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The U.S. Government's Global Hunger & Food Security Initiative



CLIMATE INTEGRATION CASE STUDY

USAID/SENEGAL: NAATAL MBAY

CLIMATE-SMART AGRICULTURE

Climate variability and change is one of many challenges that USAID programming is addressing. This case study series explores how USAID activities in various sectors and regions address the challenge.

Development Challenge

Senegal's low resilience to climatic and economic shocks is one of the four major issues identified by USAID/Senegal's Economic Growth Office as limiting the contribution of agriculture to the country's economic growth and threatening the achievement of the mission's development objectives. Farmer businesses and food security face risks from fluctuating and upward trending global food commodity prices and production uncertainties, due in part to changing climate patterns such as irregular rainfall and extreme weather events such as drought.



Naatal Mbay

Planned for a period of four years starting in 2015, the goal of the Naatal Mbay project ("Flourishing Agriculture" in Wolof) is to expand and scale-up access to technologies and management practices that enhance productivity and facilitate market integration, benefiting smallholder farmers of rice, millet and maize in the Northern Senegal River Valley and in the Southern Forest Zone and contributing to the country's economic growth. Through farming contracts that link agribusinesses and producer networks, Naatal Mbay helps improve farmer access to financing and improved products and services, while also increasing private sector



investment in rice, millet and maize value chains. Previous work by the mission indicated that agricultural productivity can be enhanced by addressing climate-related risks to these value chains. The design of Naatal Mbay therefore includes training in the use of a climate-smart agriculture (CSA) approach, climate information services, and rain-index insurance. Integrating climate change considerations in Naatal Mbay helps support a core aspect of Senegal's Feed the Future Strategy: to increase agricultural productivity while enhancing the resilience of farmers and value-chain actors to climate change.

How Naatal Mbay Addresses Climate Change

Naatal Mbay's actions to manage climate risks include:

- Expanding the introduction of CSA, such as the use of drip irrigation and drought-tolerant, short-cycle crop varieties, to help farmers, farmer networks, and private sector actors reduce climate change risks to production
- Increasing the availability of rain-index insurance for rainfed crops, helping to manage risks to farmer livelihoods
- Training farmers to use weather and climate information services to make better production decisions, such as when a drought forecast indicates a need for irrigation
- Increasing certification and access to climate-resilient seeds
- Helping farmers establish and manage rainfall data collection

Naatal Mbay tracks annual performance using a number of climate-related indicators. In FY2015, Naatal Mbay increased the capacity of 23,889 stakeholders to adapt to the impacts of climate change. In FY2016, this number rose to 67,921 stakeholders. Also in FY2016, Naatal Mbay increased the access of 2,515 millet farmers and 18,508 rainfed-rice and maize-farmers to rainfall data through its expanded network of rain gauges, enabling farmers to access daily and seasonal rainfall data to help manage production risks from rainfall variability and drought. With this information, farmers are able to make important production decisions such as when to plant crops to coincide with the onset of the rainy season or when irrigation is needed to protect crops from drought stress. The rainfall data also feed into USAID's related project, Climate Information Services to Increase Resilience and Productivity in Senegal (CINSERE), launched in 2016.

Index-Based Crop Insurance

Crop insurance that is indexed to weather uses meteorological observations such as rainfall as proxies for losses in production. Unlike traditional crop insurance, rain index insurance does not measure changes in crop yields; instead, it measures changes in rainfall, assuming that too little (or too much) rainfall will result in low yields. The farmer receives payment from the insurer to compensate for losses whenever the realized value of the index (e.g., total rainfall over a given period) is below (or exceeds) the pre-specified threshold expected to result in crop losses. The insurance payment to the farmer is calculated based on a pre-agreed sum insured per unit of the index.