"Cambodia Situation on Estimation of Carbon Stock Change in Mineral Soils"

Technical Training for Reporting Soil Carbon Stock Change in National Greenhouse Gas Inventories
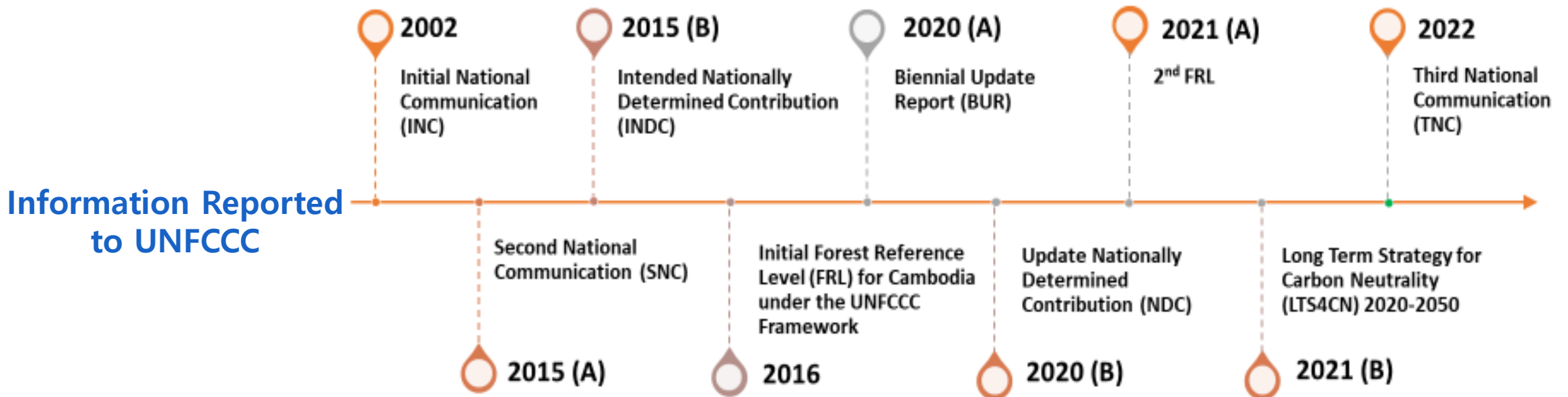Bangkok, 12th Dec, 2022

