

# Workshop “Discover new Opportunities with the Ex-Ante Carbon Balance Tool”

7-8 December 2011, Stockholm

This short document aims at summarizing the main points of this 2-day seminar, especially concerning the round table discussions. For more details on each presentation, you are invited to have a look at the PowerPoint presentations.

*Introduction to the seminar, by Louis Bockel, FAO (Food and Agriculture Organization)*

The seminar, co-organized by SEI-SIANI and FAO, had three main objectives:

- Presenting the tool and spreading its usage
- Assessing the needs/demand related to CC mitigation for further development of the tool
- Building partnerships

*Bringing science and policy, by Melinda Fones-Sundell, SEI (Stockholm Environment Institute)*

SIANI, the Swedish International Agricultural Network Initiative, is a project and network from the SEI, financed by SIDA (Swedish International Development Cooperation Agency). It is an interdisciplinary and multi-stakeholder platform where governments, civil society, industries and research come together to address the crucial need for global agricultural development strategies that ensures food security, poverty reduction and environmental sustainability. SIANI's mission is to lay the foundation for a Coherent Swedish Response to the 21st century Food and Farming Challenge. <http://www.siani.se/index.php/about-siani/mission.html>

The four major factors that impact on food security are:

- Poverty amidst abundance (effective demand of food)
- The increased pressure on natural resources
- Climate change (CC)
- The population pressure (increase in the population and ageing)

Sustainable development is not a new subject; it already existed during the Roman time. However, the concept really becomes a focus during the UN conference in 1972, on the Human Environment, held in Stockholm.

Melinda then focused her presentation on the outputs of the recent Durban conference (COP 17, December 2011). Seven key messages come out of the conference:

1. *Integrate food security and sustainable agriculture in global and national policies*
2. *Significantly raise the level of global investment in sustainable agriculture and food systems in the next decade.* However, figures illustrates that the public and private investments in agriculture have been progressively decreasing since the end of the 1980's.
3. *Sustainably intensify agricultural production while decreasing GHG emissions and other environmental impacts of agriculture* (conventional versus organic agriculture). Smallholders are more efficient than conventional farmers giving the land available and the amount of inputs (fertilizers, pesticides, fuel) used.
4. *Develop specific program and policies to assist populations and sectors that are most vulnerable to CC and food insecurity,* since CC could lead to food insecurity and conflicts
5. *Reshape the food access and consumption patterns to ensure basic nutrition needs are met and to foster healthy and sustainable eating patterns worldwide.* The objective in question seems quite idealistic, since it is very difficult and it takes time to change consumption habits. Regions where people are currently under nourished are the same as the ones with water shortages and with the greatest CC impacts.
6. *Reduce loss and waste in food systems, targeting infrastructure, farming practices, processing, distribution and household habits.* Today, about 50% of the food is wasted, especially at the producer level in developing countries and at the distribution and consumption level in developed countries. There is great potential of improvements here.
7. *Create comprehensive, shared, integrated information that encompass human and ecological dimensions*

### *A business perspective on sustainable land use, by Niclas Ihrèn, Respect*

Unsustainable resources use and population growth have lead to scarcity, e.g. the peak oil and the peak phosphorus have already been reached and certain planet boundaries have already been exceeded, i.e. the nitrogen cycle, biodiversity, the rate of species disappearance is higher than during the extinction of the dinosaurs, and CC.

Therefore, we need to head towards a different direction. Governments, citizens and private companies are now aware that sustainable development is not just a trend, it is a vital necessity. The term sustainable development was created in 1987, and encompasses at the same time the environment, economic and social component. The precise definition is "the development that meets the needs of the present without compromising the ability of future generations to meet their own needs". Changing things at the beginning seems a long process, until more and more people engaged in the wave and suddenly changes occur at a quick pace. It is why the change curve has got an S shape. One example given by Niclas is the cradle to cradle principle, developed in 2003, where the goal is to close the 2 loops: the loop of biological nutrients (consumption) and the loop of technical nutrients (service and products), by using solar energy, waste and celebrating the diversity.

Finally, maybe the most important things to remember are summarized in the slides 21 to 23: the land provides many ecosystemic services to the society but undergoes serious pressures. Finding solutions and agreements on land use management is quite complicated since many different stakeholders are pushing their claim.

*FAO, UN food and agriculture organization, by Jakob Lundberg, FAO Nordic countries*

The FAO is a UN agency created in 1945 whose goal is to achieve a world without hunger. Jakob presented some areas and results the FAO is working on: world hunger, undernourishment, food prices and food crisis, investment in agriculture, the new concept of Climate Smart Agriculture (CSA). He also underlined some programs supported by the FAO: Save & Grow, FAO-Adapt, MICCA (Mitigation of CC in Agriculture), REDD (Reduced Emissions from Deforestation and forest Degradation).

*The Ex-Ante Carbon balance tool (EX-ACT), by Louis Bockel, FAO*

The EX-ACT tool was developed by the FAO, in partnership with other organizations (World Bank, IRD, ...). Indeed, a need for a simple, practical, upgradable and cost-effective tool to calculate the mitigation potential of agricultural projects, policies and value chain had been identified. The tool aims at providing ex-ante estimates of the impact of agriculture and forestry development projects on GHG emissions and C sequestration, indicating its effects on the C-balance (GHG emissions - C sequestered above and below ground), which is selected as an indicator of the mitigation potential of the project. It is capable of covering the range of projects relevant for the land use, land use change and forestry (LULUCF) sector. It can compute the C-balance by comparing two scenarios: "without project" (i.e. the "Business As Usual" or "Baseline") and "with project". Main output of the tool consists of the C-balance resulting from the difference between these two alternative scenarios. The model takes into account both the implementation phase of the project (i.e. the active phase of the project commonly corresponding to the investment phase), and the so called "capitalization phase" (i.e. a period where project benefits are still occurring as a consequence of the activities performed during the implementation phase). EX-ACT was designed to work at a project level but it can easily be up-scaled at program/sector or national level. It is a land based system, developed in Excel and using the IPCC 2006 methodology. The tool takes into different activities (deforestation, forest degradation, afforestation/reforestation, non forest land use change, annual crop, perennial crop, flooded rice, livestock, inputs, other investment, organic soils) and estimates the emissions of CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O, expressing the carbon balance in t CO<sub>2</sub>-equivalent.

