Refinement and Scaling of Inclusive Agroecological Innovations for Livestock Management, Crop Rotations, and Soil Conservation in Semi-arid South Mediterranean Regions

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Challenge – Small Scale Cereal-Sheep Systems

- Low soil health performances and management in the cereal-based systems;
- Poor management of crop residues and livestock grazing;
- Low availability of biomass for feed, especially during the gap seasons;
- Escalated soil degradation and poor soil health;
- Tradeoffs between farmers short term preferences, and long-term soil restoration needs (requirements & practices);
- **Research question**: How to scale agroecological practices given the tradeoffs related to resources use (and their impact on soil health) within the small mixed crop-livestock systems.

Vision

Promoting agroecological practices can be constrained by actor's limited acceptance and interest. To avoid such a constraint, researchers and development agents promoting agroecological practices need to change their entry point and embrace a system change approach rather than a solely technology advocacy attitude.

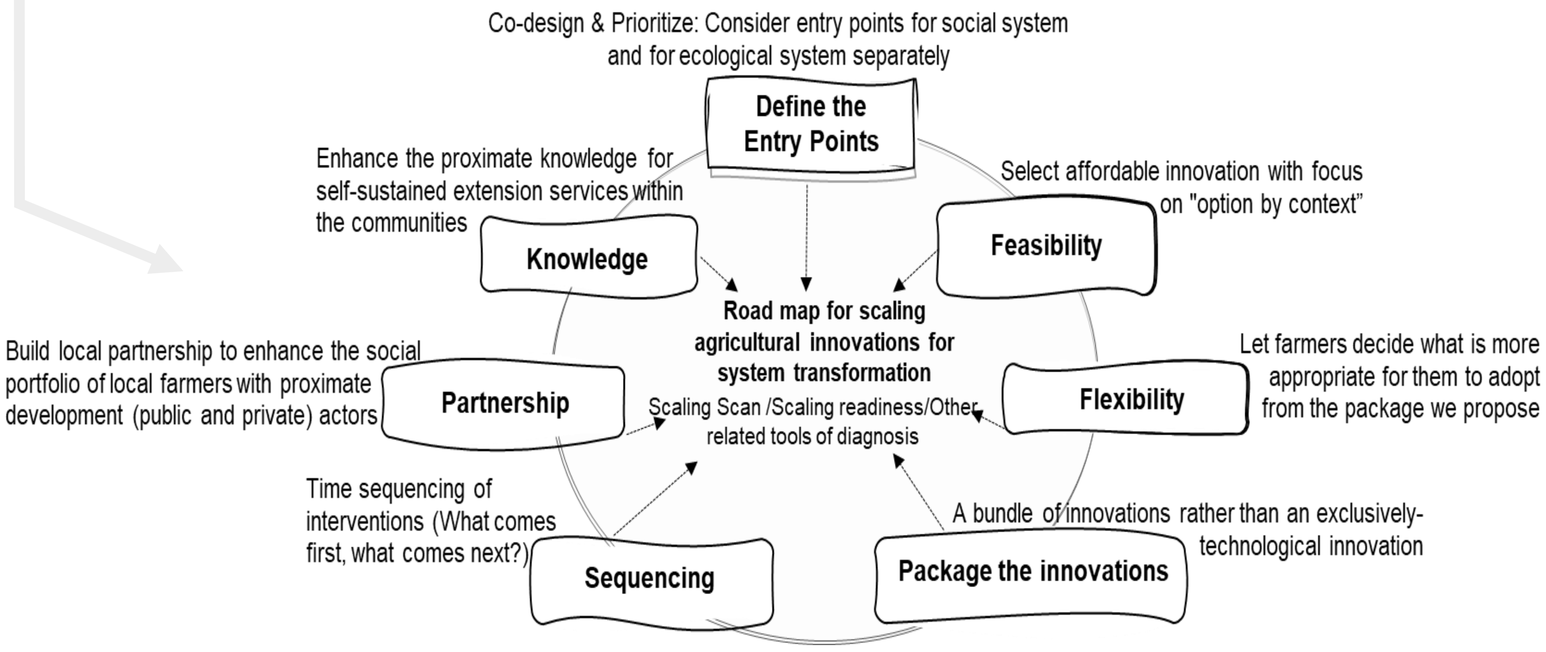
Production System

Semi-Arid North & Central West Tunisia

- Cereal – Livestock belt (Wheat, Barley, Fallow, Sheep);
- Mixed small to medium-scale holders;
- Rainfall 200 - 450 mm, very irregular;
- Poor soils, extremely low soil organic matter;
- Very high erosion risks;
- Extended practice of fallow;
- Low integration of forages;
- Supplementary irrigation (in some cases).

