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Using the CLEANED tool in Tunisia to assess the environmental impact of dairy farming

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Contributing to Livestock and Climate Initiative

Outcome 3.1: At least four governments uptake, implement and or/scale validated tools, methodologies, approaches and trainings developed by the Livestock and Climate Initiative for improving the resilience of livestock production systems to climate change and other stresses.

Outcome 5.2: Governments in at least four countries use Livestock and Climate-generated knowledge on climate mitigation, adaptation or resilience in livestock production in the design, development or implementation of livestock-related agricultural policies.

The CGIAR Research Initiative on Livestock and Climate undertakes system-level research and interventions for climate-resilient and low-emission livestock production systems. Within pastoral systems, it focuses on understanding, measuring and rebuilding climate resilience, with research-to-development partnerships that optimize scaling as a priority.

In Tunisia, implementing partner ICARDA and its national partners have developed and validated several tools and technologies that align closely with Tunisian government priorities. By doing so, they have provided considerable support to ongoing technical and policy development and implementation.

This Brief describes how the Comprehensive Livestock Environmental Assessment for Improved Nutrition, a Secured Environment and Sustainable Development along Livestock and Value Chains (CLEANED) is being used to assess the environmental impact and GHG emissions of dairy farming and has garnered interest for use by the National Agronomic Institute of Tunisia (INAT), and the Office de l'Elevage et des Pâturages (OEP). The Alliance of Bioversity and CIAT and ICARDA collaborated in this work with GIZ. The Alliance guided and enabled GIZ to carry out a CLEANED assessment of dairy systems in Northern and Central Tunisia in 2021.

Problem statement

Compared to crop agriculture, the OEP lacked data on livestock's environmental and climate impacts. More specifically, they lacked tools for assessing GHG emissions in the meat and dairy sector. This was limiting the Tunisian government's ability to design evidence-based innovations and present evidenced and well-supported projects to climate financing agencies. The Alliance of Bioversity and CIAT, working with ICARDA as part of the Livestock and Climate Initiative, offered a first opportunity for national partners to help decision-makers understand livestock's significant environmental and climate impacts and start working on this bottleneck. Data generated through CLEANED was intended to help decision-makers and other stakeholders understand environmental and climate impacts and to develop more sustainable intensification plans.

The pathway

The CLEANED tool is a legacy project from a decade-long partnership between CIAT and the International Livestock Research Institute, now being scaled out with the assistance of other CGIAR Centres. The CGIAR Research Program on Livestock supported it, and more recently, the Livestock and Climate Initiative and the CGIAR Initiative on Sustainable Animal Productivity. In Tunisia, CLEANED is being used to help the Ministry of Agriculture establish a national database on different intensive dairy systems' environmental and climate impacts. INAT has parameterized the tool for national use. The Livestock and Climate and Agroecology Initiatives subsequently organized CLEANED training events for participants to help create the national database.

In 2022 and 2023, ICARDA, the Alliance of Bioversity, and CIAT supported *two five-day national face-to-face training courses* on using CLEANED. Participants were decision-makers (especially from OEP), junior researchers, and technicians from 20 of the 24 governorates of Tunisia with significant cattle and dairy production. The aim was to enable them to use the tool in their provinces to assess the environmental and climate impacts of dairy systems. The training aimed to equip participants with the necessary skills to use the CLEANED tool for data collection and scenario assessment.

More than 60 people were trained (50% were women). Detailed reports on the *2022* and *2023* training are available (in French), while a *2024* English language summary is available from *How the CLEANED tool is assessing livestock environmental impacts in the dairy sector in Tunisia for sustainable, profitable management*.

The training included a mix of presentations, plenary sessions and group discussions, and covered livestock-environment interaction; introduction and framework of the tool; a detailed guide to understand the different sections of the model; and group work with real scenarios (farm typologies) to increase the level of understanding and show the potential and limitations of the tool. The scenarios provided the input data and parameters required during the modelling exercise and were validated by the participants. The training outputs were enhanced participant skills; validation of the tool's effectiveness; and a heightened awareness of the importance of proactive environmental measures in livestock production.

In 2024, there has been a call from OEP to INAT and GIZ to organize follow-up training to present the results of CLEANED applications in Tunisia and then identify pathways for institutionalizing this tool at the OEP level.

Lessons learned

Sparked by a collaborative subnational case study, the CLEANED tool attracted considerable national interest. ICARDA and its national partners succeeded by consolidating their efforts, building engagement with key stakeholders and ensuring government buy-in by focusing on their specific interests (e.g. a national strategy for reducing GHG emissions from camels). The goal of the initiative's support for CLEANED training is to contribute to a national database on the environmental impact of animal production, with a particular focus on dairy production, to help the Tunisian Ministry of Agriculture with strategic planning and policy change.