

## Meeting Summary

### **Technical Support for agricultural GHG Inventories and NDCs. Briefing session, World Conference Centre Bonn June 19, 2pm – 4pm**

#### *Background*

The Global Research Alliance (GRA) Integrative Research Group (IRG) has recently launched an **Inventories and NDC Support Network**. This network aims to better connect governments and relevant expertise to improve the evidence base and quality of the agriculture component of the Nationally Determined Contributions (NDCs) as well as the way their achievements are reflected by national GHG inventories.

The session was chaired by:

*Dr. Wolfgang ZORNBAACH, Chair of the GRA, Federal Ministry of Food and Agriculture, Germany*

A presentation and introduction were provided by:

*Dr. Jean-Francois SOUSSANA, Co-chair of the GRA Integrative Research Group, INRA, France*

*Dr. Beverley HENRY, Co-chair of the GRA Integrative Research Group, ACIAR, Australia*

## Summary of meeting

The agenda for the briefing session is attached as Appendix 1. It was attended by 14 country experts, shown as Appendix 2.

Dr Zornbach welcome attendees on behalf of the GRA and introduced the purpose of the session.

The IRG co-chairs introduced the Inventories and NDC Support Network and its objectives with a short presentation by Dr Soussana (Appendix 3). It was noted that a focus for the Inventories and NDC Network is in-country capacity building and that the Network could support countries to build an initial inventory and potentially move from Tier 1 to Tier 2 and Tier 3 using soil carbon as an example.

The meeting was then opened up for attendees to ask questions and express their perspectives on issues and needs relevant to the work of the Inventory and NDC Support Network.

### 1. Initial discussion points from delegates:

- There was interest in exploring how the Network would work. Co-chairs explained that a focus is working with countries to build in-country capacity. Examples could include support for inventory development in China led by NZ working with CCAFS and pilot projects in Fiji and Vietnam on capacity building. Capacity building in the Livestock Research Group is a potential model for getting country buy-in: workshops with country representatives; developing guidelines on activity data ; country studies.
- There is a need for research to get activity or emissions factor data but the research must be useful and there is a need to better link researchers and government inventory developers. This requires dialogue plus funding to understand the consequences for inventory and to define research needs, e.g. long-term experiments to quantify SOC change with practice change.
- Argentina explained that the Ministry of Agriculture is starting out an inventory development. Research projects have been funded but the emissions measurements (e.g. from cropland soils) or generated emissions factors were not suitable for use in the national inventory due to not being suitable to scale up from point to regional or national or to lack of relevant information in consultant reports (e.g. what GWP was used). Needs identified were how research and methodologies could be coordinated so that impacts of practices such as increased crop rotations could be captured in the inventory (with translation into Spanish important).
- There is a need for regular (perhaps every two years) state-of-art on methods or new emissions factors that should be used in national inventories.
- CCAFS suggested that the GRA could use regional platforms.

### 2. Insights were provided by Dr Martial Bernoux (FAO, Climate and Environment Division) on the complex landscape of support for inventory development, National Communications, Biennial Update Reports (BUR) and NDC, noting that these have different linkages amongst agencies and different sectoral approaches. The GRA/ Network could initially communicate with these agencies to understand what is happening. Inventory support entities include several UN bodies (FAO, UNDP, UNEP); NDCs are supported by UNEP, UNDP, GEF. The CBIT fund managed by GEF provides on request about \$1M for countries to implement their transparency (mandatory). UN agencies provide support (UNEP and UNDP are the lead with FAO supporting on the AFOLU component).

- Different organizations have their own systems of providing support and there is a need to bring players together.

