madeka Henry-Irving</li> <li>8. Maria Ana Gonzalez</li> <li>9. Saudia Rahat</li> <li>10. Randyll Pandohie</li> </ol> | <ul style="list-style-type: none"> <li>• Training in application, analysis and developing tools for Climate MRV</li> <li>• Development of data collection tool for mobile combustion</li> <li>• Tool developed used by On-Road Mobile Sources work crew</li> </ul>                                                                                                                                                                                                                                        |
| Forestry and Other Land Use | Dr. Anup Joshi                                 | <ol style="list-style-type: none"> <li>1. Alicia Edwards</li> <li>2. Hansrajie Sukhdeo</li> <li>3. Carianne Johnson</li> <li>4. Darien Jones</li> <li>5. Tiffany Wallace</li> <li>6. Vintee Kallideen-Ramdath</li> <li>7. Adrien Spence</li> </ol>                                                                                               | <ul style="list-style-type: none"> <li>• Training in remote sensing and writing routines in Java Script</li> <li>• Development of land use maps and time series analysis for <b>Belize, Guyana, Jamaica and Trinidad and Tobago</b></li> <li>• GHG emissions report for a 20-year period based on satellite data and knowledge of land use patterns and history</li> <li>• Script developed can be used for generating future land use maps and estimating GHG emissions from the FOLU sector.</li> </ul> |
| On-Road Mobile Source       | Dr. Michael Gillenwater & Ms. Brittany Meighan | <ol style="list-style-type: none"> <li>1. Ria Jharap</li> <li>2. Saudia Rahat</li> <li>3. Randolph Ibe</li> </ol>                                                                                                                                                                                                                                | <ul style="list-style-type: none"> <li>• Direct engagement with country focal points and transportation sector stakeholders</li> <li>• Data collection and validation of assumptions.</li> <li>• Development of country templates to document data</li> </ul>                                                                                                                                                                                                                                             |

|  |  |  |                                                                                                                                  |
|--|--|--|----------------------------------------------------------------------------------------------------------------------------------|
|  |  |  | <ul style="list-style-type: none"> <li>• Development of a vehicle registration tool and an emissions calculation tool</li> </ul> |
|--|--|--|----------------------------------------------------------------------------------------------------------------------------------|

### 3.2. New work crews focus areas

The work crews are a key part of the *Core Hub Support* shown in Figure 1 above; in particular, by developing tools and guidance, through capacity-building and mentoring, and by co-producing MRV outputs that can be used during the UNFCCC reporting process.

Initial focus areas for the work crews were determined based on the MRV System Status Assessments conducted with MRV Hub member countries which identified gaps and priority needs. The resultant Capacity Building Reports documented each country’s priority capacity building needs and served as the basis for selecting topics for the work crews. The following work crews are recruiting with this Call for Participation:

1. **Forestry and Other Land Use (FOLU) Work Crew.** Develop tools and guidance to improve data collection and calculation of GHG emission and removal estimates for FOLU.
2. **On-Road Mobile Source Work Crew.** Develop tools and guidance to improve data collection and calculation of GHG emission estimates for on-road mobile sources.
3. **Agriculture Work Crew.** Develop tools and guidance to improve data collection and calculation of GHG emission and removal estimates for Agriculture.

Appendices 1-3 provide a description of each work crew. Potential topics for future work crews include waste, and fluorinated gases. As and when new work crews are established, the MRV Hub Secretariat will reach out to countries and experts with a call for participation for them. In the meantime, we are keen to hear from experts who would be interested in participating in these work crews. If you are interested or would like more information, please contact Ms. Ahyana Bowen at [ahyana.bowen@mrvhub.org](mailto:ahyana.bowen@mrvhub.org).

### 3.3. Work crew composition

Each work crew comprises a **Development Team** and a **Review Group**.

The **Development Team** is the technical core of the work crew doing the substantive work entailed in producing the work crew outputs. The team is led by an expert who has the requisite technical expertise and experience, but the team may also include less experienced members who express a commitment to become technical experts on the work crew’s topic through participation in the work crew process and training opportunities. A lead for each work crew has already been identified. The anticipated size of each Development Team is subject to the discretion of the Work Crew Lead.

