

## **RE-FARM: Research on agroecological innovations towards increasing resilience to climate change in Cuanza Sul and Benguela**



Figure 1. A woman farming by an ephemeral river in Angola

### **OBJECTIVE OF THE PROJECT**

The overall objective is to contribute to the transformation of the agriculture sector in Angola through research and innovation activities. RE-FARM aims to develop applied research and innovation on agroecological practices to address climate change adaptation and resilience of family farming in two provinces of the Central Highlands Area (Planalto Central).

### **BACKGROUND**

About 80% of Angolan farmers are smallholders who produce over 90% of all the domestic agricultural produce. However, due to the low level of yield productivity, the sector does not generate sufficient food nor income. Climate change is exacerbating the cycle of floods, dry spells, and droughts, worsening food insecurity and malnutrition, and pushing many families into poverty. Poor roads, disjointed supply chains, lower skill levels, and limited access to electricity and irrigation schemes in rural areas are barriers to investing in agricultural development. The introduction of appropriate technologies leading to technical, institutional, and social innovations in all steps of the agriculture sector requires careful understanding and testing of the most appropriate practices that can holistically address low farm productivity, sustainable production, climate change mitigation and adaptation, biodiversity loss, and land degradation.

Agroecology is a holistic and integrated approach that simultaneously applies ecological and social concepts to enhance soil water retention, soil organic matter, production diversity and yields, thus promoting the design and management of sustainable agriculture and food systems.

However, evidence-based research is needed to determine what are the most biophysically suitable and the most socio-economically fit agroecological practices to invest in and scale up for sustainably transforming agriculture in Angola.

## THE THEORY OF CHANGE

The project aims to test a range of agroecological practices to identify the most suitable practices that can holistically improve smallholders farming systems (e.g. yields, food security and income diversification) in a participatory manner, providing the basis for a sustainable agricultural transformation. Specifically, RE-FARM will include both state-of-the-art biophysical assessments of the most suitable practices and test the socio-cultural viability using consolidated participatory methods with local stakeholders.

The biophysical assessment will be based on data collection on 10 experimental plots, which will be installed in community-representative farms and compared with alternative treatments. The plot will be co-designed with the community during workshops to assess the specific barriers and needs of the farmers, involving a wide range of stakeholders (e.g. UNACA, AJOMA, AAM – see Annex 1 for acronyms). Based on this participatory process, the plot will be installed in one representative family farm, in agreement with farmers organizations and individual farmers. The socioeconomic assessment will be based on surveys and focus groups with rural actors.

The expected outcomes include increased understanding of the barriers to low farm productivity related to (i) the impact of climate change, (ii) the current condition of soil quality and water availability, and (iii) the socio-economic barriers along the value chain. A thorough understanding of these barriers will provide the basis for a scientifically-sound, participatory selection of the most suitable practices that can increase farm productivity to be tested and implemented widely with the support of multi-stakeholder platforms and dissemination workshops. The family farms acting as test plots will be used as “farm schools” to spread innovations within the communities through the support of national scientific institutions (e.g. UNACA).

The project will ensure all stakeholders’ engagement in decision making in, for example, the operation and management of demonstration farms. All stakeholders will be involved in needs assessment, setting project priorities, preparation of work-plans, and dissemination of findings to promote transparency and increase ownership of project activities.

The close collaboration and engagement with local, regional and national policy makers will support the dissemination of skills and knowledge beyond the study area and will support training and capacity building along the value chain. Local university students will be involved by the Centro Nacional de Investigação Científica (CNIC) as community facilitators and trainee extension workers to support local capacity building and science-to-practice knowledge transfer.

