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Participatory Action Research for Long-Term-Social-Ecological-Research platforms

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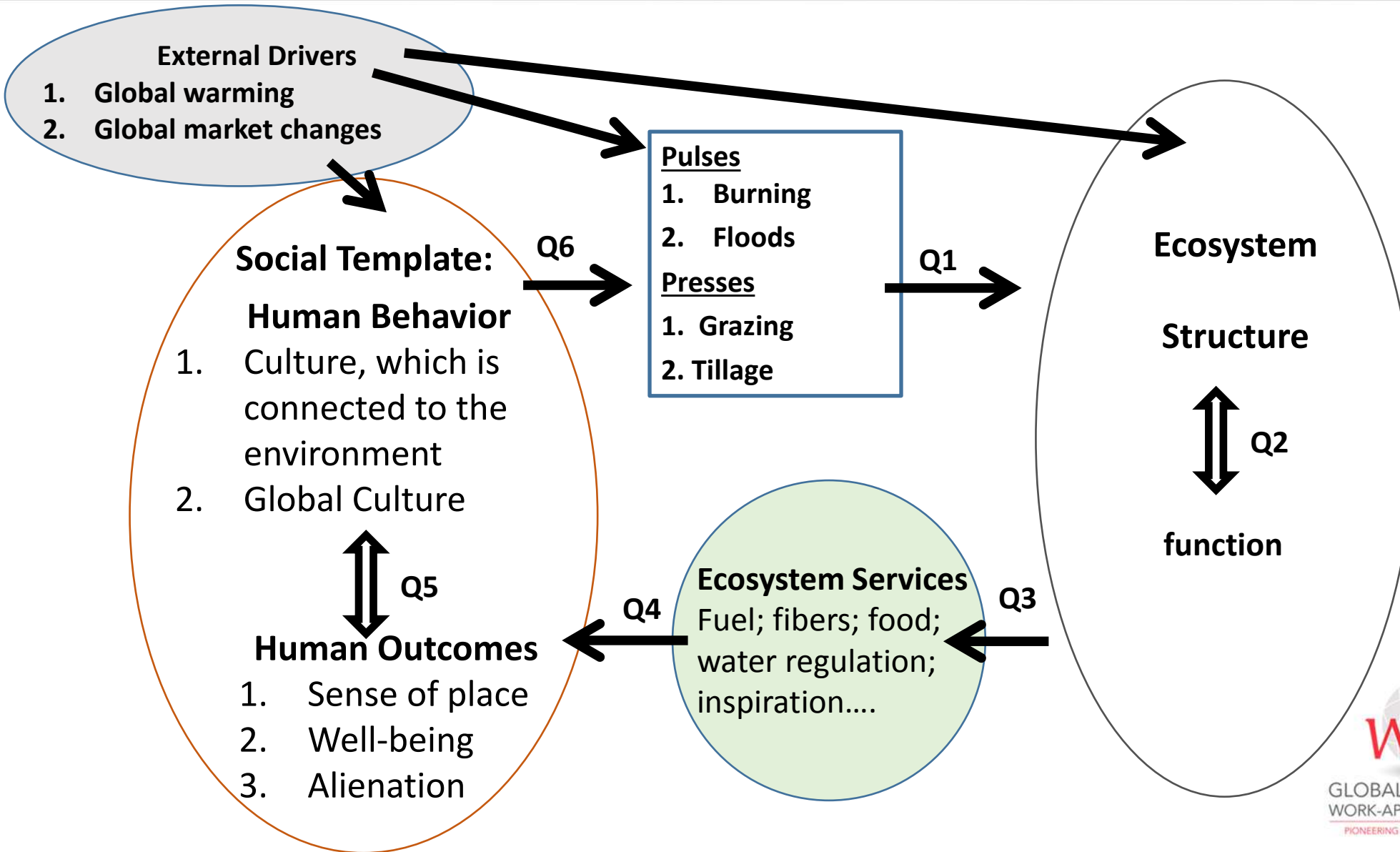
LTSER Platform – the concept

- Long-Term Socio Ecological Research (LTSER) - hubs of interdisciplinary and trans disciplinary research, as part of a global research network
- LTSER Platforms feature three functional layers:
 - Physical infrastructure
- Pro-active involvement of the research community on the regional, national and international level and,
- Integrative management

The European network of LTSER Platforms represents entire regions in the senses of cultural, land-use, historical, natural, administrative and economic units, comprising all relevant agents.



Social-Ecological Coupled System



Defining Resilience

The social-ecological System, is able to absorb ecological and social shocks and continue to maintain its basic structure and function

