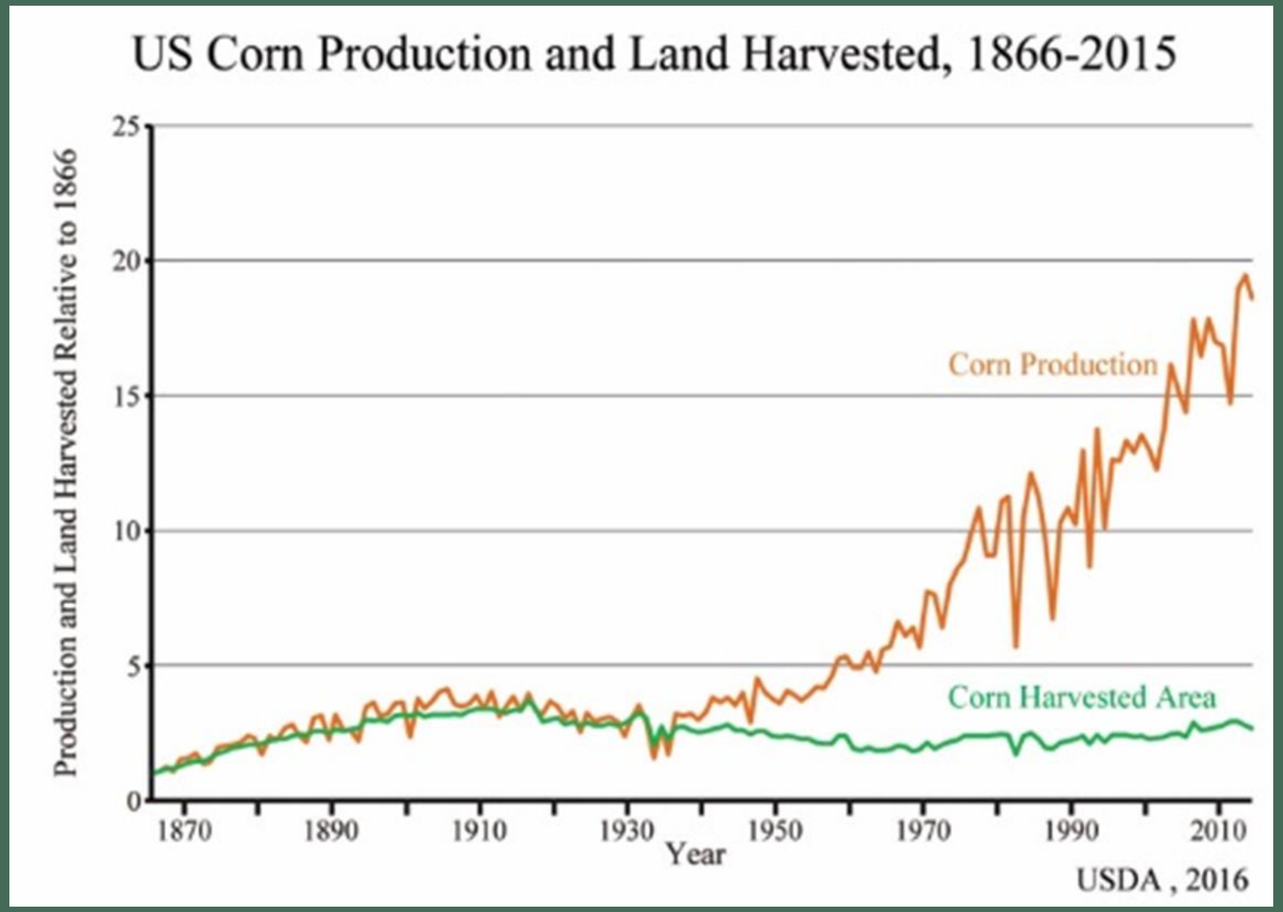
From the lab to the farm: promoting regenerative agriculture by updating the “arena of change”

