

The EX-Ante
Carbon-balance
Tool



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EASYPol Module 098

Climate Change and Agriculture Policies

How Far Should We Look for Synergy Building Between Agriculture Development and Climate Mitigation?

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 Appraisal of Investment Projects](#)



Climate Change and Agriculture Policies How Far Should We Look for Synergy Building Between Agriculture Development and Climate Mitigation?

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Abbreviations

AfDB	African Development Bank Group
AGF	African Green Fund
CAADP	Comprehensive Africa Agricultural Development Programme
CDM	Clean Development Mechanism
EX-ACT	Ex-Ante Carbon-balance Tool
GHG	Green House Gas
ICRAF	World Agroforestry Centre
IPCC	Intergovernmental Panel on Climate Change
MRV	Monitoring, Verifying and Reporting
NGO	Non Governmental Organization
PES	Payments for Environmental Services
REDD	Reducing Emissions from Deforestation and forest Degradation
SOM	Soil Organic Matter
VCS	Voluntary Carbon Standards

1. SUMMARY

There are different possibilities to finance climate change activities. Some are market based, others are not. Within this last category, there is a possibility to launch Payment of Environmental Services PES¹. Whatever activities are launched to cope with climate change issues should bring finance, ecosystems protection as well as poverty reduction in developing countries. However it is a complex and difficult path accessing climate change funds, which is also not really tailored for developing countries. Investment agriculture programmes are recognized to be a possible solution to climate change. Appraising their carbon balance is a way to highlight their capacity to cope with climate change issues.

Climate change issues should not be seen as a new trend that will imply new conditions for developing countries. It is worth seeing the opportunities that could be brought by integrating climate change policies in the objectives of development.

2. INTRODUCTION

Objectives: This paper aims at providing a more objective vision of advantages and drawbacks highlighted from a joined thinking on the link between climate change and development. The agriculture sector is part of solution to cope with climate change and can be remunerated through climate change funds. Its impacts can be appraised through the carbon balance appraisal thank to some tools and methodology. Yet, it is worth seeing the drawbacks of making it as a condition for developing countries.

Target audience: This paper targets national agriculture sector, forestry and food security policy makers, institution-based, agency and donor decision-makers.

Required background: To fully understand the content of this module the user must be familiar with:

- Concepts of climate change mitigation and adaptation
- Concepts of land use planning and management
- Elements of project economic analysis

Readers can download the EX-ACT [Tool](#) and related [brochure](#)². Links are included in the text to other EASYPol modules or references³. See also the list of EASYPol links included at the end of this module.

¹ See FAO's Payment for Environmental Services website: <http://www.fao.org/es/esa/pesal/index.html>

² See **EX-ACT website** <http://www.fao.org/tc/exact/en/>

³ EASYPol hyperlinks are shown in blue, as follows:

- a) Resource packages are shown in **underlined bold font**
- b) other EASYPol modules or complementary EASYPol materials are in **bold underlined italics**;
- c) links to the glossary are in **bold**; and
- d) external links are in *italics*.

3. DO WE NEED TO INTEGRATE CLIMATE CHANGE ISSUES IN AGRICULTURE POLICIES AND AGRICULTURE SECTOR ACTIONS?

3.1. Why agriculture development and food security strategies can gain from better integrating CC issues?

Concerns about human-induced climate change and its impacts on ecosystems and socio-economic systems (including agriculture, food security, and the livelihoods of rural communities in developing countries) have prompted two types of policy response:

- One is aimed at reducing net emissions of greenhouse gases (GHG) in order to slow or stop climate change, and is called “mitigation” of climate change,
- The other, complementary to the above, is called “adaptation”, and it addresses the social systems, economic sectors and communities affected by climate change (rather than those contributing to it). Adaptation strategies are aimed at adjusting social and economic systems so that they are less vulnerable, less impacted and/or more resilient to the changing climatic conditions.

In the climate change context, mainstreaming refers to the incorporation of climate change considerations into established or on-going development programmes, policies or management strategies, rather than developing adaptation and mitigation initiatives separately.

