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Farmers’ and academia’s views”

Refinement and scaling of inclusive agroecological innovations for livestock management, crop rotations, and soil conservation in semiarid south Mediterranean regions

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Abstract

Mixed crop-livestock farming systems are generally productive systems that face major efficiency and resilience challenges, especially in arid and semi-arid areas where biomass availability is quite low. The integrated management of natural resources, especially soil fertility, through enhanced agroecological practices, is more complex under these systems due to acute trade-offs between the use of available biomass for the immediate satisfaction of livestock needs (grazing), vs. their use to improve soil fertility (organic matter cycle/residue recovery). It is therefore important to consider a systems approach when working on better integration of these key components of the agricultural system, namely, crop, livestock, and soil. These components are themselves linked to other socio-economic, social, and environmental contextual factors, which adds complexity to development actions aimed at promoting agroecological practices in this type of system. A set of integrated interventions (innovations/packages) is essential to improve the performance and integration levels. The objective of this paper is to i) present a socio-technical package of agroecological interventions that are already being tested for this type of mixed farming system in the semi-arid area of Tunisia, and ii) illustrate the scope and mechanisms for scaling up this package.

the study was based on the piloting of a co-designed innovation package including conservation agriculture techniques, enhanced plowing and seeding methods, livestock grazing, and health management, in addition to rural women empowerment, among others. Strategic partnerships for scaling were also effectively designed across public and private actors, and widely contributed to the success of the scaling approach. Results further illustrate the key factors that have led to a change in attitude and behaviour among local actors and farmers towards a better co-generation, co-sharing, and adoption of agroecological principles at farm, community, and landscape levels.

Keywords: Cereal, crop-livestock, innovation packages, mixed systems, scaling, semi-arid, sheep, Tunisia.