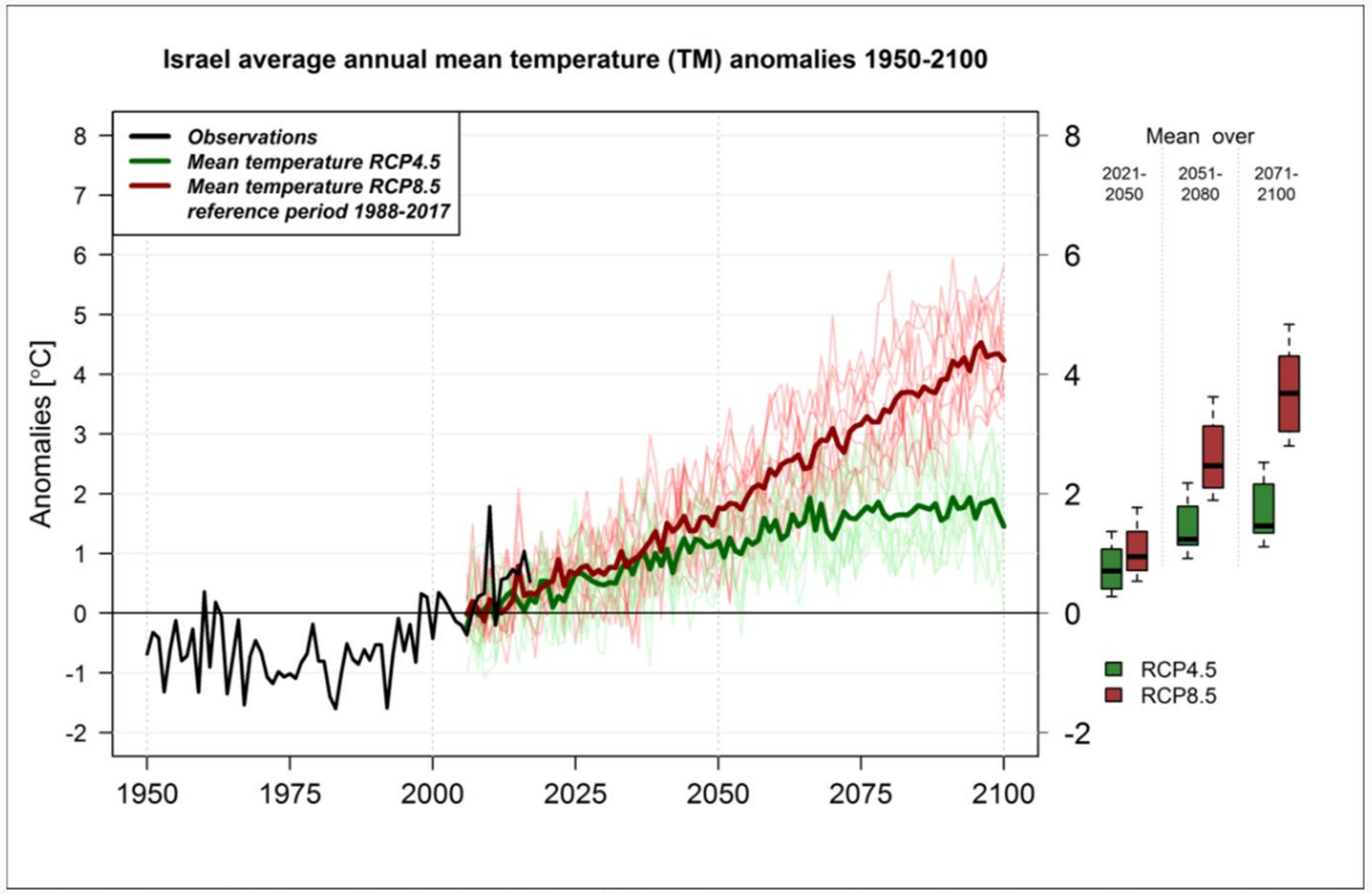
Co-operative Research Programme : Sustainable Agricultural and Food Systems (CRP)

Mr. Eran Ettinger
Israel

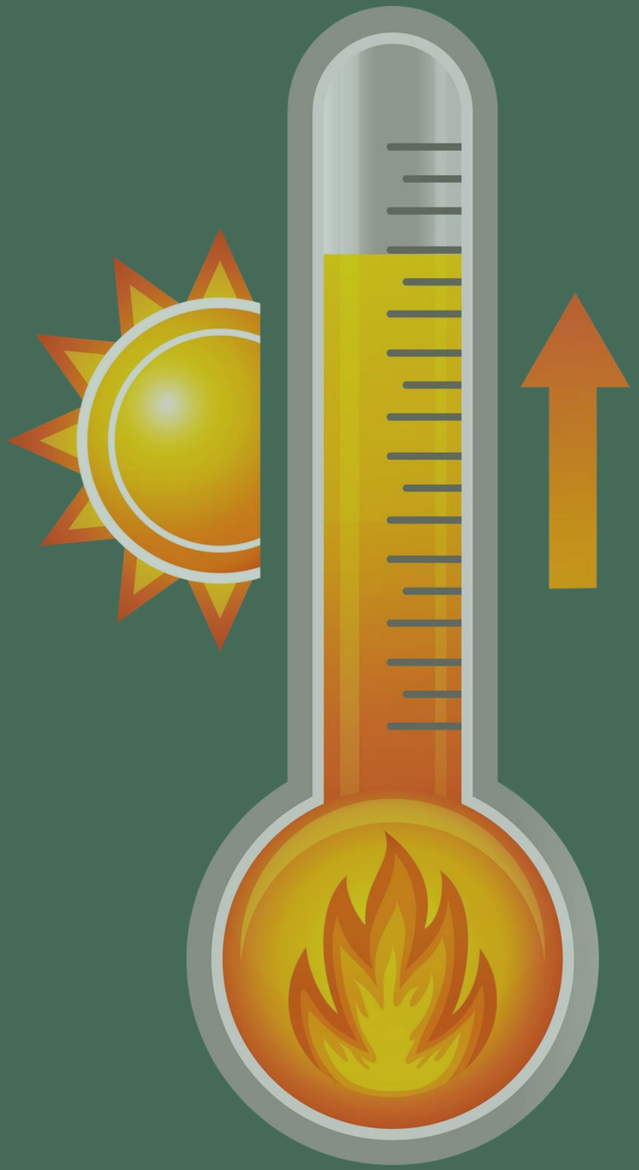
A Journey to Israel’s Regenerative Agriculutre



Industrializing Global Food Production - Maximizing Harvest per Sqm



The change in the mean yearly temperature in Israel at 1988-2017. Mean observations – Black.



