

## Training Workshop for Reporting Soil Carbon Stock Change in National Greenhouse Gas Inventories

### Speakers/Facilitators:

- Iordanis Tzamtzis, FAO
- Isabel Luotto, FAO, Global Soil Partnership (GSP)
- Dr. Yasuhito Shirato, National Institute of Agro-Environmental Sciences, NARO, Japan
- Dr. Bunjirtluk Jintaridth LDD, Thailand and CESRA
- Mr. Phongthorn Phianphitak, Director on climate change sub-division, and Ms. Chanda Charanworapan, Specialist in soil physics research, LDD Thailand
- Akiko Nagano, Beau Damen (partially), Sion Chiew (FAO and GSP)

### Organizer:

FAO and GSP, with support from IPCC TSU-TFI and the Ministry of Agriculture, Forestry and Fisheries (MAFF) of Japan

### Part 1- online training 29 Nov-1 Dec (finished)

### Part 2 –In-Person Training

In-Person Training - 12<sup>th</sup> – 14<sup>th</sup> December, 08:30 to 17.30 (BKK Time/UCT+07:00)

**Venue** Amari Watergate Hotel in Bangkok 7<sup>th</sup> floor Bangkok meeting room

**Outputs:** by the end of the training, participants will;

1. understand what kind of data is necessary, (generally, and in their country) to include soil carbon stock change (CSC) in their GHG inventories (GHGIs) using the IPCC Tier 1.
2. Be able to explain the benefits of estimating soil CSC.
3. Be able to explain how models can be used to substitute and/or complement soil sampling and analysis.
4. Be able to explain how the activities/products of GSP can support countries to estimate and include soil CSC in their GHGIs.
5. Will have listed up what may still be missing, and discuss possible solutions to fill the gap.

## Training Agenda

\*The meeting room is available 8:00 to 17:00 (up to 18:00 latest)

Time (BKK Time)	Sessions	Speakers/ Facilitators
<b>Day 1 – Mon 12<sup>th</sup> December 2022</b> <b>GHG inventory from land (focus on soils) and GSOC Processes</b>		
8:00-8:15	<b>Reception at entrance of the meeting room 7<sup>th</sup> floor</b> Bangkapi	Ling and Sion, FAO RAP
8:30-9:15	<b>1. Opening and introductions</b>  <b>Opening remarks</b> <ul style="list-style-type: none"> <li>• Dr. Bunjirtluk Jintaridth, Director of department of administration and collaboration, Center of Excellence for Soil Research in Asia and Land Development Department (LDD), Ministry of Agriculture and Cooperatives, Thailand</li> <li>• Ms Hang Thi Thanh Pham, Senior Resilience Officer, FAO Regional Office for Asia and the Pacific</li> </ul> <b>Orientation and Group photo</b>	Akiko Nagano, FAO OCB
09:15 – 12:00	<b>2. GHG inventory basics</b> <ul style="list-style-type: none"> <li>- Enhanced transparency framework (ETF) &amp; GHG inventories</li> <li>- 2006 IPCC Guidelines and carbon stock changes in mineral soils (methodologies, default parameters, etc.)</li> <li>- How to report carbon stock changes in mineral soils using 2006 IPCC tier 1</li> <li>- Reporting CSCs under the ETF</li> </ul>	Iordanis Tzamtzis, FAO OCB
12:00 - 13:00	<b>Lunch</b>	
13:00 - 13:40	<b>Country reports</b> <b>(Cambodia, Indonesia, Lao PDR, Philippines, Sri Lanka, Thailand) 5 minutes each</b>	Akiko Nagano, FAO OCB
13:40-14:10 15 min + Q&A	<b>Presentation (online)</b> <b>Japan's experience in validating and modifying the Roth C model</b>	Dr. Yasuhito Shirato, National Institute of Agro-Environmental Sciences, NARO of Japan

