

Is FAO's Ex-ante Carbon Balance Tool (EX-ACT) Beneficial to the Private Sector?

by

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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

About EX-ACT: The Ex Ante Appraisal Carbon-balance Tool aims at providing ex-ante estimations of the impact of agriculture and forestry development projects on GHG emissions and carbon sequestration, indicating its effects on the carbon balance. See EX-ACT website: www.fao.org/tc/exact

Related resources

- EX-ANTE Carbon-Balance Tool (EX-ACT): (i) [Technical Guidelines](#); (ii) [Tool](#); (iii) [Brochure](#)
- See all EX-ACT resources in EASYPol under the Resource package, [Investment Planning for Rural Development, EX-Ante Carbon-Balance](#)

EASYPol: is a multilingual repository of freely downloadable resources for policy making in agriculture, rural development and food security. The site is maintained by FAO's Policy Assistance Support Service, www.fao.org/tc/policy-support

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1 SUMMARY

The Food and Agriculture Organization of the United Nations (FAO) developed the Ex-Ante Carbon-balance Tool (EX-ACT) to provide an ex-ante evaluation of the mitigation potential of rural development and forestry projects. This tool could be useful for the private sector to support and analyse projects currently implemented in developing countries, in terms of corporate social responsibility communication and regarding economic and financial analysis.

2 INTRODUCTION

Objectives: This paper aims at highlighting the main benefits and interests of the private sector using the Ex-Ante Carbon Balance Tool for analysing the mitigation potential of projects or programmes in the AFOLU (Agriculture, Forestry, Land Use) sector.

Target audience: Practitioners in the private sector, in the agriculture and agro-industry sector,

Required background: No specific background is required.

Readers can follow links included in the text to other EASYPol modules or references¹.

3 BACKGROUND

The agricultural sector and agricultural growth is a major source of greenhouse gas (GHG) emissions, hence one of the main contributors to climate change (CC).² Nonetheless, the agricultural sector also has the potential to cope with CC by adopting adaptation and mitigation strategies. The mitigation can be realized through the reduction of carbon dioxide (CO₂) emissions, which can be achieved through the adoption of improved cropland management practices³ or the reduction of biomass burning and deforestation (FAO, 2010). Furthermore, methane emissions (CH₄) and nitrous oxide (N₂O) emissions could be reduced via improved livestock management, increasingly efficient management of water irrigation on rice paddies as well as improved nutrient management⁴. Furthermore, carbon (C) can be sequestered through the adoption of farming conservation practices, agro-forestry, improved grasslands management and restoration of degraded land⁵.

¹ EASYPol hyperlinks are shown in blue, as follows:

- Resource packages are shown in **underlined bold font**
- Other EASYPol modules or complementary EASYPol materials are in ***bold underlined italics***;
- Links to the glossary are in **bold**; and
- External links are in *italics*.

² FAO, 2010. "Climate-Smart" Agriculture, Policies, Practices and Financing for Food Security, Adaptation and Mitigation.

³ UNFCCC, 2008.

⁴ Cerri et al., 2010.

⁵ Lal, 2004.

The Food and Agriculture Organization of the United Nations (FAO) developed the Ex-Ante Carbon Balance Tool (EX-ACT)⁶ to provide an ex-ante evaluation of the impact of rural development and forestry projects on GHG emissions and C sequestration, thus estimating the potential contribution of the AFOLU sectors to CC mitigation⁷.

CC is perceived as a financial risk to the private sector due to the possible costs of carbon emissions⁸. Indeed, current insurance systems in the agricultural field are not integral to face the extent of climate change-related disasters predicted, and their products in question are often not available in developing countries or not affordable for the small-holders who are the most vulnerable.⁹

However, when it comes to stakeholder and sustainability engagement, firms often demonstrate community/social and environmental engagement, e.g. TetraPak has recently developed a program called “Food for Development¹⁰”, which is a program providing milk to children on their way to school in developing countries in which TetraPak operates¹¹. EX-ACT can, in that sense, be very useful to similar projects offering an added value to the project: assessing the Carbon Balance analysis, which directly demonstrates the generated amount of CO₂ emissions emitted or reduced by different activities within the project as well as the project itself¹². Since it is an Ex-ante analysis, the tool can provide various scenarios, based upon a baseline and a “with project” scenario. The eventual changes might therefore imply that TetraPak has the opportunity to improve its project from a social and environmental point of view. Such a project could hence provide an added value to the firm. From this perspective, it is presently possible to connect the importance of the results provided by EX-ACT and how it might positively impact upon the private sector.

4 THE EX-ACT TOOL¹³

The subsequent section presents the outputs of EX-ACT followed by its potential added value with regards to the private sector.