The **Review Group** is a broader group of country representatives trained in previous MRV Hub work crew cycles in addition to other MRV experts in the MRV Hub network. Their role is to

provide strategic direction and specific input on work crew outputs to ensure that these outputs are relevant and useful to country needs.

Appendices 1-3 provide more information about composition, responsibilities and time commitment for the Development Team of each work crew.

### 3.4. Data confidentiality

It is important that all work crew members treat national data confidentially, and all work crew members will be asked to sign a data confidentiality agreement.



## APPENDIX 1: Forestry and Other Land Use (FOLU) Work Crew

### PURPOSE

Initial consultations with country partners during the MRV Hub's Annual Meetings (2019 and 2020) and through the country gaps and needs assessment process, has unambiguously identified the improvement of data collection and calculation of GHG emission estimates in the Forestry and Other Land Use reporting sector as a high priority for almost all member countries. Lack of both historical time series data and local capacity to generate country specific data are inhibiting effective policymaking and policy implementation for countries. This lack of historical data also results in an inability to confidently produce projections and consider policy scenarios to reduce GHG emissions from FOLU sector.

The overall purpose of this work crew is to develop a team of regional FOLU experts, to facilitate calculation of annual estimates of GHG emissions from FOLU sector for each member country. More specific objectives are to:

- Develop processes to collect and analyse data, to estimate annual GHG emissions for all member countries using open source tools.
- Apply 2006 IPCC guidelines and 2019 refinements (as applicable).
- Identify and address data gaps such land cover/land use maps, emission factors, and field data.
- Create national GHG inventory estimates and documentation with support of MRV Hub experts.
- Coordinate with other work crew teams, especially with Database Management Systems Work Crew to input GHG estimates to a central database.

### SCOPE OF WORK

The 2020-21 FOLU Development Team developed the process and accompanying toolset, to generate activity data for both current and historical time periods, using freely available satellite data and open-source software and computing platform, the Google Earth Engine. This team will build upon the already established process to generate GHG emissions/removals for their countries. Land will be classified based on IPCC land use categories and sub-categories, where appropriate. The work crew will focus on generating accurate time series for each member country for a specific time period (e.g. 2000-2020) based on country specific 'begin' and 'end' years.

The work crew will focus on producing country specific emission factors for forest land where possible. In instances where appropriate country specific data is not available, default IPCC values used for forest and other land use categories.

The initial work plan for the work crew will follow the steps below, which will be revised based on work crew input:

## MRV Hub, Call for Participation, Work Crews

- Conduct virtual kick-off meeting to launch work crew.
- Gather available activity data, emission factors and land use maps through country contracts and available documentation.
- Assess data and data gaps for each member country.
- Produce activity data and emission factors.
- Consult with country focal points for their input on their country's post-processed time series activity data estimates and other methodological assumptions.
- Produce GHG emission estimates, associated documentation, and results/trends analysis for each member country.
- Draft and submit confidential results documentation for each member country's consideration and feedback.

## OUTPUTS AND INDICATIVE TIMELINE

| Output | Description                                                                                                                                                                                                   | Indicative date  |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| 1      | Documented and processed activity data and emission factors for all land use categories for countries represented by the work crew technical members for an agreed upon time series (e.g. 2000-2020).         | End of Jan 2023  |
| 2      | GHG emissions estimated for countries represented by the work crew Development Team members for an agreed upon time series (e.g. 2000-2020), including associated documentation, and results/trends analysis. | End of Mar 2023  |
| 3      | Technical improvement plans for each country addressing data collection and methodological aspects                                                                                                            | End May 2023     |
| 4      | Draft FOLU sector GHG emission report for countries represented by the Development Team members in a format that can be adapted to UNFCCC reporting requirements such as NC, BUR, FREL or NDC.                | End of June 2023 |

## FORESTRY AND OTHER LAND USE (FOLU) WORK CREW 2022-2023

Timeline



### ROLES AND RESPONSIBILITIES

The work crew members will be engaged in developing MRV outputs for all member countries, in keeping with a cooperative approach (versus only working on estimates for their single country).

#### Development Team

Members of the Development Team are selected from nominations/applications in response to this Call for Participation. They substantively contribute to the development of the technical content of the work crew at each step of its work.