Presenter Team

Mr. Pich Sokhim , MoE

Ms. Chea Navin , RUA

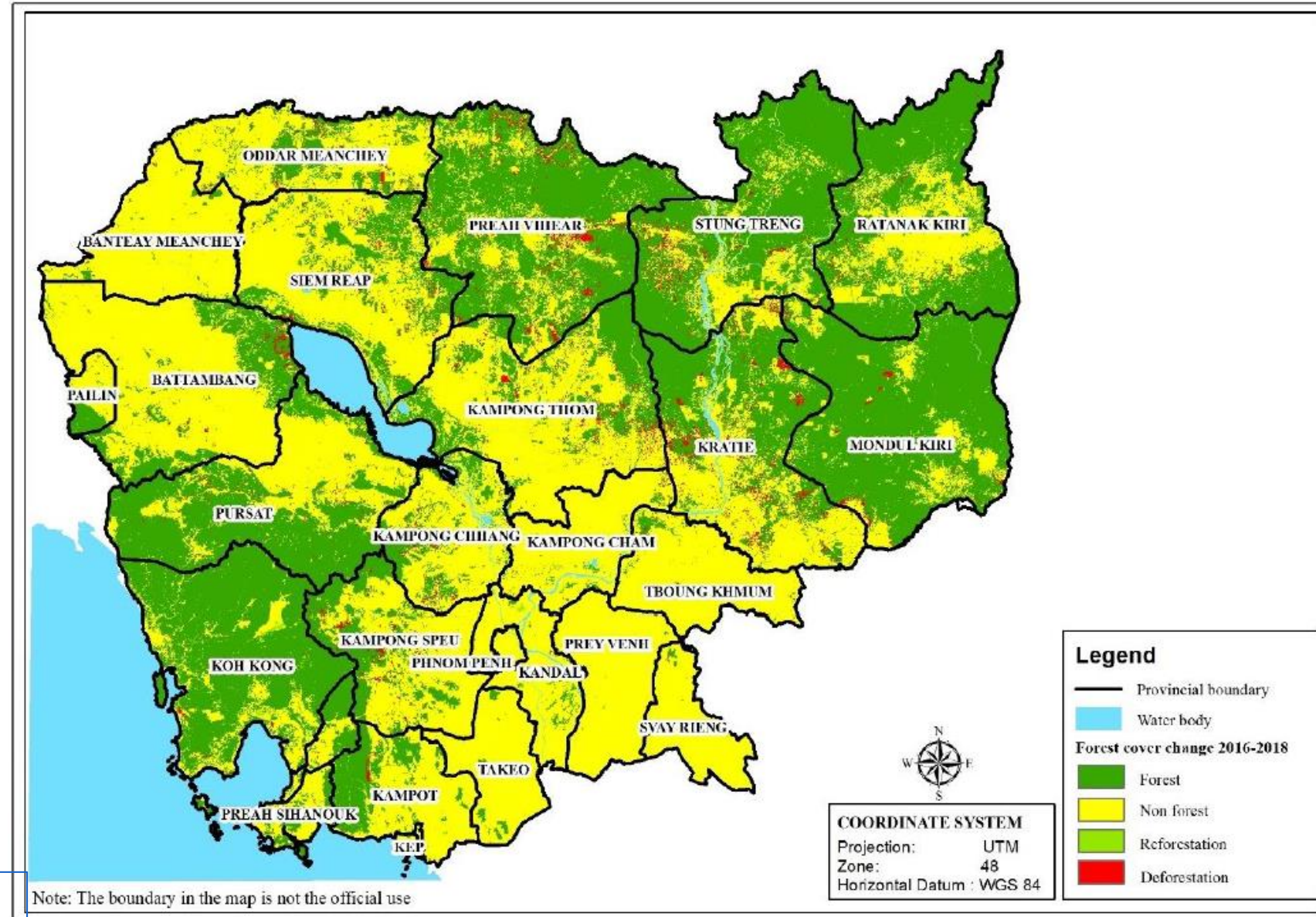Mr. Khat Piseth, GDA/MAFF

Mrs. Kea Ratha, PLNIA

Content

- Cambodia was ranked as the 12th most climate risk-prone country globally base on Global Climate Risk Index.

- Cambodia became a Party to UNFCCC in Dec 1995, and membership officially on 17th March, 1996

- On 22 April, 2016 Cambodia sign the Paris Agreement and ratification on 06th February 2017.

Information Reported to UNFCCC

Year	Report
2002	Initial National Communication (INC)
2015 (A)	Second National Communication (SNC)
2015 (B)	Intended Nationally Determined Contribution (INDC)
2016	Initial Forest Reference Level (FRL) for Cambodia under the UNFCCC Framework
2020 (A)	Biennial Update Report (BUR)
2020 (B)	Update Nationally Determined Contribution (NDC)
2021 (A)	2nd FRL
2021 (B)	Long Term Strategy for Carbon Neutrality (LTS4CN) 2020-2050
2022	Third National Communication (TNC)

2. Land Use

Table 1. Land use maps classification system.
Source: Technical Annex to the BUR (2020)

Land use/cover		
Category		Sub-category
Forest land	Natural forest	Evergreen
		Semi-evergreen
		Deciduous
		Pine forest
		Bamboo
		Mangrove
		Rear mangrove
		Flooded forest
		Forest regrowth
	Planted Forest	Pine plantation
		Tree plantation
Cropland		Rubber plantation
		Oil palm plantation
		Cropland
		Paddy field
Grassland		Grassland
		Wood shrub
Wetland		Water
Settlement		Village
		Built-up area
Other lands		Rock
		Sand