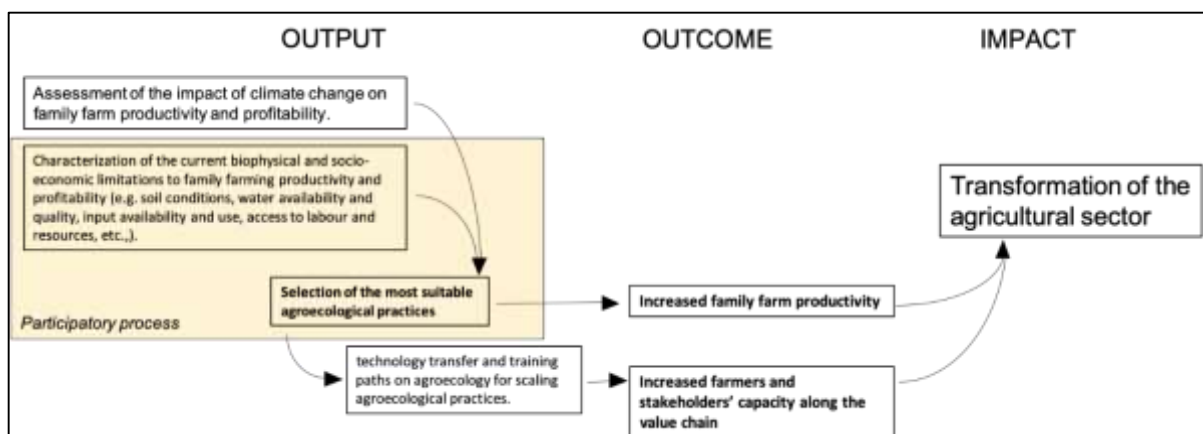


Figure 2. Link between outputs, outcomes, and impacts in RE-FARM

## MAIN ACTIVITIES

The main activities are: i) modelling the projected impact of climate change on family farm productivity by using climate change forecasting models; ii) field data collection and laboratory analysis to determine the current status of land and water productivity, including soil quality, organic carbon content, soil moisture and nutrient content; iii) survey to determine socio-economic barriers to farm productivity, using focus group discussions and semi-structured interviews; iv) workshop to integrate modelling and in-field data and select the most suitable agroecological practices; v) trials to test the selected practices in 10 experimental family farms; vi) training, learning and dissemination workshops to cross-fertilize and disseminate results across communities and stakeholder groups, including farmers, civil society organization, local and national administrative officers and policy makers; and vii) monitoring, evaluation and dissemination of project findings.

## ORGANIZATION

The Department of Agriculture, Food, Environment and Forestry at the University of Florence (DAGRI-UNIFI) will be the lead agency. A Program Steering Committee, including representatives from the European Union Delegation office, DAGRI, international and national partners and farmer representatives will ensure a multi-stakeholder approach in the project implementation.

The work will be organized in the following five work packages (WP):

- WP1. Climate change impact
- WP2. Causes of low farm productivity and profitability
- WP3. Suitability of agroecological practices
- WP4. Monitoring, Dissemination and Capitalization
- WP5. Coordination and Management

The WP lead will be taken by partners depending on their specific competences and with the support of all partners. In general, DAGRI-UNIFI will lead the climate change and agroecological modelling and the experimental plots; COSPE will provide logistical support and facilitation during the participatory phases; CNIC will conduct biophysical analysis, provide training to students, train extension workers and engage with national and local partners and institutions with the support of DAGRI and COSPE.

## IMPLEMENTING ORGANIZATIONS

- Università degli Studi di Firenze –Dipartimento di Scienze e Tecnologie Agrarie, Alimentari, Ambientali e Forestali (DAGRI-UNIFI), Florence, Italy.

## PARTNERS OF THE PROJECT

- COSPE Onlus, Florence, Italy.
- Centro Nacional de Investigação Científica (CNIC), Luanda, Angola.

## OTHER MAIN STAKEHOLDERS

- The Confederation of Associations of Peasants and Agro-livestock Cooperatives of Angola/Confederação das Associações de Camponeses e Cooperativas Agro-Pecuárias de Angola (UNACA ), Angola
- Acção Angolana para a Mulher (AAM), Angola
- Association of Young People for Angola (AJOMA), Angola
- Federação de Mulheres Empreendedoras de Angola (FEMEA), Angola
- Fórum de Mulheres Jornalistas para a Igualdade de Género (FMIJIG), Angola
- Promoção da Mulher Angolana (PROMAICA), Angola
- Istituto per la Protezione Sostenibile delle Piante (IPSP), Torino, Italy
- Vida Rural - AgroIndustry and Ecotourism Lda, Angola
- Alfa Sementeira Produção e Comercialização de sementes Lda, Angola

**Location:** Cuanza Sul and Benguela provinces, Angola

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**Duration:** 48 months (July 2022- June 2026)

