



A submission to UNFCCC Secretariat on approaches to address losses and damages in agriculture, forestry and fisheries in answer to the invitation of article 28 of Decision FCCC/AWGLCA/2010/L.7

In response to the invitation of article 28 of Decision FCCC/AWGLCA/2010/L.7 for relevant organizations to submit to the secretariat, by 21 February 2011, views and information on what elements should be included in the work programme decided in article 26, the Food and Agriculture Organization of the United Nations herein submits information and views on approaches to address losses and damages in agriculture, forestry and fisheries.

Climate change has strong impacts on the agricultural sectors – agriculture, forestry and fisheries- by modifying or degrading productive capacities and by directly and indirectly increasing the risks associated with production. In fact, developing countries that are “particularly vulnerable to adverse effect of climate change” are in that situation often because of the importance of the agricultural sectors for their economy and for their food security. Climate change induced losses and damages in the agricultural sectors will be spread into the rest of the economy because of their importance to the livelihood, economic development and food security of the population in developing countries. Climate change induced losses and damages will affect each dimension of food security: availability (production), access, utilization (nutrition) and the stability of these factors. Therefore, and considering that the right to adequate food is a fundamental right, the work programme shall devote particular attention to approaches to address losses and damages in the agricultural sectors.

1) Impacts of climate change on the agricultural sectors

An increase in temperature and a change in precipitation patterns will directly affect crops' growth and development, need for water, soil fertility, performance and carrying capacity of livestock and feed supply, water supply for irrigation, prevalence of diseases and pests and occurrence of extreme weather events; and indirectly affect market prices, owing to the different regional effects of climate change. Fisheries and aquaculture production systems are likely to suffer from the sea-level rise, changes in current sea productivity patterns, flooding, and increase in frequency and intensity of storms and extreme weather events. Forests will also be sensitive to climate variations, extremes and long-term changes, such as changes in day, night and seasonal temperatures, storm frequencies and intensities, duration and intensities of heat waves, droughts and floods, incidence of pests and diseases, and frost, snow and ice cover.

Climate change will significantly increase the production risks that farmers, livestock-keepers, fishers and forest-dependent people face, particularly in regions that already suffer from chronic soil and water scarcity, high exposure to climatic extremes, including floods and droughts, and poverty and hunger. Particularly communities in fragile environments, such as drylands, mountainous and coastal areas will be affected. The rising temperature will affect coral reefs, lessening their role in coastal protection, which in combination with rising sea levels and more frequent extreme weather events, becomes a direct threat to livelihoods and agricultural, forest and fisheries systems in coastal areas.

Production systems with low productivity and high variability in yields are chronically vulnerable leading to more stringent adaptation needs. These systems, even under present conditions, produce less, are less

efficient and less resilient to shocks than they could be. In such systems, present risks resulting from climate variability and extreme events reinforce poverty and slow down development. Climate vulnerability, poverty and food insecurity are strongly interlinked.

2) Losses and damages in the agricultural sectors are not only measured in economic terms, but also affect food and nutrition security and jeopardize the right to food

Losses and damages in the agricultural sector have considerable impact on the whole economy of developing countries. First, because agriculture represents an important share of these economies, of the wealth produced and in terms of direct means of livelihoods; second, because agriculture is a strategic sector of the economy, the wealth of the other sectors depending of the health of the agricultural sectors. Therefore, preventing losses and damages in the agricultural sectors also prevents losses and damages in other areas of the economy.

Moreover, losses and damages in the agricultural sectors directly affect food security in its four dimensions of availability, accessibility, stability and utilization.

For this reason, The Committee on World Food Security, at its last session, requested the High Level Panel of Experts on food security and nutrition (HLPE) to “review existing assessments and initiatives on the effects of climate change on food security and nutrition, with a focus on the most affected and vulnerable regions and populations and the interface between climate change and agricultural productivity, including the challenges and opportunities of adaptation and mitigation policies and actions for food security and nutrition”.

The fact that damages and losses in the agricultural sectors translate not only in “pure” economic terms, but also affect food and nutrition security, and the right to food, makes prevention of such losses and damages, ex-ante adaptation, and preparedness, absolutely fundamental.

3) Views on elements that should be included in the work programme

(a) Possible development of a climate risk insurance

If a risk facility is created to address severe weather events it shall cover losses and damages in agriculture, forestry and fisheries, particularly those affecting productive capacities, especially considering the importance of these sectors in the economy of developing countries. Insurance schemes specific to the agricultural sectors are also being developed. It is, however, necessary to examine the financial sustainability of such compensatory schemes in the context of increased probability of weather-induced adverse effects, and to explore the conditions and ways to enhance it, in particular through risk spreading on larger geographic areas and/ or with external subsidies, including the possible model of a disaster relief fund backed up and subsidized by developed countries and the reinsurance industry.