Alternative Approaches

Starting the 20s Century

Organic

Conservation

Sustainable

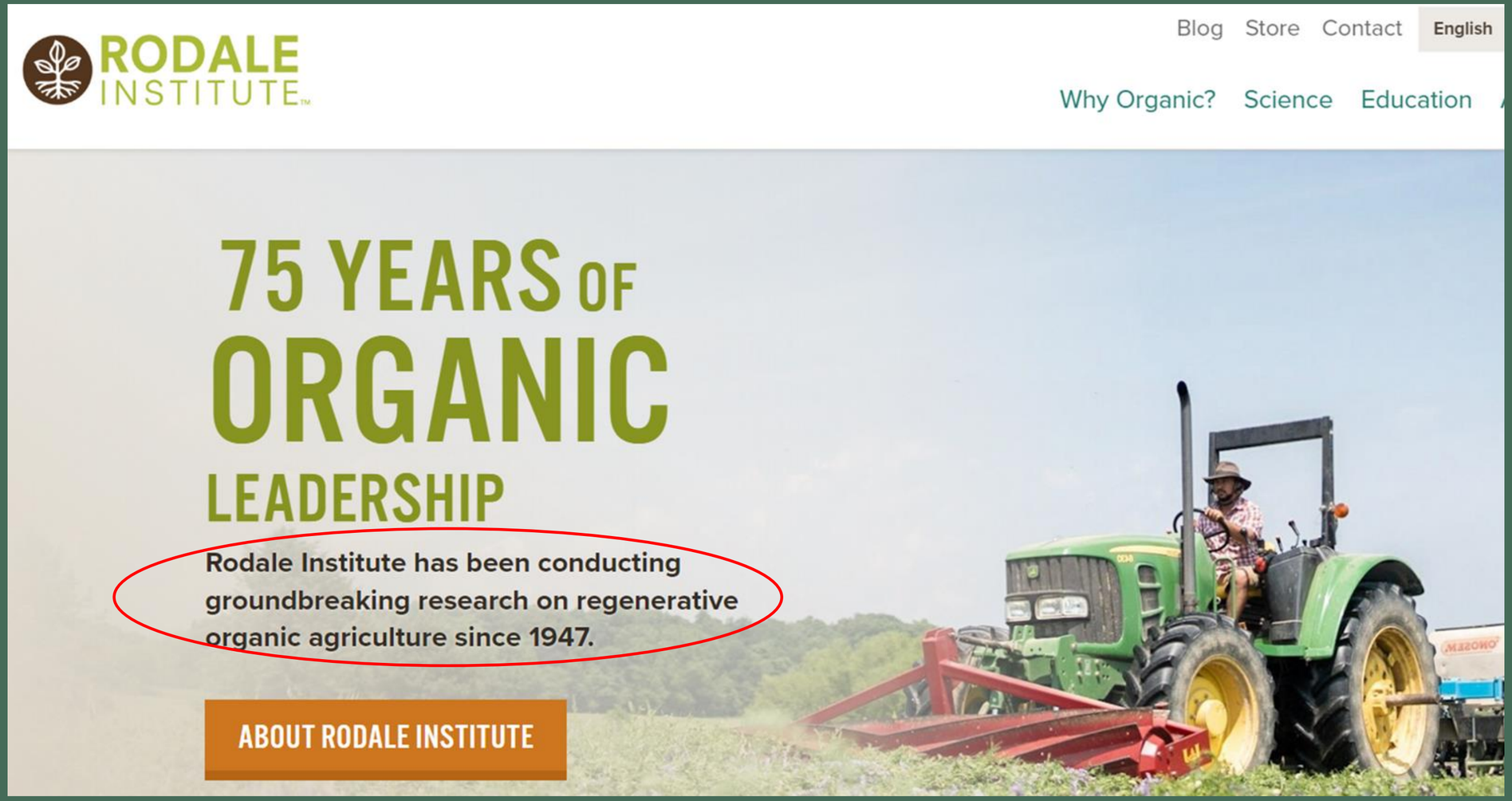
Bio-dynamic

Environmental

Agro-Ecology

Regenerative Agriculture

does it live upto the hype?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Why Organic? Science Education
75 YEARS OF
ORGANIC
LEADERSHIP
Rodale Institute has been conducting groundbreaking research on regenerative organic agriculture since 1947.
ABOUT RODALE INSTITUTE

What is Regenerative Agriculture?

Regenerative agriculture is a system of farming principles and practices that increases biodiversity, enriches soils, improves watersheds, and enhances ecosystem services. ~~Resulting in~~ increased yields, increased resilience to extreme weather events and climate change, and higher health and vitality for the rural communities.

aspiring to...

