Tropentag 2023 – Berlin, Germany
Competing Pathways for Equitable Food Systems Transformation: Trade-offs and Synergies

How to foster inclusive food systems? Approaches to assessing social vulnerability and foster social equity

ICARDA
Science for resilient livelihoods in dry areas
CGIAR
INITIATIVE ON
Agroecology

"Positive Grounds for Agroforestry-Based Systems in Tunisia to Transform to more Equitability and Inclusiveness"

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Berlin
September 21st, 2023

CGIAR
Science for a food-secure future

Agroecology, an Approach to Enhance Food System Resilience, Equity and Sustainability

Initiative Overview

INITIATIVE ON Agroecology

CGIAR

WP3 Inclusive Business Models with a Focus on Agroecological Principles

WP4 Coherent policies &Institutional Arrangements conductive to Agroecological Transition

Adaptive Scaling Strategies

Food System Actors Apply Agroecological Principles Suited to Particular Context – from Food Production to Consumption

Science-based Evidence

WP2 Evidence-Based Agroecology Assessments

WP5 Understanding & Influencing Behavioral Change

WP1

Transdisciplinary co-creation of innovations in a Network of Agroecological Living Landscapes (ALLs) to Test and Understand the Benefits of Agroecological Approaches

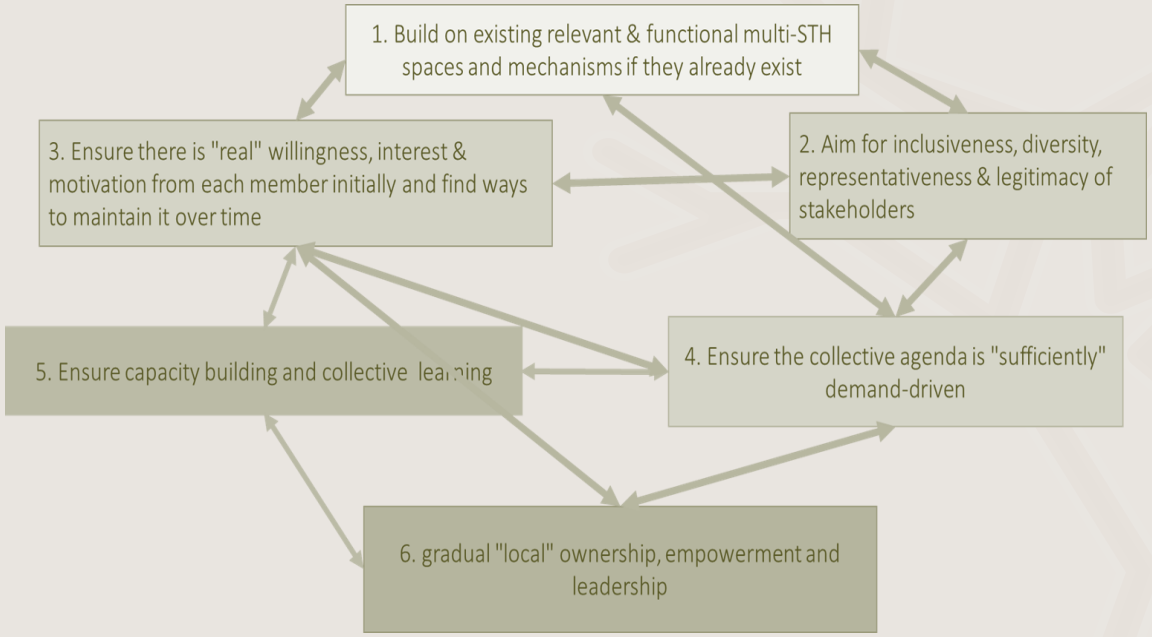
Agroecological Living Landscapes

3-Year Outcome

Contextually relevant agroecological principles applied by farmers and communities across a wide range of contexts and supported by other food system actors by 2024.

1 Context Assessment + Engagement

Landscape Establishment & Actors Engagement



(Triomphe et al, 2022)

These Principles also ensure, to a some extend, a strong inclusiveness and representativeness of local FSA, projects, and institutions

2 Visioning

Visioning as a follow up and initial step of establishing a clear agroecological transition

- ❑ It is part (or early beginning) of the process for re-designing agricultural and production systems.
- ❑ It encourages creative and unrestricted discussion, and enable the creation of 'desirable futures' by the participants to find shared ambitions and go beyond the single interests of specific stakeholders' groups

VISIONING

Consideration of Multi-Stakeholders Objectives

Social (values), Environmental Economic Practices

Social Categories Inclusion

Visioning with Men & Women

Implementation: Vision2Action Process

From Vision2Action

Visioning

Regional Workshops at the ALL Level

Prioritization with food system actors

Prioritization of food systems, commodities, value chains, and potential technologies to be object of the project investments (release some of the constraints generated by the visioning)

Facilitation of a National Workshop With research and development Actors

Experts' consultation for better refinement of the agricultural systems, value chains, etc.

