



Declaration

Farmers' Solutions to Climate Change The Bali Road Map

Farmers around the world are faced with complex challenges connected to climate change, food security, poverty and energy. Given the diverse impacts of climate change on farmers and their daily activities, farmers can expect a deterioration of their natural, financial, social and physical capital, which will result in lower farm productivity and endangered food security. If farmers are not sufficiently prepared and supported to face climate change, they will suffer from impoverishment, which will affect those located in developing countries most severely. This will give rise to increased poverty, global health problems, food insecurity and even social unrest. Consequently, agriculture, climate change, food security and poverty reduction are inextricably linked. This link is unique to the agricultural sector, and therefore, deserves recognition.



IFAP farmers call on governments to give high priority to increased agricultural production, productivity and high quality production in developing countries. This is key to overcoming current and future challenges linked to climate change and the achievement of the Millennium Development Goals (MDG). Therefore, there is an urgent need to invest in agricultural development as an effective way to combat climate change and poverty and to boost economic growth.

IFAP farmers call on governments and parties to the UNFCCC to recognize Agriculture as a sector that experiences climate change effects and at the same time, as a sector with a huge potential in providing solutions to mitigating and adapting to climate change consequences.

IFAP farmers call on governments and parties to the UNFCCC to support the establishment of an international sector agreement on agriculture, which will take into consideration the special characteristics and needs of agriculture. The current Kyoto accounting rules do not reflect this specificity.

IFAP farmers' organizations recognize their need to be pro-active on climate change issues so that the contribution of farming to finding solutions is given due recognition. This comes at a moment when most farmers have to face other challenges such as the global food, energy, economic and financial crises as well as population growth.

FARMERS' SOLUTIONS BASED ON THE BALI ROAD MAP

Even though it is estimated that agriculture is responsible for 13.5%¹ of global anthropogenic greenhouse gases (GHG)², it is also a sector that will be most impacted by an increasingly variable climate and its adverse effects. Above all, agriculture is a sector that has a huge potential to provide solutions to both mitigate and adapt to climate change.

IFAP farmers are well aware of the need to both mitigate and adapt to the adverse effects of climate change. However, this is everyone's concern, and the associated costs have to be shared amongst all stakeholders and society as a whole. Furthermore, opportunities for mitigation and adaptation by the agricultural sector should complement the potential for productivity and sustainability gains. This way, agriculture can continue to meet global needs for food, fuel and fiber, and farmers can get a decent income out of their agricultural activity, thereby reaching the MGDs aimed at reducing poverty.

THE POTENTIAL OF AGRICULTURE ON MITIGATION

1. Agriculture is different by nature: decoupling anthropogenic and non-anthropogenic emissions

The current accounting framework under the Kyoto Protocol takes into account most types of land-based GHG emissions and sinks. However, in practice, this framework contains limitations. It does not allow a distinction between anthropogenic and non-anthropogenic emissions. Therefore, a different policy approach is needed to tackle the specific case of the agricultural sector.

The agricultural sector needs to be differentiated from the other sectors when it comes to GHG emission reductions. Most of the GHG emissions from agriculture are nature-made and are directly linked to natural biological process, which are primarily aimed at producing food, fuel and fiber. Indeed, the origin of emissions from agricultural land is inherently different to those associated with fossil fuels – and the science of monitoring and reporting agricultural GHG emissions is much less certain.

Therefore, agriculture should not be penalized for natural emissions that are beyond human control, independent of management effects and are due to natural variability and climate conditions such as variable rainfall, drought and bushfires.

Agriculture cannot compete with other sectors in terms of cost-efficiency in reducing GHG emissions, unless there is inclusion of the carbon sequestration and displacement potential –using soil and land use change as a carbon sink³- along with energy efficiency improvements and supply of renewable energies embedded within the agricultural sector.

2. Establishing a global evaluation system of GHG emissions from agriculture

This system would reflect a comprehensive and integrated coverage of all emissions where and when they occur, including all pools e.g. biomass and soils, all gases and all emissions and sinks. This global evaluation system would:

- Take into account the diverse variables within the farming sector such as the effects of different management practices and production systems on emissions, sequestration potential at the farm level and the heterogeneity within the production systems.
- Be based on practicable measurement and achievable international standards that work across all farming and land management sectors and that are compatible with high level measurement and reporting standards (ISO, CEN standards). These standards or measurement and monitoring techniques should be transparent, and based on science, consumer and market demands.
- Ensure that transaction costs of reporting are minimized.
- Be determined within the envelope of an individual farm (up to the farm gate) and be based upon geographical indicators and rules of origin. The reporting system should help to improve and develop farm businesses.