Regenerative Agriculture: Three Perspectives

Practices

Goals

World View

Based on:

Cusworth G and Garnett, T. (2023). What is regenerative agriculture? TABLE Explainer. TABLE, University of Oxford, Swedish University of Agricultural Sciences and Wageningen University and Research. doi.org/10.56661/2caf9b92

Set of environmental & agricultural goals

- Increasing the durability of the ecological/agronomic system;
- Increasing biodiversity;
- Increasing soil health and fertility;
- Replenishment of natural resources;
- Carbon fixation;
- Minimizing damage to the environment and to humans;
- Continued economic prosperity of agriculture and farmers.

Set of Agricultural Practices

1. reducing mechanical and chemical disturbances to soil and crop;
2. optimal preservation of ground cover;
3. cultivating agricultural diversity;
4. preserving living roots in the soil;
5. Integration of livestock and agricultural systems.

World View and Constant Effort

Ongoing journey of trial and error, searching; complexity and interconnections within the agro-eco - system; humanity - nature balance

Regenerative Agriculture: Three Principles

Soil comes first

Locality & flexibility

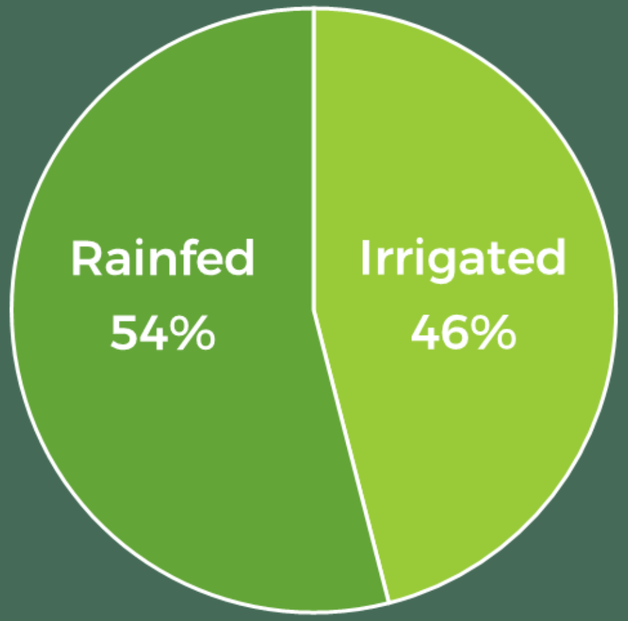
Holistic approach

Israel’s Agriculture Facts & Figures

National figures:

Territory: **22,000 sq. Km**

Population: **8.9 M**



Arable land:
420K hectare
4,200 sq. km

Water Consumption in Agriculture
60% of national consumption
mostly marginal water

Labor force in Agriculture: 75 K

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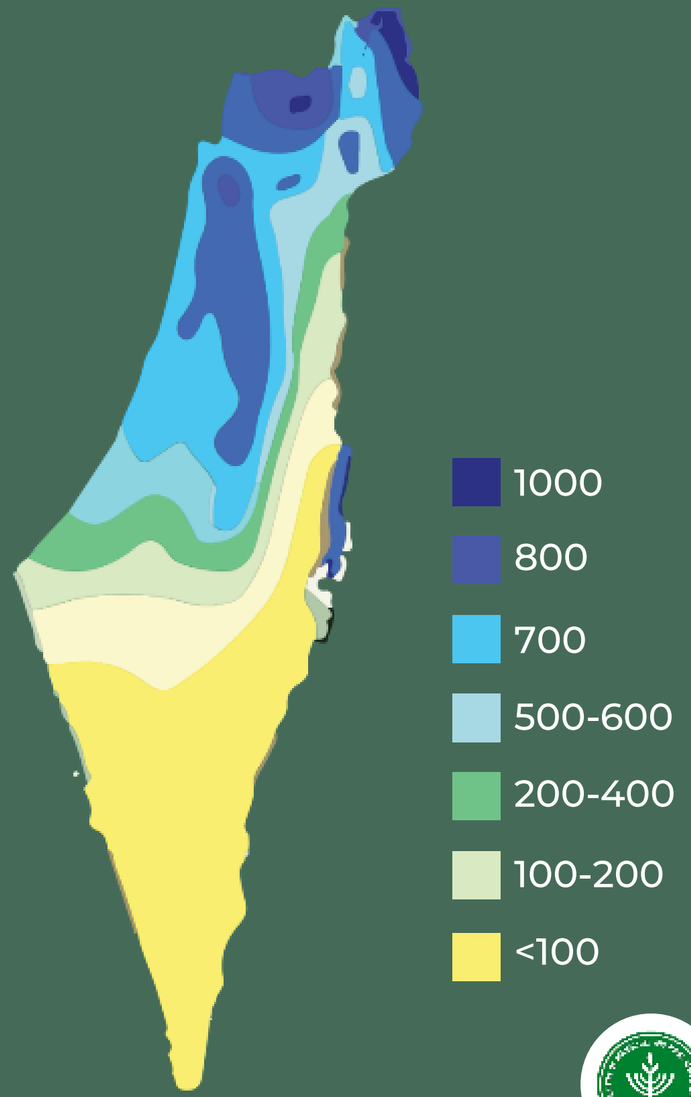
Main Constraints on Israeli Agriculture Sector

- Distant from foreign markets
- 2/3 Semi-arid or arid
- Only 20% of the land is arable
- Shortage of natural water
- Shortage in farm labor
- Complex geopolitical environment
- Frequent drought seasons
- Rain period limited to 3-4 months



