

FARMING-SYSTEM SPECIFIC EXTENSION CONTENT FOR ENHANCING CLIMATE CHANGE ADAPTATION AND RESILIENT FOOD SYSTEMS IN SORGHUM-BASED DRYLAND FARMING SYSTEMS OF TANZANIA AND BURKINA FASO

CLIMATE SERVICES

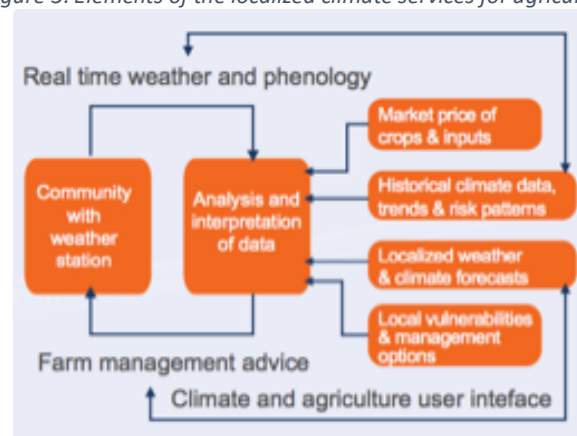
CLIMATE CHANGE AND RESILIENT FOOD SYSTEM ISSUES

Climate variability and change place significant stress on food production and availability. Highly variable seasonal rainfall, increasing trends of temperature and extreme climate events together with growing demand for food and energy places additional pressure on the food systems and natural resources. The climate impacts are location specific implying a need for localized climate services. Extension agents are a critical link in a localized climate service at decentralized levels. Their role in the service is to bridge the gap between the climate information providers and the information users. The issue is how to enable them to play this role.

ESSENTIAL TECHNICAL INFORMATION

The Food and Agricultural Organisation (FAO, <https://www.fao.org/3/az620e/az620e.pdf>) identifies the four main elements of the localized climate services for agriculture as being: (i) collection and synthesis of data on local weather, climate, crop and market price of crops and inputs; (ii) use of weather and climate forecasts; (iii) analysis and development of impact outlooks and management options; (iv) and communicating to end-users. These elements are cyclic as illustrated in the Figure below:

Figure 3: Elements of the localized climate services for agriculture



Source: Climate services for food and agriculture. FAO, <https://www.fao.org/3/az620e/az620e.pdf>

Both Burkina Faso and Tanzania are implementing national frameworks for climate services to improve the availability and use of tailored weather and climate services necessary to strengthen resilience to climate change and extreme weather. In Tanzania implementation of the framework is led by the Tanzania Meteorological Agency while in Burkina Faso

implementation is led by the General Directorate of Meteorology. In both cases, different sectors of government and society are embraced in order to increase coordination and facilitate cross-cutting action and informed decisions.

FACILITATING CLIMATE SERVICES FOR FARMERS

Localized climate services consider community perceptions, traditional knowledge, livelihood patterns, gender and reliable communication channels. It also promotes community participation and enhances two-way feedback. Hence the extension agents and farmers should play a part in the cyclic identification, analysis and prioritization of the current and future vulnerabilities and climate risks and design management strategies to promote proactive decision-making. This should become more effective as communities acquire local weather stations.

The extension agents should facilitate the farmers to play their (farmers') role in implementing the national frameworks for climate processes by linking them to the following processes:

A. Monitoring, data, tools and methods:

- Acquisition and dissemination of climate data
- Down-scaling climate change scenarios
- Crop monitoring and forecasting
- Climate change impact assessment
- Estimating local climate for regions where coverage of weather stations is scarce

B. Managing risks of climate variability and change

- Assessing local risks and variabilities
- Provision of customized weather and climate forecasts for agricultural management
- Provision of need-based advisories to farmers for proactive decision making
- Promoting local coping and improved adaptation strategies to build resilience of food systems

C. Managing food systems and their resources

- Land use planning and agro-ecological zoning
- Planning and design of water conservation strategies and enhancing water productivity
- Designing cropping patterns conditioned on climate variation and change
- Supporting agricultural research to develop new crop types tolerant to stresses
- Monitoring ecosystems and biodiversity hotspots

D. Advancing payment for environmental services and risk transfer mechanisms

- Defining resource conservation practices
- Promoting economic incentives to farmers for managing ecosystems
- Protecting livelihoods through weather-based insurance mechanisms

E. Contributing to food security information and emergency response

- Analysing food security and information on livelihoods
- Food insecurity and vulnerability information
- Providing advance information about impending food crises
- Facilitating disaster risk management in agriculture
- Monitoring crop and livestock pests and diseases