wiki.resalliance.org

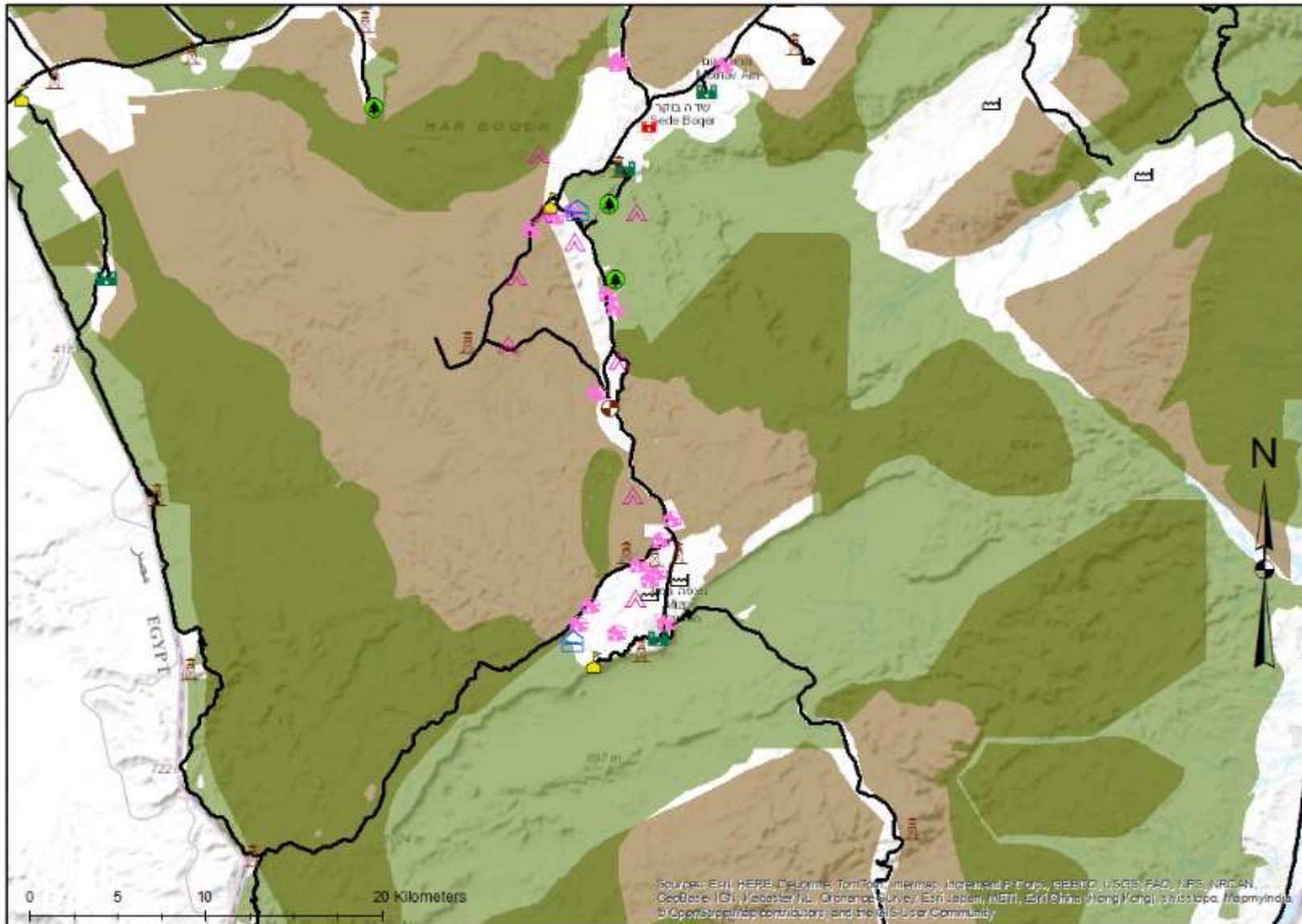


A social-ecological partnership



- Located in the central Negev desert in southern Israel
- Annual rainfall of 80-100 mm
- Characterized by high degree of geo-diversity resulting from long-term geological and geomorphological processes
- Currently in a start-up phase