Refined Prioritization Through Experts Consultation

Which Agroecological Principles ?

National Multistakeholder Workshop

Codesign of Innovations

- Challenges & Co-Selection of main Innovations 1
- Co-Building of Innovation Packages 2
- Co-Design of Experimentation 3

Key system components, their respective problems and challenges, and possible relevant innovations which can unlock their potential and solve their challenges

Scientific evidences needed by FSA which need to be generated for better and wider scaling/adoption of the suggested agroecological practices and innovations

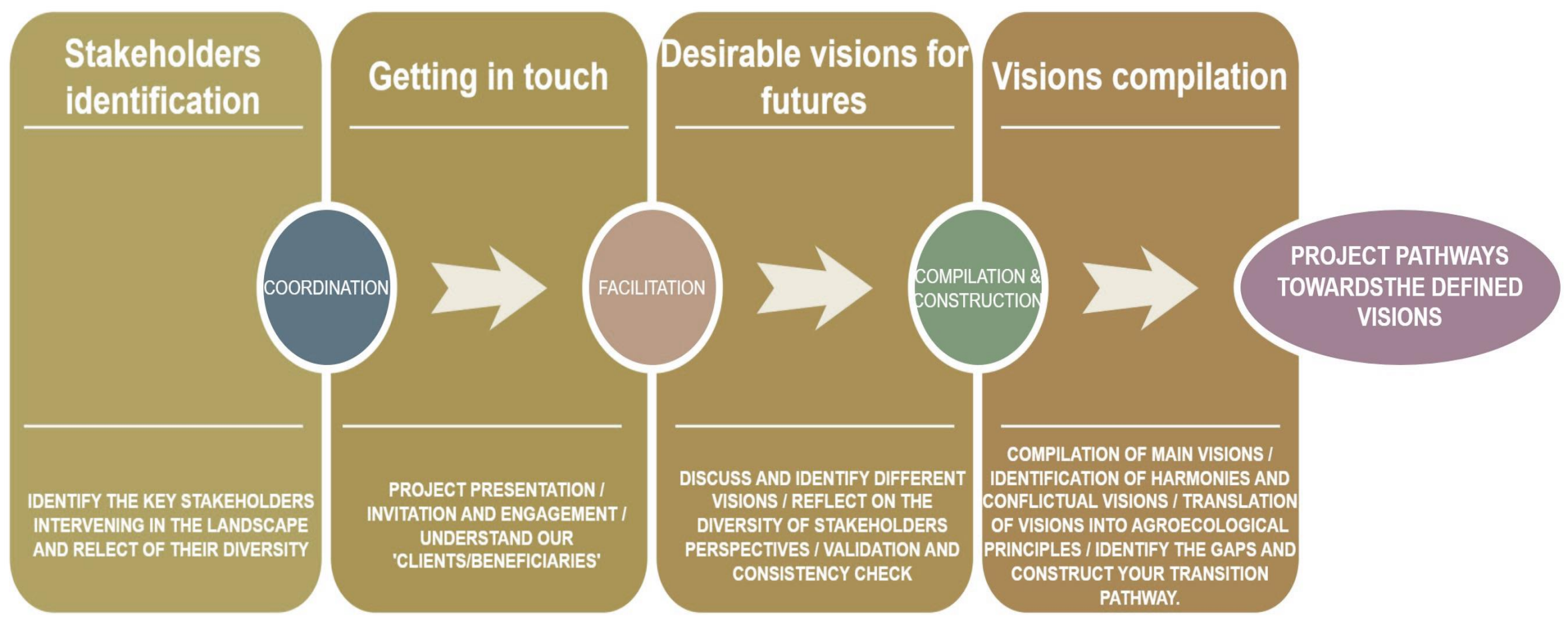
1 Prioritization

2 Co-design

3 Packaging

Transition Pathways (Set of Actions) + Packages of Agroecological Innovations

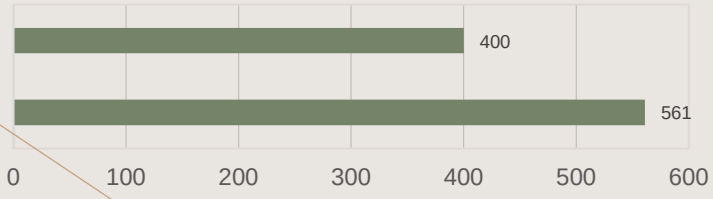
A Process of Step-By-Step Vision2Action for Planning Project Activities

