FAO-EPIC Technical consultation on "Soil carbon sequestration coefficient and capacity building scenario planning under CSA project"

Rome, Italy, 21-24 May 2013

BACKGROUND NOTE FOR PARTICIPANTS

WORKSHOP 1 – Soil carbon sequestration coefficient
Facilitators: University of Aberdeen and FAO
Tuesday, 21 May and Wednesday, 22 May 2013

Cool Farm Tool[1] The Cool Farm Tool is a decision support tool developed at the University of Aberdeen in collaboration with several non-academic partners. The motivation for the tool was that with a number of companies having ambitious medium term sustainability targets there was a need for an accessible, informative decision support tool which their suppliers could use. The first version of the tool was developed by the University of Aberdeen under a collaborative project with Unilever with the remit to develop a tool which:

1. Was responsive to inputs which a farmer could easily understand
2. Allowed the user to begin to identify practical mitigation options

In addition to having these required functions it was also agreed that the tool should be fully referenced, open source, and free at the point-of-use.
In its current form it is available as an Excel tool under a creative commons licence, however within the lifespan of this project it will be made available in an online web-based format to further improve the user-friendliness.

The tool has received wide global testing under the Cool Farming Options project with 17 sponsoring organizations across 16 crops in 15 countries. It is now managed by a purpose built organisation called the Cool Farm Institute which is funded by a membership model with founding corporate members Marks and Spencer, Unilever, Heineken, Tesco, PepsiCo, Yara, and Fertilizers Europe as well as U.K. based associate members the Royal Agricultural University and ADAS. Together the members work to ensure the relevance of the tool to end-users as well as the connection with current and emerging science.

EX-Ante Carbon Balance Tool[2]
The EX-ACT (EX-Ante Carbon Balance Tool) is a tool aimed at providing ex-ante estimations of the impact of agriculture and forestry development projects on GHG emissions and Carbon (C) sequestration, indicating the effects on the C balance. EX-ACT is a land-based accounting system, measuring C stocks and stock changes per unit of land, expressed in tCO2-eq/ha and year. The ex-ante C-balance appraisal guides the project design process and decision-making on funding aspects, complementing the usual ex-ante economic analysis of investment projects. EX-ACT has the potential to support project designers to select project activities with higher benefits both in economic and climate change mitigation terms and the output could be used in financial and economic analysis. EX-ACT has been jointly developed by three divisions in FAO: a)

[1] For further information on the Cool Farm Tool, visit: http://www.coolfarmtool.org/
[2] For further information on Ex-Act, visit: http://www.fao.org/tc/exact/en/

Policy and Programme Development Support Division [TCS] formerly Policy Assistance and Resource Mobilization Division [TCA], b) the Investment Centre Division [TCI] and c) the Agricultural Development Economics Division [ESA]). EX-ACT is an easy tool that can be used in the context of ex-ante project/program formulation. Further, it is cost effective, requires a minimum amount of data, and has resources (tables, maps) which can help finding the information required to run the model. Also, EX-ACT works at project level but can easily be up-scaled at programme/sector level.

Session: Overview of the Cool Farm Tool

We will describe the origins, current state, and ambition for the Cool Farm Tool. The overview will include a description of both the user-facing and engine parts of the tool as well as a range of case studies. The session will also cover the role of the project partners and the tool as a vehicle for knowledge exchange and as a means of building relationships and capacity up and down the agricultural product value chain. In the agricultural context a model always incorporates a compromise between the ease of use and the precision of outputs. This overview will naturally cover both the strengths and limitations of the Cool Farm Tool in the context of other modelling approaches.

Sessions: Training on the Cool Farm Tool with demonstration and Tutorial session

In these sessions we gain some practical experience using the tool, with the first session being dedicated to a walkthrough with examples from livestock as well as arable and perennial cropping systems to enter plot data and interpret estimates of emissions. We will also demonstrate how the tool may be used to explore mitigation options from some sample long-list options. In the second session the participants will be able to follow worked example to gain experience in using the tool.

Session: Overview of Ex-Act

This session provides an overview of the Ex-Act tool. We will explain what it consists on, how it works and its purposes and utilization.

Session: Ex-Act Training and Tutorial

In this session we carry out a practical application of the Ex-Act tool in which we use different modules (e.g. crops/livestock/grasslands). We will walk the audience to the functioning of the excel worksheets, go through the modules and additional resources (i.e. maps etc) and explain how to build the "baseline" and the "with project" scenarios. We will continue with a practical application using different modules and conclude with a discussion on if and how Ex-ct can/cannot be used to model some CSA technology (e.g. CA/agroforestry) .

Session: Precision on process for assessing long-list

In this session we propose to develop a draft long-list of mitigation options. The preliminary list informing this process will be constructed prior to the meeting by the Aberdeen partners mostly based on Smith et al 2008 with selected additions related to production intensity. During this session we wish to:

1. Refine that list both by deleting irrelevant options as well as adding other regionally relevant options where appropriate.
2. Agree a process via which to conduct the initial screening of options
3. Assess the capability of the Cool Farm and Ex-Act tools to reflect the mitigation options in the long-list. It is anticipated that some modification of the Cool Farm Tool and possibly the Ex-Act tool may be required and we aim to identify these areas in this session.

