## Objectives of the project

- ✓ Work in partnership with local and national stakeholders to jointly agree and implement research-based CSA interventions for the development of the dairy value chains in three selected regions of Eritrea in line with government development agendas and national priorities for the dairy sector.
- ✓ Strengthen research capacities in Eritrea both at individual and organizational levels to fully address the dairy value chain development challenges.

*Smallholder farm, Zoba Anseba*

- ✓ Build strong research and innovation partnerships involving European, international and national research capacities to mobilize the best expertise in support of project interventions and to ensure the sustainability of the institutional developments supported by the project.
- ✓ Link research, innovation and capacity building with a multi-stakeholder approach to achieve impacts at scale within the selected study areas and beyond.
- ✓ Strengthen the capacity of the wider Eritrean Agricultural Knowledge and Innovation System (AKIS) to lead and support an innovation approach in the long term.

## Background

The livelihoods of more than 60% of the Eritrean population are based on subsistence agriculture, which accounts for less than 20% of the country's gross domestic product (GDP). The performance of the agricultural sector is hampered at national level by macroeconomic, land ownership and other policies which tend to act as disincentives to enhancing productivity. Innovation and change are further held back by an over-reliance on traditional farming practices and a fragile natural resource base resulting from land degradation, deforestation, overgrazing, soil erosion, unsustainable land management practices and loss of biodiversity. These environmental challenges are exacerbated by climate change manifested in climate variability and extremes, recurring drought, depletion of groundwater, and flash flooding, all of which have significant impact on agricultural production and the livelihoods of the rural population.

The sector is also impeded in its development by underdeveloped value chains, which are constrained by deficiencies in input supply (seed, fertiliser, knowledge, equipment, finance, etc.) and market access (price information, aggregation, transport, value addition, trading finance etc.). Moreover, research and innovation systems are not influencing to the extent needed by smallholder farmers and other value chain actors.

Dairy farming in Eritrea is mainly subsistence in nature, normally involving small-scale producers who own almost 90% of dairy animals. The Government's national agriculture strategy seeks to address the factors constraining the sector from achieving its potential. A key thrust of the strategy is to formalize the dairy value chain and, considering its health benefits, to increase national consumption of processed milk instead of the raw milk currently being consumed. It also seeks to improve value addition, based on the use of the anticipated increases in milk production.

*Milk delivery, Asmara Dairy Factory*

The CSARIDE project supports government dairy development strategy in transforming the smallholder dairy sector. Using a value chain framework, the project works with public and private sector partners to develop selected dairy value chains in three Zobas (regions), Debub, Maekel and Anseba, through the introduction of integrated technological and institutional innovations. Such a framework recognizes that value chain actors add value at different stages of the value chain and that individuals and groups provide inputs and services to producers and other users.

## The theory of change to achieve the objectives

The theory of change posits that by focusing on the entire dairy value chain in the three study zones and empowering all of the relevant actors to adopt and use new knowledge/technologies, the project will result in:

*Overall impact:*

***Inclusive, sustainable and climate-resilient transformation of the Eritrean dairy value chain to enhance food and nutrition security, reduce poverty, create job opportunities for young people and promote resilience to climate change while mitigating greenhouse gas emissions.***

The following four *outcomes (Oc)* contribute to the achievement of the overall impact:

1. Improved climate smart dairy farming production and productivity leading to enhanced supply of quality dairy products, improving household income and generating employment along an equitable value chain;
2. Enhanced organizational capacity and enterprise skills of dairy value chain actors with capacity to adopt/promote new technologies;
3. Enhanced service delivery and support of institutional actors on climate smart innovation, and knowledge management along the dairy value chain;
4. Increased access to information and knowledge on CSA practices, tools and approaches for the wider public.

*Outputs (Op):*

The project team has identified a wide range of *outputs,* the successful delivery of which is critical to the achievement of the above-listed outcomes:

As a first step in delivering on **Oc 1** was to deliver on **Op 1.1**, namely to develop a comprehensive knowledge and understanding of the target areas and their dairy value chains. This involved a participatory assessment of the selected value chains and participatory mapping of the value chains and linkages amongst the various actors in the chains. The full attainment of this outcome is contingent upon progress with **Op 1.2,** the ongoing identification, review and implementation of gender-sensitive and environmentally sustainable production, input/service supply, processing and marketing interventions. In this regard, the team has identified a range of potential intervention options for all stages of the Value Chains (VC). Training is being provided to extension staff, farmers

and processors in a number of these intervention areas (**Ops 2.3, 3.2 and 3.5**), while others are being reviewed for future implementation.

Under **Oc 2,** the project team has undertaken a capacity needs assessment (**Op 2.1**) and is now following up with training, mentoring and other capacity-building activities with extension staff, farmers and processors on different aspect of the Dairy VC (DVC) (**Ops 2.3, 3.2 and 3.5**).