- There is diversity in the capability of different countries and in the stage they are up to, e.g. some are only doing a first National Communication at this time. Objectives should align with capability, e.g. moving from Tier 2 to Tier 3 could work for countries that have 4 national communications.
  - An important first step is to support the compilation of activity data; emissions factors receiving attention but need activity data before linking with emissions factors. Engagement on emissions factor could be through the IPCC Emissions Factor Database Board (Andrea is a member).
  - Aspects of providing support are (1) need to work within the in-country process (can be complex and involve building a relationship with relevant Ministry); (2) once started, the need for support should be long-term; (3) there are a number of requirements for related data/reporting e.g. inventories, SDGs.
- Dr Bernoux recommended that GRA/ Inventories and NDC Support Network seek to find the best niche for its support. One area for GRA may be support for research which is an important need in the context of data needs for inventories and NDCs. Agencies are supporting countries (across all sectors) but are not supporting research e.g. identifying and funding the need for long-term trials.
    - A sector-based approach is needed, working together (e.g. GRA-FAO-World Bank-National agencies) to meet the diverse needs of different countries. There was a discussion on the difficulty of management of sectors through different government ministries e.g. AFOLU - Agriculture vs LULUCF (environment). This can be a problem for developed countries (e.g. in EU) as well as developing with questions such as differing data needs for agroforestry depending on where it's counted.
    - Engage with agencies - UNDP Damiano Borgogno in Turkey, Miriam Hinojosa for UNEP-DTU in Denmark. Unit in charge of support of countries for inventories.
    - Research should target inventory needs (e.g. activity data).
3. Several countries discussed specific challenges in doing their inventories and possible areas where support would be valued (in italics), e.g.
- Hungary – lack of accounting for soil carbon in agriculture in 1996 IPCC Guidelines and having agriculture and LULUCF sectors managed internally by different people/agencies meant there was little soil monitoring data.
    - *Project on how to use data to enhance inventory to Tier 2 accounting for SOC*
  - Hungary – as a member of UNCCD Hungary reports on SDG 15.3 but land management data for the Inventory cannot be used for SDG reporting (different concept of LU). This was supported by Finland and France noted that countries need to provide a biennial report on the national communications for greenhouse gas inventories
    - *France – First step is to map reporting obligations, processes and data needed (by developing but possibly for all countries).*
    - *Check UNCCD brochure on procedures for reporting*
    - *Project to facilitate harmonization of data with an initial focus on land use data*

- General - it would be helpful to have a focus point(s) for questions i.e. who could you contact for support if you have a Tier 1 inventory and been advised to move to Tier 2, or to get guidance on what is needed to set up a long-term monitoring experiment for SOC.
  - General (including Hungary, Finland, Latvia) - guidance for activity data to understand research needs, how to collect new data, and using statistics for country data (with Cor Graveland providing a contact for the EU).
    - *Explore how in-country reporting can align with UNFCCC reporting needs*
  - Latvia – lack of data and methodology to capture emissions reduction due to good practice
  - General – regional workshops could support countries developing inventories.
    - *Guidance is needed to ‘define’ and understand what ‘regional’ is in a meaningful way. This question may be broader and could be taken to the GRA Council.*
4. The meeting discussions on the Inventories and NDC Support Network indicated strong interest by country representatives in the potential for linking with the Network to get assistance with specific and general needs, especially by countries in the early stages of inventory development. They are generally looking for more clarity on how to work with the new Network and get answers on specific questions. The suggestions on initial projects/activities may inform initial engagement and forward planning, with some delegates intending to be in Bali. (A possible road map synthesized from delegate input for Network leads to consider is added in Appendix 4).

## **Appendix 1**

### **AGENDA**

#### **Welcome:**

*Dr. Wolfgang ZORNBACH, Chair of the GRA, Federal Ministry of Food and Agriculture, Germany*

#### **Introduction and presentation:**

*Dr. Jean-Francois SOUSSANA, Co-chair of the GRA Integrative Research Group, INRA, France*

*Dr Beverley Henry, Co-chair of the GRA Integrative Research Group, ACIAR, Australia*

#### **Open discussion**

#### **Conclusions**

## Appendix 2

Country/Organisation	Name	Email
Chair of the GRA Germany Federal Ministry of Food and Agriculture	Wolfgang ZORNBAACH	Wolfgang.Zornbach@bmel.bund.de
Co-chair of the IRG France INRA	Jean-Francois Soussana	jean-francois.soussana@inra.fr
Co-chair of the IRG Australia ACIAR	Beverley Henry	beverley.henry@qut.edu.au
Argentina Ministry of Agriculture	Andres Said	asaid@magyp.gob.ae
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France Ministry of Agriculture	Valerie Dermaux	valerie.dermaux@agriculture.gov.fr
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CCAFS	Lini Wollenberg	Lini.Wollenberg@uvm.edu
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Netherlands Statistics Netherlands	Cor Graveland	c.graveland@cbs.nl
SER Luxemburg	Marie-Josee Mangen	marie-josee.mangen@ser.etat.lu
Ireland Department of Ireland	Philip Blackwell	Philib.blackwell@agriculture.gov.ie

