IFAD
Investing in rural people

CRISIS RESPONSE INITIATIVE HIGHLIGHTS

Eritrea

Innovative agro-inputs to enhance sustainable agricultural practices

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PROJECT OVERVIEW

In recent years, Eritrea has faced multiple shocks leading to food shortages, higher food prices and greater food imports. Beyond desert locust invasions and the COVID-19 pandemic, severe drought and erratic rainfall have reduced crop yields. Additionally, farmers are using fewer agricultural inputs because of the higher costs of fuel, natural gas and fertilizers due to the war in Ukraine.

The interventions funded by the Crisis Response Initiative (CRI) in Eritrea focused on protecting rural poor households from the short-term impact of the Ukraine crisis while also building longer-term resilience to future shocks. It promotes local production of seeds and staple cereals and increased access to agricultural inputs.

Value of the grant

The CRI-funded project activities have a budget of **US$3.3 million**.

Main results

The CRI-funded project activities aimed to increase the geographical scope of specific activities of the Integrated Agriculture Development Project (IADP), including the distribution of improved wheat seed and rapeseed, the distribution of compost and liquid organic fertilizer, and soil and water conservation (SWC). For the CRI project activities, **22 sub-zobas** (provinces or districts) were selected to produce wheat and **9 sub-zobas** to produce rapeseed. A total of **36,282 households** benefited from the CRI-funded project activities, which led to improved crop yields, increased household incomes and better nutrition for the most vulnerable members of the community.

To enhance soil fertility and improve crop production, the project supported beneficiaries' access to organic fertilizers. It distributed **343,650 litres of marine-based liquid fertilizer** to 15,927 households and **12,400 quintals of compost** to 320 households. Of the households that received these fertilizers, **30 per cent were women-led**, and **25 per cent were headed by youth**. The total area treated with fertilizers was **11,537 hectares**.

Innovations

To reduce reliance on chemical fertilizers – and develop and implement sustainable, eco-friendly agricultural practices – the Government of Eritrea is championing an organic farming policy that advocates for using organic agricultural inputs and investing in testing, scaling up and enhancing climate-smart farming. The CRI grant contributed to piloting the use of marine waste as a source of organic fertilizer, including by investing in technologies to process marine waste into high-quality liquid fertilizer. In collaboration with the Ministry of Marine Resources, the Ministry of Agriculture has been able to manufacture organic liquid fertilizer from seaweed and fish

waste, mainly by using technology developed by a local company. The CRI-funded project activities supported the scaling up of this innovation, contributed to training project beneficiaries and extension staff on its commercialization and use, and created room for public-private partnerships.

ORGANIC LIQUID FERTILIZERS FROM MARINE WASTE: A SUSTAINABLE SOLUTION TO INCREASE YIELDS

Using marine waste to create organic liquid fertilizers is an innovative approach to sustainable agriculture and waste management. Marine waste such as fish scraps and seaweed is collected from fish industries, aquaculture farms and coastal communities. The collected waste is then processed through various techniques, including composting and fermentation, to break down the organic matter into nutrient-rich liquid. The liquid is filtered and processed to extract essential nutrients such as nitrogen, phosphorus and potassium and micronutrients such as iron, zinc and manganese. The nutrient-rich liquid is further processed and diluted to create a balanced liquid fertilizer that can be applied to crops.

To ensure the effectiveness and sustainability of marine-based organic fertilizers, it is crucial to optimize processing techniques and develop efficient, environmentally friendly methods to extract nutrients.

Given that government policy in Eritrea is encouraging a shift towards organic agricultural inputs, project beneficiaries will continue to be able to access bio-fertilizers after the CRI-funded project activities end. The CRI interventions served as an instrument to test, scale up and enhance the adoption of marine-based organic fertilizer. They also supported sustainable supply chains (for production and distribution) through partnerships with government institutions and local private companies.

To expand the use of liquid fertilizer in rural communities, CRI introduced a farmer-to-farmer learning approach. Consequently, the use of the fertilizer has been widely accepted in the targeted area and beyond, by both direct beneficiaries and non-beneficiary farmers.

CRI project activities have also contributed to the increase in demand for bio-fertilizers, which has triggered the growth of private companies involved in large- and small-scale production and distribution of bio-fertilizers. This increased supply has significantly lowered the price of organic fertilizers in the country, further encouraging their use. Prior to the CRI project activities, fertilizing one hectare of land cost a farmer ERN 2,000–3,000 for UREA or DPA, while liquid bio-fertilizer for the same area costs ERN 378.

CRI financial contributors

The CRI has been made possible thanks to the generous contributions of five donor countries: Germany, Ireland, Netherlands, Norway and United States. As of July 2023, the total commitments amount to US$80,331.548.

Tsgf Dawit from Adi-Ahderom village is one of the 13,058 women who benefited from the CRI-funded project activities.

"Last year it was very expensive for us to use fertilizers because the price was increased. It reached around ERN 4,500 for a quintal. The CRI-funded project provided me with 210 litres of fish aminoacidic [liquid fertilizer from marine waste] and supported me very much. After the application, my potato yield increased from 35 to 110 quintals per hectare."

Caroline Mwongera, Country Director Eritrea

"The CRI grant successfully addressed the urgent needs of smallholder farmers impacted by the Ukraine crisis by leveraging the operational framework of the IFAD-funded Integrated Agriculture Development Programme. By providing climate-smart innovations like bio-fertilizers and improved post-harvest management, it enhanced productivity and resilience for rural households. CRI's success was driven by stakeholder collaboration and dedicated agricultural extension agents, delivering immediate crisis support while building a foundation for sustainable agriculture and food security in Eritrea."

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