(b) Options for risk management and reduction

Climatic risks, whether extreme events or even unpredicted slight changes in temperature or precipitation patterns can cause considerable losses and damages. Agricultural sectors are also facing very diverse risks (economic, environmental, pests and diseases) all of which will be modified and can be exacerbated by climate change. A very slight climatic change can trigger a considerable extension, in geographical range, intensity, and frequency of a pest or disease which will, because of climate change, cause considerable losses and damages.

Losses and damages can affect both production and productive capacity and ecosystem functions. The work programme shall consider both categories of losses, in production and productive capacity, to propose appropriate measures to address them.

Any risk management strategy shall aim first to reduce exposure to risk, before palliating with the effects of risk through risk coping, i.e risk retention (risk is borne by the farmer, i.e. self-finance) and risk transfer (insurance) mechanisms.

It shall aim, above all, to reduce damages and losses through increasing resilience of the production systems including by promoting best practices in an ecosystem approach, the early detection of emerging risks, the subsequent reduction or elimination of a specific risk. It shall then help systems to recover, including by restoring productive capacities. In doing so, such strategies should combine specific policies targeted to address specific agents and categories of risks. They include measures to reduce or eliminate specific risks, such as plant pests and animal diseases, including advanced observation networks for quick response. Diversification can both increase the efficiency of systems and their resilience to direct and indirect risks. It also can spread risk, increasing economic resilience at farm and local level. Diversified rotations, including crop varieties and species with different thermal/temperature requirements, better water use efficiency and resistance to pest/disease, and lower yield variability are effective ways to reduce risks and increase efficiency. Other measures either prevent the loss of productive assets, such as feed banks for livestock during droughts, or enable quick recovery, such as availability of seeds.

The work program shall thus consider all the elements needed to establish and implement risk management strategies. These include, at local level, impact assessment and monitoring, vulnerability assessment, identification of (ex-ante) damage reduction measures including by early action and by building resilience at farm and system level. It shall also consider measures to ensure their implementation, including the establishment of institutions at national and regional level, capacity building and compensation for incurred costs, including investments and income foregone during the transition period towards a more resilient system. It will also require supporting the development and dissemination of technologies and practices, as well as international cooperation for promoting the conservation and sustainable management of biodiversity, including ecosystem services to maintain and/or enhance ecosystem resilience; breeding of crops, trees, livestock and fish adapted to less predictable climate conditions; and enhancing in-situ and ex-situ conservation and sustainable use of genetic resources.

The efficiency of any specific risk management policy is largely dependent on the existence of enabling policies, institutions, coordination mechanisms, and basic infrastructures. All of these form a set of public goods that are particularly important to reduce risk exposure and improve early warning and preparedness.

The notion of insurance helps to better understand the incidence of risk at producers level. But it shall only be considered as an element of a risk management strategy. Insurance does not eliminate risk, it pools the risk to spread it across an industry or economy and through time. And it is only a tool to limit adverse financial effects of an event. Therefore its relevance and role in a risk management strategy would be different according to sectors and to the impacts they have to address. In fact, climate change could even reduce the range of use of insurance in the agricultural sectors. On the medium to long term the combination of slow onset change and the increased risk of adverse weather events or conditions will compromise the financial sustainability of insurance schemes. The work program shall examine the potential role of insurance taking into account these elements and explore ways to ensure financial sustainability of insurance schemes given an increased climatic risk.

(c) Approaches for addressing rehabilitation measures associated with slow onset events

Agriculture, forestry and fisheries are particularly vulnerable to slow onset events such as sea level rise, increasing temperatures, ocean acidification, glacial retreat and related impacts, salinization, land and forest degradation, loss of biodiversity and desertification.

These slow onset effects will change gradually the conditions of production. For instance changes in growing seasons will cause gradual shifts in areas suitable for cultivation of specific crops.

Some of these changes can be addressed, to a certain extent, either by adapting production systems or by rehabilitating degraded environments. Both will require, at local level, impact assessment and monitoring, vulnerability assessment, identification of (ex-ante) damage reduction measures. Adaptation and/or rehabilitation, to be implemented, will require capacity development and compensation for incurred costs, including investments and income foregone during the transition period towards an “adapted” or “rehabilitated” stage. It will also require supporting the development and dissemination of technologies and practices, as well as international cooperation for promoting the conservation and sustainable management of biodiversity, including ecosystem services to maintain and/or enhance ecosystem resilience, and breeding of crops, trees, livestock and fish adapted to changed climate conditions and enhancing in-situ and ex-situ conservation and sustainable use of genetic resources.

The work program shall also explore the means to compensate for loss of productive capacity caused by slow onset events.

(d) Engagement of stakeholders

Climate change will have in the agricultural sectors very different impacts depending on local conditions, food production systems and diets. The poor, women and indigenous people are particularly at risk. Therefore, implementation measures shall be designed locally in a participatory process including all stakeholders, smallholders, pastoralists, fishermen and forest-dependent people and other particularly vulnerable minorities and ensuring proper representation to women and indigenous people.

The work programme shall consider processes to that effect.