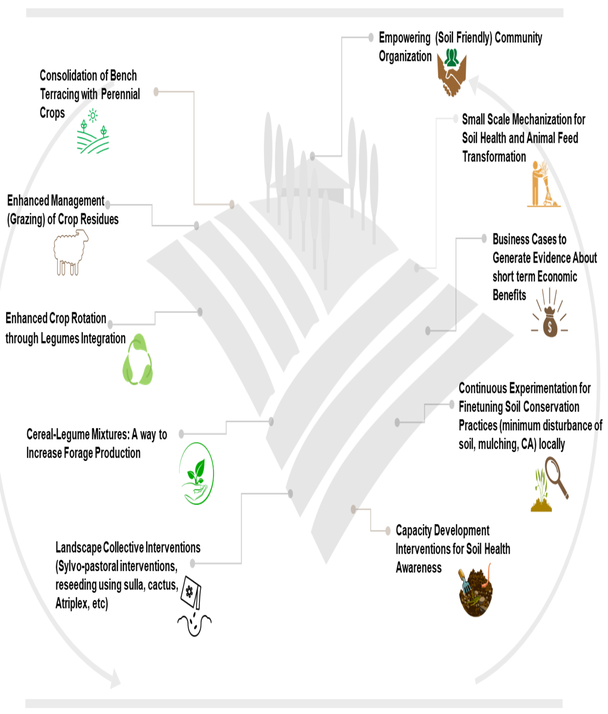
Approach for Refinement and Scaling

How?



Resulting Package – Bundle of Innovations for System Transformation

(co-designed with farmers, researchers, and development agents)



Step
Step 1 – Selection of hosting organization/platform of the KH
Task 1.1. Selection of promising technologies (relevant for the projects, regions, and context). This can happen through concertation between the project teams, and their national and local partners
Task 1.2. Identify potential public and private partners who might be members (or clients) of the KH. This includes an assessment of the actual demand for the technology in the dominating farming systems
Step 2 – capacity assessment of the selected hubs and investments in appropriate knowledge products
Task 2.1. Preliminary assessment of local partners engagement (can be straightforward or based on questionnaire, Manifestation of interest, existing partnership, etc.). The rationale is to select a platform holder/ manager who will ensure the maintenance and sustainability of the knowledge products and materials which will be invested
Task 2.2. Assessment of technical and infrastructure capacities within the hub
Step 3 – Handholding activities to build the knowledge dissemination capacity of the established KH
Task 3.1. Handholding of the KH managers and personnel (these are not necessarily the personnel of the KH, as they can be leader farmers, NGO, etc.)
Task 3.2. Minimum co-investments in appropriate infrastructure which will allow the hub to be functional as a knowledge dissemination center
Task 3.3. Investments in demonstration plots, and other experimental fields to further generate context-specific knowledge and evidences of the technology benefits
Task 3.4. Investment in generating knowledge products useful for technology dissemination
Step 4 – Connecting the KH with wider local and regional, research and development stakeholders – First step to operationalize a "Scaling Hub"
Task 4.1. A large workshop event where all relevant stakeholders will be invited to present the established network and discuss potential joint scaling activities
Step 5 – Co-design of scaling activities led by the established of the KH (institutional arrangements, clients, beneficiaries, and funding activities)
Task 5.1. Refine the co-designed scaling activities with different 4-W partners
Task 5.2. Develop joint sub-agreements (including activities and budgets) with different 4-W partners for the implementation of the defined scaling activities
Step 6 – "Social learning" and adaptation
Task 6.1. Measuring social learning and progress on social capital within and beyond the hub based on a set of knowledge and social network indicators which can constantly be collected to monitor the progress and sustainability of the created hubs

Integrated Sociotechnical Package promoted in El Rhahla Site – Siliana, Northwest Tunisia (implemented over 18 months of project activities)

Resulting Transformation

- Development of contract farming between farmers and their associations;
- Increase of collective investments (due to farmers organisation into associations);
- Increased trend towards commercial activities (sheep and beef fattening), due to the increase of forage availability;
- Increased awareness about environmental and soil health through confirmed adoption of (forage) legume rotations (Self production and storage of forage seeds increased);
- Increased exchange of information across communities and with locally empowered extension actors led to increased demand on agricultural innovation;
- Raised interest for restoration of collective grazing areas (with Cactus, Sulla, Atriplex, Carob trees, etc.);
- Increase of women engagement and leadership into the farmers associations (transformation of social norms).

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