



Enhancing cost-effectiveness and promoting mitigation actions: the case of agriculture

Submission by the Food and Agriculture Organization of the United Nations (FAO) on various approaches to enhance the cost-effectiveness of and promote mitigation actions, as outlined in paragraphs 79, 80 and 81 of the *Outcome of the work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention*.

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 appropriate ways to mobilize this potential could be considered by Parties within the AWG-LCA and AWG-KP (LULUCF). A discussion on agriculture will also be held in the SBSTA in May 2012.

1. Mitigation from agriculture requires approaches that take into account the specificities of the sector.

It is estimated that agriculture contributes 14% of global greenhouse gas emissions. It is also a major driver of deforestation which accounts for a further 17%. The agricultural sectors (agriculture, forestry and fisheries) are also among the most climate sensitive sectors and agricultural production systems and food security are affected by extreme climate events and slow-onset climatic changes. Agriculture thus affects and is affected by climate change. It can also be affected by adaptation and mitigation responses.

The agricultural sectors constitute a substantial part of GDP, export earnings and employment in the agriculture-based economies of least developed, as well as other developing countries. The sectors are crucial to the achievement of national development and food security goals, for which adaptation is necessary under climate change. For many developing countries, where achieving food security and development is a priority, adapting agricultural systems to climate change will be the primary goal, while climate change mitigation may be viewed as a secondary goal.

Projections indicate that emissions will increase if agricultural growth and development proceed under a "business-as-usual" approach to technology and resource use. If least developed and other developing countries are to meet their food security and development goals, emissions will inevitably increase. The approach to agricultural mitigation in LDCs and other developing countries, then, is not an absolute reduction in current emission levels, but rather a reduction, compared to a projected baseline of growth in emissions. Mitigation actions could thus be assessed as a deviation from the baseline. Such deviation from the baseline could be achieved for example by efficiency gains in food production and food chains. They could also be achieved by a reduction in bringing new land areas under agriculture or by the restoration of degraded land (increased carbon stock, improved vegetation coverage). Measurement, reporting and verification, could ensure consistency across sectors and for land-based activities, while adapted to the specificities of the agricultural sector.

2. Climate smart agricultural systems offer cost-effective mitigation by capturing synergies with adaptation and food security

There is growing interest at national and global levels in climate smart agriculture (CSA). CSA, as defined by FAO, aims to enhance the capacity of agricultural systems to support food security, incorporating the need for adaptation and the potential for mitigation, in sustainable agricultural development strategies. Changes in agricultural technologies and practices that enhance the productivity and stability of production and thus contribute to food security and adaptation, often also have mitigation co-benefits in the form of increased resource use efficiency or carbon sequestration. While some of these actions involve practices that are readily available and low cost, incentives may be required for adoption and climate financing for cases where there is a delayed return on investment (taking land out of production, reduction of herd size). Adoption of appropriate practices will also require enabling policies and institutions, in addition to mobilization of needed finances. Thus capturing cost-effective climate smart mitigation actions will require innovative financing mechanisms to support needed transitions.

CSA proposes more integrated approaches to the challenges of food security, adaptation to and mitigation of climate change, which, in the agriculture sector, are closely linked. This could enable countries to identify better options with maximum benefits for prioritization and mitigation co-benefits could help to attract climate financing. CSA recognizes that implementation of options will be shaped by country contexts and capacities, as well as enabled by better information, aligned policies, coordinated institutional arrangements and flexible incentives and financing mechanisms. FAO is building national data and capacity to assist countries to design, implement and finance CSA to fit their specific contexts, and is currently in the process of initiating CSA projects with partner countries.

3. Designing approaches to mitigation activities and enabling policies, institutional arrangements and financing mechanisms

Agricultural mitigation in developing countries needs to be pursued in the context of broader sustainable agricultural development and food security objectives, as provided by the climate smart agriculture framework. FAO suggests the following considerations for designing approaches to mitigation in this context:

Building an evidence base drawn from data on the agriculture sectors, food security, potential climate impacts and mitigation potential to help identify activities with synergies between food security, adaptation and mitigation, as well as possible trade-offs. Given a lack of data and information in many developing countries, in a first stage, coarse analysis can be undertaken to identify key areas where mitigation actions can be complementary to food security and adaptation. Over time, necessary data and models for more sophisticated analysis can be built.

Taking a holistic and landscape approach to considering agricultural mitigation.

Agriculture is an important driver of deforestation due to the expansion of agricultural activities (livestock and crops) into forested lands. Approaches that look across different land uses and the trade-offs involved are needed in order to find solutions to the competition for land and water resources for food, energy, income and carbon-storage. A separate FAO submission addresses decision 1/CP.16, paragraph 72 and appendix II, in particular how to address drivers of deforestation and forest degradation and on robust and transparent national forest monitoring systems as referred to in its paragraph 71(c).

Coordinate climate change and agricultural/food security policies. Consistency across major agricultural, food security and climate change policy instruments affecting the agricultural sectors such as

agricultural sector strategies and plans, NAPs and NAMAs will be needed to achieve cost-effective mitigation in the agricultural sector, avoiding perverse outcomes and ensuring a consistent set of incentives for adoption of priority options. At national and subnational levels, institutional/legislative arrangements addressing improved systems for land tenure, extension and aggregation, as well as MRV and payment for environmental services will be needed. In addition to national legislation, Farmers Unions, the private sector, extension services and village leadership have important roles to play at local level.

Building financing mechanisms to support Climate Smart mitigation actions within the context of NAMAs Approaches to promote agricultural mitigation need to take into account: sector specificities, including agriculture's crucial contribution to agricultural growth in developing countries to meet food security and development goals; its potential to generate at the same time benefits for food security and climate change adaptation and mitigation within climate smart agriculture approaches; a broader perspective on land use, including agriculture's impact on deforestation and the necessity to design institutional arrangements and financing, which can enable smallholders to implement mitigation actions.

This implies the development of financing mechanisms that are suitable to meet these challenges. For example, some forms of mitigation from smallholder agriculture are not cost effective for international compliance markets, due to low returns, high transactions costs or high risks. Nonetheless, when implemented over large groups of producers and area, they could generate significant mitigation benefits. The development of cost-effective approaches to measuring, reporting and verifying types of mitigation action that allow for the flow of public sector mitigation financing is thus a priority for capturing cost-effective and climate smart agricultural mitigation in developing countries and a condition for its effectiveness. Public sector resources will be needed to support the long term transitions that will be required to capture synergies among mitigation, adaptation and food security.

Public finance can also play an important role in facilitating the flow of private sector finance, by funding needed capacity building, reducing risks to private sector investors and assisting in the development and dissemination of technologies. In developing countries agricultural NAMAs provide the vehicle for achieving this. Such NAMAs should be aligned with overall agricultural development and food security policy priorities, build upon evidence of the potential for capturing mitigation co-benefits from actions that generate food security and adaptation benefits, and linked to monitoring and financing mechanisms already operating in agricultural sectors.