The Negev Highland LTSER Platform: Multiple land use

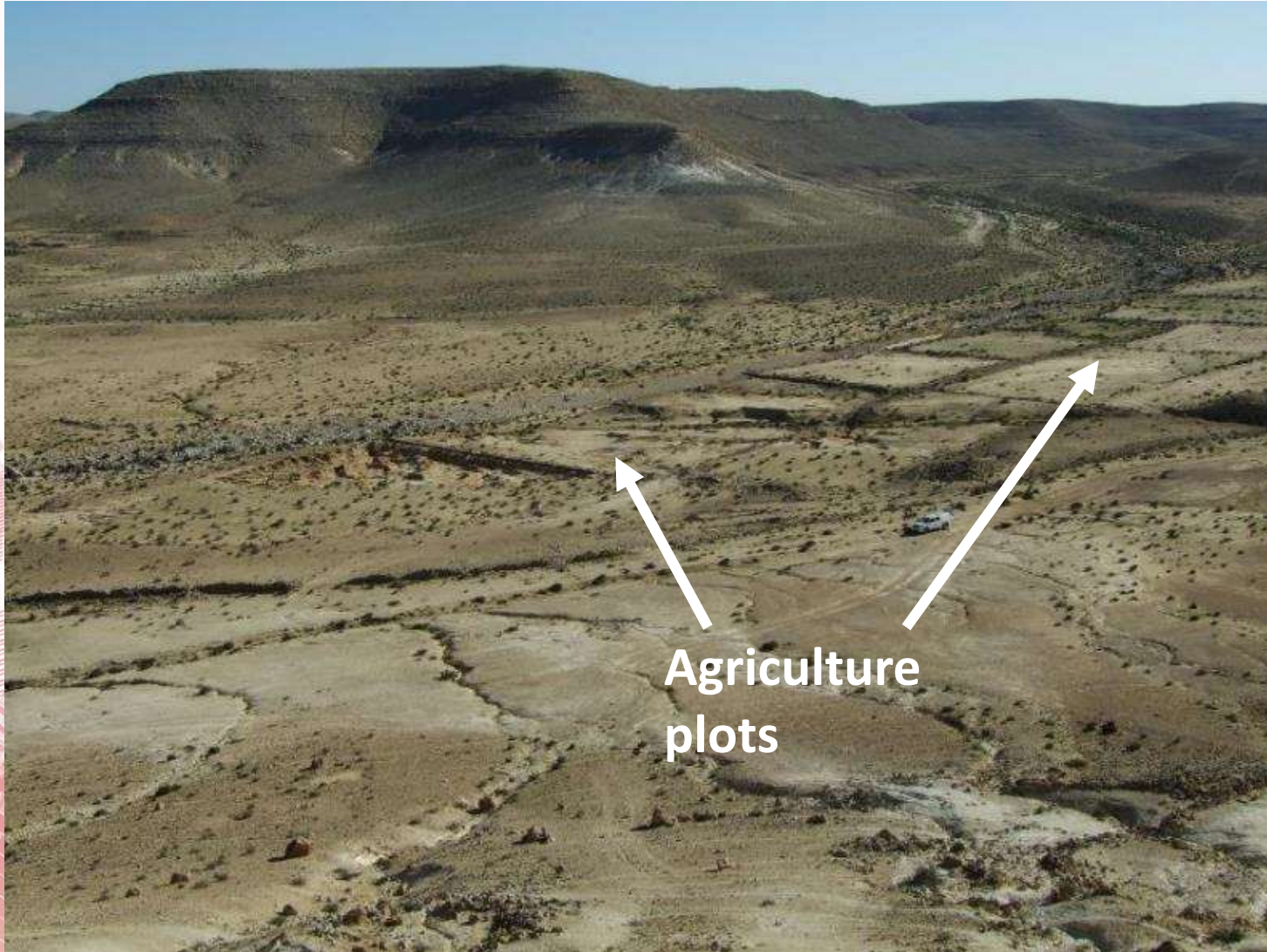


Legend

Human Activity

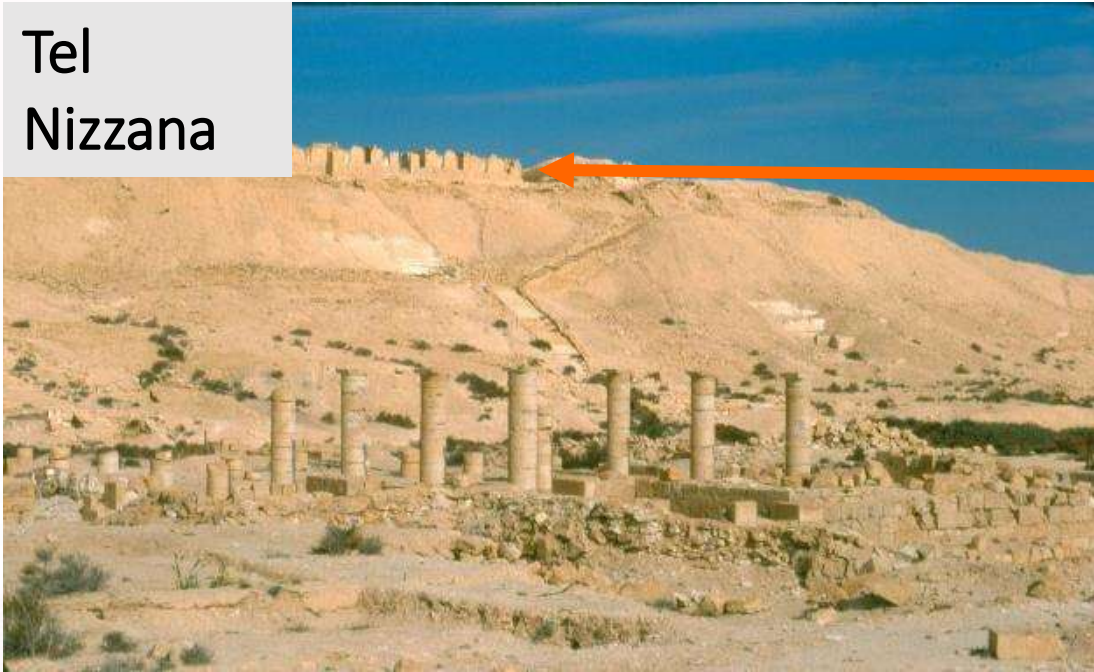
Type

- Bedouin village
- Educational facility
- Farm
- Industry
- Kibbutz
- Lodge
- Military facility
- National park
- Prison
- Town
- Central Negev road
- Nature reserve
- Firing zone



Soils originating in dust storms during the ice age were transformed to agricultural land in the Byzantine time (6th – 7th century AD), by wise using of runoff water.

Tel
Nizzana

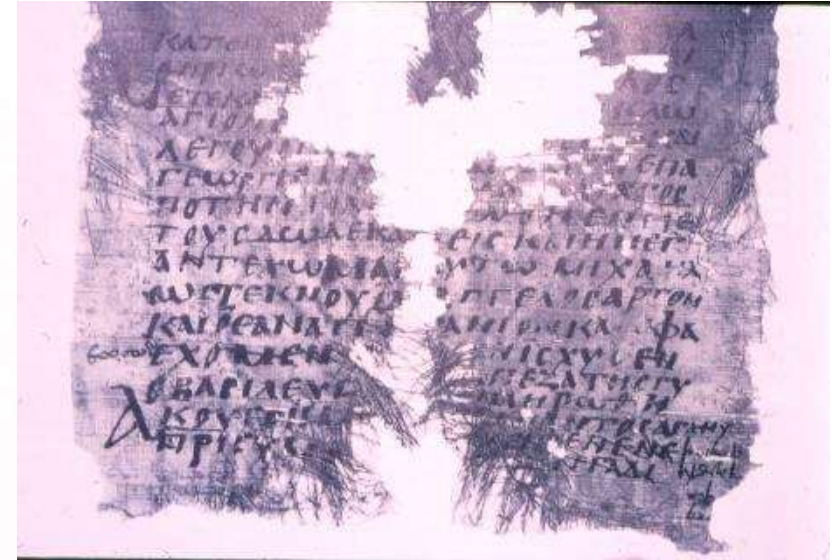


The desert city of Nizzana (southern Israel) and the Byzantine church

Acropolis of Avdat



Wine
press



Historical documents: The Nizzana Papyrus (6th – 7th century AD)

The Nizzana Papyrus indicates:

Mediterranean crops were cultivated in the desert margin of the Levant during historical times



Desert agriculture facilities built by agricultural civilizations contribute to preserving the land and mitigate natural processes of desertification



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Agriculture plot



After the fields were abandoned, soil erosion took over

SFAT MIDBAR (Desert edge)

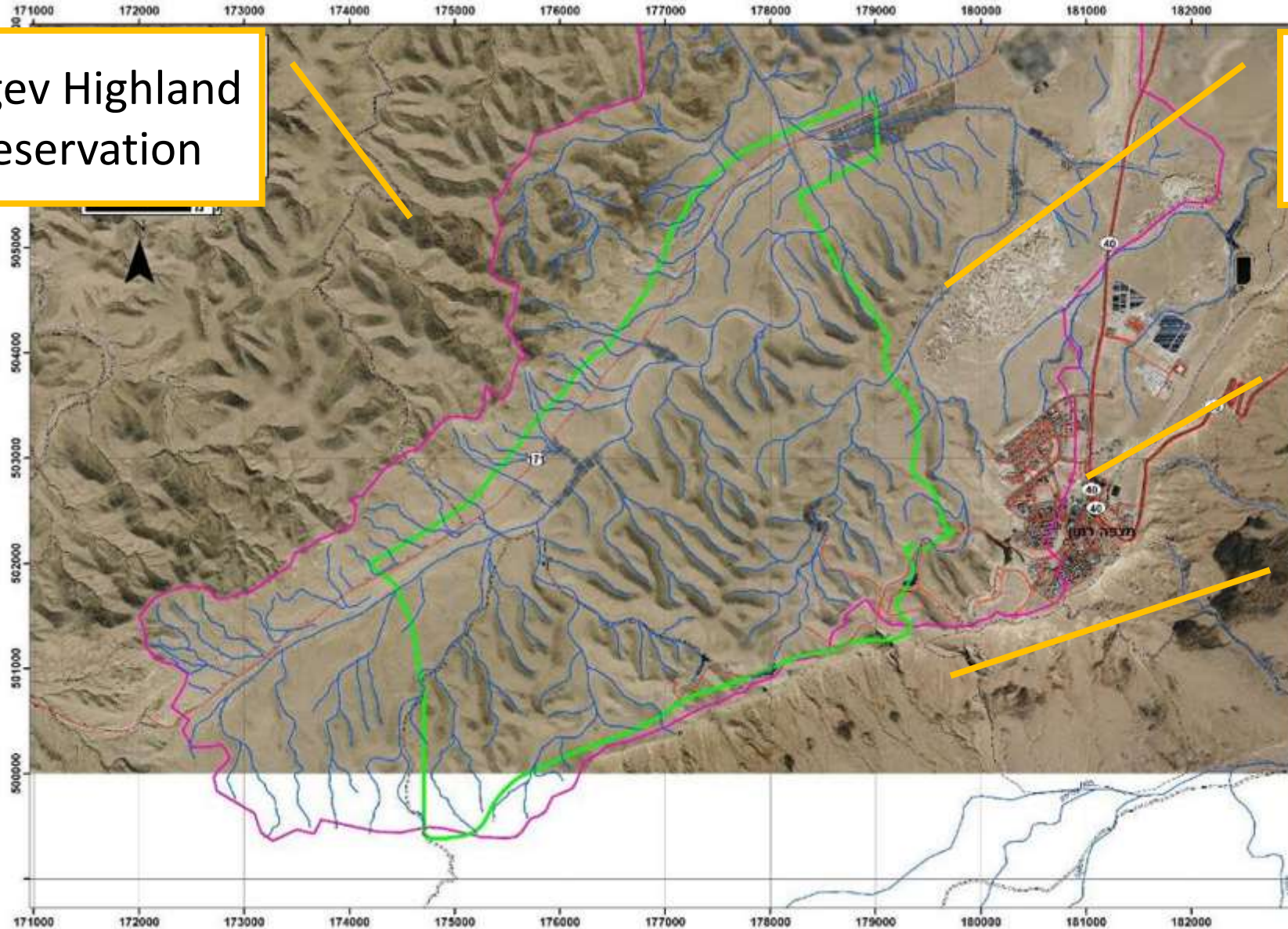
Development of extensive agricultural and tourism park

Negev Highland
Reservation

Small Bedouin
settlement

The town of
Mitzpe Ramon

Makhtesh Ramon
(erosive crater)



Project planning began in 1996
Various delays caused farmers to enter the area
prior to the approval of the plan regulations



The challenge

- Repeated problems of soil erosion and uprooting trees led farmers ask for help from the Drainage Authority
- The Drainage Authority ask the help of the LTSER scientists to help better understand land management practices and the challenges facing grape growers in developing agriculture under the hydro-ecological conditions of a rocky desert