In order for climate change adaptation to be sustainable and applicable on a wide scale, it must be incorporated, integrated or “mainstreamed” into the policy apparatus of governments⁴. Most climate change adaptation measures relate closely to, or directly overlap with, existing strategies, policies and programmes (e.g. agricultural development, food security, livelihood maintenance, resources management, risk management). It has been suggested that the most efficient and effective way to achieve adaptive and resilient agricultural systems and rural communities is to incorporate climate change adaptation into other policies rather than creating separate, self standing climate change policies which may duplicate others (IISD).⁵

A similar situation exists with climate change mitigation. There is an increasing demand to reduce net GHG emissions, even among developing countries that historically have not contributed to emissions and climate change. This translates into pressures and incentives to alter practices in order to reduce emissions of greenhouse gases from crop and livestock operations to capture carbon in land use practices and benefit from carbon funding / markets.

The principle guiding FAO work with respect to activities related to climate change is the “no-regret” approach. It emphasizes measures that should be taken regardless - even in the absence of climate change - because they improve the efficiency of present agriculture practices as well as in forestry and fishery. At the same time, they put farmers, the foresters or the fisherfolk in a better position to adapt to or mitigate the effects of climate change.

An alternative to viewing climate-agriculture relationships to the climate scenario-impact is to start with existing challenges to agricultural and rural development (as addressed in

⁴ Klein, R. (2007): Adaptation to Climate Change: IPCC Findings and their Implications for Climate and Development Policy. Presentation held at a workshop in Bonn, 20 November 2007 <http://www.germanwatch.org/termine/2007-11-20/klein.pdf>

⁵ IISD, 2006. *Designing Policies in a World of Uncertainty, Change, and Surprise, Adaptive Policy-Making for Agriculture and Water Resources in the Face of Climate Change*, International Institute for Sustainable Development.

policies), then consider how and where they are moderated, exacerbated or otherwise affected by climate change. A summary of challenges to agriculture and the impacts on them by climate change is given in Table 1.

Table 1: Challenges to agriculture and influence of climate change

	Challenge	Possible Impact of Climate Change
Natural Resources	<ul style="list-style-type: none"> Precipitation in semi-arid and arid developing world is highly variable Irrigation: Water critical to increasing productivity in Asia; opportunities far more limited in Africa, where agriculture will rely heavily on rain-fed systems in the future. Degradation of the natural resource base 	<ul style="list-style-type: none"> Increased variability of precipitation Increased competition for water, particularly between utilization for productive agriculture vs. domestic/non-agriculture-related needs. Agriculture will have to consume less water and/or irrigate far more efficiently. Increased degradation, especially in Africa
Population	<ul style="list-style-type: none"> Agricultural development is limited in places with low population densities and small markets HIV/AIDS is reducing agricultural productivity 	<ul style="list-style-type: none"> Increased migration and changing population densities in different parts of the world - changing markets Adaptation hindered as coping / adaptive strategies and local knowledge not passed between generations
Transportation/Infrastructure	<ul style="list-style-type: none"> Poor transport infrastructure limits market access for many farmers Transport costs account for high proportion of export costs in many African countries 	<ul style="list-style-type: none"> Infrastructure threatened by disasters e.g. floods. Transport costs likely to rise as a result of (shipping and airfreight) mitigation measures – implications for global and local competitiveness
Commodity prices	<ul style="list-style-type: none"> Commodity prices have fallen steadily since the 1960s Volatility of input and output prices discourages investment in increasing productivity 	<ul style="list-style-type: none"> Global prices for commodities may increase but there will be significant inter-regional differences Price volatility will increase under climate change scenarios
Access to markets	<ul style="list-style-type: none"> Product standards imposed by supermarkets are a barrier to market entry by small producers High value cash crops (e.g. horticulture and floriculture) provide opportunities for growth though small farmers receive small share of market value 	<ul style="list-style-type: none"> Phyto-sanitary standards may increase due to concerns about new disease corridors resulting from climate change Changing consumption patterns and increased transport costs reduce access to supermarkets in developed countries
Agriculture growth	<ul style="list-style-type: none"> Links between agriculture and wider growth may not be as strong today as during the Green Revolution 	<ul style="list-style-type: none"> Increased costs of global shipping and changing consumer demands regarding food miles may stimulate local diversification and linkages
Role of the state	<ul style="list-style-type: none"> In many developing countries, fiscal unsustainability has forced states to reduce / withdraw support to agriculture with only rarely successful private substitution. Public expenditure on agriculture has fallen over the last 3-4 decades, especially in research 	<ul style="list-style-type: none"> Climate change suggests an increased role for the state to ensure successful adaptation and mitigation strategies but whether this will result in a rejuvenation of Agriculture Ministries or 'more of the same' is not clear Different and increased public expenditure in agriculture is required under climate change scenarios.