# Appendix 3

**GLOBAL RESEARCH ALLIANCE**  
ON AGRICULTURAL GREENHOUSE GASES

**Integrative Research Group**  
Co-chairs:  
Beverley Henry, Australia;  
Pamela Joosse, Canada  
Jean-François Soussana, France

1 ★

**Research Groups**

**RESEARCH GROUPS**

Livestock, Croplands, Paddy Rice, Integrative

2 ★

**The Network**

**Co-chairs of the IRG**  
Beverley Henry <beverley.henry@csu.edu.au>  
Pamela Joosse <pamela.joosse@canada.ca>  
Jean-François Soussana <jean-francois.soussana@terra.fr>

**Network leaders**  
Andrus Piskering, Miro Primari Inc., NZ  
Alberto Colorado-Sanz, Polytech U. Madrid  
Mauri Baranski, USDA  
Nandini Chandra, CIAT  
Richard Eckard, Melbourne U.

At the time of writing the Network had 108 members from 57 different countries and 5 organizations. Many of these countries are not members of the GRA, but this does not preclude these countries from participating in the Network. However, for non member countries, if you would like to join the GRA, please contact the GRA secretariat at [globalresearchalliance.org](mailto:globalresearchalliance.org). For a full list of member countries and Partners see <https://globalresearchalliance.org/community/>.

3

**Network objectives**

The objective of the Network has therefore been defined as the facilitation of links across organizations, research institutes and government so that the expertise is accessible. The Network will focus on:

- Increasing access to methods to improve the collection of activity data as well as inform the collection of GHG emissions and uptake data where it has not previously been available;
- providing technical support and skills training, for capacity building and knowledge transfer;
- building upon existing shared databases and developing new platforms where necessary; and
- creating in-country capability and avoiding international consultancy so as to build country capabilities.

4

**MRV Platform**

The Measurement, Reporting and Verification (MRV) Platform for Agriculture is an online platform of tools, approaches, and case studies for MRV of GHG emissions and mitigation actions in the agriculture sector. This platform provides information to guide the technical and institutional design of MRV systems for agricultural mitigation actions, including those outlined in Nationally Appropriate Mitigation Actions (NAMAs) and Nationally Determined Contribution (NDC) goals.

Over 100 countries indicated their intention to reduce emissions from the agriculture sector in their NDCs, and all of them need credible MRV systems. (CCAFS, CGIAR)

The MRV Platform summarizes evidence-based approaches to practicing MRV. We want to ensure that inventory compilers and project developers have access to the information they need and examples of how others have solved the same problems they may be facing."

5

**CIRCASA**

Develop international synergies concerning research and knowledge transfer on agricultural soil C sequestration at European Union (EU) and global levels.

CIRCASA has 22 partners including the research secretariats of Ag1000, GRA and FACCE-IPM

Together with these initiatives and WOC-COAS-CGIAR, it has direct outreach to a total of 82 countries accounting for 85% of the world's total research on soil C sequestration in agriculture

6

**CIRCASA**

A survey of national GHG inventories from GRA countries for SOC carbon in agriculture