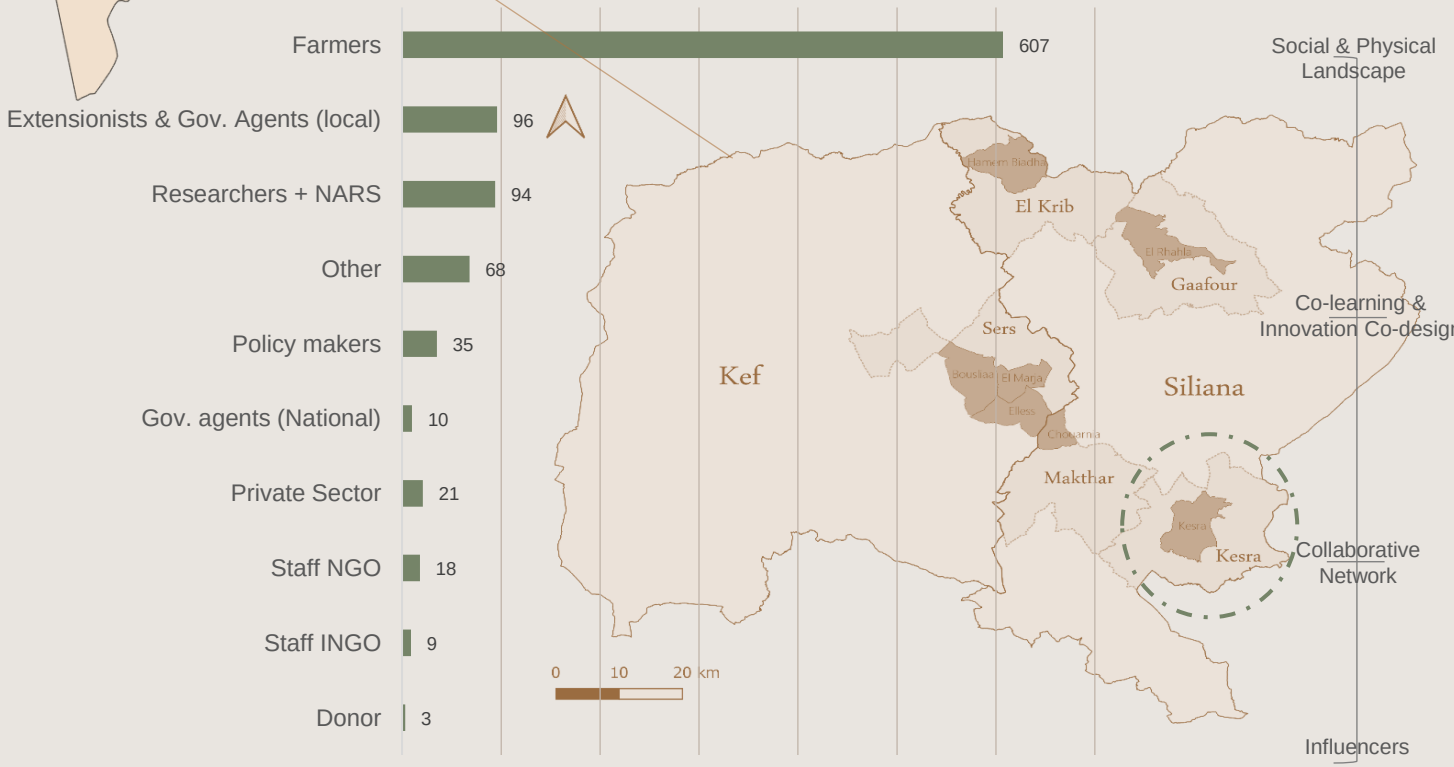


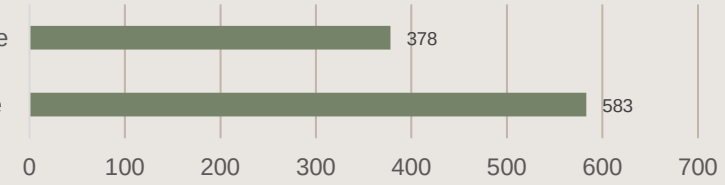
(Source: adapted from McKee et al., 2014)