(Slater, 2007; ODI, 2007)

The above table clearly reflects the possible impact of climate change threatening production systems hence food security. Thus to guarantee better stability of food systems, mitigation and adaptation options should be integrated into agriculture development and food security strategies.

3.2. Adaptation to strengthen risk management options and sector resilience

Most adaptations can be considered as forms of “risk management” in that their purpose is to reduce the likelihood of losses associated with climate change. A commonly stated agricultural adaptation is with crop management, involving existing crops types and varieties, the development of new varieties or replacing crops (which is then reflected in changes in the spatial location of crops) in order to rely on crop types and varieties that are better suited to a changed climate. Promoting a new kind of ecologic intensification would also decrease the loss risks (culture association, permanent cover).

The resilience is the capacity of a complex system to absorb shocks while still maintaining function, and to reorganize following a disturbance (from dynamic of ecological systems). Biodiversity increases resilience to changing environmental conditions and stress. Genetically-diverse populations and species-rich ecosystems have a greater potential to adapt to climate change.

Climate change adaptation requires higher resilience against both excess of water (due to high intensity rainfall) and lack of water (due to extended drought periods). A key element to respond to both problems is soil organic matter, which improves and stabilizes the soil structure so that soils can absorb higher amounts of water and thus prevent surface run off, which could result in soil erosion and, further downstream, in flooding. Soil organic matter also improves the water absorption capacity of the soil during extended periods of drought.

At the national level, land use and tenure policies, the development of sustainable soil and land use management practices, and policies to encourage such practices can influence land use and land management, so that grazing or cropping are more resilient to climate extremes and changes.

3.3. Mitigation options and agriculture intensification

Conservation agriculture is an option for adaptation as well as for mitigation because the increase in soil organic matter reduces vulnerability to both excessive rainfall and drought. The impact is not immediate; soil under zero-tillage tends to increase the soil organic matter content by approximately 0.1 to 0.2% per year, corresponding to the formation of 1 cm of new soil over a ten-year period⁶. However, not only does organic matter facilitate soil structuring, and hence the infiltration and storage of water in the soil, but it also directly absorbs up to 150m³ of water per hectare for each percent of soil organic matter. In addition, under conservation agriculture, no soil moisture is lost through tillage and seedbed preparation.

Whether or not they arrive with tropical cyclones or hurricanes, floods generally follow heavy rains and generally affect a country’s low geographical areas (basins, low-levels, etc.). Highlighting and protecting **watersheds** is generally the most suitable tool for managing flood risk. Indeed, the value of a watershed stems from its capacity to absorb and clean water, recycle excess nutrients and maintain the soil’s stability in order to prevent flooding. Rebuilding degraded watershed areas presents a high potential for climate mitigation through carbon fixing as a result of reforestation and improved land use management.⁷

⁶ Crovetto, 1999.

⁷ Bockel L, Thoreux M, Sayagh S, Resilience of Rural Communities to Climatic Accidents: A Need to Scale up Socio-Environmental Safety Nets (Madagascar, Haiti), FAO EASYPol Policy Brief, 2009

3.4. How to proceed to improve global development impact

Key features for integrating climate change adaptation and mitigation into agricultural development initiatives are that they fit within the development priorities and processes of the country and that they are accepted, supported and promoted by a wide spectrum of stakeholders, including government, civil society organisations.

This integration process should be profiled to fit with the choices of the Government in question as well as with the degree of partner mobilisation using the following paths separately or jointly: (i) begin with policymaking as a driver; (ii) Promote local entry points to test and multiply pilot experiences which will help design adequate policies; (iii) encourage or facilitate donor initiatives to propose innovative projects; (iv) simultaneously promote mainstreaming at all levels with synergic effects of self-led dynamic of local initiatives vis-à-vis public policies.

The challenges of agriculture are threatened by climate change. In this context, integrating climate change issues should help to achieve agriculture development including food security. Then climate change policies should strengthen risk management as well as household resilience. Furthermore, these policies also offer the opportunity to promote agriculture intensification, and improve watershed management. Finally, climate change issues are integrated well into development priorities.