#### Composition

- Work Crew Lead - Overall manager for the work crew and lead technical expert (Dr Anup Joshi, Senior Fellow, GHGMI).
- Technical experts, expected to have forestry-relevant knowledge and skills in some combination in the following area:
  - IPCC guidelines and GHG inventory
  - Forest inventory and field survey
  - Familiarity with one or more following software programs: Google Earth, Google Earth Engine, ArcMap, QGIS.
  - Remote sensing and use of satellite data

## Responsibilities

- Act as liaisons with national governments to establish definition of the forest and other land use categories and methodological tier, communicate about the work of the work crew, and identify relevant national circumstances and priorities with respect to FOLU sector.
- Identify and document what kind of data and capacity are available or lacking in countries for which FOLU emissions assessment will be done.
- Based on country needs, design methods, prepare data collection templates, and establish data collection and analysis procedures.
- Organize field surveys, gather data to generate emission factors and also for field verification of change maps, as needed.
- Generate FOLU sector GHG emissions estimates for their own countries for agreed upon time series (e.g. 2000-2020).
- The Work Crew Lead will provide training and support to the Development Team to elevate them to be experts in the sector, and provide leadership and support in execution of work crew responsibilities listed above.
- Trained Development Team members will use their newly acquired skills to generate FOLU sector GHG emissions estimates for remaining member countries for agreed upon time series in consultation with country focal points, under the supervision of the Work Crew Lead.
- Sign and fully abide by the work crew country data confidentiality agreement.

## Commitment

Success of the work crew will depend on active participation by all team members.

Development Team members are requested to participate in the work crew process initially from July 2022 to mid-2023 (which could be extended, depending on subsequent phases of work and work crew outputs). This is expected to involve:

- Participation in regular work crew calls, anticipated as weekly or bi-weekly at times of peak activity and monthly otherwise.
- Attendance of all training sessions and completing all course assignments in a timely manner, as needed.
- Work on country data to generate GHG emissions data for FOLU sector during the training period.
- Expand work to include data from remaining member countries to generate GHG emissions for FOLU sector for all 12 member countries.

## Acknowledgement

Members of the Development Team will be acknowledged by name on the MRV Hub website and relevant documentation.

## APPENDIX 2: On-Road Mobile Source Work Crew

### PURPOSE

For all MRV Hub member countries, CO<sub>2</sub> emissions from on-road mobile sources is a key category and transport is a key category with actions in the transport sector identified during their initial and revised NDC submissions. A lack of quality and disaggregated time series data on these mobile source emissions is inhibiting effective policymaking and policy implementation for all member countries. This lack of historical data also results in an inability to confidently produce projections and consider policy scenarios to reduce transport emissions.

The overall purpose of the work crew is to serve as a structured and facilitative venue for member countries to cooperatively build a system to produce national estimates for GHG emissions from on-road mobile sources, or more specifically:

- Develop tools and processes to annually collect data and estimate national GHG emissions from on-road mobile sources,
- Enhance associated national data collection processes,
- Identify data gaps and apply practical approaches to address gaps,
- Apply IPCC methodologies for on-road mobile sources,
- Create national GHG inventory estimates and documentation with support of MRV Hub experts,
- Contribute to the establishment of regional capacity for performing projections and scenario analysis for mobile sources, and
- Contribute to the establishment of targeted mitigation and NDC tracking MRV system development for MRV Hub member countries.

### SCOPE OF WORK

Activity data collection efforts will focus on national fossil fuel consumption data, or more specifically, fuel import and export data (as well as production in the case of select countries—e.g., Trinidad & Tobago). Data will be classified according to standardized IPCC fuel type categories. Additional data to further understand on-road mobile source activity will be sought, including distance travelled data (vehicle kilometres), where available; evidence to support vehicle class fuel economy assumptions; population distributions of vehicle types, classes, and model year; evidence on vehicle scrappage rates; presence of emissions control technologies across vehicle fleets.

The work crew will focus on producing accurate time series by country of on-road fuel consumption by fuel type. Fuel consumption data, generally, produces the most accurate CO<sub>2</sub> emission estimates. Likely data suppliers for fuel consumption data will be major wholesale fuel

importers and providers in each country, along with any available government fuel sales or tax records.