*The Use of the Ex-Ante Carbon Balance Tool, by Madeleine Jönsson and Ophélie Touchemoulin, FAO*

EX-ACT has been applied on different levels: projects, policies, programmes and value chains. The outputs of the tool could be used in project management, communication as well as economic and financial analysis. Six examples of application are presented, on project level, value chain and carbon footprint (CFP) level and in economics and finance. The conclusion is that EX-ACT offers an added value for the private sector in the following areas:

- Projects improvements both on the environmental and on the social level
- Enables proactive work
- Firms can build scenarios and establish future strategies and objectives since the tool might function as a gap-analysis
- A transparent picture for the firm, which in turn implies decreased sustainable and reputational risks
- Building partnerships
- The tool can be applicable on a Carbon Foot Print level
- The results could be used for carbon certifications, e.g. organic and fair-trade labeling → permits differentiation and hence gain a larger market potential
- Appraising generated carbon funds based upon present opportunity prices at the Certified Emission Reduction (CER) market
- Potential role of EX-ACT within the Clean Development Mechanism (CDM) and Voluntary Carbon Market.

More information about the applications of the tool is available on the EX-ACT website <http://www.fao.org/tc/exact/en/>

### *Benchmark analysis, by Louis Bockel, FAO*

The presentation offers an overview of some current national (Sweden) and international initiatives on agriculture and climate change. It should enable to identify some gaps in CC adaptation and mitigation.

### *Round table n°1: your work related to CC mitigation and adaptation*

#### Group 1: the example of SCAN, a Swedish meat processing company

In terms of sustainability, Scan is focusing on animal welfare, which is also important for their customers. Healthy animals produce more, which is therefore also good for the environment since we need fewer animals to produce a same amount. They are using different routines programs to keep track of each farm and to help the farmers keep the animal welfare in the correct way.

Approximately 10 years ago, Scan did an LCA analysis on the meat process, i.e. they only have Swedish suppliers, and for some specific products such as pork meatballs or beef meatballs. Their main issue currently is to sell their product on the local market, because more and more meat is

imported. It is why they can't increase their cost if they want to stay on the market, therefore all environmental considerations should not lead to an increased cost of the product.

More information is available on their website <http://www.sverigesdjurbonder.se/web/sv/info/start.php>

### Group 2: the example of the social company "Food and Health Concept Centre" (FHCC)

The FHCC aims to ease the commercialization of good ideas within the field of "Food & Health". The overall objective was, and still is, to create job opportunities. It bridges the competencies of different stakeholders (food industry, research centers and entrepreneurs) to provide a prominent environment for commercialization of healthy food. However, they acknowledge that the market for healthy food is not yet here and they need to increase the communication about the added value of their products. They have initiated LCA to quantify the effect of switching to more healthy food and production (e.g. less meat).

They focus on the social aspect, through sustainable development, and the financial goal is not the main objective. They are investing in food security projects in developing countries.

More information is available on their website <http://eng.fhcc.se/>

### *Round table 2: General advantages/opportunities that the outputs of the EX-ACT tool could bring to your business/organization/work*

Group 1: EX-ACT appears to be a useful tool to compare different systems, but only for carbon (GHG emissions) and not for other environmental indicators. Moreover, the group recognizes the importance of having different kind of coefficients within the tool (tier 1/tier 2). However, their main concern was about the uncertainty of the results; they need to be reliable. Uncertainty comes from the IPCC indicators and also from the definition of the project and the baseline, the assumption taken to build each of these scenarios. As a result, they would recommend having a scientific community to discuss the allocation, the boundaries, ... in order not to enter anything in the tool. The FAO had already identified this issue and is currently developing a guideline on how to build the baseline scenario.

### Group 2: outputs from people from the Forestry Agency

The tool is useful at the planning stage, for small projects but seems less interesting for capacity building and process oriented, which is not its field of application anyway. EX-ACT could be complementary to other tools such as a logical framework. What is more, EX-ACT could be used for participatory processes (discussion on the project/policy giving the results of the tool). In fact, such interactive work has already been done in Russia where people discussed the formulation of the project after having assessing it with EX-ACT. Briefly, EX-ACT is a sort of guidance tool for

policy or project formulation, but we have to admit the uncertainty that do not come from the tool but from the data used, i.e. emission factors, data of the project, and assumptions of the baseline.

Cecilia, from Orgut Consulting, shared with the audience that they have used the EX-ACT tool in the past for a forestry policy in Tanzania. The tool was a useful help to improve, implement and sell the projects.

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### *List of documents and presentations attached with this summary:*

1. Summary of the workshop
2. PPT presentation: SEI, Melinda
3. PPT presentation: business & land use, Niclas
4. PPT presentation: FAO Nordic, Jakob
5. PPT presentation: EX-ACT
6. PPT presentation: examples application
7. PPT presentation: intro, benchmark, round tables
8. Wording of the exercises (training to EX-ACT)
9. Correction of the exercises
10. List of the participants
11. EX-ACT software
12. Diploma