Tunisia ALL

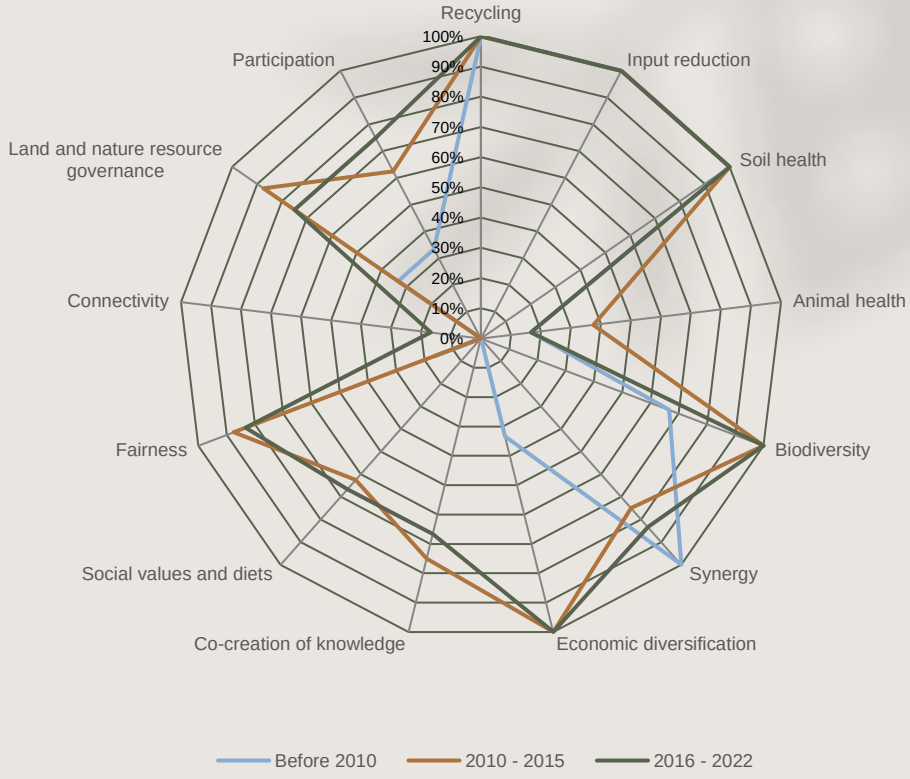
961 Food System Actors Engaged in the Cocreation of Agroecological Innovations - Tunisia ALL







- Covering **a gradient of agroecological contexts** of the mixed tree-crop-livestock systems in a semi-arid zone, from the mountainous to plain zones.
- Gradient of AE packages & Partnerships from “existing partnership and AE packages” to “New partner, New AE package”



AE principles considered for different national policies for the three period: (3 programs before 2010, 5 programs during 2010/15, and 3 programs for the period 2016/15)

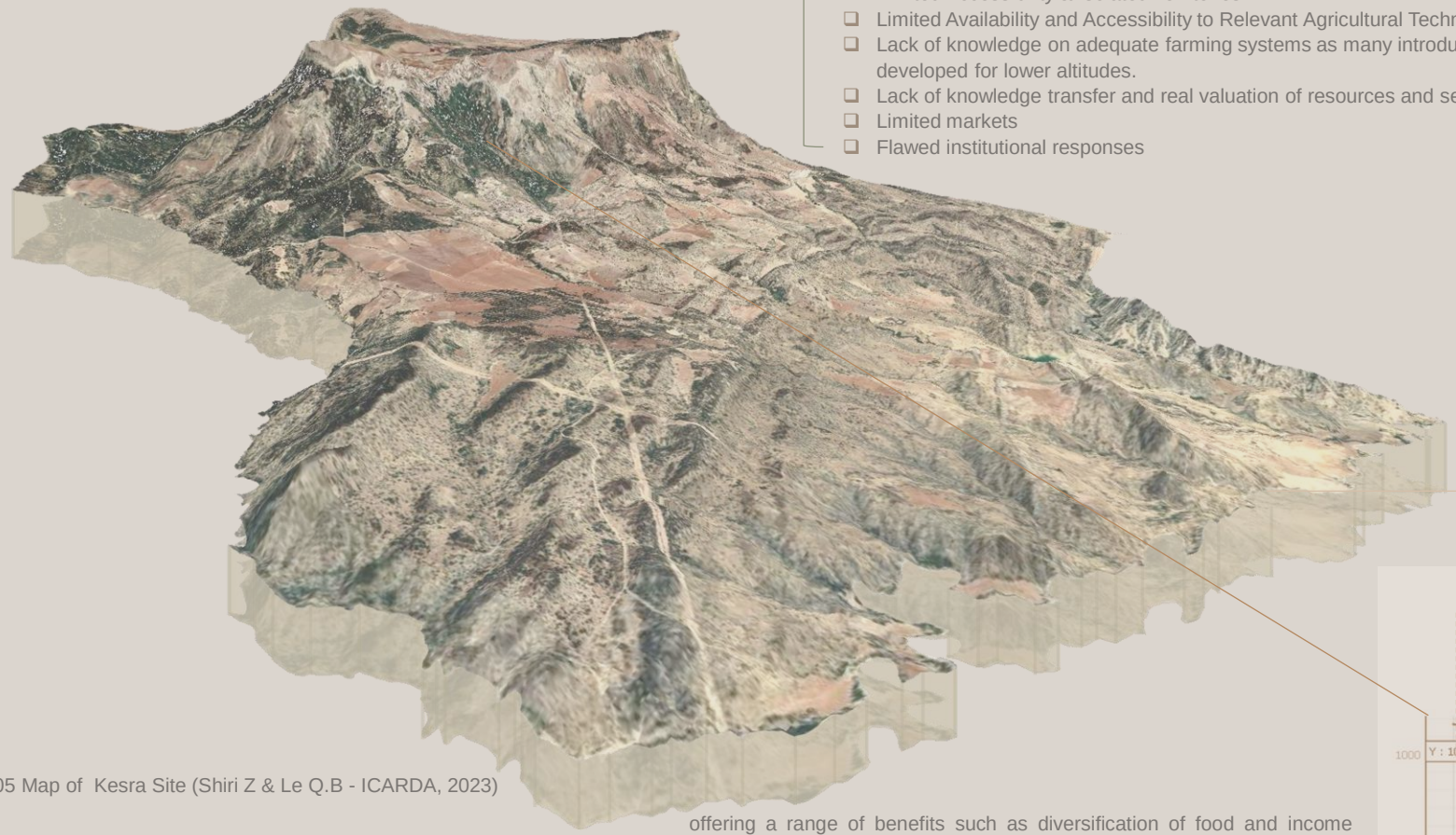
Kesra Site Characteristics & Main Challenges

