

Project pilot Areas: Middle Jordan Valley (Jordan)

INTERCROPPED, CROP ROTATION FOR SILAGE MAKING USING MIXED WATER QUALITY: DEVELOPMENT OF FEED QUALITY SOFTWARE.

The Jordan Valley is an intensive irrigated agriculture, where the Dair Alla Agricultural Station is located. Farmers in the area raise livestock to maximize their benefits. The National Agricultural Research Centre (NARC) encourages local farmers to benefit from agricultural by-products to feed their animals and replace part of their land planted with vegetable fodder. At NARC, we plan to develop a feed formulation program with a matrix for a more economical feed ratio for livestock. Agricultural and industrial by-products will be part of the matrix as non-conventional feed resources that can minimize high feed costs through a low-cost feed ration strategy. Farmers will benefit from better use of water to produce intercropped silage and reduce the cost of production in the livestock system.

GENERAL CHARACTERIZATION

Jordan Valley □

- ✓ **Population:** About 605,000.
- ✓ **Climate:** Average annual rainfall is 277 mm. Warm in winter and hot in summer.
- ✓ **Irrigation:** Intensive in vegetables and fruit trees. **Surface water:** Mixture of rainwater and treated wastewater; some farmers use solar energy for irrigation. **Groundwater:** Desalination improves water quality.



Dair-Alla Agricultural Research Station →

- ✓ **Location:** Center of the Jordan Valley.
- ✓ **Primary source of irrigation water:** King Talal Dam. Salinity ranges from 1.8 dSm^{-1} in winter to about 3.0 dSm^{-1} in summer, resulting in salinity accumulation in the root zone profile and deterioration of productivity if not properly managed.



HOW WILL LENSES WORK?

- ✓ Support the allocation of resources for **Sustainable Development**.
- ✓ LENSES will develop **innovative methodologies** that contribute to the needs, and one of them is to improve the production of feed for livestock.
- ✓ **Improve resource management:** The aim is to increase farmers' benefits and improve the state of ecosystems by reducing pollution. For example, improved water allocation efficiency reduces leakage, and alternative energy sources reduce the cost of production.
- ✓ Apply **Nature-based Solutions (NBS)** to mitigate Climate Change, salinity accumulation and soil deterioration.



KEY Sustainable Development Goals



FUTURE PERSPECTIVE "CALL TO ACTION"

"We believe that it is essential to apply new methodologies to achieve the Sustainable Development Goals by integrating environmental aspects to improve the situation of farmers in the Jordan Valley. In this case, a close collaboration between the farmers' union and the water user associations is essential. A detailed assessment of optimal silage production of the best quality will be developed, accompanied by a thorough social and economic analysis to help farmers decide on crop rotation techniques. Crop rotation will have a positive impact, such as improved yields. The production of new forages and mixtures for livestock feed will demonstrate and be a reference example of the importance of good management."

NARC Team



COUNTRY PILOTS REGIONAL TEAM

NARC is a distinguished governmental scientific institution with different disciplines for agricultural research to optimize the use of available resources and achieve sustainable agricultural growth. NARC aims to improve agricultural production, conserve natural resources, and maintain food sufficiency and ecological balance. NARC has discrete geographic stations distributed over the country with good infrastructure, equipment and laboratories networks equipped with modern devices. NARC has strong local, regional and international relations and has its regulations.