¹ According to the fourth report of the Inter Governmental Panel on Climate Change (IPCC)

² Agriculture has an influence on the following greenhouse gases (GHG): Carbon Dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O)

³ According to some research studies, agriculture can potentially achieve a significant reduction in the risk of climate change by taking CO₂ out of the atmosphere and storing it in the soil, Rosenberg, N.J and Izaurralde, R.C (2001), 'Storing carbon in agricultural soils to help head-off a global warming', in J.N.Rosenberg and R.C. Izaurralde (eds)? Storing Carbon in Agricultural Soils: A multi-Purpose Environmental Strategy, Dordrecht, Kluwer Academic Publishers, pp. 1-10.

- Be adapted to :
 - * national circumstances, taking into account both climate variability as a driver of emissions trends and sinks.
 - * the internal capacity to meet international reporting obligations. For instance, the provision of 'net net' accounting measures under article 3.4 of the Kyoto Protocol tends to favor certain types of climatic conditions to the detriment of others.

3. The focus of negotiations should be mainly on NET CO₂ emissions

As mentioned above, there is greater scientific certainty and higher quality of available data on CO₂ compared with Methane (CH₄) and Nitrous oxide (N₂O), where only qualitative (rather than quantified) emissions reductions may be possible.

4. Enhancing the potential of agriculture in carbon storage and rewarding farmers for carbon sequestration

Globally, approximately half of all soil carbon in agricultural land has been lost to the atmosphere during the past two centuries. However, this loss should be turned into an opportunity for carbon storage from the agricultural sector. The global additional storage potential in agricultural soils is estimated at 80 billion tons, equivalent of 10% of the total atmospheric carbon.

Net sequestration occurs with sustainable farming systems through increased plant material returning to the soil, reducing carbon loss and introduction of carbon from external sources such as organic residues of urban origin⁴. *This does not require advanced technology. However, economic incentives are needed to enable farmers to implement more sustainable agricultural practices.*

There is a need to establish *carbon credit systems* to reward farmers for their contribution to climate mitigation through carbon sequestering activities. These carbon credits would provide farmers with an alternative source of income while promoting good agricultural practices.

5. Rewarding farmers for sustainable agricultural practices and ecosystem services: a way to mitigate climate change effects

Farmers should also be supported for the adoption of *sustainable agricultural practices that reduce the global carbon foot-print*, therefore contributing to climate mitigation through conservation agriculture practices such as zero or reduced tillage, sustainable water management, agro-forestry, and carbon sequestration through sustainable forest management.

6. Securing energy efficiency through sustainable bioenergy⁵: a response to climate change mitigation

Even though production of food and feed remains undoubtedly a priority as well as energy saving technology and methods, bioenergy represents a new market opportunity and a way of diversifying risk and income. Farmers producing sustainable bioenergy help to *bring down greenhouse gas emissions* across the heat, power, energy and transport sectors and, at the same time, promote rural development.

Positive policy frameworks and investment incentives are needed for farmers to ensure their capacity to produce bioenergy from local sources and to add value by local processing where possible rather than just supplying bulk commodities. Despite all the opportunities offered by bioenergies, farmers are well aware that they are not a miracle solution to farmers' incomes. Long term assessment of economic, environmental and social benefits and costs is necessary. This would include setting a rational land use policy, appropriate selection of crops and production areas, and protection of rights of farmers.

R&D is needed for the development of small scale technology and to enhance the energy potential of indigenous plants.

⁴ Okimori Y, Makoto Ogawa M, Takahashi F (2003), Potential of CO₂ Emission Reductions by Carbonizing biomass waste from Industrial Tree Plantation in South Sumatra, Indonesia, Mitigation and Adaptation Strategies for Global Change, Springer Netherlands ISSN 1381-2386.

⁵ Bioenergy includes all wood energy and all agro-energy resources, and wood energy resources are fuel wood, charcoal, forestry residues, black liquor and any other energy derived from trees. Agro-energy resources are crops specifically grown for energy, such as sugarcane, cassava, sugar beet, sweet sorghum, maize, palm oil, rapeseed and other oilseeds, and various grasses. Other agro-energy resources are agricultural and livestock by-products such as straw, leaves, stalks, husks, shells, manure, droppings and other food and agricultural processing and slaughter by-products. (Source: FAO)

THE NEED FOR AGRICULTURE TO ADAPT TO THE EFFECTS OF CLIMATE CHANGE

Even in the case of a stabilization of GHG emissions, the process of climate change will carry on for many decades. Therefore, the need for adaptation is undeniable.

The main determinant of agricultural production is still the seasonal variation of temperature, precipitation, sunshine, increased frequency of droughts and floods, frost freezes, and heat waves at any season, which increase stress both on crops and livestock. It is the changing frequency and intensity of these events due to climate change that is of main concern. The impacts on the agricultural sector are severe. These include: increased water scarcity and animal diseases, increased vulnerability of ecosystems already affected by deforestation and worsening of erosion especially in coastal areas.