As regards **Oc 3**, all of the key State support service agencies have produced self-assessments of gaps in their skills and knowledge capacities, which have been built upon by assessments conducted by the international partners (**Op 3.1**), and specialist training, mentoring and education interventions are being delivered in response (**Ops 3.2, 3.3 and 3.4**). The strengthening of research and innovation capacity is a core objective of the DeSIRA programme and this is reflected in CSARIDE in the continuing high level of investment in postgraduate training of the National Agriculture Research Institute (NARI) and Hamelmalo Agricultural College (HAC) staff, investment in research infrastructure, equipment and supplies and support for a variety of research outputs (**Ops 3.5, 3.6, 3.7 and 3.8**).

To improve climate smart dairy farming production, the needs of the project target groups are being addressed by providing a strong pipeline of contextually relevant new knowledge and technologies (**Op 1.2**) (such as artificial insemination, forage production and conservation, animal health and food technologies). These technologies are based on scientific knowledge complemented by existing local knowledge. They are tested, made available and applied on farm and throughout the value chain to accelerate agricultural growth and develop a strong and equitable dairy value chain.

The project intervention logic also supports the scaling-out of the effective interventions within and beyond the selected regions' and dairy value chains (**Oc 4**). In this regard, outputs seek to facilitate the promotion of principles and good practices for the development of dairy value chains.

Critical to successful development outcomes and sustainable impacts are the processes through which innovation is developed, triggered and enhanced, and how the capacities of the private sector and the public institutions supporting the changes are strengthened. In this regard, it is crucial a wide range of local stakeholders is involved from the outset, including in joint problem analysis and identification of possible solutions. Moreover, the integration of gender as a key principle in the design, implementation, monitoring and evaluation of interventions is vital. Finally, focused and demand-led capacity building, and the implementation of knowledge management and dissemination plans to promote good practices and principles widely are all important in ensuring lasting outcomes.

### Activities

The main activities are the following:

- ✓ Dairy value chains mapping;
- ✓ Technical experimentation on dairy technologies in research facilities;
- ✓ On-farm experimentations on dairy breeds improvement, new animal facilities and research services through the identification of facilitators to champion the development of the technology;
- ✓ Provision of inputs to farmers along the dairy value chain;
- ✓ Support to dairy cooperatives and associations for milk collection, processing and marketing;
- ✓ Organization of technical trainings for dairy farmers and associations on dairy climate smart technologies;
- ✓ Management of a small "Job Creation Seed Fund" for young entrepreneurs;
- ✓ Institutional capacity building targeting the national research institute, the college of agriculture, Ministry of Agriculture (MoA) extension departments;
- ✓ Technical assistance and support provided by the international partners;
- ✓ Organization of exchange visits and study tours

- ✓ Support to MSc students and scholarships
- ✓ Up-grade of curricula at the agricultural college;
- ✓ Promotion and dissemination of dairy value chain principles and good practices (conferences, workshops, mass media, publications, internet & promotional materials).

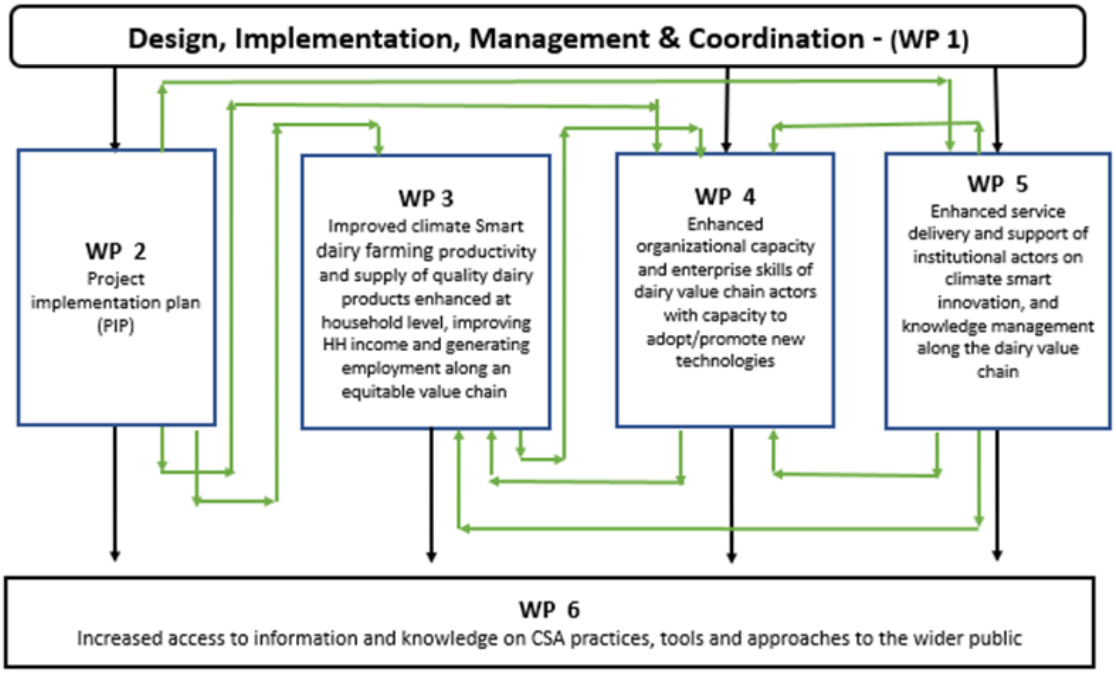
**Results achieved to date (February 2023)**