4. ARE CLIMATE CHANGE FUNDS AN OPPORTUNITY OR A RISK FOR DEVELOPING COUNTRIES?

4.1. Conditions for eventual access to additional mitigation funds

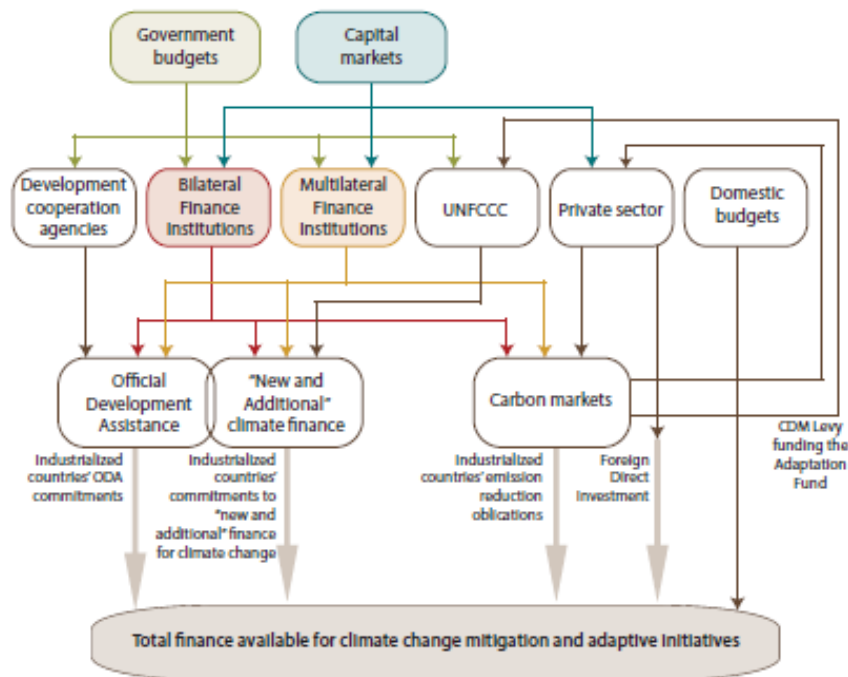
There are many ways and efforts underway to reduce carbon emissions and promote activities which help to store and remove carbon. This has made **carbon** a valuable economic commodity. To find a common unit for this commodity all GHGs are converted to CO₂ equivalents (CO₂-eq)¹. The CO₂-eqs are traded on **carbon markets**. The markets work in a similar way to financial markets. The currency used on these markets is **carbon credits**⁸.

In the carbon trade in simple terms an agreement is made between a buyer and a seller of carbon credits. Those who reduce emissions or sequester carbon, receive payments and those who have to decrease emissions can buy carbon credits to offset their emissions. “**Carbon offsetting**” means to compensate emissions which cannot be avoided by paying someone else to save – sequester GHGs. The prices which are received for one ton of CO₂ vary greatly and depend on the type of market and the type of carbon offset project. During 2009 the prices *ranged from* €1.90 to €13 per ton of CO₂-eq. Over the last few years several financial instruments mechanisms and markets have emerged⁹. The main climate funds are shown in the figure below.

⁸ Seeberg-Elverfeldt C, Carbon Finance Possibilities for Agriculture, Forestry and Other Land Use Projects in a Smallholder Context, NRD, FAO, 2010. Available at :

http://www.fao.org/fileadmin/templates/ex_act/pdf/carbone_finance.pdf

⁹ For an overview of additional funds see the **Climate Funds Update**. This is an independent website that provides information on the growing number of international funding initiatives designed to help developing countries address the challenges of climate change. <http://www.climatefundsupdate.org/>

Figure 1: Main climate funds

Source: A. Atteridge and others, *Bilateral Finance Institutions and Climate Change: A Mapping of Climate Portfolios* (Stockholm: Stockholm Environment Institute, 2009).

Source SEI, 2009

However carbon markets access remains complex for agriculture projects and requires costly monitoring and procedures. Designing and developing a carbon project takes a long time, requires a lot of technical expertise and considerable financial resources for the initial set-up. Therefore, it is important to identify a project developer and donors at a very early stage of the project to facilitate the process and to arrange for specific early (up-front) payment or compensation arrangements for the involved farmers¹⁰.

4.2. Opportunities to fund Payment of Environment services

Healthy ecosystems provide a variety of vital goods and services that contribute directly or indirectly to human well-being. However most of them are currently in decline, and making their value clear to those who benefit from them but are not direct land users can encourage investment in their protection and enhancement.

PES are one type of economic incentive for those that manage ecosystems to improve the flow of environmental services that they provide. Generally these incentives are provided by all those who benefit from environmental services, which includes local, regional and global beneficiaries. PES is an environmental policy tool that is becoming increasingly important in developing and developed countries and that interest in addressing an environmental problem through positive incentives to land managers.

