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THEMATIC BRIEF

AVENIR Thematic Brief: Climate resilience

The AVENIR project is working with partners to help women and young people overcome challenges at the nexus of agriculture and climate change with entrepreneurship, partnership and sustainable farming.

The AVENIR project

The Adaptation and Valorization of Entrepreneurship in Irrigated Agriculture (AVENIR) project aims to improve the well-being and resilience of farming households, especially women and youth, in the regions of Tambacounda of Senegal.

AVENIR focuses on smallholder farms that use irrigation and promotes affordable agricultural practices and technologies that can help farming systems become more resilient to a changing climate.

The five-year project aims to directly benefit 10,000 farming households and indirectly benefit up to 35,000 individuals.

AVENIR is funded by Global Affairs Canada and implemented and led by Mennonite Economic Development Associates (MEDA) in partnership with the Alliance of Bioversity International and CIAT.

The impact of climate change in Senegal

Senegal is rated as one of the top four most climate-vulnerable countries in the world. Rainfall has declined by 35% since 1996 while the mean annual temperature has increased by 1.6°C since 1950.

The length of the dry season has increased, and droughts and flooding have become more intense and frequent. Decreased precipitation and increased evapotranspiration have led to a noticeable decrease in the flow of some rivers, a rise in seawater in certain watercourses, an overall drop in water tables, the drying up of rivers, and the salinization of freshwater and land.

With agriculture being one of the key sectors in the country and employing over 70% of the available workforce, climate change is negatively impact the industry by affecting soil fertility, prolonging the dry season, increasing the risk of crop infestation, lowering crop yields, and affecting food security.

Climate change also affects key socio-economic sectors. 70% of women in Senegal are active in the agricultural sector and are vulnerable to the implications climate change presents.

Climate changes are also anticipated to lead to an increase in water-borne diseases like cholera and insect-borne diseases like malaria, threatening human health.

Senegal is in dire need of sustainable farming practices that can help the nation adapt to and mitigate the effects that are already being felt by climate change and present a workable future for communities that benefit men, women and young people.

The impact of climate change in Sédhiou and Tambacounda Regions

AVENIR project areas intervention in Senegal

AVENIR has focused it work on two regions in the southern part of Senegal: Tambacounda and Sédhiou. In these regions, crop diversification is limited, and cereal staple production is highly dependent on climatic conditions.

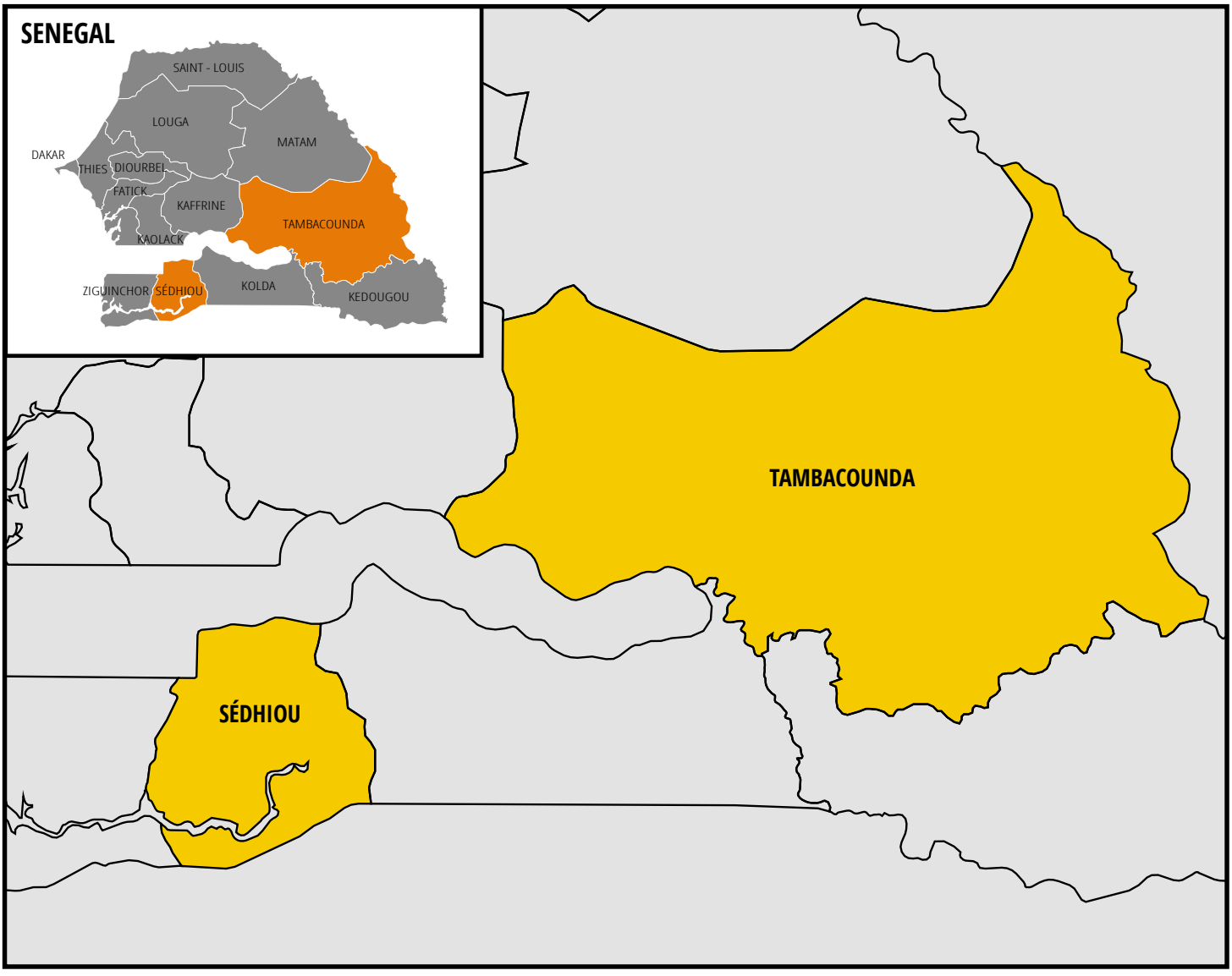
Agriculture in the two regions is vulnerable to climate change due to sensitivity and exposure to climate shocks and a lack of capacity to cope with and adapt to such changes.

