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“Reconcile land system changes  
with planetary health”

## Sowing the drops of change: Transforming lives in the Sahel amidst climate adversity

MICHAEL WANJOHI KINYUA<sup>1</sup>, OBADIAH MWANGI<sup>2</sup>

<sup>1</sup>*Alliance of Bioversity International and International Center for Tropical Agriculture, Multifunctional land scape ,*

<sup>2</sup>*Alliance of bioversity and ciat, Multifunctional land scape , Kenya*

### Abstract

Climate change has been a serious challenge in resource poor households of the Sahel, particularly those reliant on small-scale crop production and livestock rearing. With only one rainy season lasting three months each year, farmer are exposed to harsh dry condition, severely affecting food security and nutritious. To adress this challenges, a Canadian government funded project on Adaptation and Valorisation of Entrepreneurship in Irrigated Agriculture (AVENIR) was launched in Tambacounda and Sedhiou regions of Senegal. Currently in its 5<sup>th</sup> year, the project implemented by Mennonite Economic Development Associates (MEDA) in partnership with the International Center for Tropical Agriculture (CIAT) introduced several inovations including climate smart agriculture (CSA), intergarated water resource management, and nutrition training. These initiatives have contributed to the transformation of thousands of households through instilling knowledge and skills, and initiating technologies that enhance beneficiaries' resilience to climate change.

Fifteen solar powered demonstration farms were established as learning hub, promoting innovations such as small micro irrigation kits, and agroforestry with high-value trees like mango, pawpaw, cashew and baobab. Beneficiaries managed the micro-plots with high marketable crops like, okra, bissap (russel), pepper, onion and rice. With temperatures soaring upto 47° C, the evidence of 'every drop counts' is visible. The project emphasise sustainable water use, drip irrigation, sunken beds, zai pits alongside soil conservation methods such as mulching and integrated soil fertility management following the 4R principles. The beneficiaries are also allowed to use the conventional fetch-and-carry method using buckets to compare its effieciency relative to improved methods.

Testimonies highlight the postive impact, from adopting affordable micro-drip system, increased productivity and constrant supplly of vegetables throughout the year. The project has empowered thousands of women and youth, enhancing resilience and transforming arid land into productive farms. AVENIR offers a model for community-led climate adaptation, showcasing that the right knowledge, tool and support, sustainable agricultural transformation in the Sahel is achiebale.

**Keywords:** Climate change, climate-smart agriculture , Food security, Small-scale farming, soil conservation