Convergence interviews

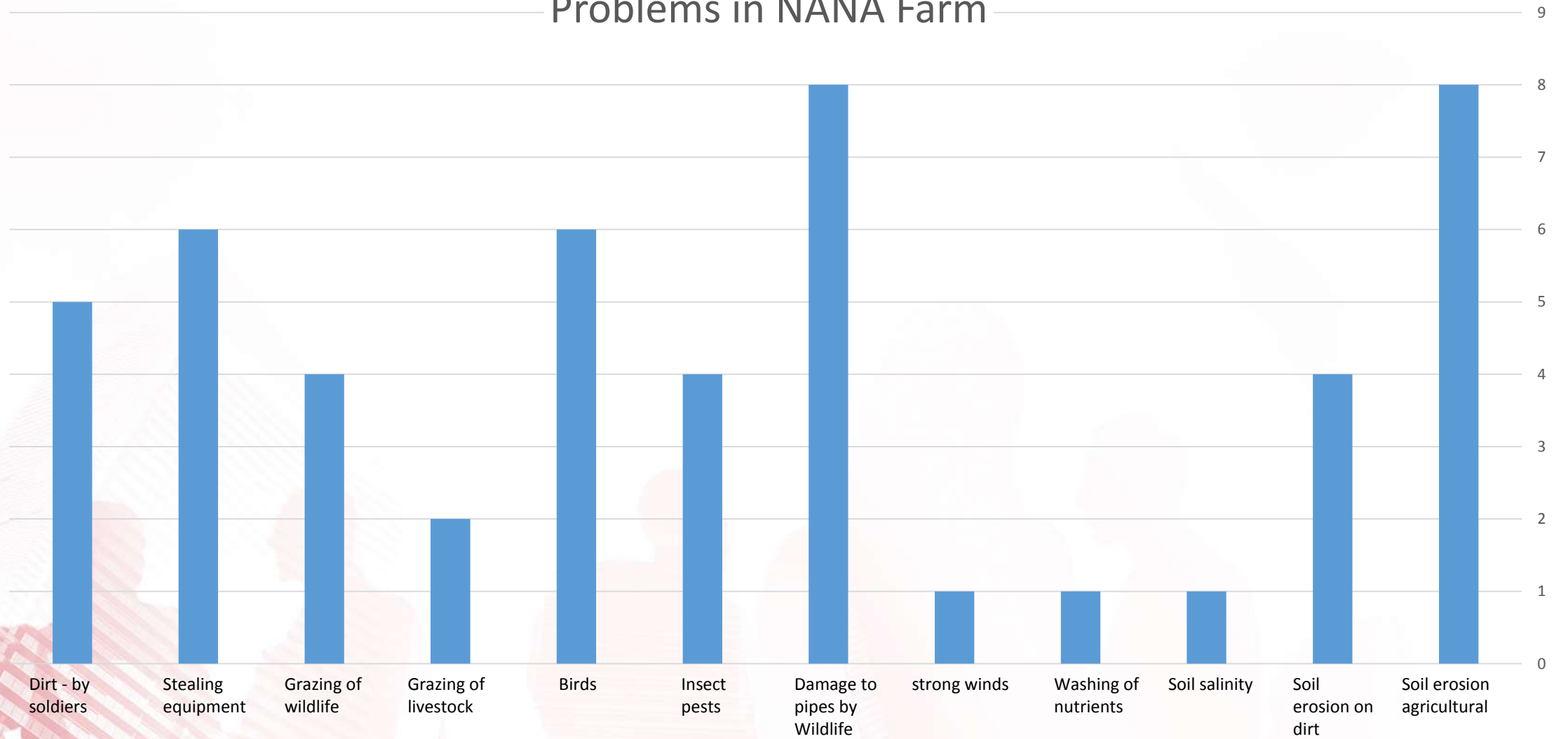



I learned and adapted the agricultural practices that I learned in the Jerusalem hills to the Negev Highlands conditions

Planting the same direction of the flood's flow leads to a constant struggle with soil erosion



Problems in NANA Farm





I dream of reviving the
ancient agriculture in
the Negev Highlands



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Planting vines perpendicular to the direction of flow slows down flooding, but access roads continue to cause soil erosion



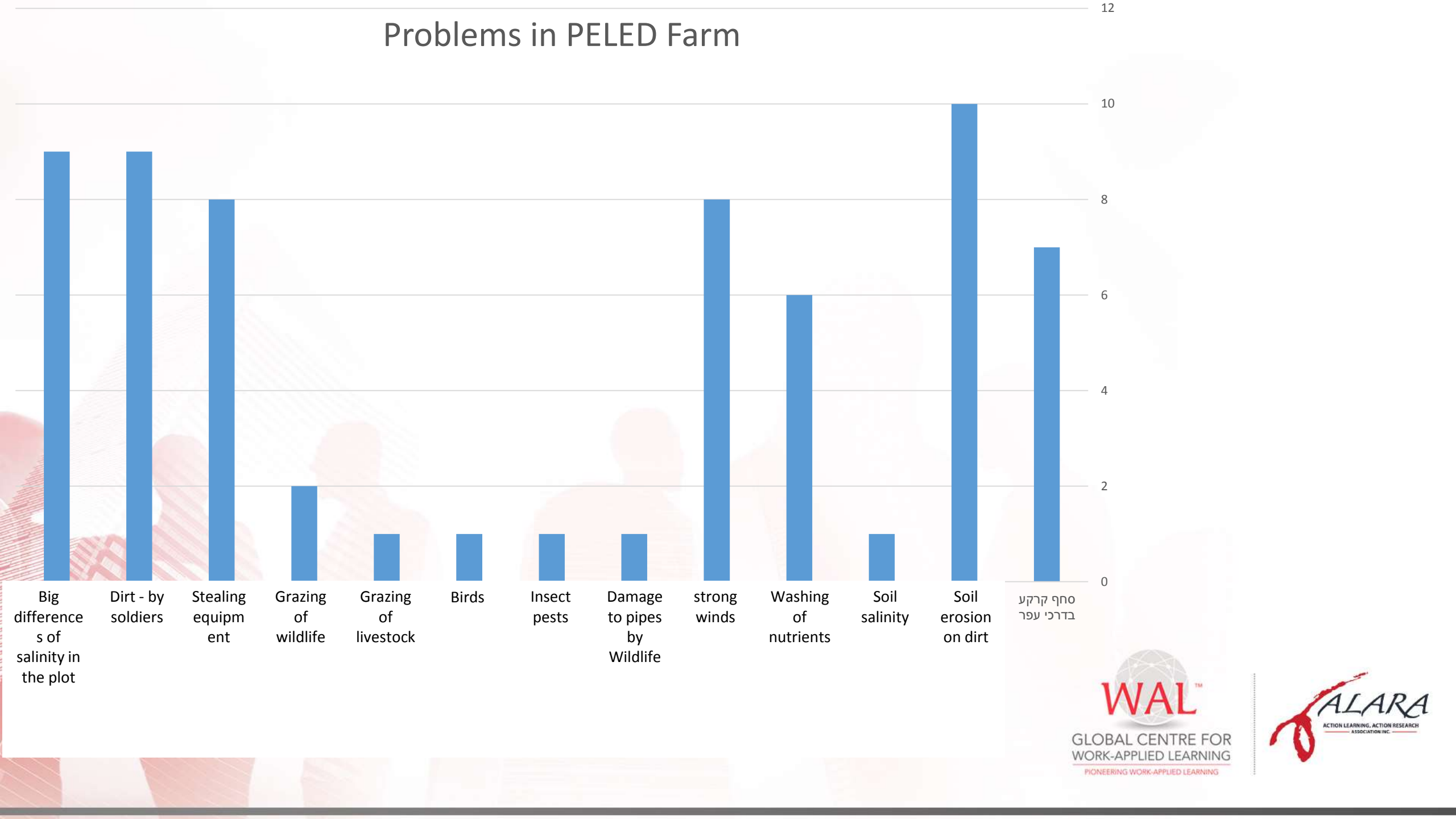
I prefer to plant on the terrace of saline soil, so that I don't have to deal with floods