As poverty is a major cause of environmental degradation, rewarding poor producers to adopt more environmentally friendly systems of production would result in both environmental

¹⁰ Seeberg-Elverfeldt, 2010.

benefits and poverty reduction¹¹. Existing PES initiatives have focused on three kinds of activity:

- restoring natural habitat or tree planting
- maintaining existing natural habitats and protecting them from incursion (forest, grasslands conservation...)
- improving existing land use (soil conservation, efficient inputs use...)

4.3. A main Risk on complexity of MRV process

Despite urgent needs, developing countries with weak administrative capacity and inadequate governance systems risk being at a disadvantage in terms of attracting both private and public financing. Past experience with environmental financial mechanisms highlights difficulties of aligning separate financing procedures with country priorities and systems. There is thus a need to both strengthen vulnerable countries' capacity to apply for and comply with environment and climate change financing requirements and to adjust the criteria for financing.

In the context of developing countries, there is a sometimes a very limited availability of reliable data, which makes it hard to come up with reliable estimates of GHG emission reductions. MRV needs to be flexible and requires different types of indicators.

There are different possibilities to finance climate change activities. Some are market based, others are not. Within this last category there is a possibility to launch PES. Whatever activities are launched to cope with climate change issues should bring finance, ecosystems protection as well as poverty reduction in developing countries. However it is quite complex and difficult to access climate change funds and sometimes the path is not properly adapted to developing countries.

5. WHY SHOULD WE APPRAISE CARBON BALANCE OF AGRICULTURE INVESTMENT PROGRAMMES?

The carbon balance, for a specific project (or scenario of action) in comparison with a reference, should be considered as the net balance of all GHG expressed in CO₂ equivalent computing all emissions (sources and sinks) with the atmosphere interface and the net change in C stocks (biomass, soil...). It can be realized at different scales, locally for an investment, an institution, or globally for a region, a value chain, a country, the planet. Within a dynamic process, it is also possible to appraise the global carbon balance effect of a new action, a project / programme, a strategy or a policy.

5.1. The need to benchmark agriculture against other sectors

“The magnitude of the challenge to stabilize greenhouse gas (GHG) concentrations in the atmosphere and limit average temperature increases makes it imperative that the contributions of all sectors with significant mitigation potential be tapped to the fullest extent possible. Agriculture is recognized as a sector with such potential and farmers, ranchers, herders and other land users around the world can and should be part of the solution to climate change”¹².

¹¹ See FAO PES website; <http://www.fao.org/es/esa/pesal/index.html> .

¹² FAO, *Enabling Agriculture to Contribute to Climate Mitigation*, FAO submission to UNFCCC, 2009 <http://unfccc.int/resource/docs/2008/smsn/igo/036.pdf>

There is potential for developing win-win scenarios by promoting agricultural systems and practices that both enhance food security and livelihoods for the poor and also have reduced net GHG emissions. Agriculture needs to be part of any new mitigation mechanisms under post-2012 agreements so that developing countries and poor people can benefit from increased investment in agriculture – a potential double dividend ¹³.

5.2. Carbon balance as a planning indicator to compare options

The climate mitigation dimension of a public policy could be first evaluated through the incremental carbon balance fixed and through the cost generated by ton of equivalent CO₂ fixed or emission-reduced. In agriculture and food-chain sector a set of carbon-foot-printing methodologies and decision support tools are under development since 2008. It links with the willingness of institutions to ensure planning and access to newly implemented carbon marketing and carbon funding facilities.

EX-ACT is a FAO tool that allows for planning through the possibility to successively appraise the impact of different development scenarios within the realization of their carbon balance. Once the appraisal has been carried out, it is possible to confront the different economic and social trade-off and orientate the lowest sustainable scenario of development with less GHG emitted. This gives more visibility to policy makers as well as to project designers.

EX-ACT (EX-Ante Carbon-balance Tool) is a FAO tool which provides ex-ante measurements of the mitigation impact of agriculture and forestry development projects, estimating net carbon (C) balance from GHG emissions and C sequestration. It is a land-based accounting system, measuring C stocks, stock changes per unit of land, and CH₄ and N₂O emissions expressed in t CO₂-eq per hectare and year¹⁴. The main output of the tool is an estimation of the C-balance associated with the adoption of improved land management options, as compared with a “business as usual” scenario. Thus, EX-ACT allows for the carbon-balance appraisal of new investment programmes by ensuring an appropriate method available for donors and planning officers, project designers, and decision makers within agriculture and forestry sectors in developing countries.