A recent baseline study shows that 47% of the households in Tambacounda and Sédhiou have experienced climatic shocks in the past 10 years. Strong winds impacted 13% of households while 12% of the households were impacted by drought. About 4% of households reported that insects invaded and damaged crops.

To cope with the financial losses due to climate shocks, 14% of the households surveyed reported selling livestock, 10% used savings, and a number of households also borrowed from relatives.

Climate resilience

Climate resilience is the ability to prepare for, recover from, and adapt to hazardous events, trends, or disturbances related to climate. Improving climate resilience involves first assessing how climate change will create new, or alter current, climate-related risks, and then taking steps to better cope with these risks.



The AVENIR approach

AVENIR intends to strengthen climate resilience amongst rural farmers of Tambacounda and Sédhiou, particularly women and young people in the short, medium and long term.

Short term. To achieve short-term goals, AVENIR is conducting training activities on climate smart-agriculture technologies and practices, disseminating climate information services, promoting nutrition education and access, providing financial incentives to agribusinesses, establishing multi-actor platforms smallholder irrigation technologies, introducing improved land management practices, building the capacities of farmers and small enterprises to operate agribusinesses, linking farmers and small enterprises to financial institutions, training local actors on improved sustainable management of water resources, and introducing value-addition technologies and practices to reduce food loss and waste.

Long term. To achieve long-term goals, AVENIR is establishing multi-actor platforms at the departmental level in Tambacounda, Goudiry, Bounkiling and Sédhiou for long-term meaningful engagement between governmental, local producer organizations, civic authorities and private sector actors for sustainable agriculture production and irrigation water improvements focusing on equitable use of water resources. Furthermore, multi-actor platforms establish relationships and networks with other institutions such as environmental authorities, financial institutions, marketing organizations and water user associations.

Case Study: Intensive rice cultivation and agroforestry

Intensive rice cultivation (SRI) is an intelligent agro-ecological method in the face of climatic constraints. SRI enables farmers to ensure rational management of plans and soils while using less water and reducing the use of chemical fertilizers. AVENIR is working with its local partners to identify the best rice varieties for plaint in Sédhiou according to environmental constraints. For areas of high salinity, the project has identified salinity-tolerant varieties such as ISRIZ 10 or ISRIZ 11. In areas subject to drought constraints such as in the in the plateau areas, AVENIR will recommend ISRIZ 12.

AVENIR has been promoting agroforestry systems in Sédhiou based on cashew, papaya and mango trees interspersed with market garden produce. Cashew varieties such as Costa Rica, Benin-yellow and Henry have shown promise as have Kent and Keitt varieties for mango. The trees are interspersed with varieties such as Goana for peppers, Violet de Galmi for onions, the Vinto for bissap and Clemson for okra.

AVENIR is conducting similar projects using SRI and agroforestry methods based on baobab trees in Tambacounda, which has different environmental constraints.

Climate-smart agriculture (CSA)

The climate-smart agriculture (CSA) concept reflects an ambition to improve the integration of agriculture development and climate responsiveness. It aims to achieve food security and broader development goals while the climate is changing and demands for food are increasing.

CSA initiatives aim to sustainably increase productivity, enhance resilience, and reduce greenhouse gas emissions. AVENIR prioritizes climate-smart agriculture and irrigation systems to improve livelihoods especially for women and youth.