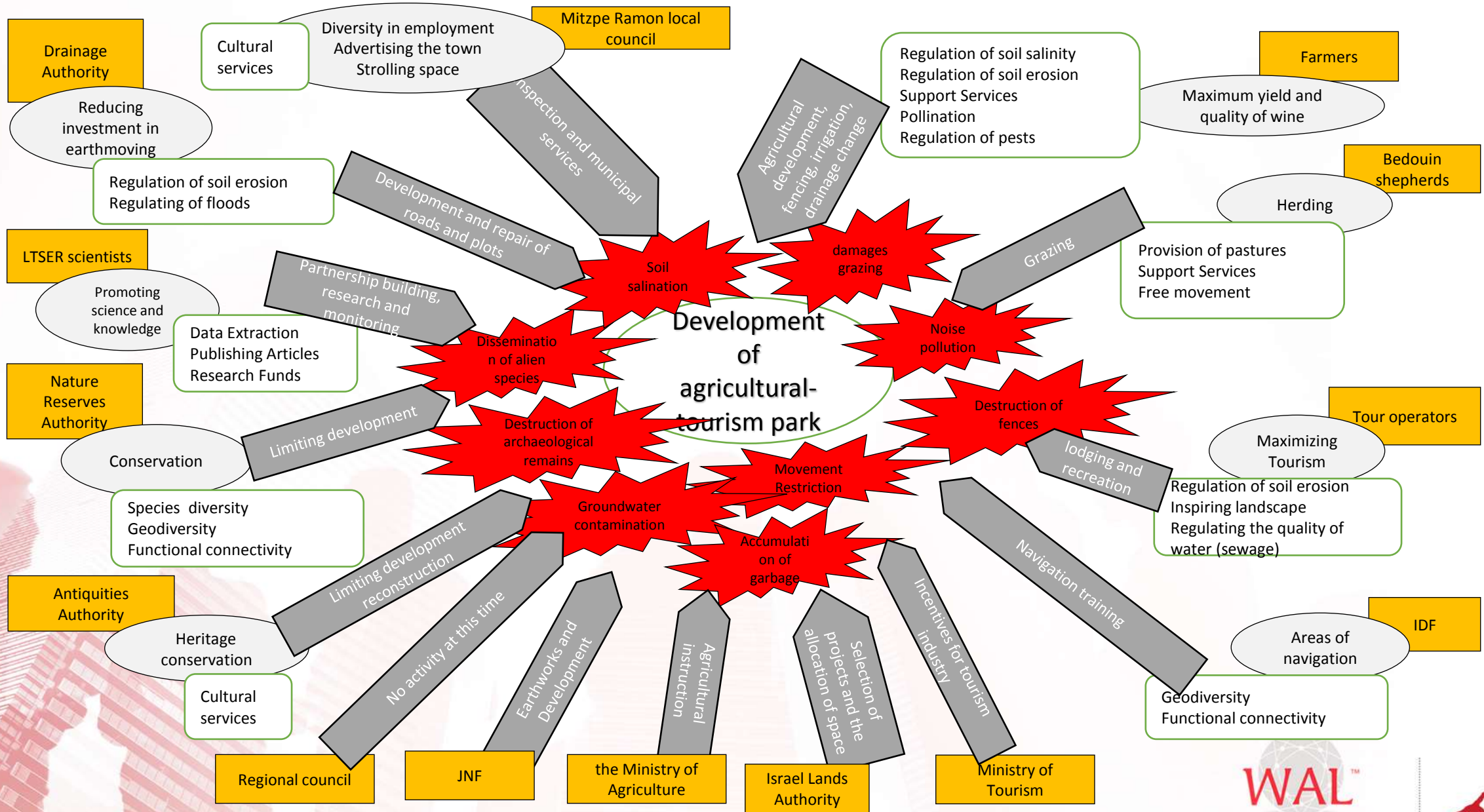
Signs of saline soil around trees

Problems in PELED Farm





Mapping of partners By the converging interviews



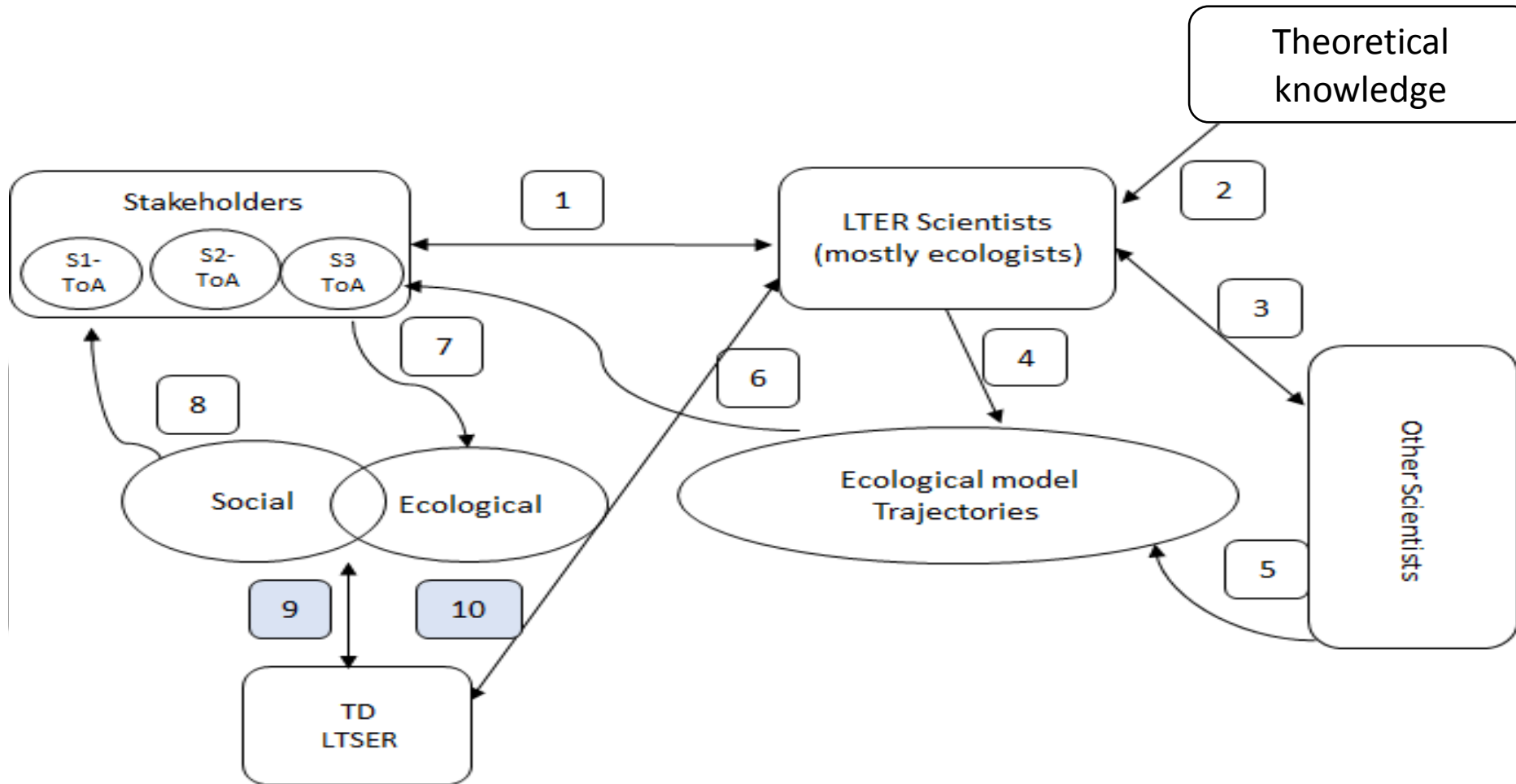
How to lead a resilient long-term social-ecological platform in a situation where the target