

Digitally Enabled Resilience and Nutrition Policy Innovation (DERPIn)

Implemented by the *Fund for the Promotion of Innovation in Agriculture (i4Ag)* as part of the special initiative *Transformation of Agricultural and Food Systems*

The Challenge

Assertive and gender-sensitive resilience building needs policy and decisions made based on data and evidence

According to the Intergovernmental Panel on Climate Change (IPCC), Africa is one of the continents most threatened by climate change. Increasing extreme weather events (e.g., droughts, storms, floods, irregular rainfall, and temperature spikes) are disrupting production sectors such as agriculture, destroying assets and hampering livelihoods. This affects both smallholder farmers and people living in rural areas.

The vulnerability of rural communities is exacerbated by severely limited access to user-friendly information based on timely, reliable, and spatially disaggregated data, including future forecasts. National systems and mandated institutions of agricultural statistics and agricultural extension systems are not prepared for the expected frequency and severity of future climatic and economic shocks and often do not adequately capture gender-specific or intersectional disadvantages.

Name of the Project	Digitally Enabled Resilience and Nutrition Policy Innovation (DERPIn)
Name of the Global Fund	Fund for the Promotion of Innovation in Agriculture (i4Ag)
Commissioned by	Federal Ministry for Economic Cooperation and Development (BMZ)
Project Region	Benin, Ghana, Malawi, Senegal, Uganda
Implementing Partners	AKADEMIYA2063
Duration	10/2022 - 12/2025

The Innovation

An open access, web-based tool which incorporates machine learning for the prognosis of nutritional status, agricultural production and crop specific yields

AKADEMIYA2063's Africa Agriculture Watch (AagWA) platform is an open access, web-based portal built on the Africa Crop Production (AfCP) model. It applies machine learning techniques (AI) to model biogeophysical processes. The AAgWa platform currently provides production and yields forecasts for eight crops in 47 African countries, considering factors such as vegetation, rainfall, land surface temperature, biomass, and soil moisture. The primary innovation is the country-specific combination of data and analytical tools for vulnerability, nutrition, and biophysical modelling. The country-specific harvest estimation by means of satellite data and AI will represent a digital innovation in the selected countries. This enables comprehensive and detailed data-based decision-making, which is made widely accessible via an integrated digital infrastructure.

Early identification of particularly vulnerable communities paired with gender-specific data enables the development of differentiated prevention strategies and response measures. Additionally, the tool provides a better understanding of the nature and extent of the communities' exposure to digital data. By these means, this digital innovation serves as a fundamental element of assertive resilience policy. An improved data basis in the context of global crises also offers opportunities to improve the allocation efficiency of state resources. Data-based analyses can help to understand vulnerability factors at a disaggregated level of rural communities and across social strata in order to design and implement tailor-made



Biomonitoring for Higher Crop Yields



and resilience-enhancing policies, strategies, measures, and services.

The Main Objective

Stakeholders in the agri-food sector are empowered to develop gender-sensitive and resilience-building strategies

250 selected actors (50% women) confirm the productive use of digital platforms regarding gender sensitivity and resilience building

80 % of selected actors state that the specific needs of women were considered in the development of gender sensitive resilience building strategies

70 % of selected actors attending dialogue formats attest that these formats offer a positive contribution to the development of gender-sensitive resilience-building strategies

10 private sector actors use data from a platform for the development of gender-sensitive resilience-building strategies

The project contributes to the achievement of these Sustainable Development Goals (SDGs):



Methodological Approach and Innovation Partnership

The open access AAgWA platform developed by AKADEMIYA2063 will be adapted and expanded for the project's specific needs. Production-specific data can be coupled with nutrition and vulnerability indications before being analytically incorporated into strategic decisions at the policy level. This is made possible by data

disaggregation, country-specific models, and the integration of additional crops at national and sub-national levels.

At the same time, training courses will be held with platform users. The aim of these trainings is to build user capacity, giving them the skills to be able to incorporate the information from the platform into their strategic decision-making. On the one hand, this is aimed at representatives of relevant state institutions, especially women, as well as private-sector actors and associations. On the other hand, the aim is to create the basis for better decision-making for smallhold farmers through improved skills for data use. The trainings offer initial starting points for broader scaling. In addition, the data-based approach of the platforms will be complemented by dialogues and consultations. These can tie in with country-specific political processes on agricultural and food systems or the dialogue processes for the United Nations Food Systems Summit (UNFSS).

Most Important Activities

- Establishment of partner networks for each country
- Country-specific data collection
- Development and implementation of trainings
- Collection of evidence and identification of scaling options
- Development of inclusive dialogue processes and scientific symposia, of policy briefs and country-specific analysis.

Durability and Scaling Strategy

Capacity building at the individual level (human capacity development) as well as at the institutional level among the intermediary institutions ensures that the knowledge acquired is anchored in the countries. In addition, the dialogue formats along with the establishment of partner networks support networking within the country and beyond. Through data, analyses and built competencies as well as the establishment of necessary processes for the use of the platforms in decision-making, the intermediary institutions are strengthened beyond the scope and schedule of the project.

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