4.1 Outputs

EX-ACT is a carbon appraisal tool that can be used on a small and macro level, within projects, policies and value chain analysis¹⁴. The tool is being used in developing countries measuring the impacts of the AFOLU activities on the climate, by determining different projects, policies and programs abilities to absorb and stock CO₂ emissions. It computes the carbon balance with and without the project, expressed in tons CO₂

⁶ FAO, 2010 <http://www.fao.org/tc/exact/en/>

⁷ Bernoux et al., 2010.

⁸ Adams & Frost, 2008.

⁹ http://www.fao.org/fileadmin/templates/rome2007initiative/NENA_Forum_2009/Factsheets/FAO_CCFactsheet_DisafterRiskReductionInsurance.pdf

¹⁰ Further information available at:

http://www.tetrapak.com/about_tetra_pak/food_for_development/pages/default.aspx

¹¹ TetraPak, 2010.

¹² Bernoux et al., 2010.

¹³ http://www.fao.org/fileadmin/templates/ex_act/pdf/Flyer/Ex-act_flyer-EN_july2011.pdf

¹⁴ Bockel et al., 2011.

equivalents. The difference represents the potential impact of the project in terms of mitigation, indicating the net amount of carbon sequestered (carbon sink) or emitted (carbon source) as a result of the project. The tool shows if the project is able to supply environmental services in the form of C sequestration, thus contributing to CC mitigation.

The outputs of the tool could be used in financial and economic analysis of a project, i.e. economic value of Carbon (C), guiding the project design process and the decision-making on funding aspects. EX-ACT could therefore help project designers to select the project activities, which have higher benefits both in economic and CC mitigation terms, and consequently bringing an added value to the project.

The tool has the potential to work as an interactive base connecting different sectors regarding CC adaptation and mitigation¹⁵. Indeed, there is a demand for such a tool as the obtained results can put forward the multiple benefits of carbon as a public good: value to farmers, value to the community, value to society, and therefore it can demonstrate a win-win situation in terms of sustainable adaptation and not only on economically related aspects. Likewise, the EX-ACT tool undeniably incites the implementation of mitigation and adaptation practices.

4.2 Added-value of EX-ACT

The EX-ACT tool can be applied within various domains. It can be realized at different scales, locally for an investment, an institution, or globally for a region, a value chain and Carbon Footprint¹⁶ as well as at country level. Within a dynamic process, it is also possible to appraise the global carbon balance effect of a project/programme, a strategy or a policy. Indeed, FAO is collaborating with several institutions with the tool on different type of projects worldwide¹⁷.

Presently, sustainability reporting according to, e.g. the Global Reporting Initiative (GRI), has acquired growth and is exponentially and successfully growing throughout the past decade¹⁸. Within companies' sustainability reports, transparency is required with regards to their environmental and social work. It is in this context, within GRI Reports or Corporate Social Responsibility (CSR) reports, that companies assess various risks, considering CC risks as a cross cutting issue financially, environmentally and socially¹⁹. In addition, it is equally here that EX-ACT has a potential added value in CSR and GRI reports. The tool has the capacity to illustrate which activities within the frame of a dedicated project of the firm are carbon emitters or sources. By taking proactive action on activities that have a negative impact upon the environment, the company considerably reduces destructive reputational and eventually financial risks, which can therefore, rather than being perceived as risks, become opportunities. It may in turn be communicated within the CSR or GRI report of the respective company.

¹⁵ Bockel et al., 2011a.

¹⁶ FAO, 2010. [Value Chain analysis - The Case of cashew in Burkina Faso](#).

¹⁷ <http://www.fao.org/tc/exact/ex-act-applications/en/>

¹⁸ Beechuk, 2011 <http://www.triplepundit.com/2011/06/gri-process-reporting-framework/>

¹⁹ SAS 2010; SCA 2010.

Moreover, due to uncertain carbon market conditions, the private sector considers CC as a financial risk. However, it seems that the interest of the private sector to future projects is increasing especially in the renewable energy and energy efficiency sectors. Indeed, strong investor interest followed an earlier commitment by The International Finance Corporation (IFC) this spring to directly invest approximately \$22 million (€15 million) into a carbon facility. Since then, an additional \$195 million (€135 million) was leveraged from market leaders such as EnBW Trading, ESB International, GDF Suez, JP Morgan, Mabanaf, Mercuria Energy Group, PetroChina, and Shell Trading²⁰.

Likewise, a large number of companies are operating within developing countries, involved with agricultural and agroforestry projects, e.g. Coca-Cola, Pepsi Co. and TetraPak²¹. Using EX-ACT would help project designers to provide a clearer picture of a project's potential to absorb carbon. Moreover, it can be directly linked to Sustainable Land Management (SLM) practices and Climate Smart Agriculture²² (CSA). Here below are the benefits for the private sector, provided from the results of the tool, illustrated in table 1.