audience is made up of such diverse stakeholders?

Is Participatory Action Research (PAR) the appropriate approach for this endeavor?

What is the role of scientists in this PAR context?

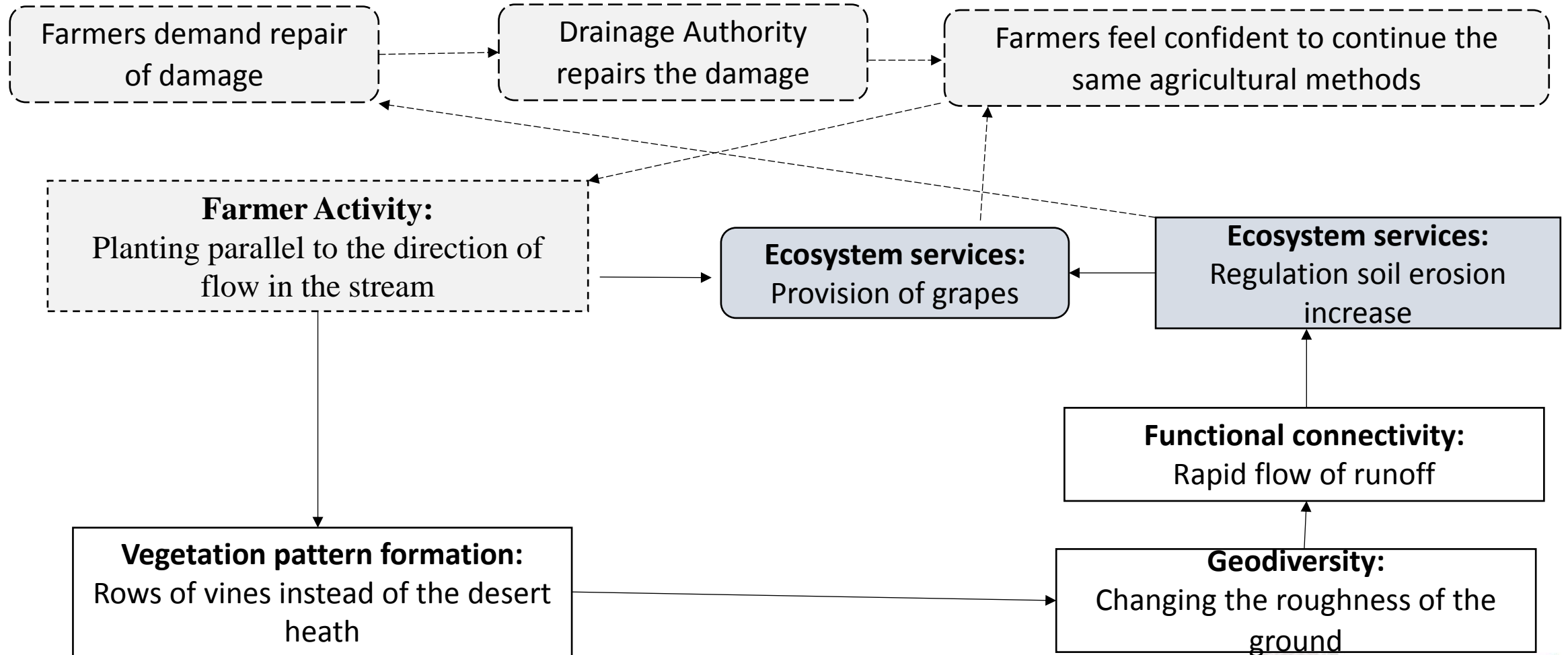
Modeling the social-ecological system structure and function