¹³ GDPRD, Platform issues paper n°4: climate change and agriculture, Global Donor Platform for Rural Devt, 2009 http://www.donorplatform.org/component/option,com_docman/task,doc_view/gid,1132

¹⁴ EX-ACT has been developed using primarily the IPCC 2006 Guidelines for National Greenhouse Gas Inventories, complemented by other existing methodologies and reviews of default coefficients. Default values for mitigation options in the agriculture sector are mostly from the 4th Assessment Report of IPCC (2007).

5.3. Carbon Balance as one way to multiply funding sources

Such carbon balance appraisal could become a key factor in the preparation of “*Agriculture’s entry into the carbon market, which is an essential and economically viable way to reduce existing concentrations of GHG and help stabilize the changing climate*”¹⁵.

Mitigation finance could be either public or market-based and integrated with existing official development assistance (ODA). Rural development projects involving the implementation of sustainable land management practices could therefore obtain funds from C finance related to mitigation benefits. In this perspective environment analysis within project formulation needs to switch from qualitative to quantitative appraisal with a focus on the effective carbon-fixing and GHG reduction capacity of the future project.

5.4. Carbon Balance as a way to ensure synergy building between forestry and agriculture strategies

According to the United Nations Framework Convention on Climate Change (UNFCCC) secretariat, the overwhelming direct cause of deforestation is agriculture. Subsistence farming is responsible for 48% of deforestation; commercial agriculture is responsible for 32% of deforestation; logging is responsible for 14% of deforestation and fuel wood removals make up 5% of deforestation.¹⁶ Thus gathering agriculture and forestry strategies (REDD+ and the on-going debates) is potentially opening new doors for agriculture and the well-being of rural producers. But there are many challenges to making agriculture part of the mitigation agenda, and there are many trade-offs between forestry approaches to mitigation and agricultural approaches¹⁷.

5.5. Carbon balance as a way to consider co-benefits in agriculture development

Carbon balance can put forward the performance of a project/policy in terms of climate mitigation. This performance may be considered as a co-benefit in an agriculture project.

On the contrary, within a specifically climate mitigation targeted project, the notion of co-benefit can be considered as the other way : agriculture output becomes the co-benefit.

Agricultural management practices that promote sustainable land management and agriculture intensification may simultaneously have another effect on carbon sequestration which can be referred as a co-benefit.

¹⁵ Sustainable food laboratory, available at www.sustainablefoodlab.org/filemanager/download/14489/

¹⁶ UNFCCC, 2007. Investment and Financial Flows to Address Climate Change, UNFCCC. p. 81 http://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/pub_07_financial_flows.pdf

¹⁷ Campbell B, Beyond Copenhagen: REDD+, Agriculture, Adaptation Strategies and Poverty, ELSEVIER Global Environmental Change 19, 2009

http://www.hks.harvard.edu/var/ezp_site/storage/fckeditor/file/pdfs/centers-programs/centers/cid/ssp/docs/events/workshops/2010/foodsecurity/Campbell_GEC_2009.pdf

Investment agriculture programmes are recognized to be a possible solution to climate change. Appraising their carbon balance is a way to highlight their capacity to cope with climate change issues. Carbon balance can be realized through tools such as EX-ACT. Carbon balance as a new indicator should allow for planning low carbon activities, getting climate change finance, linking agriculture and forestry joined impacts, and putting forward co-benefits of acting on mitigation.

6. ANY RISK OF HAVING CARBON BALANCE AS A CONDITIONALITY ?

Conditionality is linked with access to credit. Most banks and donors associate credit acceptance with respect to specific conditions or norms which allow them to justify their approval decision and to ensure good conditions of repayment. However with new competition between classic donors and newly entered partners the concept of conditionality is to rethink within some flexibility.

6.1. Donation versus obligation of northern countries

For many developing countries, finance is a crucial component of present and future climate change negotiations and developing countries have accordingly 'been disappointed by the low quantum of financial resources' and by the institutional frameworks of provision of such financing. Developing countries see the provision of financing for climate change mitigation and adaptation not as 'a donation but an obligation of developed countries' which are largely responsible for the problems of climate change today¹⁸. Within this perspective donors should be very cautious on the way they fund mitigation efforts from developing countries.