It is anticipated that assumptions for the allocation of aggregate fuel consumption data to various uses (e.g., on-road vs. non-road) and vehicle types will be informed by various vehicle data references (e.g., registration), where available. In some cases where such registration records are not easily accessed (e.g., not available electronically), statistical sampling of available records could be performed. Some commercial operations with large vehicle fleets may provide useful partly representative sample data. Ultimately, annual fuel consumption estimates by fuel type and vehicle class will be produced. As a residual result of these data collection and processing steps, allocation of total fuel consumption to non-road uses will also likely be produced, which should be compared against available data and expectations for fuel consumption by these non-road users.

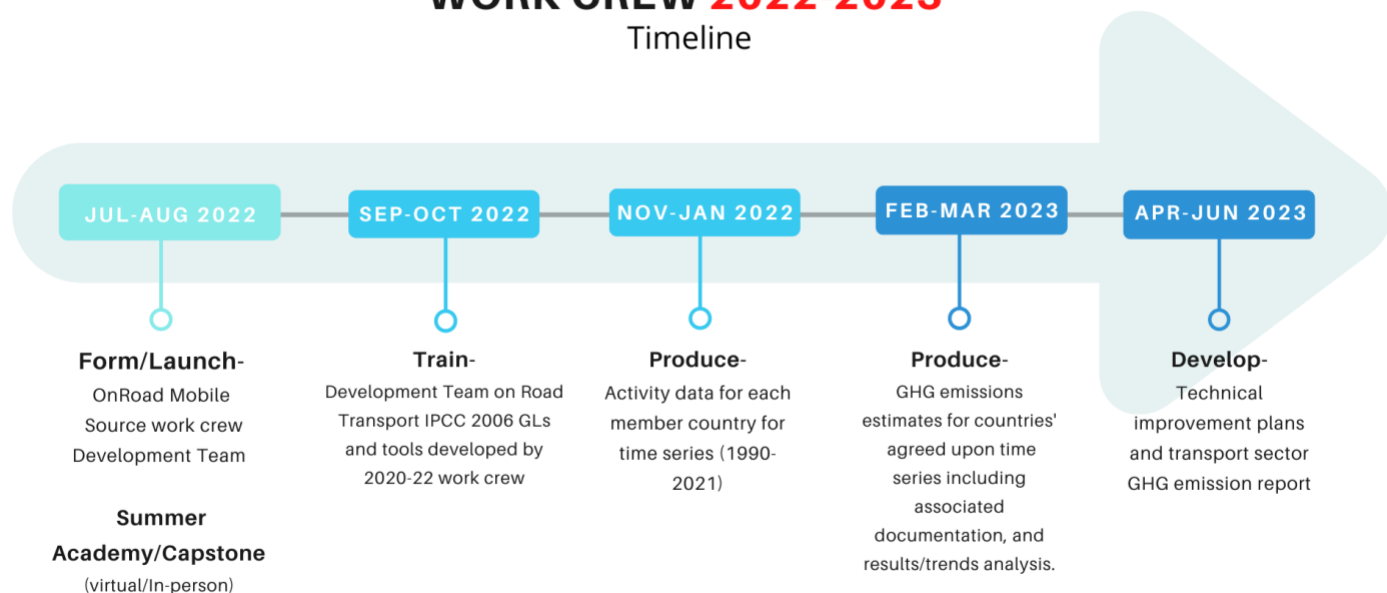
The initial work plan for the work crew will follow the steps below, which will be revised based on work crew input:

- Conduct virtual kick-off meeting to launch work crew.
- Identify country technical contacts relevant to on-road mobile source for each member country, including experts addressing transport-related air-quality issues, and energy
- Initiate training period on road transport IPCC 2006 guidelines approaches and methodologies (reference approach vs bottom up approach), data collection processes & templates, gap filling, splicing and interpolation techniques, and quality control through live workshop sessions
- Gather available activity and other data (including proxy data) through country contracts and available documentation.
- Assess data, data gaps, and common elements and challenges across countries.
- Develop and implement gap filling and other data processing methods for all countries and for entire time series (1990-2021).
- Consult with country focal points for their input on their country's post-processed time series activity data estimates and other methodological assumptions.
- Produce GHG emission estimates, associated documentation, and results/trends analysis for each member country.
- Elaborate technical improvement plan addressing all data collection and methodological aspects.
- Draft and submit confidential results documentation for each member country's consideration and feedback.
- Establish a standardized tool, with embedded documentation, for emission estimation for all 12 member countries.