Building TD-PAR of stakeholders and multi research disciplines researcher in crystallization sustainable solutions

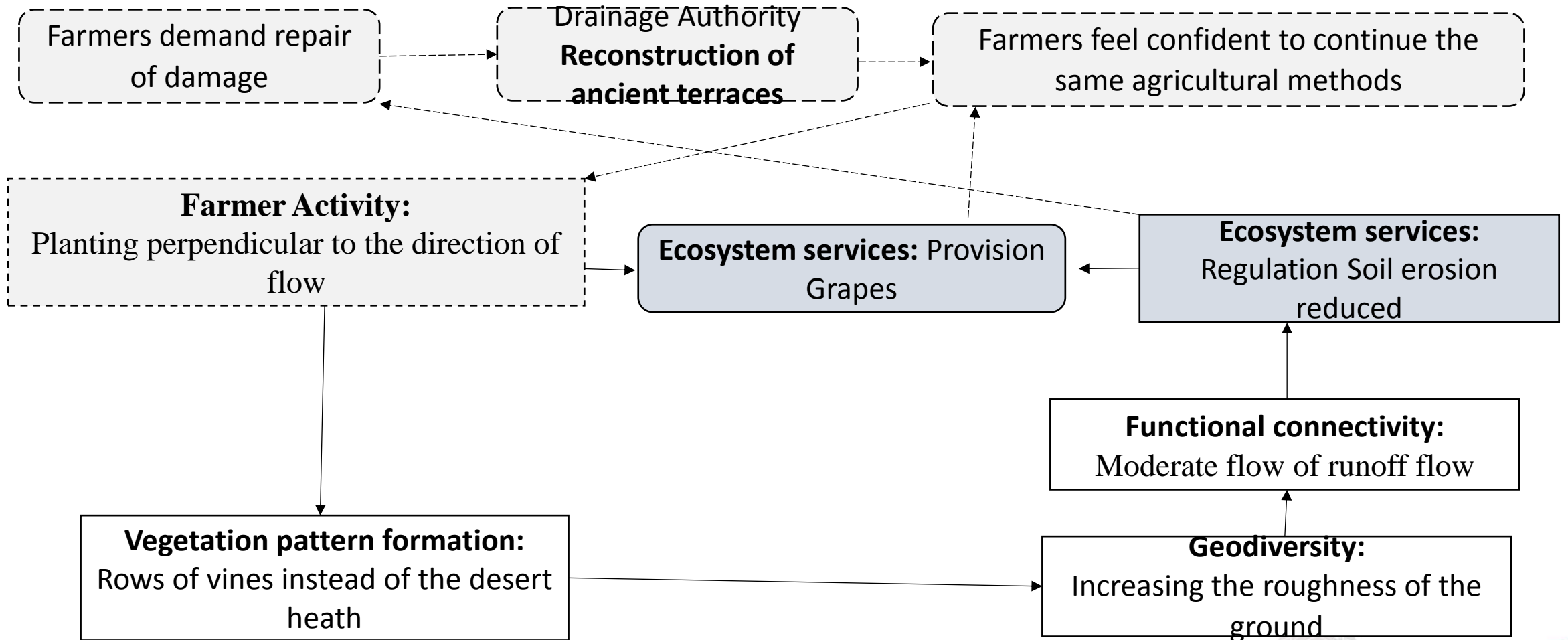


The numbers indicate the steps of development of a Transdisciplinary- PAR framework.
(S (1-3)ToA: Stakeholder Theory of Action)

The current situation: A socio-ecological model of farming in the Negev Highlands



The product of the TD-PAR process: A socio-ecological model of farming in the Negev Highlands



Conclusions

- The main goal of the LTSER platform is to design a resilience social-ecological system that is capable of learning and adapting to social and environmental changes.
- This requires establishing long-term action research partnerships
- Preliminary interviews revealed a multiplicity of stakeholders involved in the area, in relationships of distrust and lack of respect, and a potential for conflicts between the various stakeholders.
- The challenge is threefold:
 - Partnership between researchers from various disciplines
 - Partnership between researchers and stakeholders
 - Partnership between different stakeholders
- Using models that present the complexity and the benefits of cooperation proved useful for connecting researchers from various disciplines and for contributing to assessing partnerships with stakeholders.
- Thought is required as to how to connect the various stakeholders. Do the models help?