



Southern Africa Confederation of Agricultural Unions (SACAU)

In cooperation with



Eastern Africa Farmers' Federation (EAFF)

SACAU/EAFF- response to the Agriculture issues under SBSTA42

In June 2014, SBSTA40 outlined the way forward with respect to addressing agriculture in the UNFCCC processes. The conclusion outlined four main areas around which technical and scientific work will be done to advance agriculture in the context of UNFCCC. Parties and observers to the UNFCCC were required to submit the responses to the first two issues.

Southern Africa Confederation of Agricultural Unions (SACAU) and The Eastern Africa Farmers' Federation (EAFF) have prepared the following joint response on the agriculture issues to be discussed under SBSTA42.

Part (a): Development of early warning systems and contingency plans in relation to extreme weather events and its effects such as desertification, drought, floods, landslides, storm surge, soil erosion, and saline water intrusion

Development of early warning systems

i. The two main early warning systems that exist are:

- a. Use of short, medium or long-term seasonal forecasting:* Weather and seasonal forecasting services are mainly the preserve of the national and regional meteorological departments. There is a need for the forecasts to be timely in their delivery and the delivery methods need to be user-friendly.
- b. Use of indigenous knowledge as an early warning system* to predict weather patterns. A lot of local knowledge exists across the region including observation of bird and insect movements, observation of animal movements and migrations, among other examples.

ii. Proposals for improving the effectiveness of early warning systems. Early warning systems may be improved in the following ways:

- a. By using of combined approach of indigenous knowledge and weather/seasonal forecasting to develop an effective and comprehensive early warning system,*
- b. By deliberately disseminating information to farmers through their various avenues including farmers' organizations and co-operatives;*
- c. By ensuring that the early warning messages are clear and easy-to-read and understand for end-users. In addition, the messages need to be relayed to end-users in a relevant format, in a timely manner, and in the appropriate frequency and mode including through radio broadcasts and use of mobile phone devices;*
- d. By improving the relevant infrastructure for collecting weather information including increasing the density of weather stations, use of satellite weather data;*
- e. By downscaling seasonal and weather forecasting to specific locations using tools such as the FEWS Agro-Climatology Toolkit - Forecasting Interpretation Tool (FACT-FIT);*

- f. By deliberately exploiting the business incentives for private sector to invest in the provision of early warning information, as a service to stakeholders in the agriculture sector;

Development of contingency plan: This section outlines the different options that farmers may opt for, to minimize the risks associated with the effects of climate change.

- i. Contingency against prolonged dry spells and droughts: Farmers can adopt the following actions as a contingency against prolonged dry spells which lead to droughts.
 - a. Diversification into crop and livestock enterprises that are more resilient to dry climatic conditions including crop enterprises such and livestock enterprises such as small stock including goats and poultry. In addition, farmers may opt for enterprises such fish farming, mushroom farming, and apiary among others.
 - b. Diversification into crop and livestock bi products,
 - c. Zero-grazing of livestock as an alternative to over-grazing on rangelands.
 - d. Water management strategies that emphasize minimal use of water, and water storage, including:
 - i. Water harvesting especially at the farm level using underground water tanks and over-head/roof water tanks,
 - ii. Irrigation including drip irrigation and gravity irrigation
 - e. Drought tolerant and quick maturing seed varieties
 - f. Destocking of livestock before the onset of the drought. This is important as prices of livestock tend to fall when there is a low amount of livestock feeds, and many animals are being sold,
 - g. Feed management through practices such as fodder conservation at a household level, community level, and also as a separate business enterprise. Fodder conservation would ensure that livestock farmers can access quality feed during times of water shortages.
 - h. Soil nutrient management through practices such as conservation agriculture, mulching,
- ii. Coping against prolonged rains which leads to soil erosion, flooding, landslides, pests and diseases. The following coping mechanisms may be adopted:
 - a. Control of soil erosion in hilly areas through terracing and afforestation;
 - b. Use of cover crops to control soil erosion on flat lands
 - c. Water management for example erecting gabions, constructing water storage devices such as underground and overhead water tanks.

- d. Mapping of flood-prone areas
- iii. Coping against temperature changes including short extreme temperature spells such as heat waves, cold waves which leads to changes in water levels (sea and lake), sea intrusion leading to water salinity where there are water bodies (lakes, underground water) close to the coast, and pests and diseases. The coping mechanisms include:
- a. Damming rivers up stream
 - b. Planting trees close to the coast to prevent saline sea water from seeping into the water sources inland,
 - c. Planting mangroves at the coast. Mangroves is good for animal fodder;
 - d. Building levees to prevent saline water from the sea from extending inland
- iv. Coping against heavy winds, leading to soil erosion and destruction of property
- a. Agro-forestry and afforestation for trees to act as wind-breakers

Issue (b): Assessment of risk and vulnerability of agricultural systems to different climate change scenarios at regional, national and local levels, including but not limited to pests and diseases.

i. Why are farmers vulnerable to the effects of climate change?

- a) *Agricultural technology and practices*: Lack of access to, and low uptake of agricultural technologies for example. drought tolerant varieties. Poor quality technologies and practices leading to poor land management and low productivity
- b) *Information*: Lack access to agricultural and weather information (e.g. information on temperature, rainfall, markets) caused by weak extension systems, low levels of education and lack of effective weather information systems dedicated to agriculture.
- c) *High poverty levels* caused by over-reliance on subsistence and rain-fed agriculture.
- d) *Low levels of crop and livestock diversification* for example lack of linking agriculture to pastoralism, lack of intercropping and extensive livestock rearing.
- e) *Persistence of cultures and traditions*: Farmers' resistance to change is influenced by their cultures and traditions, for example pastoralists who may be driven by the number of animals as opposed to the productivity of the animals. Farmers are generally are isolated from other communities, slow down the rate of change in perceptions.
- f) *Degradation of rangelands* due to over-grazing.
- g) *Deforestation* due to forest encroachment by agricultural production and high demand for firewood
- h) *Lack of access to services* such financial services and insurance services

ii. The priority actions that should be done to reduce farmers' vulnerability to the effects of climate change?

- a) Build capacity of farmer organisations to deliver services to farmers such as knowledge dissemination, programme and project management, and to establish partnerships and linkages with key stakeholders.
- b) Strengthen key support institutions such as meteorological departments, agricultural technical departments among others to effectively provide services to farmers which enable them to reduce their vulnerability
- c) Deploy appropriate information and communication tools such as radio, cellular phones and other communication technologies to ensure farmers have access to information related to climate change
- d) Promote the use of adaptive crop varieties and livestock breeds: Train farmers to identify and use appropriate resilient crop varieties and livestock breeds
- e) Train farmers to use appropriate water management practices and technologies including irrigation, water harvesting and storage
- f) Train farmers to use appropriate soil management practices including conservation agriculture; covercrops, mulching, crop rotation, agro-forestry

- g) Improve access to finance and insurance for farmers to sustainably invest in yield enhancing agricultural inputs, technologies, storage, value addition
- h) Support regeneration/restoration of forest areas to minimize flooding and to control soil erosion
- i) Support regeneration/restoration of rangelands to improve their carrying capacity and productivity
- j) Facilitate diversification of crop and livestock enterprises, and into other non-agricultural enterprises that are less vulnerable to climate change
- k) Support farmers to engage in value addition such as processing and storage, to increase their income and reduce their vulnerability to climate change
- l) Facilitate increased participation of youths into agriculture, as they are more likely to take risks, and explore new practices and technologies in agriculture.

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