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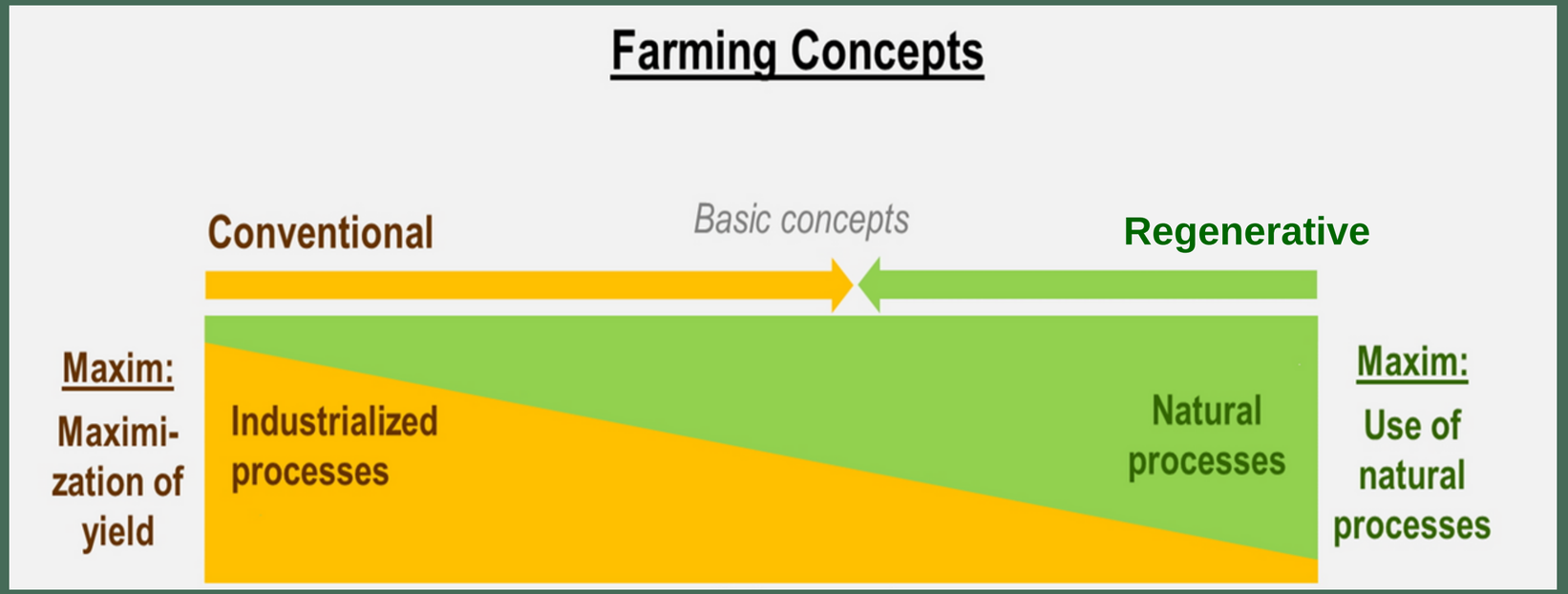
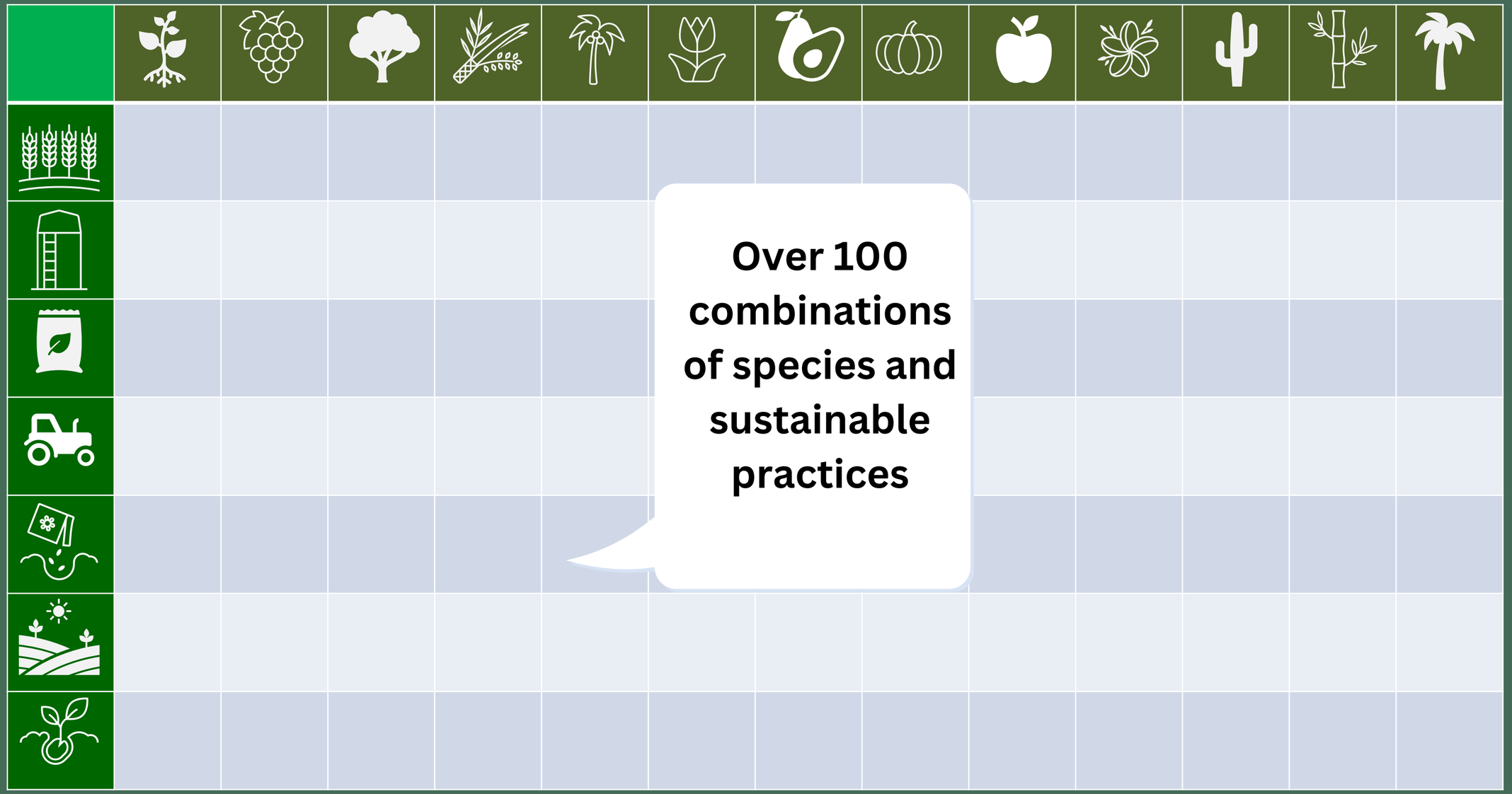
Regenerative Agriculture: Israel's status