A key achievement to date has been the creation of a better understanding of the overall value chains in each study Zoba and to target solutions in a more specific manner in each area. At the national level, the team maintained its strong focus on capacity building with the research, education and extension services; supported direct farmer training, and training, mentoring and product development activities with the processing sector, including support on product shelf-life extension options through starch solutions, improved packaging, and health and safety procedures. The team made additional investment in upgrading milk collection centres, as well as in strengthening research facilities at NARI and research and teaching facilities at HAC. The NARI/HAC research teams continued the implementation of the joint research programme, which is now benefiting from the involvement of four of the project-funded MSc students who commenced their studies in 2021. Given the critical importance of animal feed availability and the feeding practices on farm, the project is funding a joint research programme between NARI and HAC in the area and considerable emphasis is placed in extension work with farmers on improving formulation of feed and fodder rations to help adjust feeds to recipes and resources available locally. The team also completed financial modelling studies to provide better insights into farm and processing costs and strategies to lower these costs. The team also directed additional resources towards meeting the specific needs of women to enable them participate effectively in new value chains.

These activities mean that there is now widespread knowledge of the CSARIDE project among the various stakeholders in the three Zobas. In addition, there is greater awareness and understanding among the stakeholders of how to engage with the project and to benefit from the project interventions, and a growing capacity among those stakeholders to adopt and benefit from the interventions being promoted. Finally, the project team itself has a clearer understanding of the needs of different stakeholders, how best to address those needs and of the CSA interventions best suited to particular areas and stakeholders.

**Organization**

The project is structured in six inter-related work packages (WPs): Design, implementation, management & coordination (WP1); project implementation plan (WP2); improved climate smart dairy farming productivity and supply of quality dairy products (WP3); enhanced organisational capacity and enterprise skills of value chain actors (WP 4); enhanced service delivery and support of institutional actors (WP 5); increased access to information and knowledge on CSA practices to the wider public (WP 6).




A consortium of international and national organizations is responsible for implementing the project. The lead organisation is the Irish Agriculture and Food Development Authority (TEAGASC), which with co-applicants (Natural Resources Institute of Finland (LUKE), University College Dublin (UCD), University College Cork (UCC), and Vita and SHA, two Irish NGOs) is providing international-level inputs. MoA departments, HAC and Zoba administrations are associates and are fully responsible for day-to-day project implementation.

The MoA has seconded a project manager and leader of the National Project Management Team (NPMT). He reports directly to the overall Project Coordinator located in Teagasc. The NPMT comprises a range of specialists in research, extension, capacity building, and agribusiness, all of whom have been seconded to the project from the MoA. The technical team is supported by a team of financial and administrative support experts. In addition, to the support and input from the international team members, international consultants with expertise in dairying and value chain development provide technical support to the teams on the ground in Eritrea. Support for the NPMT is also be provided by the International Fund for Agricultural Development (IFAD), the Food and Agriculture Organisation (FAO) and the International Livestock Research Institute (ILRI).

Implementation teams have also been established in each of the three Zobas. These teams are responsible for working with the NPMT and in partnership with local stakeholders to develop and implement interventions in the dairy value chains in the target Zobas. Each team comprises a Zoba coordinator, livestock expert and support staff.

A Project Steering Committee (PSC), chaired by the Minister of Agriculture, aims to ensure cross-sectoral coordination as well as strategic oversight of project implementation in accordance with the set objectives across the three Zobas.

**Implementing organizations**

The Irish Agriculture and Food Development Authority - TEAGASC (Ireland)

**Partners of the project**

- ✓ Natural Resources Institute of Finland (LUKE) (Finland)
- ✓ University College Dublin (UCD)
- ✓ University College Cork (UCC)
- ✓ Vita (an Irish NGO)
- ✓ Self Help Africa (SHA, an Irish NGO)

**Other main stakeholders**

- ✓ Eritrean Ministry of Agriculture (MoA);
- ✓ National Agriculture Research Institute (NARI);
- ✓ Extension Service; Regional/Zoba administrations;
- ✓ Hamelmalo Agricultural College (HAC);
- ✓ National Union of Eritrean Women (NUEW);
- ✓ International Livestock Research Institute (ILRI, Ethiopian branch)

Other stakeholders involved are: livestock farmers; private and cooperative input and output market agents and service suppliers, including milk collection and processing entities, as well as artificial insemination services and veterinary services; small scale entrepreneurs.

**Region**

Eritrea/ Debub, Maekel and Anseba Regions

**Funding and co-funding**

| | |
|---|---|
| EU | € 4,000,000 |
| Co-funding from the implementing partners | € 248,057 |
| Total budget | € 4,248,057 |

**Duration**

52 months (February 2020 – June 2024)

**Project website**

www.csaride.org

**Updated on 11/05/2023**