



Pearl



Groundnut



Sorghum



Cowpea

### **Project objectives**

The global objective of the project is to contribute to sustainably increasing crop productivity and farmers' income in the context of climate change. Thus, the project specifically aims at: (1) increasing agricultural productivity in the face of population growth and climate change through the promotion of varieties developed under previous projects, (2) improving resilience of smallholder farmers to climate change and economic vulnerability through an innovative demand-driven and modern breeding schemes, (3) achieving more efficient exchanges of genetic material and data at the regional scale, and (4) sustainably strengthening research teams in crop improvement.

### **Background**

In Mali, the agriculture sector employs a large proportion of the population and contributes to about 42% to the Gross Domestic Product. Despite its importance, this sector is challenged by low grain yields of main crops resulting to food deficits due particularly to climate change and variability, biotic and abiotic stresses and poor access of farmers to improved technologies such as high-yielding varieties. The targeted environment is also characterized by a weak formal seed system and inefficient conventional methods in breeding programs, which are relying on poorly equipped technical platforms leading to a slow replacement of the old varieties in the context of climate change. Therefore, investment in the modernization of crop improvement is essential to respond to market signals and take advantage of technological advances that will allow being more effective in developing resilient crops adapted to local environments and needs. In addition, there is a great potential of opportunities in the agri-food and seed production technologies that can create jobs and provide supplementary benefits to the seed companies and farmers' organizations around high yielding varieties. Facing these challenges, the APSAN project aims at improving the productivity of crops such as sorghum, pearl millet, groundnut and cowpea through modernizing crop improvement programs and strengthening of seed systems, technology transfer and market access.

### **The theory of change to achieve the objectives**

The APSAN project aims to improve food and nutrition security through the increase in cereals and legumes productivity and farmers' income. It is focused on a results-based framework using complementary approaches ensuring the impact pathways, effectively leading to the achievement of the targeted results.

A first set of activities concerns the promotion of varieties developed under previous projects and now ready for commercial uses as per ECOWAS rules. This promotion will integrate as well good agronomic practices and will be done through awareness creation (demonstrations plots, field days, rural radios, etc). The activities also include the strengthening of seed systems and the linkage of farmers to inputs suppliers (improved seed and fertilizer).

A second set of activities is focused on the modernization of sorghum, pearl millet, groundnut and cowpea improvement programs through a demand driven approach and the use of modern tools. The market demands will be assessed and the outputs used to define the main products requested. This step will be followed by the development of climate resilient and nutrient dense cultivars with the

specific needs of farmers/market in the targeted zones. All these activities will be realized through a participatory approach and an effective public-private partnership with farmers as central actors.

A third set of activities relates to the implementation of regional trials, trainings and data management to reinforce the ECOWAS seed catalogue. The capacity building of next generation breeders and associated disciplines in crop improvement will be a cross cutting activity.

The project will build its interventions on lessons learned from previous technology scaling projects and will synergize with on-going projects (ABEE and AVISA) on the target value chains to create more impact. The result-based framework captures expected outputs, outcomes and impacts through performance indicators. It also includes monitoring, evaluation, and learning system using a digital based platform that combines continuous monitoring of the progress in real-time, evaluation surveys, and learning activities with key stakeholders to support field activities. Furthermore, it ensures that the project activities are being implemented as planned, supports data quality management, and identifies good lessons learned.

The figure 1 below summaries the impact pathway of the APSAN project.

