



Agriculture practices supporting biodiversity conservation in Israel: A meta-analysis

Introduction

Farmlands can play an important role in supporting biodiversity conservation. In order to do so there are challenges to understand and address:

- ❖ **20% of Israel lands are cultivated**
What effect do they play on biodiversity
- ❖ **Research on agriculture practice & biodiversity**
Scarce and often with conflicting results
- ❖ **Agriculture land are a source for livelihood**
Can we experiment on farmland?
- ❖ **Farmland often is in close proximity to sensitive ecosystems**
How to integrate agriculture and ecology conservation?



Aim

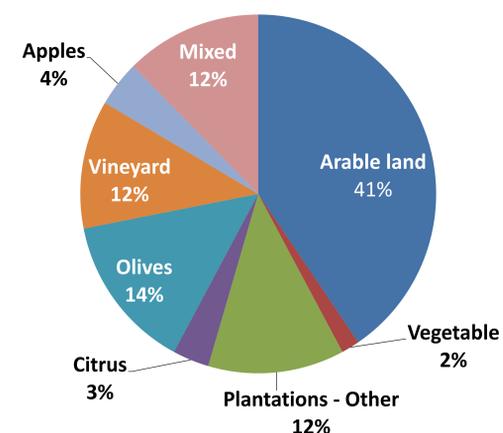
This study was designed to identify wildlife-friendly farming practices, which may be incorporated into Israeli farms, given the local climate, biodiversity, and the prevalent agricultural branches. An additional aim is to identify knowledge gaps and directions for future research in agroecology.

Methods

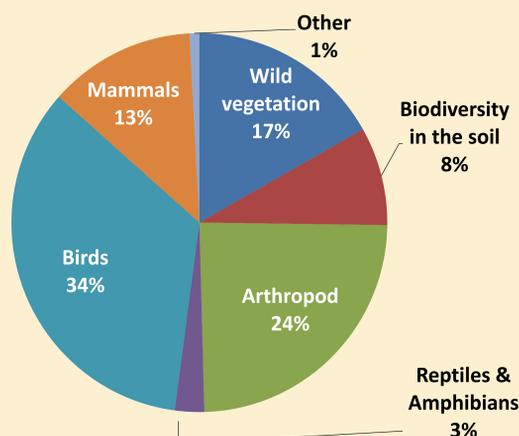
The research focused on identifying scientific evidence for the contribution of various agricultural practices to biodiversity conservation, based on Conservation Evidence Methodology:

1. **Search & identifying** scientific per-reviewed **research work** done in Mediterranean climate zones.
2. **Extracting evidence** such as: The type of specific farming practice, what species are effected and in what manner: Richness, diversity, abundance.
3. **Deducting the main practices** that derive from the reviewed research & Writing summery reports for each meta practice.
4. **Deriving conclusions** on best practices and indicating decision making support tool for biodiversity conservation in agriculture

Agricultural sectors examined in studies Engaged in agriculture and biodiversity



The variety of taxonomic groups under research in the data base

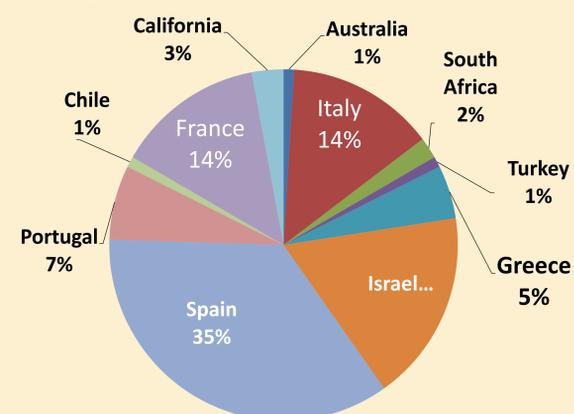


Results

The meta-analysis of the research in the data base reviled the following outcomes:

- 1) 17 meta biodiversity-supporting agricultural practices were identified.
- 2) The practices found to contribute to conservation in the largest number of studies are: conserving natural patches in agricultural areas and cover crops.
- 3) 34% of the studies dealt with bird conservation in farms - none of them in Israel,
- 4) 3% of research dealt with reptiles and amphibians – highly endangered species.
- 5) Only 2% of the studies dealt with vegetables farms, whereas vegetables comprise 14% of the farming sector in Israel.

The distribution of Biodiversity & agriculture research by countries



Conclusion

The 7 most researched agricultural practices derived from the data base are in the following chart. In addition, this study provides a tool to support decision-making processes in identifying practices that should be promoted by biodiversity and agroecology policy.

| Agriculture practice | Num. of research |
|-------------------------------------|------------------|
| Fallow - set aside | 11 |
| Redoced taillag | 11 |
| Natural patches in agriculture land | 14 |
| Hedgerow: Trees & shrabs | 16 |
| IPM\ Reduced Pesticides | 17 |
| Landscape mosaic | 18 |
| Cover crops in orchards | 20 |



Orchard with cover crops by Aviv Avishar