6.2. From conditionality to more adapted approaches

The enforcement through financing conditions goes against the principles underpinning the UNFCCC and the Kyoto Protocol which states that developing countries' commitments should be non-binding in recognition not only of their lower financing and technological capabilities, but also of 'their negligible historical role in the build up of GHG in the atmosphere' and their continued need for social and economic development¹⁹.

When designing a mechanism of international public finance to support south-north cooperation on domestic climate policies in developing countries, the negotiation should be built around a shared objective to increase credibility and participation. Clearly defining global emissions reductions as a shared objective could offer similar opportunities for cooperation²⁰.

6.3. Economic Impact of Low carbon economy options

There is also a danger that the climate investment funds will create onerous obligations on developing countries to comply with emissions targets and other rules under the international climate change regime for which they have been exempt on grounds of their differing responsibilities and capacities. Access to financing will be contingent upon countries'

¹⁸ Khor, 2008.

¹⁹ Khor M, Some Key Issues for the Post-Bali Climate Process (Draft), Penang: Third World Network, 2008

²⁰ Sippel, Maïke and Neuhoff, Karsten, Lessons from Conditionality Provisions for South-North Cooperation on Climate Change (2008). EPRG (Electricity Policy Research Group) Working Paper No. 0825. Available at SSRN: <http://ssrn.com/abstract=1559824>

demonstrated readiness to transit to a low-carbon economy and, there are concerns that there will not be adequate assessment of what impact such a transition will have on a country's overall development and poverty reduction efforts in the context of other extenuating economic circumstances²¹.

Making carbon balance appraisal as a conditionality to obtain climate change funds is not worth while for developing countries as it could move some partners away from credit access. It would also be prejudicial to give obligations to southern countries whereas northern countries have more responsibilities in human-induced climate change, hence should have more obligations than southern countries. It is therefore insufficient to impose this conditionality without offering capacities to achieve it.

7. HOW TO STRENGTHEN COUNTRY POSITION IN PRO-ACTIVE ARBITRATION

7.1. UNFCCC recognizing government priorities

The current international climate change regime recognises that less industrialised countries will not be able to respond to the challenges of climate change and implement their obligations if there are insufficient financial resources and technology transfer to do so: it recognises that efforts to combat climate change in less industrialised countries must 'take fully into account that economic and social development and poverty eradication are the first and overriding priorities' of the developing countries²².

7.2. Need of Climate mitigation country appraisal capacity to better negotiate with donors

To complement the integration of climate change and other environmental issues across sectors, there is also a need to strengthen institutions responsible for development of policies, coordination and monitoring with a bearing on climate change and other environmental issues. These include centrally placed government ministries (Ministry Planning/Finance) and sector ministries.

7.3. Toward carbon platform

Developing countries could build carbon platforms to open access of carbon funding to rural and agriculture development actions and to PES within the promotion of sustainable water and land management strategy and a low carbon agriculture intensification strategy. Such platforms could support the following key functions:

- To capitalize experiences and exchange of information (low carbon field- and farm-scale applications, adaptability of low carbon mitigation practices) towards improved information access (Web) and communication;
- To update capacities of local partners to appraise carbon balance and to monitor carbon mitigation (tool training, tool testing, pilot field application of monitoring reporting and verification (MRV) methods);

²¹ Tann Celine, No additionality, new conditionality: A Critique of the World Bank's Climate Investment Funds, TWN, 2008, Source: <http://www.twinside.org.sg/title2/par/Paper.by.Celine.doc>

²² UNFCCC, Article 4.

- To appraise and compare project results and agriculture policy options in term of carbon balance and to monitor carbon track of agriculture and forestry sector;
- To promote pilot carbon –funding on field experiences and project applications (PES, Socio-Environment safety nets, promotion of carbon-funded decentralized municipality watershed services, use of PES to promote low carbon practices in SRI/unflooded rice farming...);
- To look for upscaling options of carbon funding within wider rural development, food security or value chain support projects (project design, operational carbon monitoring framework, use of carbon funds);
- To develop and aggregate country specific data, , in partnership with research centers, for more accurate emissions factors and value for biomass vegetation.

Climate change finance and decisions should not be arbitrated by OECD and BRIC countries. Low income developing countries should have the capacity to negotiate with donors on the way they plan to integrate climate change issues in policies.