Table 1: The benefits of the EX-ACT tool for the private sector

EX-ACT as a potential strategic tool for the private sector
<ul style="list-style-type: none"> • The tool enables the diffusion of accurate impact of organizations for different agricultural and agroforestry projects • An in-depth analysis with regards to projects improvements both on the environmental and on the social level • A transparent picture for the firm, which in turn implies decreased sustainable and reputational risks • The tool has several application levels, i.e. value chain, project, policy level, macro-scale level analysis • The results of the tool can be interlinked to economic and financial analysis, e.g. MAC-curves. It enables to promote economic benefits from firms sustainability work, which are connected to the EX-ACT tool • Based upon the EX-ACT results, firms can build scenarios and establish future strategies and objectives since the tool might function as a gap-analysis, i.e. which activity represents a source/sink, what requires further attention, which practices needs to be renewed, etc. • Since it is an ex-ante analysis, it encourages companies to work proactively • It can help the private sector to build partnerships with other institutions and eventually get and provide co-finance for future projects/programmes.

²⁰International Finance Corporation, IFC, World Bank Group
[http://www.ifc.org/ifcext/climatebusiness.nsf/Content/New_Carbon_Fund_To_Catalyze_\\$2_Billion_in_Clean_Efficient_Energy_Investments](http://www.ifc.org/ifcext/climatebusiness.nsf/Content/New_Carbon_Fund_To_Catalyze_$2_Billion_in_Clean_Efficient_Energy_Investments)

²¹ Coca-Cola 2010; Pepsi Co., 2010; Tetrapak, 2010.

²² FAO, 2010. "Climate-Smart" Agriculture. Policies, Practices and Financing for Food Security, Adaptation and Mitigation, <http://www.fao.org/docrep/013/i1881e/i1881e00.pdf>

EX-ACT promoting sustainability

- The results could be used for **carbon certifications**, e.g. organic and fair-trade labeling. Such labeling systems could permit for different projects to **differentiate** themselves from others and hence **gain a larger market potential** through an increased added value via SLM practices
- The tool can be applicable on a **Carbon Foot Print level**
- 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**.

5 CONCLUSIONS

As highlighted, EX-ACT has various value-added of different levels. The tool has proven to be useful within projects dealing with increased food security²³, watershed management and irrigation²⁴, investment projects²⁵, value chain analysis²⁶, Carbon Footprint analysis in the context of agricultural growth projects²⁷, MACC analysis, in the framework of biofuels and on policy level²⁸.

Furthermore, as noticed, sustainability reporting is increasing amongst companies. Indeed, various firms are emphasizing their role within SLM and Carbon Reduction Emissions in the AFOLU sectors in general. Institutions, e.g., the United Nations and the World Bank, and the private sector are clearly interlinked as they can bring added value to each other both publicly and privately. As mentioned previously, the FAO EX-ACT tool may provide multiple benefits to the private sector. What is currently needed is to increase the collaboration between the public and the private sectors. By developing a good cooperation between the two, the private sector could concretely help to demonstrate the benefits provided by the tool.

²³ [Accelerated Food Security Project in Tanzania, FAO, 2010](#)

²⁴ [Irrigation and Watershed Management Case Study in Madagascar, FAO, 2010](#)

²⁵ [First results of carbon balance appraisal on Agriculture Rehabilitation and Recovery Support project \(ARRS\) in DRC, FAO, 2010](#)

²⁶ [Value Chain analysis - The Case of cashew in Burkina Faso, FAO, 2010](#)

²⁷ [The Carbon footprint of the Agricultural Growth Project \(AGP\) in Ethiopia, FAO, 2010](#)

²⁸ [AFOLU sectors and Climate Change in Nigeria, FAO, 2011](#)

6 READERS' NOTES

6.1 Links to other related EASYPol modules

- EX-ante Carbon-Balance Tool : Software
http://www.fao.org/docs/up/easypol/873/ex-act_version_3-2_april_2011_101sp.xls
- EX-ante Carbon-Balance Tool : Technical Guidelines
http://www.fao.org/docs/up/easypol/780/ex-act-tech-guidelines_101en.pdf
- EX-ante Carbon-Balance Tool : Brochure
http://www.fao.org/docs/up/easypol/780/ex-act_flyer_101en.pdf

See all EX-ACT work in EASYPol under the Resource package, [Investment Planning for Rural Development - EX-Ante Carbon-Balance Appraisal of Investment Projects](#)

7 FURTHER READING

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- a. Bockel L., Jonsson M., Tinlot M., 2011. A Multiplication of Green Concepts in Agriculture: Building the Path Towards Wide Up-Scaling, forthcoming *EASYPol Module*, Rome, FAO (work in process).
- b. Bockel L., Sutter P., 2011. Prospective Appraisal of Low Carbon Options for the AFOLU Sector in Nigeria, Carbon Balance Appraisal and Economic Analysis of the Nigerian Vision 2020, forthcoming *EASYPol Module*, FAO, Rome (work in process).

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