Second Forest Reference Level

Note: The boundary in the map is not the official use
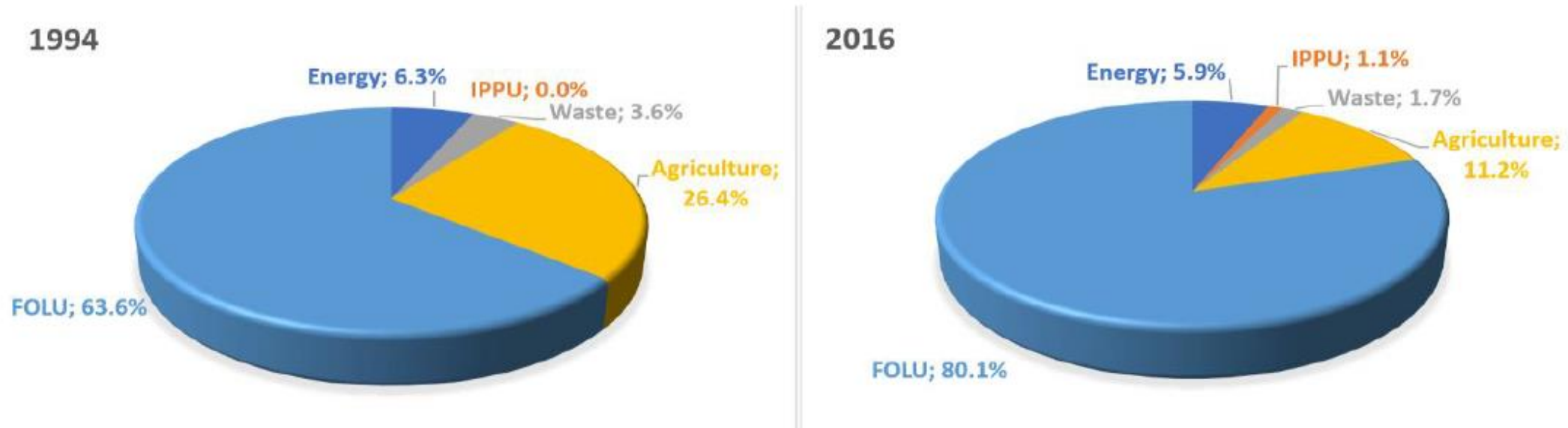