AVENIR improves farmers' access to agriculture and irrigation inputs, technologies and techniques that promote sustainable intensification of selected crops that have been adapted for climate change.

AVENIR's pathway to building resilience of farming households with particular focus on the development and adaptation to climate change of irrigated crops is based on six pillars (Figure 1): climate-smart value chains; diversified and integrated cropping systems; climate-smart irrigation systems; sustainable land management; climate information services; and multi-stakeholder platforms.

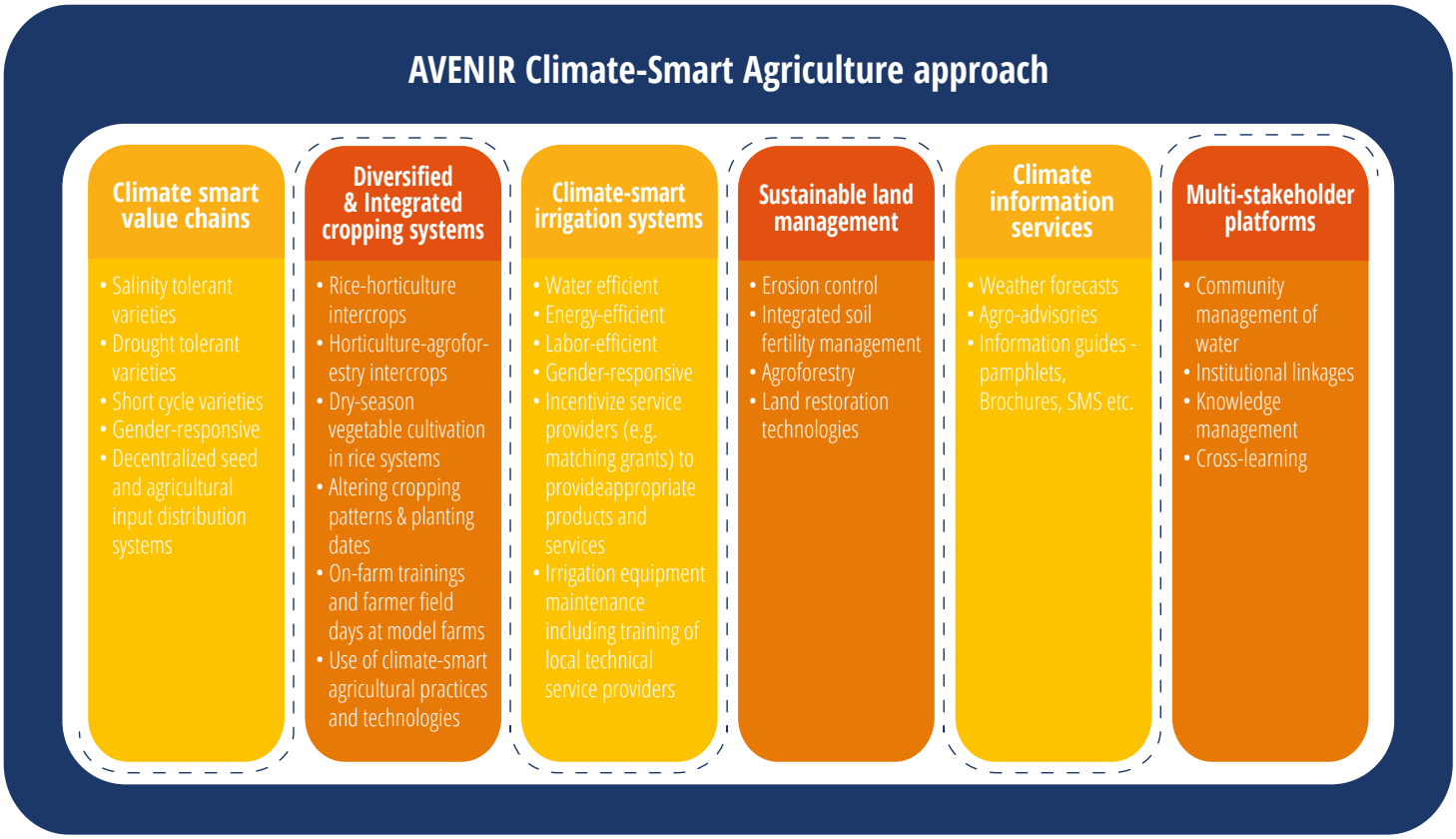


Figure 1. AVENIR's approach to building resilience to climate change of irrigated cropping systems in Tambacounda and Sédhiou

Further reading

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FUNDER

Global Affairs Canada
Affaires mondiales Canada

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Bioversity International and the International Center for Tropical Agriculture (CIAT) are part of CGIAR, a global research partnership for a food-secure future.

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