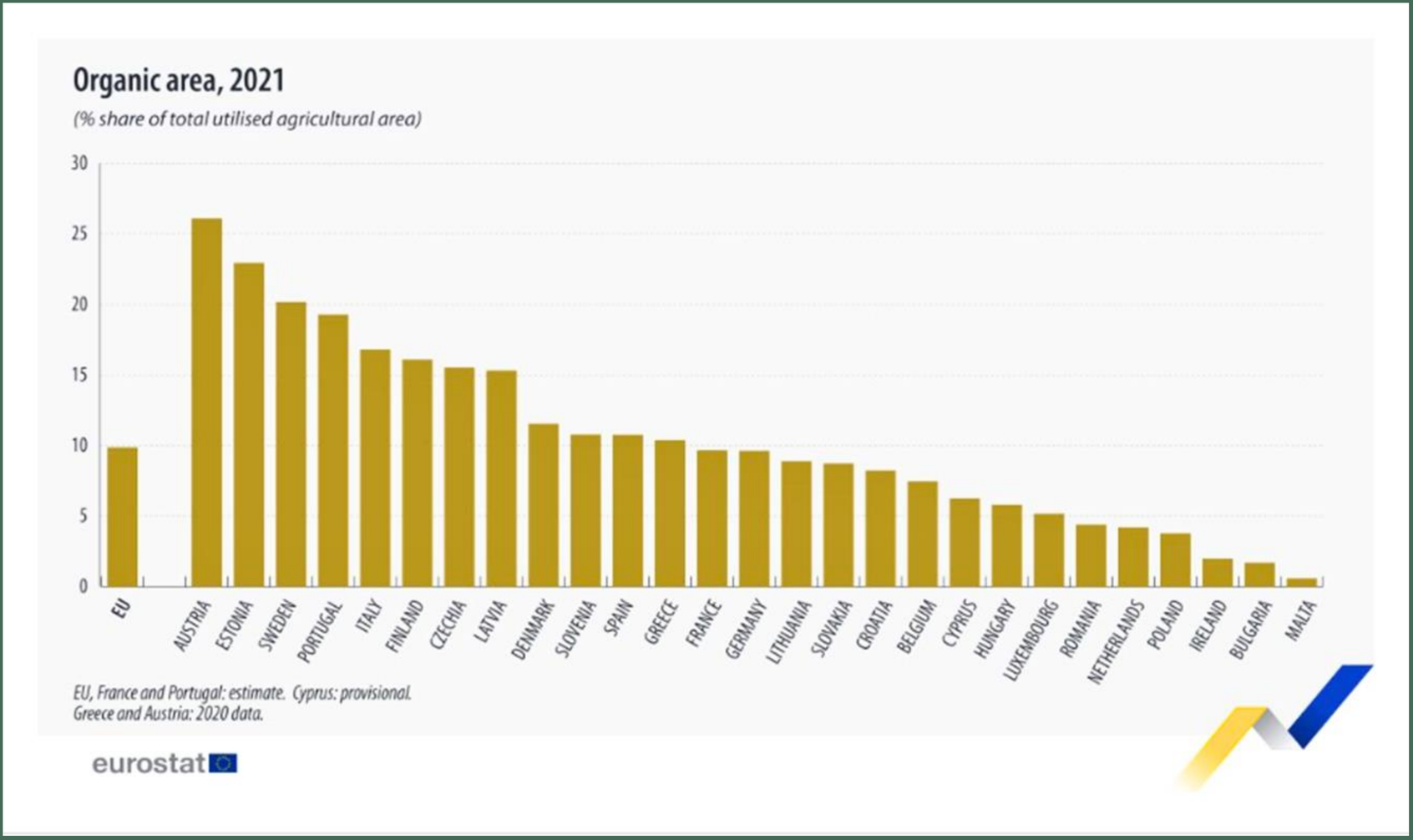


Conservation Agriculture
Organic Agriculture
Agroecological Intensification

Complexity and Lack of Accurate Data



