

## **4R- Nutrient Stewardship Project**

### **Lesson Dissemination Bulletin**



## **Ethio Wetlands and Natural Resources Association (EWNRA)**

**(Working for People and Environment!)**

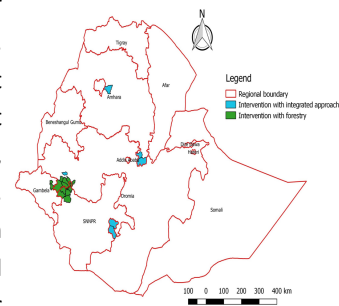
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## **4R- Nutrient Stewardship Project**

### **(Right Time, Right Rate, Right Source, and Right Place of Fertilizer/Crop)**

The project is implemented by the Ethio-Wetlands and Natural Resources Association (EWNRA). EWNRA is the first Ethiopian NGO to focus on the sustainable management of wetlands and associated natural resources. It is one of the key actors in forest conservation and Community development in four regional states namely; Amhara, Oromia, Gambella and SWEPRS. Implementing projects focusing on sustainable forest management and integrated approaches within the four regional states



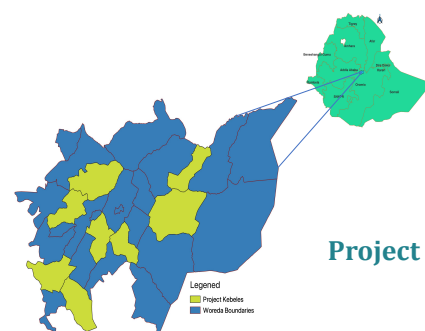
### **Preamble**

In Ethiopia, inherently infertile soils are widespread and characterized by problems of soil acidity and multiple deficiencies of nutrients. Despite the recognition of multiple nutrient deficiencies as a major constraint to crop productivity in the country, fertilizer recommendations only cover some nutrients such as N and P, which results in very poor crop yield responses and make it difficult for smallholder farmers to provide the required food needed to their families. These issues are compounded by the access problem of improved technologies, good agricultural parasites, and working capital.

To address the aforementioned challenges, the Ethio-Wetlands and Natural Resources Association (EWNRA) in collaboration with Debre- Brehan Agriculture Research Centre and Africa Plant Nutrient Institute has been implementing a research and development project. The project was funded by Global Affairs Canada (GAC) and Fertilizer Canada through the Co-operative Development Foundation (CDF) of Canada.

## Project Location and Target Groups

The project was under implementation from October 2019 to March 2024 across eight kebeles within Minjar Shenkora woreda, North Shewa zone, Amhara Region, Ethiopia. The project targeted 8,000 smallholder farmers, and more than 40,000 people (men, women, and youth including disabilities and minorities).



*Figure 1: Project intervention Kebeles across the woreda within Amhara regional state*

## Approaches and Principles

The project approach focused on enhancing the adoption of 4R- principles, access to the value chain through cooperatives, and empowerment of women. The 4R nutrient stewardship principles are the same globally. However, how they are used locally varies depending on field and site-specific characteristics such as soil, cropping system, management techniques, and climate.

### The scientific principles of the 4R framework include:



**RIGHT SOURCE:** - Ensure a balanced supply of essential nutrients, considering both naturally available sources and the characteristics of specific products, in plant-available forms.

**RIGHT RATE:** - Assess and make decisions based on soil nutrient supply and plant demand.

**RIGHT TIME:** - Assess and make decisions based on the dynamics of crop uptake, soil supply, nutrient loss risks, and field operation logistics.

**RIGHT PLACE:** - Address root-soil dynamics and nutrient movement, and manage spatial variability within the field to meet site-specific crop needs and limit potential losses from the field.

### Project achievements so far

The project implementation entirely builds on the involvement of the beneficiary community and pertinent local government institutions at all levels; in this regard, the following specific results are achieved:

1. Improved the knowledge and skills of 154 (13 female and 141 male) smallholder farmers towards improved agricultural practices through the proper implementation of the 4R principles



*Figure 2: Community involvement in improved agricultural practices and on field day*

2. The project facilitated the establishment of five new and strengthened three existing Savings and Credit cooperatives (SACCOs). The SACCOs have a total of 1827 members of which 786 are female, the required capacity-building trainings were provided to the SACCO leaders' and members, they have been also supported with the renovation of office facilities and a revolving fund worth ETB 8,784,521.48. As a result, the interest of smallholder farmers to become members of the SACCOs and actively be involved in their activities increased over time.



*Figure 3: Old SACCO office left and the newly constructed one to the right*

3. The project supported the existing eight multi-purpose cooperatives through the provision of pieces of training in the areas of business plan development, cooperation, and financial management. They were supported in developing their own business plan. The cooperatives have been also supported with ETB 10,525,786.89 to reach their members in the provision of improved Teff and Wheat seed and other agricultural inputs like fertilizer. In addition, warehouses were renovated for the cooperatives, and different types of agricultural machinery were also provided.



*Figure 4: Old cooperative office left and the newly constructed one to the right*



*Figure 5: Combine harvester to left and tractor to the right support to cooperative*



4. Through the organization of dialog sessions at woreda and national levels, the cooperative members (male and female smallholder farmers) were linked to input suppliers and high-value markets.



*Figure 6: Woreda-level dialog session between suppliers, buyers, and cooperatives*



*Figure 7: National-level dialog session between suppliers, buyers, and cooperatives*

5. Through the establishment of Rural Commercial Women groups, Gender Model Families, and also the facilitation of peer education and gender equality dialog sessions at different levels, the acceptance of women in the targeted community enhanced, their involvement in leadership positions and decision-making as well as economic empowerment increased.



*Figure 8: Women income generating activities and gender equality dialog session at different*

## Lessons learned

- The participatory approach principle adopted by the project increased the involvement of smallholder farmers in the implementation of 4R principles and ownership of the initiatives thereby increasing the sustainability of project results
- The establishment of rural commercial women's group fostered collaboration and knowledge sharing among women in business ventures and access to resources, training, and markets, ultimately boosting their economic empowerment
- The establishment of "gender model families" served as a powerful locally adapted model and demonstrated a more balanced distribution of responsibilities and decision-making between genders. This approach likely challenged traditional norms and inspired others to consider a more equitable division of labor within their households.
- Facilitating peer-to-peer education and hosting gender equality dialogues at school created a space for open communication and allowed men to hear first-hand the challenges women face and the benefits of gender equality

## Local Collaboration and Sustainability

The project aimed to ensure the sustainability of its work by focusing on improving the capacity of smallholder farmers, community-based organizations (rural commercial women groups, primary cooperatives, and cooperative unions), and local-level government organizations. In addition, dialog sessions were facilitated to better link producers to local and national markets. The intention was to ensure the community-based organizations have the necessary skills and experience to be self-sustaining in the activities covered by the project in the long term and to obtain advisory support from the local government staff.

### Project Implementing Partners



***Amhara Regional State, Bureau of Agriculture and Natural Resources, Cooperative Promotion Agency and Bureau of Women, Youth and Children***



***Amhara Agricultural Research Institute (AARI) Debre-Brehan agriculture research centre and African Plant nutrition institute***

### Project Funding Agency



In partnership with  
**Canada**



**FERTILIZER CANADA**  
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