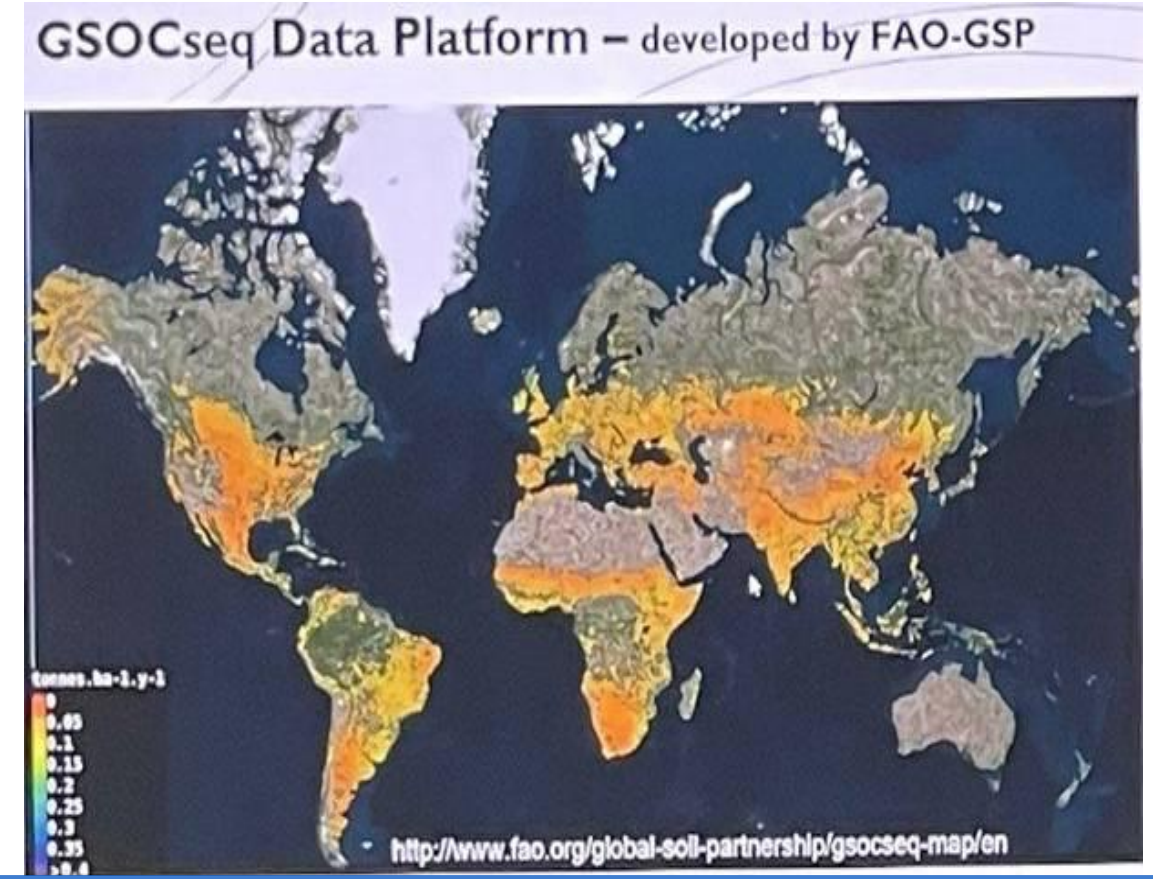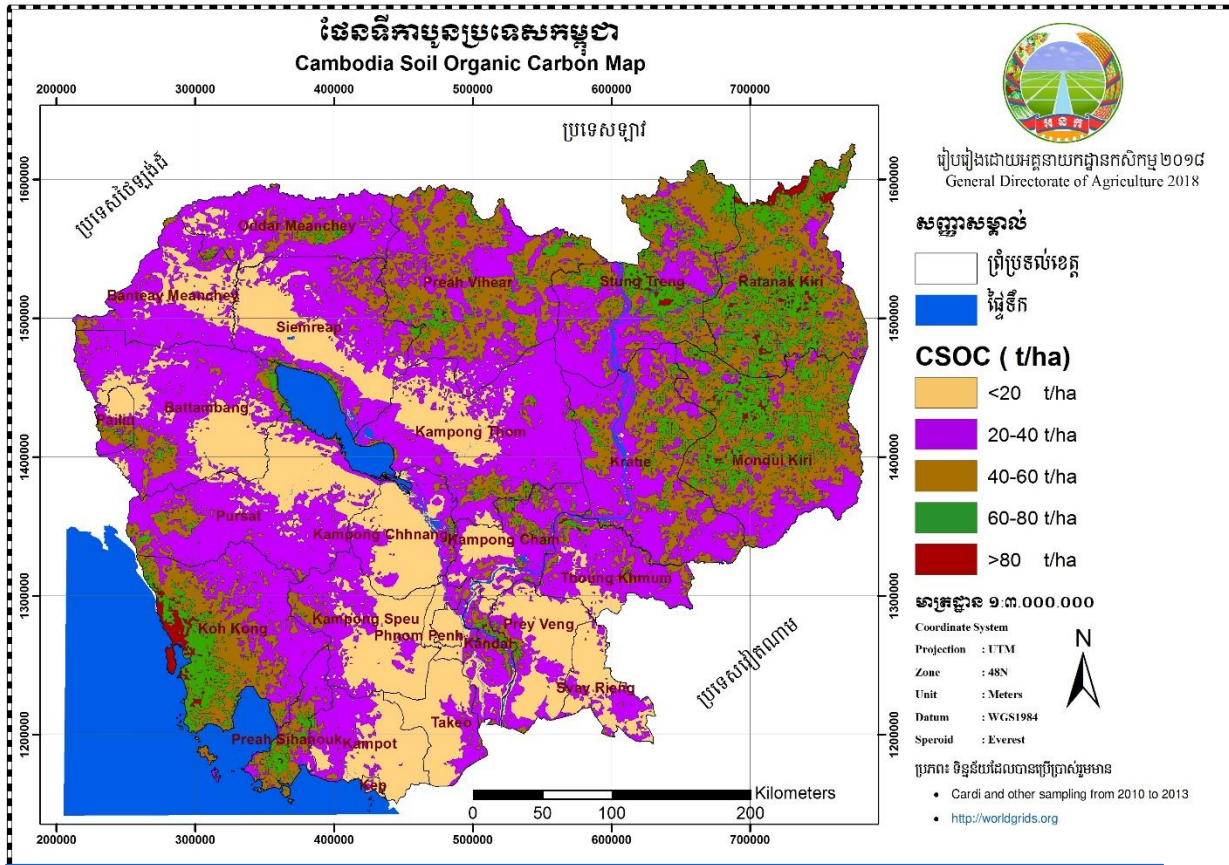Figure 5. FCC Map 2016-2018. Source: MoE.