14:15-15:00	<b>Practical exercises on estimating carbon stock changes in mineral soils</b>	Iordanis Tzamtzis, FAO OCB
15:00 - 17:00 With tea and coffee breaks	<b>1. The Global Soil Organic Carbon Sequestration (GSOCseq) Initiative</b> <ul style="list-style-type: none"> <li>- Significance, processes, benefits and timeline</li> <li>- General framework (BAU, SSM1-SSM2-SSM3, meta-analysis)</li> <li>- Product specifications</li> </ul> <b>2. The GSOC MRV Protocol</b> <b>3. The RECSOIL Initiative</b> <b>4. Q&amp;A and discussion</b>	Isabel Luotto, FAO GSP
<b>Day 2 – Tue 13<sup>th</sup> December 2022</b> <b>Insert title</b>		
08:30 - 12:00 With tea and coffee breaks	<b>Introduction to sequestration modelling (RothC Basics)</b> <ul style="list-style-type: none"> <li>- Input data requirements, software and tools</li> </ul>	Isabel Luotto, FAO GSP
12:00 - 13:00	<b>Lunch</b>	
13:00 - 17:00 With tea and coffee breaks	<b>Intro to R and Input data preparation</b> <ul style="list-style-type: none"> <li>- Introduction to the R language</li> <li>- Input data preparation: running scripts 0 to 9</li> </ul>	Isabel Luotto, FAO GSP
<b>Day 3 – Wed 14<sup>th</sup> December 2022</b> <b>Insert Title</b>		
09:00 - 12:00 With tea and coffee breaks	<b>Input Data Preparation (cont.)</b> <ul style="list-style-type: none"> <li>- Input data preparation: running scripts 0 to 9</li> <li>- Harmonization of spatial layers</li> </ul>	Isabel Luotto, FAO GSP
12:00 - 13:00	<b>Lunch</b>	
13:00 – 13:15	<b>Introduction to Lab Tour</b>	Chanida Charanworapan, LDD, Thailand
13:15 - 16:00 With tea and coffee breaks	<b>Modeling and Mapping using RothC in R</b> <ul style="list-style-type: none"> <li>- Modelling and mapping stage: running scripts 11 to 15</li> <li>- Review and interpretation of the results and Q&amp;A</li> <li>- How to adapt the methodology for a Tier 3 approach to report CSCs in GHGI</li> </ul>	Isabel Luotto, FAO GSP

16:00-17:15	<p><b>Discussion Workshop wrap up</b></p> <ul style="list-style-type: none"> <li>- Guiding questions</li> </ul> <ol style="list-style-type: none"> <li>1. What is the biggest benefit for your country, of estimating and reporting soil CSC in national GHG inventories?</li> <li>2. What is the main challenge, knowing that countries may start reporting using IPCC tier 1 with limited data sets?</li> <li>3. What is the immediate next step to overcome the challenge?</li> </ol>	
Evening/ Side even	<b>Social event with Pathway to Net Zero participants</b>	

Participants will join Day2 and Day 3 of the Pathway to Net Zero for Agrifood and Land Use Systems in Asia workshop (concept and agenda attached), and a visit to the soil laboratory of Thailand.

### **CESRA/LDD Tour (organized by LDD, CESRA, GSP)**

16<sup>th</sup> December, 13:30 to 16.00 (BKK Time/UCT+07:00)

Time (BKK Time)	Sessions	Speakers/ Facilitators
1245-1345	<b>Transportation by micro bus (approximately 1 hour)</b>	
14:00 - 16:00	<p><b>The time of Lab visiting will start from 1400 (local time)</b></p> <ul style="list-style-type: none"> <li>- 3 Labs in OSLD building (OC-W&amp;B, OC-dry combustion, Dry bulk density; duration 20 min/lab)</li> <li>- The group will be separated to 3 groups (15, 15, and 20 person). Each group will visit each lab and rotate until all. Each lab will brief the analytical method by using posters, then we will take them to visit each lab together with Q&amp;A. After finishing 3 labs visiting, the group will gather in the main meeting room to see soil analysis by test kit (pH OC and EC).</li> </ul>	FAO team (Akiko, Iordanis, Isa, Sion) will facilitate discussion