Smith et al, Phil. Trans. R. Soc. B (2008) 363, 789–813

WORKSHOP 2 – Scenario planning
Facilitator: CIAT/CCAFS
Thursday, 23 May and Friday, 24 May 2013

The purpose of the FAO-CCAFS scenario planning workshop is to review the scenarios processes that are to be conducted in Malawi, Zambia and Vietnam. The objective of the workshop is for all parties to understand and gain some experience with the logic of scenarios processes, the intended outcomes and results, the potential challenges, and the roles for individuals in each participating organization and in each country.

Parties participating in the workshop will be the FAO ESA organizing team, FAO country coordinators, country focal points, the CCAFS scenarios officer and CCAFS participants responsible for the process in each country.

The workshop will introduce scenarios theory and CCAFS case study examples to help participants understand the benefits and challenges associated with scenarios. It will also feature some dry-run scenarios development for each country to help facilitate understanding. Finally, the workshop will focus on concrete steps to be taken, in each of the focus countries, associated challenges, and the roles of organizers.

Multi-stakeholder scenarios to guide decision-making and investment for Climate Smart Agriculture
Many research projects provide results that never feed into policy making decisions, and in fact in many cases the relevant policy makers are not even aware of them. Similarly, many research projects address and develop research questions without any or enough input from relevant policy-makers.
Within the "Climate-Smart Agriculture" (CSA) project (GCP/INT/139/EC), ESA wants to address this shortcoming and try out innovative ways of facilitating dialogue between researchers and policy-makers avoiding that useful research results are lost in the air and that, on the other hand, research ignores concrete needs coming from policy processes. Given the multidisciplinary topic of the project, ESA also recognize the need to facilitate dialogue across various disciplines at both policy and research levels, in the realms of environment, agriculture/food security as well as economics and ecology.

Based on the research that is evolving from the CSA project and the ongoing institutional analysis, ESA aims to use participatory scenario processes for interdisciplinary and inter-sectoral dialogue. In this context the CGIAR (Global Agriculture Research Partnership for a Food Secure Future) Research Program on Climate Change, Agriculture and Food Security (CCAFS) has brought together the world's best researchers in agricultural science, climate science, environmental and social sciences to identify and address the most important interactions, synergies and trade-offs between climate change and agriculture. Led by CIAT, through the 15 CGIAR Research Centers as well as with other CGIAR thematic research programs, CCAFS has been using participatory scenarios for their work on food security and climate change[3] since 2009.

Rationale for application of a multi-stakeholder scenarios process in the CSA project
Although the CSA project has already started involving policy makers and key stakeholders with project activities through direct interactions and encouraging their active participation, to reach a very active and interactive policy dialogue at national level, a stronger engagement from policy makers and other relevant stakeholders is necessary. In particular, one of the issues the CSA project has not as yet adequately dealt

[3] Chaudhury M et al., Participatory scenarios as a tool to link science and policy on food security under climate change in East Africa. Regional Environmental Change, September 2012, 1-10.

with is getting the key stakeholders in the country (particularly national agricultural policy-makers) to understand what FAO can (and cannot) do for them under this project. FAO sees participatory scenario analysis as one (although not the only) way of achieving this engagement. Specifically, through participatory scenario analysis FAO aims to get relevant stakeholders together to discuss about the biggest drivers of change for food security, agriculture and climate change in each country, shaping the discussion in a way to develop relevant questions for policy simulations that models and/or econometric analysis could address. This would serve to provide a clearer picture of how best FAO could actually contribute for each country under this project.

The end result of the CSA project is to develop investment plans for climate change adaptation and mitigation that have been tested to be robust under multiple socio-economic and climate futures. To do this, general or partial equilibrium models could be used to explore conditions for different commodities under a range of scenarios. Input to the socio-economic scenarios should be provided by relevant and knowledgeable stakeholders and then quantified. Models to be used are thus required to be clearly defined to ensure the stakeholders are involved in parameterization of the appropriate inputs. Socio-economic scenarios are then combined with climate scenarios through the models used, so to produce combined scenarios offering interacting socio-economic and biophysical future stressors. These scenarios are "exogenous" in that they fall outside the decision space of national stakeholders.

In a subsequent step, these exogenous, explorative scenarios will be used to provide plausible challenges and opportunities to various policy options that can be explored with stakeholders in a process called "back-casting". In an objective-oriented back-casting process, workshop participants determine future objectives and then work back from those objectives to determine which steps are necessary to achieve them. This back-casting is done in the "realities" of multiple scenarios, each scenario offering an alternative future world in which the participants conducting the back-casting have to tackle challenges presented by the scenario and bank on opportunities that arise in that specific future. This process of combining backward planning and explorative scenarios yields policy options that are robust under widely different future conditions, as well as insights as to what policy options are specifically suitable to certain future eventualities and not to others. This structured process of developing scenarios and using the same for back-casting allows both for collective sense-making between different sectors as well as for the development of collaborative strategies, partnerships and networks while enabling social learning.

Finally key stakeholders' involvement in scenario building would help identify better vertical linkages and feedback loops between country-led action on climate change and agriculture and the multilateral negotiations under the UNFCCC, including for the design of international architecture, governance, metrics and financing of climate change and agriculture, as well as for national instruments (NAP, NAMA).

Steps after the workshop

The plans outlined in the workshop for each focus country for workshop organization, the selection of participants and policy impact pathways will be implemented by participating partners as agreed, centred around a scenarios development workshop and a workshop where the scenarios are used for policy planning in each country through the back-casting process outlined above. To further ensure policy impact, policy makers will be involved in all steps and the process will be guided by institutional mapping to make sure key actors are engaged.