8. CONCLUSIONS

Climate change issues should not be seen as new trend that will imply new conditionalities for developing countries. It is worth seeing the opportunities that could be brought by integrating climate change policies in the objectives of development. Indeed if climate change threatens development efforts, adaptation and mitigation strategies can help to achieve better agriculture production, food security, risk management and poverty reduction. Carbon balance appraisal may help in planning policies to cope with climate change while achieving development issues.

9. READERS' NOTES

This module belongs to a set of EASYPol modules and other related documents:

- [EX-ANTE Carbon-Balance Tool : Software](#)
- [EX-ANTE Carbon-Balance Tool : Technical Guidelines](#)
- [EX-ANTE Carbon-Balance Tool : Brochure](#)

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

Related policy briefs

- [Climate Change Financing: What are the Challenges and the Opportunities for Financing Agriculture in Africa?](#)
- [Mainstreaming Carbon Balance Appraisal in Agriculture: EX-ACT: A Tool to Measure the Carbon-Balance](#)

10. FURTHER READINGS

- Bernoux M.; Branca G.; Carro A.; Lipper L.; Smith G.; Bockel L., 2010a. Ex-ante Greenhouse Gas Balance of Agriculture and Forestry Development Programs, *Scientia Agricola* 67: 31-40.
- Bernoux M.; Bockel L.; Branca G.; Tinlot M., 2010b. *EX-Ante Carbon-balance Tool (EX-ACT) Technical Guidelines*, version July 2010, *EASYPol Module 210*, FAO, Rome, 79 p. Available at: <http://www.fao.org/tc/exact/technical-guidelines/en/>
- Bockel, L., Smith, G. , Bromhead, M., Bernoux M., Tinlot M, Matieu H, Branca G, 2010. *Mainstreaming Carbon Balance Appraisal in Agriculture. A Tool for Measuring Carbon-Balance in Ex-ante Project-Programme Impact Appraisal*, *EASYPol Module 099*, FAO, Rome.
- Campbell B, 2009. Beyond Copenhagen: REDD+, Agriculture, Adaptation Strategies and Poverty, *ELSEVIER Global Environmental Change 192009*
http://www.hks.harvard.edu/var/ezp_site/storage/fckeditor/file/pdfs/centers-programs/centers/cid/sdp/docs/events/workshops/2010/foodsecurity/Campbell_GEC_2009.pdf
- FAO, 2009. *Enabling Agriculture to Contribute to Climate Mitigation*, FAO submission to UNFCCC, 2009 <http://unfccc.int/resource/docs/2008/smsn/igo/036.pdf>
- GDPRD, 2009. *Platform Issues Paper n°4: Climate Change and Agriculture*, Global Donor Platform for Rural Devt, 2009
http://www.donorplatform.org/component/option,com_docman/task,doc_view/gid,1132
- Klein, R., 2007. *Adaptation to Climate Change: IPCC Findings and their Implications for Climate and Development Policy*. Presentation held at a workshop in Bonn, 20 November 2007 <http://www.germanwatch.org/termine/2007-11-20/klein.pdf>
- Khor M, 2008. *Some Key Issues for the Post-Bali Climate Process (Draft)*, Penang: Third World Network, 2008
- IISD, 2006. *Designing Policies in a World of Uncertainty, Change, and Surprise, Adaptive Policy-Making for Agriculture and Water Resources in the Face of Climate Change*, International Institute for Sustainable Development Canada
- Porter G, Bird N, Kaur N and Peskett L, 2008. *New Finance for Climate Change and the Environment, July 2008* <http://www.boell.org/web/140-321.html>
- Seeberg-Elverfeldt C, 2010. *Carbon Finance Possibilities for Agriculture, Forestry and Other Land Use Projects in a Smallholder Context*, NRD, FAO, Rome, Italy.
http://www.fao.org/fileadmin/templates/ex_act/pdf/carbone_finance.pdf
- Sippel, Maike and Neuhoff, Karsten, 2008. *Lessons from Conditionality Provisions for South-North Cooperation on Climate Change. EPRG (Electricity Policy Research Group) Working Paper No. 0825*. Available at SSRN: <http://ssrn.com/abstract=1559824>
- Sustainable Food Laboratory, available at www.sustainablefoodlab.org/filemanager/download/14489/
- Tann Celine, 2008. *No Additionality, New Conditionality: A Critique of the World Bank's Climate Investment Funds*, TWN.
- UNFCCC, 2007. *Investment and Financial Flows to Address Climate Change*. UNFCC INT. p. 81
http://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/pub_07_financial_flows.pdf