3 GHGs emission by Sectors

- Although Cambodia currently contributes only 0.02% to global greenhouse gas emissions (ADB, 2021), it has committed to reducing greenhouse gas by up to 42% by 2030 (Minister of MoE, COP26).
- Major contributor to the GHG is the Forest and Other Land Use sector (FOLU), which is driven by the change in carbon stocks due to deforestation and other changes in the land use.

GHGs emissions by Sector 1994, 2006

4 Soil Organic Carbon Stocks Map

ផែនទីកាបូនប្រទេសកម្ពុជា
Cambodia Soil Organic Carbon Map

រៀបរៀងដោយអគ្គនាយកដ្ឋានកសិកម្ម ២០១៨
General Directorate of Agriculture 2018

សញ្ញាសម្គាល់

ព្រំប្រទល់ខេត្ត

ផ្ទៃទឹក

CSOC (t/ha)
- <20 t/ha
- 20-40 t/ha
- 40-60 t/ha
- 60-80 t/ha
- >80 t/ha

មាត្រដ្ឋាន ១:៣.០០០.០០០

Coordinate System
Projection : UTM
Zone : 48N
Unit : Meters
Datum : WGS1984
Speroid : Everest

ប្រភព: ទិន្នន័យដែលបានប្រើប្រាស់មានមាន
- Cardi and other sampling from 2010 to 2013
- http://worldgrids.org

GSOCseq Data Platform – developed by FAO-GSP

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0.05
0.1
0.15
0.2
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0.3
0.35