(Shiri Z - ICARDA, 2023)

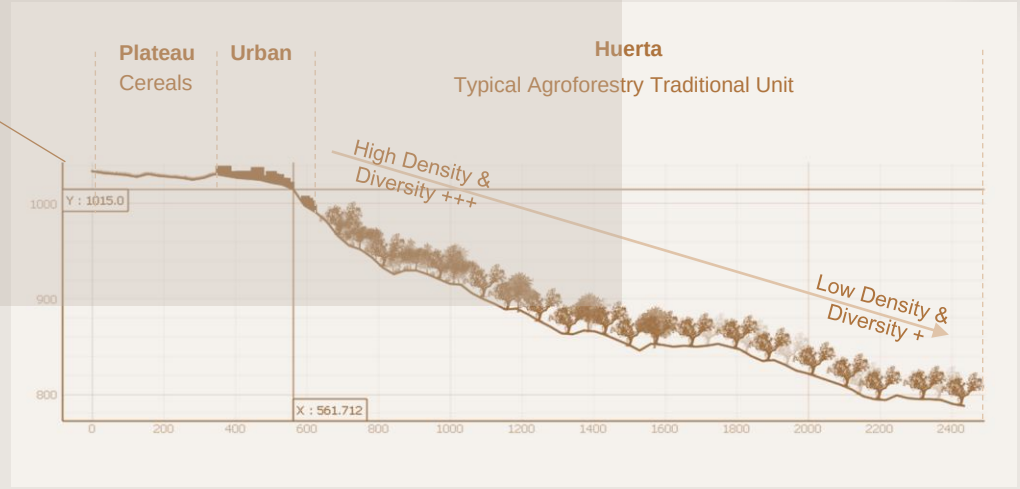
Mountainous Agroforestry System

Difficult Territories:

- Highly Susceptibility to Climate Change
- Signs of Degradation & Environment stress (Resources scarcity, poor waste management, biodiversity loss of figs and olives, decreased food resources for bees, declining health of soil)
- Fragile Ecosystems
- Harsh Weather Conditions
- Limited Accessibility & Isolated Territories
- Limited Availability and Accessibility to Relevant Agricultural Technologies & Innovations
- Lack of knowledge on adequate farming systems as many introduced systems were originally developed for lower altitudes.
- Lack of knowledge transfer and real valuation of resources and services.
- Limited markets
- Flawed institutional responses

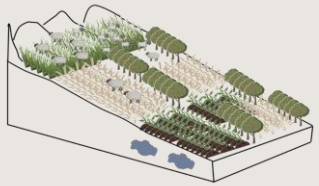


2D05 Map of Kesra Site (Shiri Z & Le Q.B - ICARDA, 2023)



Profile section A-A' (Shiri Z & Le Q.B – ICARDA, 2023)

offering a range of benefits such as diversification of food and income resources for communities, biodiversity conservation, and environmental resilience. Fig trees, olives, carob, vegetables and honey are common features of this landscape



4,660 HH

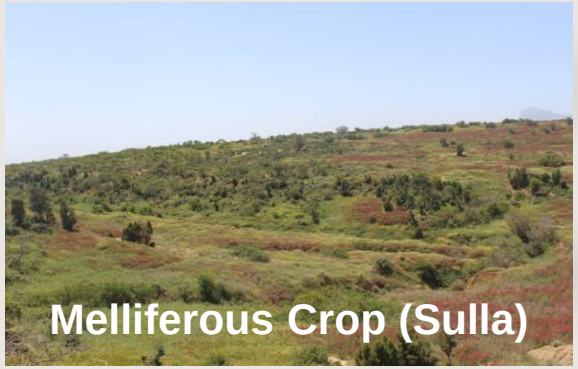
85% are heavily dependent on this farming system