## OUTPUTS AND INDICATIVE TIMELINE

| Output | Description                                                                                                                                                | Indicative date |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 1      | Formation of work crew Development Team                                                                                                                    | End of Aug 2022 |
| 2      | Training on Road Transport IPCC 2006 GLs, data collection, gap filling and estimation tools using dummy data                                               | End of Oct 2022 |
| 3      | Collect, document and process activity data for each member country for time series (1990-2021)                                                            | End Nov 2022    |
| 4      | Estimate emissions using estimation tool and/or IPCC software                                                                                              | End of Jan 2023 |
| 5      | GHG emission estimates for 1990-2021 time series for each country, including associated documentation, and results/trends analysis for each member country | End of Mar 2023 |
| 6      | Technical improvement plans for each country addressing data collection and methodological aspects                                                         | End May 2023    |
| 7      | Confidential results “draft report” for each member country to be shared with country                                                                      | End June 2023   |

## ON-ROAD MOBILE SOURCE WORK CREW **2022-2023** Timeline



## ROLES AND RESPONSIBILITIES

The work crew members will be engaged in developing MRV outputs for all member countries, in keeping with a cooperative approach (versus only working on estimates for their single country).

### Development Team

Members of the Development Team are selected from nominations/applications in response to this Call for Participation. They substantively contribute to the development of the technical content of the work crew at each step of its work.

### Composition

- Work Crew Lead - Overall manager for the work crew and lead technical expert (Ms. Brittany Meighan, Program Associate, MRV Hub).
- Technical experts, expected to have transportation-relevant knowledge and skills in some combination of the following areas:
  - IPCC guidelines and GHG inventory
  - Air pollution
  - Transportation planning/policies
  - Energy statistics

### Responsibilities

- Act as liaisons with national governments to establish data collection routines, communicate about the work of the work crew, and identify relevant national circumstances and priorities with respect to on-road mobile source.
- The Work Crew Lead will work with core members to design methods, prepare data collection templates, establish data collection connections and procedures, develop data processing (e.g., gap filling) methods, prepare emission estimates and analysis, and create thorough documentation for replication.
- The Work Crew Lead, with support from the MRV Hub Secretariat, will provide necessary training for core technical members and will chair the work crew activities.
- Sign and fully abide by the work crew country data confidentiality agreement.

### Commitment

Success of the work crew will depend on active participation by all members. Development Team members are requested to participate in the work crew process initially from July 2022 to mid-2023 (which could be extended, depending on subsequent phases of work and work crew outputs). This is expected to involve:

- Approximately one to two conference calls per month (1-2 hours each) (see indicative timeline above), unless fewer calls are necessary.
- The necessary time to prepare and review materials (approximately 1-3 hours per call)



### Acknowledgement

Members of the Development Team will be acknowledged by name on the MRV Hub website and relevant documentation.

## APPENDIX 3: Agriculture Work Crew

### PURPOSE

The overall purpose of this work crew is to develop a team of regional Agriculture experts, to facilitate improved data collection procedures and GHG emission estimates that adhere to the TACCC principles for the Agriculture sector of each Hub member country.

Initial consultations with country partners during the Hub's annual meetings (2019 and 2020) and through the country assessment process, has unambiguously identified the improvement of data collection and calculation of GHG emission estimates in the Agriculture reporting sector as a high priority need and gap for almost all participating countries to support MRV.

The Agriculture work crew was formed to build capacity in the region for estimating annual GHG emissions by improving the technical skill of experts and effectively reducing the reliance on external consultants for generating reports to meet UNFCCC reporting requirements.

### SCOPE OF WORK

After official launch of work crew, members will undergo training in using country data to develop an updated agriculture GHG inventory for the time-series relevant to each country. GHG estimates, IPCC methodological tier, calculation tools and time-series will be determined based on national circumstances, in consultation with country focal points and government representatives.