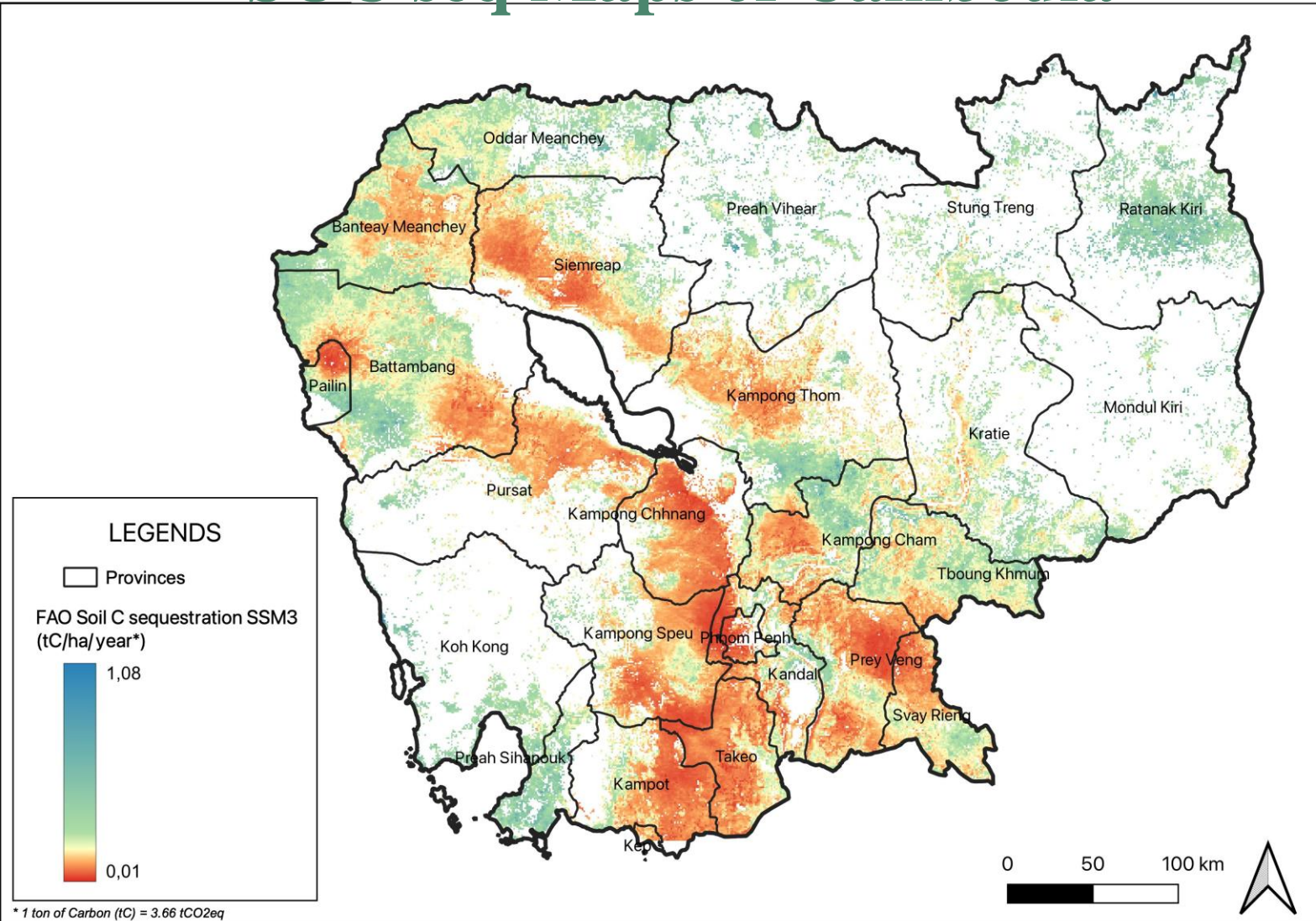http://www.fao.org/global-soil-partnership/gsocseq-map/en

The Cambodian map of Soil Organic Carbon (SOC) stocks at 0-30 cm.

With supported by AFACI/RDA "SOIL Project" and FAO, Soil Organic Carbon map, and Soil Organic Carbon Sequestration map was produced in 2021.

➤ The highest SOC stocks were found in the mangrove and upland forests in SW and NE of the country.
➤ The lowest SOC stocks are found on the **upper sandy terraces** where rainfed rice is mainly cultivated.

SOC seq Maps of Cambodia

Cambodia/FAO/GSP

GSOCseq layers source:

National Submission
National Expert(s):
Phy Chhin
Keo Nimol

Data-holding Institution(s):

Department of Agricultural Land

Resources Management, General

Directorate of Agriculture, MAFF

SOC Under the Report to UNFCCC

- NDC updated 2020: SOC was not included in NDC.

- BUR 2020 : Carbon stock change for mineral soil was not estimated

- MRV was applied but in the Forestry sector (REDD+ project)

- The latest version of the IPCC inventory software (Ver. 2.691) was used to compile the inventories. (Third Communication)

- Second FRL: The country needs to collect data of litter, deadwood, and soil organic carbon pools to be included in the next FRL

6 Next Step

- ➢ To produce soil property maps (pH, CEC, Texture, and other nutrients)
- ➢ To update soil organic carbon (SOC) and soil organic carbon sequestration (SOCseq) maps
- ➢ To develop national soil information and soil profile database
- ➢ To develop land suitability and crop maps for the main crops (i.e. cashew, cassava, corn, mango, banana, longan, durian, sugarcane, black pepper, date, and soybean)
- ➢ Capacity building on DSM and Soil Information System Management

Thank You!