Key Components of the Farming System in Kesra

Forage Associations between the Rows of Olive and Almond Trees

Millennia-Old Olive Tree

Wheat between Olive Trees



Visioning

Transformational Agroecology Across Food

CGIAR

INRSA

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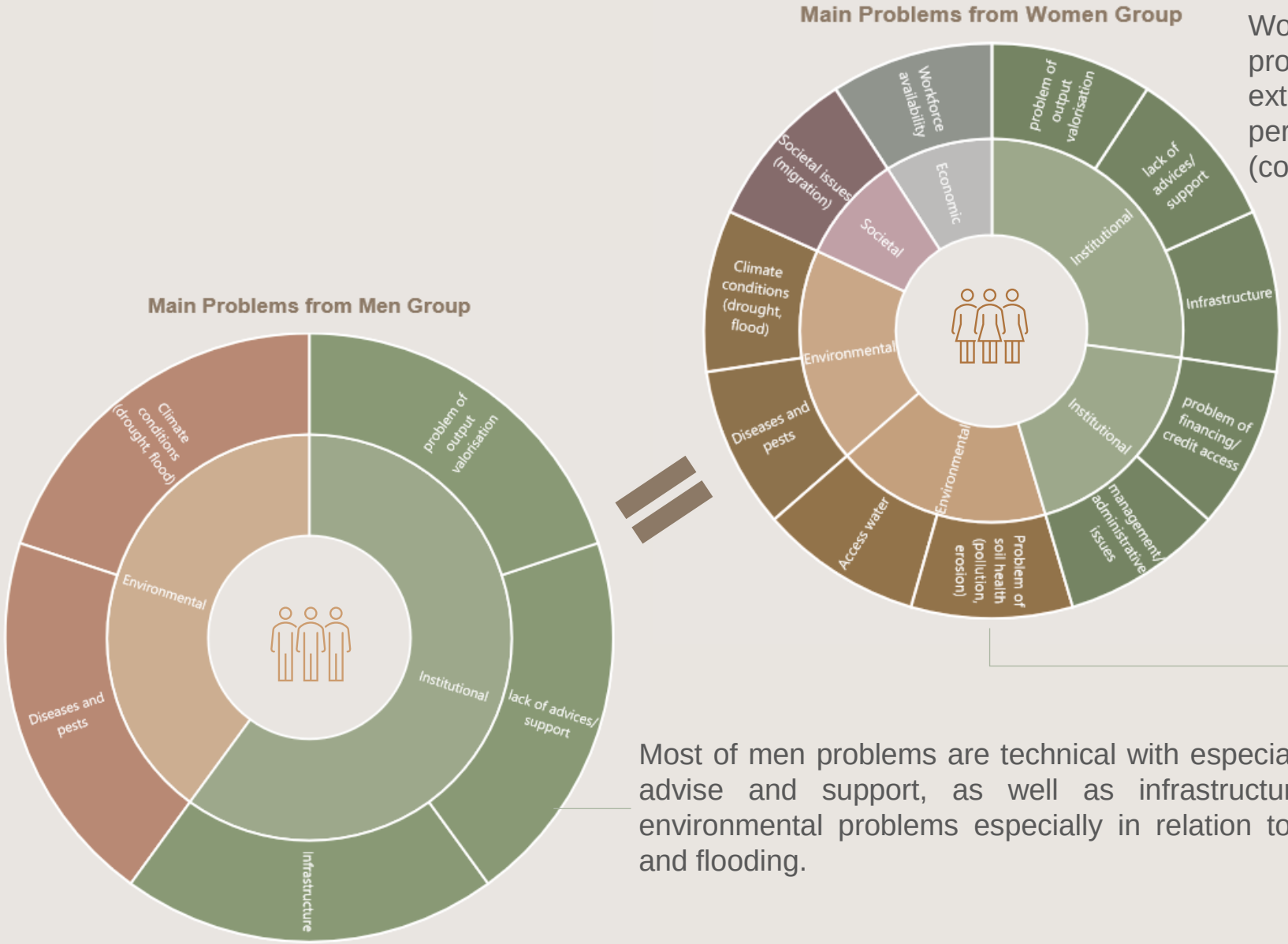
التقنيات التي يعتمدها مشروع الفلاحة الإيكولوجية