The initial work plan for the work crew will follow the steps below, which will be revised based on work crew input:

- Conduct virtual kick-off meeting to launch work crew.
- Capacity building for estimating emissions in the Agricultural Sector.
- Identify data gaps and select most appropriate and efficient options for handling the gaps in activity data (e.g. extrapolation/interpolation) .
- Apply 2006 IPCC methodologies and corresponding 2019 refinements (voluntary\*) to estimate GHG emissions in these sub-categories.
- Assess the agriculture inventory compilation tools (spreadsheets, IPCC 2006 software, ALU software) and develop a tool selection guide.
- Develop processes to collect and analyse data, to estimate annual GHG emissions for Hub member countries using freely available tools.
- Create a baseline GHG inventory for the agricultural sector through the work of domestic CCMRVH experts with support of GHGMI using available inventory computation tools.
- Create national GHG inventory estimates and documentation with support of MRV Hub experts.

## OUTPUTS AND INDICATIVE TIMELINE

| Output | Description                                                                                                                                                                                                                                                       | Indicative date   |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 1      | <p>A guidance document with:</p> <ul style="list-style-type: none"> <li>• Sources of tools and guidance on tool selection</li> <li>• Data collection procedures, templates, QC checks for agriculture</li> <li>• Outline of inventory report structure</li> </ul> | End of Dec 2022   |
| 2      | Documented and processed activity data and emission factors for phase 1 countries corresponding to the time series reported by their country.                                                                                                                     | End of Jan 2022   |
| 3      | GHG emissions estimated for Phase 1 countries (countries represented by the work crew technical members) for an agreed upon time series (e.g. 2000-2020), including associated documentation, and results/trends analysis.                                        | End of Feb 2023   |
| 4      | <p>Agriculture GHG inventory report for each Phase 1 country, including data flow maps, QC checks, verification, recalculations and improvement plans.</p> <p>* Improvements can be rated on a scale low-medium-high priority.</p>                                | End of April 2023 |
| 5      | Trained work crew technical members who will work with remaining Hub countries to generate agriculture GHG inventory estimates and reports for agreed upon time-series for each remaining country.                                                                | End of Aug 2023   |

## AGRICULTURE WORK CREW

2022-2023

Timeline



### ROLES AND RESPONSIBILITIES

The work crew members will be engaged in developing MRV outputs for all member countries, in keeping with a cooperative approach (versus only working on estimates for their single country).

#### Development Team

Members of the Development Team are selected from nominations/applications in response to this Call for Participation. They substantively contribute to the development of the technical content of the work crew at each step of its work.

#### Composition

- Work Crew Lead - Overall manager for the work crew and lead technical expert (Dr Luanne Stevens, Fellow, GHGMI).
- Technical experts, expected to have agriculture-relevant knowledge and skills in some combination in the following area:
  - IPCC guidelines and GHG inventory
  - Agriculture data collection procedures
  - Familiarity with one or more following software programs: IPCC 2006 software, ALU software

#### Responsibilities

## MRV Hub, Call for Participation, Work Crews

- Act as liaisons with national governments to establish definition of the agriculture and methodological tier, communicate about the work of the work crew, and identify relevant national circumstances and priorities with respect to the agriculture sector.
- Identify and document what kind of data and capacity are available or lacking in countries for which agriculture emissions assessment will be done.
- Based on country needs, design methods, prepare data collection templates, and establish data collection and analysis procedures.
- Assist with the data collection, quality checks and verification of data.
- Generate agriculture sector GHG emissions estimates for their own countries for agreed upon time series (e.g. 1990-2019).
- The Work Crew Lead will provide training and support to the work crew members to elevate them to be experts in the sector and provide leadership and support in execution of work crew responsibilities listed above.
- Trained work crew members will use their newly acquired skills to generate agriculture sector GHG emissions estimates for remaining Hub member countries for agreed upon time series in consultation with country focal points, under the supervision of the Work Crew Lead.

## Commitment

Success of the work crew will depend on active participation by all members. Work crew members are requested to participate in the work crew process initial from July 2022 to Aug 2023 (which could be extended, depending on any subsequent phases of work and work crew outputs) which is expected to involve:

- Participation in regular work crew calls, anticipated as weekly or bi-weekly at times of peak activity and monthly otherwise.
- Attendance of all training sessions and completing all course assignments in a timely manner, as needed.
- Work on country data to generate GHG emissions data for agriculture sector during the training period.
- Expand work to include data from remaining Hub member countries to generate GHG emissions for agriculture sector for all 12 member countries.

## Acknowledgement

Members of the Development Team will be acknowledged by name on the MRV Hub website and relevant documentation.