Food and Agriculture Organization of the United Nations

FAO elearning ACADEMY

Climate change and agriculture: Quantifying carbon stocks in soils and their evolution

14 April 2021

Recording Link: https://youtu.be/dO7YGMrZI0I

Questions and Answers

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1) **What does NDC stand for?**

NDC stands for Nationally Determined Contributions.
NDC Repository: https://www4.unfccc.int/sites/NDCStaging/Pages/All.aspx
FAO NDC Regional analysis and methods: http://www.fao.org/climate-change/our-work/what-we-do/ndcs/research-tools/en/

2) **Are there Malaysian initiatives that investigate Soil Carbon Stocks that you know of?**

Certainly, Malaysia is part of the Global Soil Partnership - GSP, here an example of information available:

- http://www.fao.org/fileadmin/user_upload/GSP/docs/asia_2015/Malaysia_ASP_Bangkok_2015.pdf
- http://www.fao.org/fileadmin/user_upload/GSP/docs/Presentation_china_feb2012/Bahman.pdf

3) **As countries are committing to carbon neutrality what role of AFOLU has been playing and can play?**

Let's answer on the basis of the two carbon neutrality strategies I'm most familiar with: the EU one and the French one. In both cases, residual emissions in 2050 are intended to be around 10-15% of 2005 levels. However, there are substantial differences in the relative share of AFOLU versus CCS in the removals necessary to offset these residual emissions. In the French strategy (MTES, 2020), AFOLU represents 80% of total removals in 2050. In the EU strategy (European Commission, 2018), there are two alternatives: the first is similar to the French share, but in the second, CCS represents 50% of removals in 2050.

European Commission, 2018. In-depth analysis in support of the Commission communication COM(2018) 773 - A Clean Planet for all - A European long-term strategic vision for a prosperous, modern, competitive and climate neutral economy. European Commission, Brussels, Belgium.

MTES, 2020. Stratégie Nationale Bas-Carbone. Ministère de la transition écologique et solidaire, Paris, France.

4) **Have you been in touch with any farmers who use these tools?**

Not directly, but I have been in touch with intermediaries (farmers associations, technical institutes, project developers, ...). I think that in many cases, it is not efficient to ask farmers to grapple directly with the technical and administrative work necessary to turn improved management practices into carbon credits or other payments for environmental services. Intermediaries able to aggregate dozens or hundreds of farmers around a given project are the right people to efficiently use these tools.

5) **As I observed, it's not easy to obtain benefit from soil carbon stock quantification, because of the cost of monitoring, the reliability of data provided, but as a farmer of low-income country (Cameroon), how can I use soil carbon stock as a tool to increase income?**

You may want to have a look at the methodologies related to agriculture in carbon offset standards applicable in Cameroon (e.g., Verra or Gold Standard).
https://verra.org/
https://www.goldstandard.org/

6) **Carbon sequestration in limestone soils in regions with contrasted seasons (hot and dry summer and cool winter): quantity and method of assessment**

You can find more information in this report:
http://www.fao.org/3/cb0403fr/CB0403FR.pdf

7) **How is breeding considered in the protocols and tools presented?**

The CarbonAgri method in the Label Bas Carbone was developed by the Livestock Institute (IDELE) and is perfectly suited to livestock farms. Outside Europe, international offset standards such as Verra or the Gold Standard also propose methodologies applicable to livestock farms.

8) **How are the soil organic carbon monitoring and evaluation been supported by various governments in combating climate change?**

Let me narrow down this question to "how well is soil carbon currently monitored by governments in the national GHG inventories they yearly submit to the UNFCCC?". And then the answer is: "not very well, but it's improving". Soil carbon changes related to land-use changes are overall properly monitored. Soil carbon changes in "cropland remaining cropland" or "grassland remaining grassland" are however poorly monitored. Most often, they are assumed to be constant. When a model is used to estimate these changes, the IPCC requires that the model be validated with national data, and the inventories often show that the model is unable to reproduce national data on soil carbon changes.

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