المجال	التقنية	اختر الخمس التقنيات الأكثر أهمية بالنسبة لك و لماذا اخترتها	ماذا تريد أن تعرف أو تتعلم حول هذه التقنية	الصورة
السماد العضوي	الفحم الحيوي هو فحم مستخلص من المواد النباتية يقع حفظه في التربة و يعد مصدرا للتسميد العضوي و يقوم بتقنية الهواء من نتائي أوكسيد الكربون			
	الكومبوست هو خليط مكون غالبا من مجموعة من المواد العضوية متحللة يقع استعماله للتسميد			
	الفرمكولتيا هي تكنولوجيا تقوم بتغذية التربة بالأزوت من خلال جذور البقوليات			
تربية الماشية و الاعلاف	القرط علف مجفف في غاية التخفيف			
	الحميات الطفيلية البوتوزات في تحويل لخليط من الاعلاف عبر ضغط ميكانيكي			
	السيلاج / العلف المخمر طريقة حفظ و تحسين للاعلاف الخضراء			
	تطوير العلائق العلفية لمجابهة نقص الاعلاف جراء الجفاف			

Using different sheets, forms, and simplified templates , with visuals for simplification to farmers

Prioritization & Co-design

Main Problems For Communities in Kesra

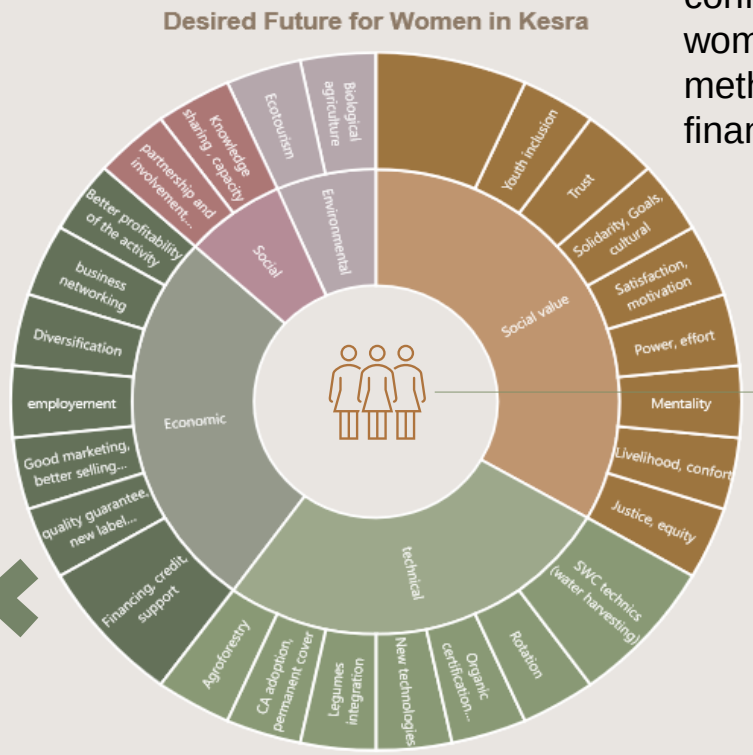


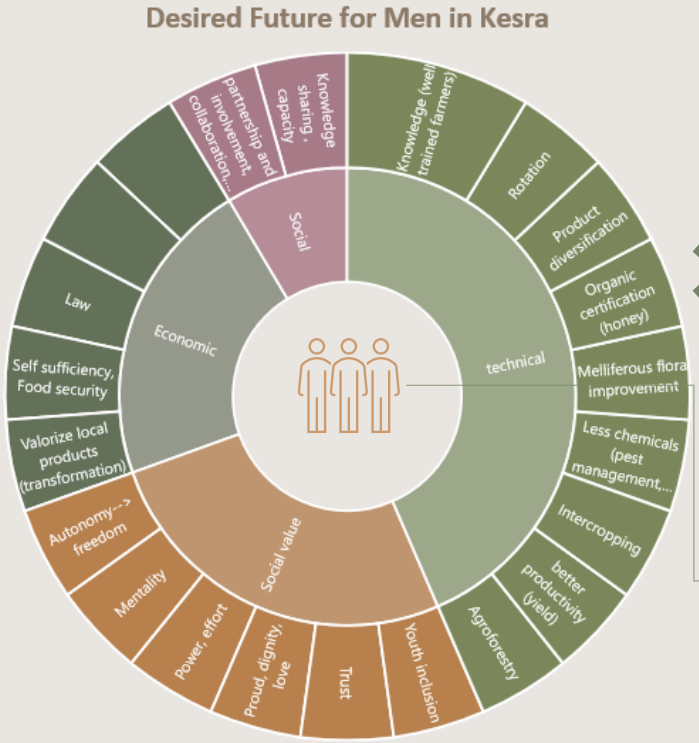
Women provide heavy weight for the institutional problems (same as men in terms of advice and extension, infrastructure, etc.) and they also perceive the environmental problems as important (completely like Men).