Organic Farming Area as Indicator for Regenerative Farming

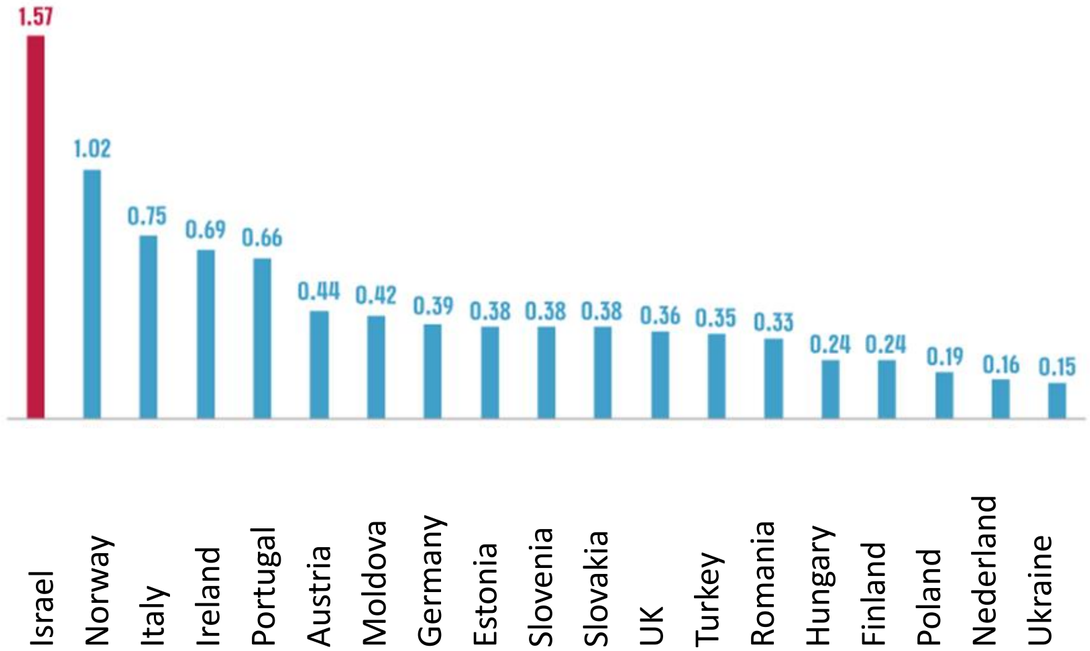


EU: 8%
Israel: 1.5%

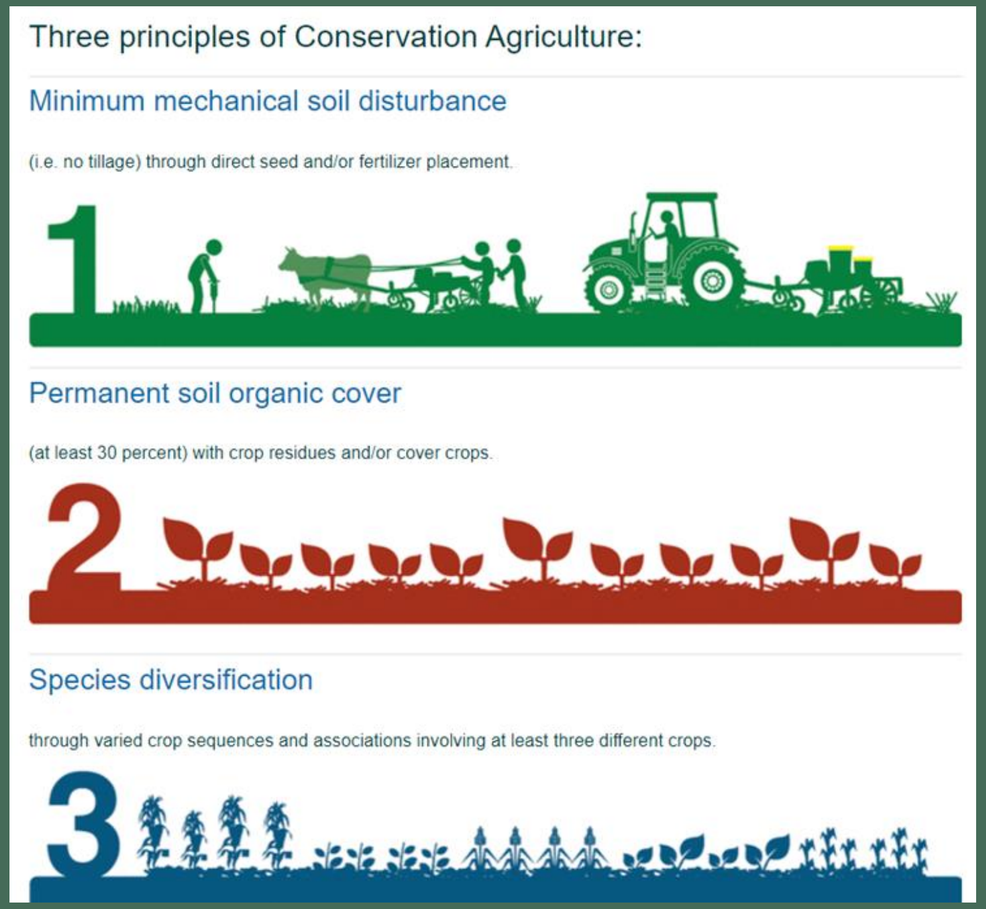
Pesticides Usage in Israel and Worldwide