Methodology	Number of Countries
NA	25
Tier 1	18
Tier 2	12
Tier 3	10

Cristina Arias-Navarro, INRA, CIRCASA project

7

**CIRCASA**

**Tier 2 methods for cropland remaining croplands w/wo country specific land management practices**

Country	Methodology	Land Management Practice	Year
France	Method 1 (Tier 2)	Land Management Practice	2012
France	Method 2 (Tier 2)	Land Management Practice	2012
France	Method 3 (Tier 2)	Land Management Practice	2012
France	Method 4 (Tier 2)	Land Management Practice	2012
France	Method 5 (Tier 2)	Land Management Practice	2012
France	Method 6 (Tier 2)	Land Management Practice	2012
France	Method 7 (Tier 2)	Land Management Practice	2012
France	Method 8 (Tier 2)	Land Management Practice	2012
France	Method 9 (Tier 2)	Land Management Practice	2012
France	Method 10 (Tier 2)	Land Management Practice	2012
France	Method 11 (Tier 2)	Land Management Practice	2012
France	Method 12 (Tier 2)	Land Management Practice	2012
France	Method 13 (Tier 2)	Land Management Practice	2012
France	Method 14 (Tier 2)	Land Management Practice	2012
France	Method 15 (Tier 2)	Land Management Practice	2012
France	Method 16 (Tier 2)	Land Management Practice	2012
France	Method 17 (Tier 2)	Land Management Practice	2012
France	Method 18 (Tier 2)	Land Management Practice	2012
France	Method 19 (Tier 2)	Land Management Practice	2012
France	Method 20 (Tier 2)	Land Management Practice	2012
France	Method 21 (Tier 2)	Land Management Practice	2012
France	Method 22 (Tier 2)	Land Management Practice	2012

8

**Soil carbon: moving from Tier 1 to Tier 2**

- Land management practices
- Long-term field trials
- Soil surveys

9

Models used to estimate CO<sub>2</sub> emissions and removals from the cropland remaining cropland soils component (Tier 3 method) in GRA countries.

GRA country	Model
Australia	Soil Full Carbon Accounting Model (SoilCAM)
Canada	CENTURY
Denmark	C-TOOL
France	SoilCART soil carbon model
Japan	Soil Carbon Model (SCM)
Norway	Soil Carbon Model (SCM)
Sweden	Soil Carbon Model (SCM)
Switzerland	Soil Carbon Model (SCM)
United Kingdom	Soil Carbon Accounting Model (SoilCAM)
United States	Soil Carbon Accounting Model (SoilCAM)

Cristina Arias-Navarro, INRA, CIRCASA project

10

Developing methodologies for estimating farm scale C sequestration practices in EU (H2020 NIVA project)

**For C sequestration**

- Remote sensing (GPP, NPP)
- Climatic data
- Soil data
- Impacts of changes in practices on soil C and GHG balance

**For N<sub>2</sub>O and CH<sub>4</sub>**

- Similar needs for Tier 2/Tier 3 methods for N<sub>2</sub>O and CH<sub>4</sub> (e.g. UK)

11

**Soil carbon: moving to Tier 3**

- IPCC AFOLU 2019 guidelines, Chapter 2

Four examples of Tier 3 model applications for soil organic C stock changes are elaborated in this section based on government reporting to the UNFCCC by the Australia, Finland, Japan and United States.

**Integrative Research Group:**  
Australia: Soil Carbon Offset Method; the accuracy, the policy and the practice  
Canada: Soil Carbon Accounting Model (SoilCAM); the accuracy, the policy and the practice  
Denmark: Soil Carbon Accounting Model (SoilCAM); the accuracy, the policy and the practice  
France: Soil Carbon Accounting Model (SoilCAM); the accuracy, the policy and the practice  
Japan: Soil Carbon Accounting Model (SoilCAM); the accuracy, the policy and the practice  
United States: Soil Carbon Accounting Model (SoilCAM); the accuracy, the policy and the practice

12

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Thank you for your attention!

## Appendix 4

Possible roadmap for consideration of the Network.

- Start with explaining the reporting needs for UNFCCC, also including UNCCD, and showing for soil carbon how to harmonize procedures. This could form a brochure that would also specify the niche for the NDC and inventory support network.
- Develop technical contact points within the countries (or regions where appropriate)
- Need to connect with statisticians providing activity data in countries. How is reporting organized in the countries. Link to those bodies in the countries. Cor Graveland contact point for EU in this respect. Run training workshops within regions, also for activity data (especially countries starting Tier 1)
- Develop guidance on how to develop Tier 2 approaches; e.g. for soil carbon create a guidance data for long-term experiments, sampling depth etc.
- Make a plan on who is involved and how can research link to the knowledge needs
- Room for research to provide data at country scale from remote sensing and for developing a sound scheme for carbon budgeting at field to national scale. This could be part of the International Research Consortium agenda following CIRCASA project