All stakeholders - in particular governments - should actively be involved in developing and enhancing adaptation strategies to support farmers in their daily adaptation to climatic variations.

1. From crisis management to risk management

National risk management response strategies should be based on: minimizing risks, including policies to **reduce risks** and mitigate their consequences such as early warning systems, ecosystem services, and awareness raising campaigns; **coping with risks** through crop insurance guarantee fund schemes and **support after crisis** type of measures, such as rehabilitation and recovery schemes to help farmers recover from losses and stabilize their incomes in a situation of increasing “climate vulnerability.”

Farmers' organizations can play a critical role in delivering risk management tools for individual farmers. However, costs and administration of appropriate insurance schemes should not constitute an added burden for farmers. Given the unavailability of reliable data on climate related risks in farming, farmers need to be informed about existing risk management initiatives.

2. There is a need to link up scientific findings with policy decisions and development

An integrated approach to climate change policies need to be put in place, linking up all the actors: farmers, scientists and policy makers.

3. Farm-specific climate change information is critical

There is a need for a **better knowledge generation and dissemination** of climatic variability and impact at the **regional and local** levels, following an integrated and multidisciplinary approach (ecosystems, health, water resources and coastal zones). Global models should be downscaled and turned into impact scenarios at the national and local levels, where they do not exist.

4. Increased economic profitability, growth and a general economic development in particular in developing countries is critical to increase their capacity to adapt to climate change and secure food supply

Increasing resilience of vulnerable populations, such as small scale farmers, including women and young farmers, is vital, as their economic and technological capacity to adapt is very limited.

FINANCING

Current financial and technological transfer plans under the UNFCCC Convention are not well suited to fulfill all the agricultural adaptation and mitigation needs linked to climate change in many developing countries. The backbone of satisfactory response capacity is without any doubt strongly connected to the level of economic development of each country.

1. A specific finance delivery mechanism for farmers in developing countries needs to be put in place.

Farmers -particularly small holders- need to benefit from direct access to such instruments as the Clean Development Mechanisms (CDM) and other financial mechanisms such as the Adaptation Fund and the GEF.

The agricultural sector, despite its huge mitigation potential and vital need for adaptation, has for too long been sidelined in the CDM projects.

2. A fair international carbon market

GHG credits earned by a farm can also come from the export of renewable energy services that displace fossil-fuels elsewhere, such as by the supply of electricity or heat to other businesses in the food supply chain as well as recycling of farm residues and waste to produce energy for own consumption. The creation of a stable international carbon market that provides fair prices for CO₂ emissions mitigated by agriculture or through CDM projects is therefore needed.

3. Mainstreaming climate change related efforts in development projects

Existing funds from other Multilateral Environmental Agreements could serve to benefit climate change mitigation and adaptation efforts. This should be done through integration of climate change goals into projects aimed at combating related environmental concerns.

TECHNOLOGY

Today's technology does not provide sufficient concrete tools to benefit from the mitigation potential in agriculture. In addition, appropriate incentives to support the implementation of existing climate friendly technology would give agriculture a great leap forward. One of the main challenges is to make existing technologies cheaper and more efficient.

1. International technology transfer programs as well as capacity building programs need to be given priority.

Incentives for farmers –in particular small scale- to use improved technology, and incentives to invest in research to develop climate friendly technology, are essential to successfully implement new mitigation technologies.

2. Addressing and planning areas for research and development through partnerships between farmers and scientists, such as research projects addressing energy harnessing techniques on the farm, will ensure the development of technology where is it most needed and fit-for-use.

3. More pro-poor farming research is needed to develop adaptation solutions based on better science, technology and governance. In particular, innovative programs to support region specific activities and new crops which are drought and water tolerant are critical.

CONCLUSION

The role of agriculture in combating climate change is important and must be recognized as such.

Therefore, this should lead to a change in the relationship the agricultural sector and rural community have with governments, society and the environment.

Agriculture around the world positively affects the sustainable management of land, the environment and climate. It already provides sustainable produce for local and global markets while protecting the environment. Although agriculture is already responding proactively to climate change mitigation through such things as substitution of fossil fuels, continued energy efficiency and carbon sequestration, these actions have yet to be recognized in international agreements. The potential of agriculture to provide an even larger solution to climate change is enormous and agriculture and farmers are prepared to contribute even more to tackling the global threat of climate change. However, farmers' actions are often unrecognized and not well-documented. Also, the economic and social burden of mitigation and adaptation cannot rest on farmers alone. Farmers cannot continue to feed themselves, their families and society while still providing ecological goods and services that go beyond food production. Incentives and fair carbon markets must be created while financing and technology transfer must be put in place to allow farmers to continue to adapt and mitigate climate change as well as to achieve their ultimate goal of providing food for society. This should be facilitated and encouraged in the post-Kyoto accord.