



## Ecological intensification of livestock systems

The joint research unit Mediterranean and Tropical Livestock Systems (UMR SELMET – CIRAD, INRA, Montpellier SupAgro) develops alternative management strategies that meet the challenges of ecological intensification of agroecosystems while maintaining, or even improving, their capacities to provide the ecosystem services that societies expect from livestock systems.

The unit has set three objectives to fulfil this mission:

 To analyse and understand changes in livestock agroecosystems and their settings—under the many and increasingly harsh constraints they are facing, these agroecosystems could show a capacity to adapt or, instead, decline and pave the way for other activities and livelihoods. The aim is thus to analyse their development trajectories, which may also be driven by certain, and usually economic, opportunities.

■ To assess—in their biophysical and biotechnical environments—the production potential of livestock and crop resources, according to the prevailing opportunities and constraints, in order to assess the situations and develop innovations regarding livestock agroecosystems. These assessments are based on benchmarks.

▲ El Hammam region (Egypt): cropping and grazing forage crops (Alexandrian clover in winter and maize in summer) on new land irrigated by the El Nars canal. V.Alary © CIRAD

■ To design—in collaboration with concerned stakeholders— more efficient systems in a setting in which livestock systems are increasingly constrained by their environments. This involves drawing up development strategies that are sustainable from social, economic and environmental standpoints and that are in line with ecological transition of agriculture objectives. •••

## Future of Mediterranean livestock systems

Livestock systems in the Mediterranean region must adapt to a broad range of complex changes linked with the region's past and present history. The CLIMED project, conducted by UMR SELMET and involving CIRAD, INRA, IRD, the Agricultural Research Center (Egypt) and the *Institut Agronomique* et Vétérinaire Hassan II (Morocco), aims to gain insight into and assess the technical, economic and socioecological viability of integrated crop-livestock farming systems in the Mediterranean setting.

The challenge is twofold:

- to help farmers, local communities, researchers and policymakers better understand and predict future livestock farming trends in the Mediterranean region
- to set priorities, rules and policies that are better able to perceive socioenvironmental issues related to demographic and land pressure, in a setting of rising demand and changes in international competition.

The main objectives of the CLIMED project are thus:

- identification and understanding of crop-livestock farming systems to enhance resource use (water, soil, crop residue, grassland fodder, etc.) and to achieve greater socioeconomic efficiency (increased production to meet the rising demand for top quality animal products)
- assessment of the adaptation capacities of these systems and their extent of vulnerability and flexibility regarding current pressures and changes
- 3 assessment of the socioecological coviability and resilience of these systems with respect to population growth and from a historical perspective
- development of future scenarios and formulation of priorities for the development of livestock farming in Mediterranean situations so as to enhance the adaptation capacities of these systems.

The project will also—via the sharing of research methods and databases—strengthen interdisciplinary collaboration between different teams from several Mediterranean countries.

Contact: Véronique Alary, veronique.alary@cirad.fr