Most of men problems are technical with especially lack of output valorization, advise and support, as well as infrastructure. Men also states some environmental problems especially in relation to climate conditions, drought, and flooding.

Desired Futures for Communities in Kesra

Balanced perspective of the future for women, with desired improved social value (especially honesty , self-confidence, openness, and trust). For technical aspects women are mostly interested to SWC practices and methods, and for economic aspects, better access to financing and credits is a key preference.





A clear dominance of technical futures is recorded for men, with preference for better access to knowledge and training.

Results of the Visioning Implementation: The Resulting Agroecological Transition Pathway

- Articulating the visioning results with agroecology principles and specific production systems (and typologies) in place.
- This resulted into the prioritization of the following clusters of activities:
  - ❑Honey and beekeeping in general
  - ❑Carob cultivation for land restoration and beekeeping
  - ❑Sustainable intensification of fig tree plots
  - ❑Better marketing and commercialization of agrifood products, This includes prioritization of short commercial channels and product labeling

INNOVATION PACKAGE FOR KESRA SITE

INCLUSIVE BUSINESS MODEL

To create value and Generate Net Positive Social Impact

Fairness

- Agroecology Principles

KNOWLEDGE CO-CREATION

To foster participatory learning through **co-**: Developing, Experimenting and Disseminating Best practices

Co-Creation of Knowledge
Participation

"CHUSIRA AGROECOLOGY VILLAGE"

The idea is not to certify an agricultural product or producer group – but the entire Territory and its development pathway.

PROMOTING NATIVE LEGUME TREE SPECIES "CAROB"

Land and Natural Resources Management
Soil Health

Carob Dissemination
Setting up a carob tree nursery and large-scale plantation in private lands & forest landscapes

Participation

Developing Multiple Strategic **partnerships** & **Alliances**

NETWORKING & SMART MARKETING

Strategy 4 Smart Marketing

Collective Action for Market Information & Facilities, Branding, Territorial Labeling, Community Shop, etc.

Connectivity
Economic Diversification

VALORIZING THE MILLENNIA-OLD OLIVE TREES

Certification
Developing an "Indication de Provenance"

Transformation
Support the Establishment of a small-scale olive milling & packaging unit

Social Values and Diets

Soil Health
Biodiversity

BEEKEEPING

Connectivity
Co-Creation of Knowledge
Participation

Collective & Smart Apiary for Learning & SM-System

Capacity Lifting on Good Practices

Healthy Bee
Hive Health Best Management Practices

Animal Health

Bee Nutrition
Establishing a local "protein pollen substitute" processing unit for bees and creating a specific Melliferous calendar for the region of Kesra

Input reduction, recycling, Synergy

VALORIZING THE DIVERSITY OF THE FIG TREES

Preserving & Multiplying Kesra's Caprifigs
Implementing Collective Community Nursery for Caprifigs & Local Fig Varieties

Certification
Support ongoing efforts for a Controlled designation of origin (**AOC**)

Valorization & Diversification
Introducing locally manufactured solar dryer for stimulating collective Investment in a fruit processing unit

Biodiversity
Social Values and Diets
Recycling

Introducing Melliferous Crops for Beekeeping Industry & Soil Health Restoration

Action: Putting the innovation Bundles in the field

Setting up **collective community nurseries** for carob tree and large-scale plantation in private lands & forest landscapes

Benefits

- ❑ Tolerates droughts and salinity
- ❑ Its deep root systems allow CO2 to sink,
- ❑ Grows on a wide range of soils
- ❑ Performs as a multipurpose tree
- ❑ Produces nutritious fruits (carob beans/ pods)
- ❑ Provides shades for livestock during summer






Action: Putting the Innovation Bundles in the field

Native Drought-Tolerant Forage Species for Enhanced Dryland Pasture Restoration

Planting hardy, indigenous crop varieties and trees such as carob or other melliferous plants which are resilient to climate change, on collective and private marginal landscape.

Hedysarum coronarium L.
Sulla

Benefits

- ❑ Drought resistant
- ❑ Improves soil fertility and erosion control
- ❑ Prefers slightly acid to alkaline soils
- ❑ Highly palatable, nutritious, and productive forage
- ❑ High-protein forage crop
- ❑ Melliferous crop

Biological Consolidation of Bench Terracing using

Conclusion & Challenges

- While visioning, engagement, and planning for agroecology were relatively manageable and effective at the community levels, stakeholder engagement at food system level is rather harder and more contextual
- Other conceptual and practical challenges for piloting similar projects aiming at agroecological transitions are:
  - Representativeness,
  - Agroecology transition is an investment for some stakeholders/farmers, and thus a reward (mostly in terms of labeling?) needs to be considered for quick uptake,
  - Lack of public engagement for facilitation.

Thank you