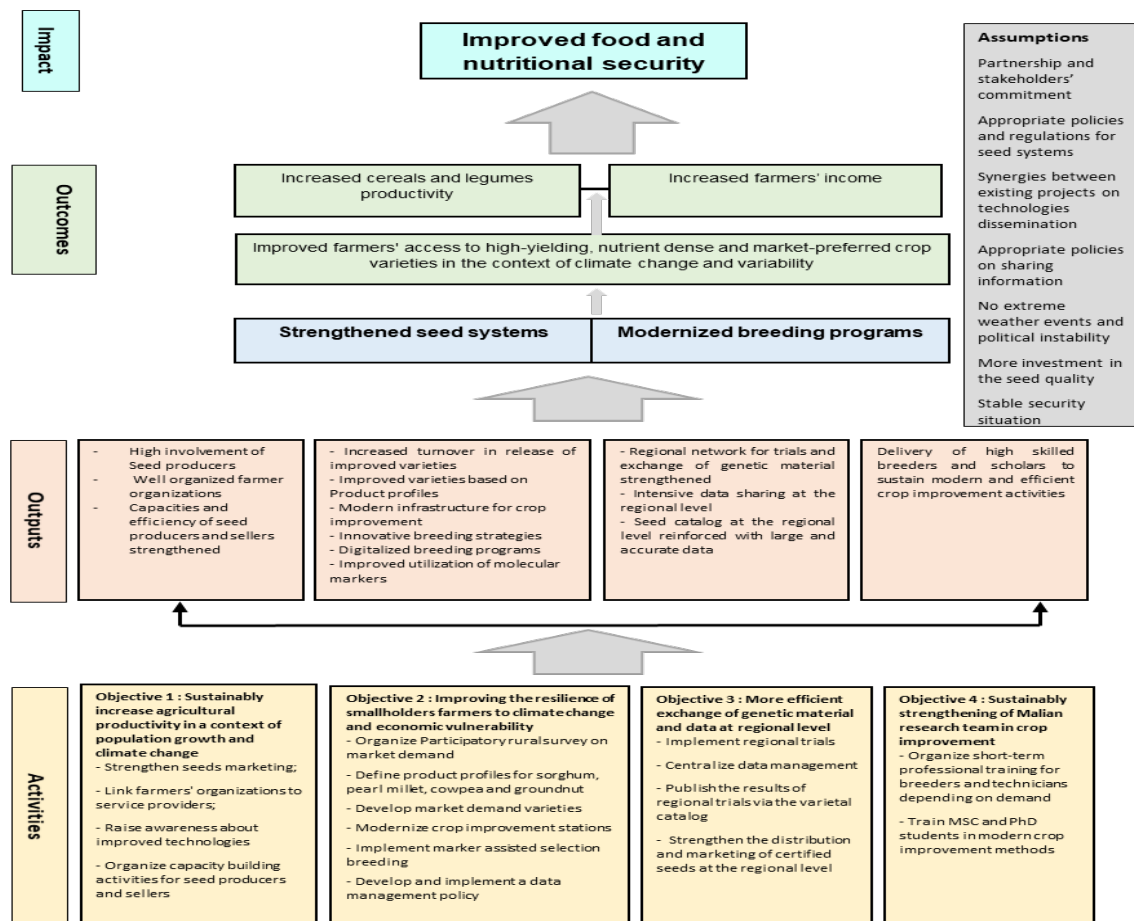


Figure 1: The theory of change (ToC) of the APSAN-Mali project

**Main activities**

The main activities of the project include:

- ✓ Modernize crop improvement stations.
- ✓ Conduct surveys on the performance of existing varieties and market demand.
- ✓ Develop market demand for nutrient dense and climate resilient varieties and hybrids.

- ✓ Conduct participatory evaluation of new varieties.
- ✓ Raise awareness about existing improved varieties through demonstration plots, rural radios, seed fairs and SMART FOOD campaigns.
- ✓ Build capacity of master and PhD students on modern breeding and associated domains.
- ✓ Exchange genetic material and data through joint trials and data management platforms at regional level.
- ✓ Strengthen capacity of farmers’ organizations and seed companies in improved varieties seed production techniques through workshops.

**Organization**

The APSAN project is structured around four work packages: (i) Seed systems and technologies dissemination, (ii) Crop improvement, (iii) Functional regional research network, (iv) Capacity building of the target value chains actors and students.



**Implementing organization**

The project is led by the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT).

**Project partners**

The project is jointly implemented with IER “Institut d’Economie Rurale”, which is the main partner.



**Other stakeholders**

CORAF, Farmers organizations in Mali (ULPC, Sene Yiriwaton, COOPROSEM, UACT, Union Netaa, USCPMD), Agricultural extension services, National NGOs (Malimark, EUCORD, AMASSA, CADD, AMEDD) and Seed companies (SOPROSA, Camara Semence, Doun kafa, FASO Kaba), IPR/IFRA-Katiebougou and University of Bamako.

**Region**

Mali

**Funding and co-funding**

European Union	€ 4,000,000
ICRISAT	€ 270,000
Total budget	€ 4,270,000

**Duration**

5 Years (2019-2024)