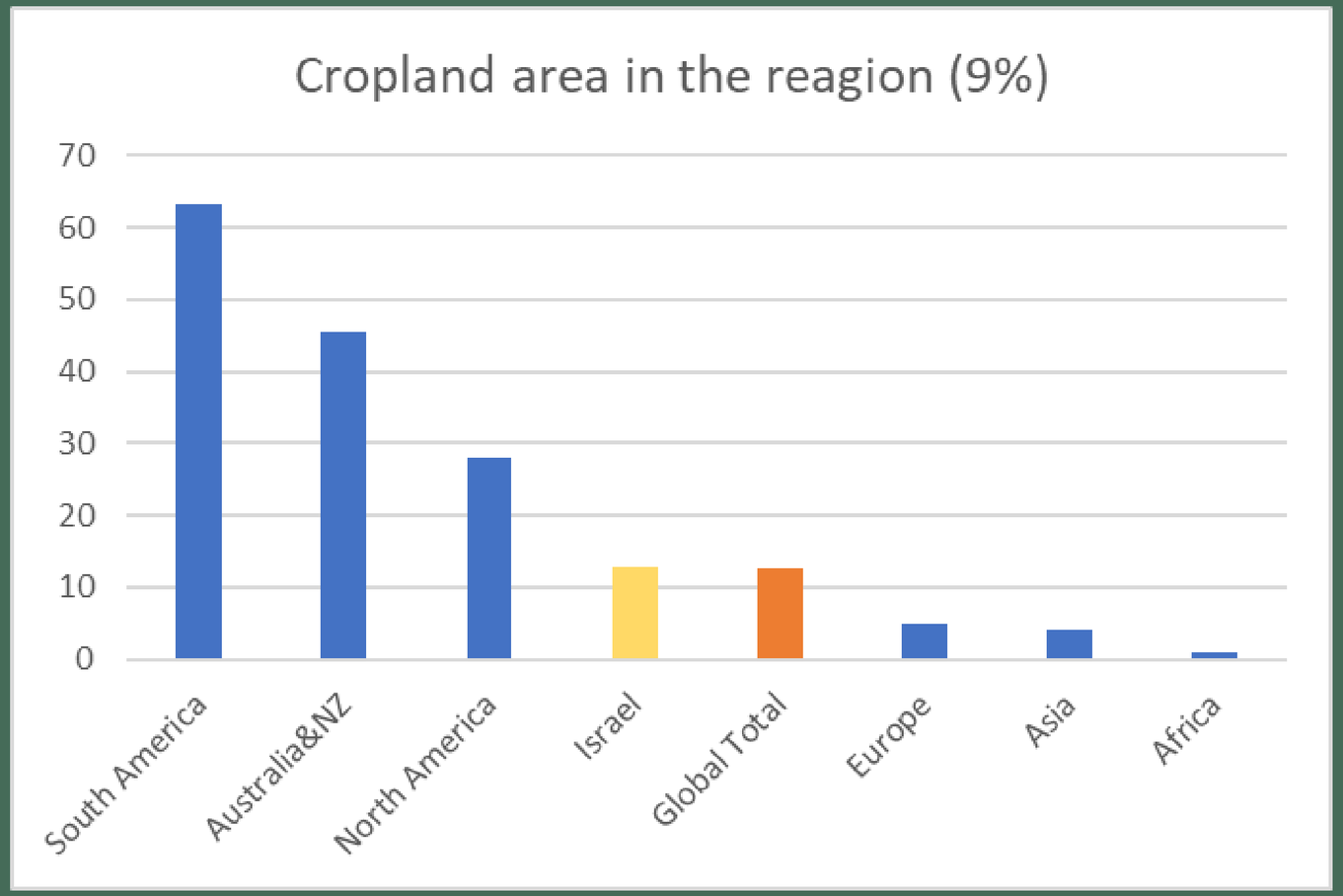
THE Usages of Pesticides in vegetables and Fruits - Israel Central Bureau of Statistics

Ratio of 1 tone of active ingredient to 1,000 tones of plant output, in selected countries, 2018

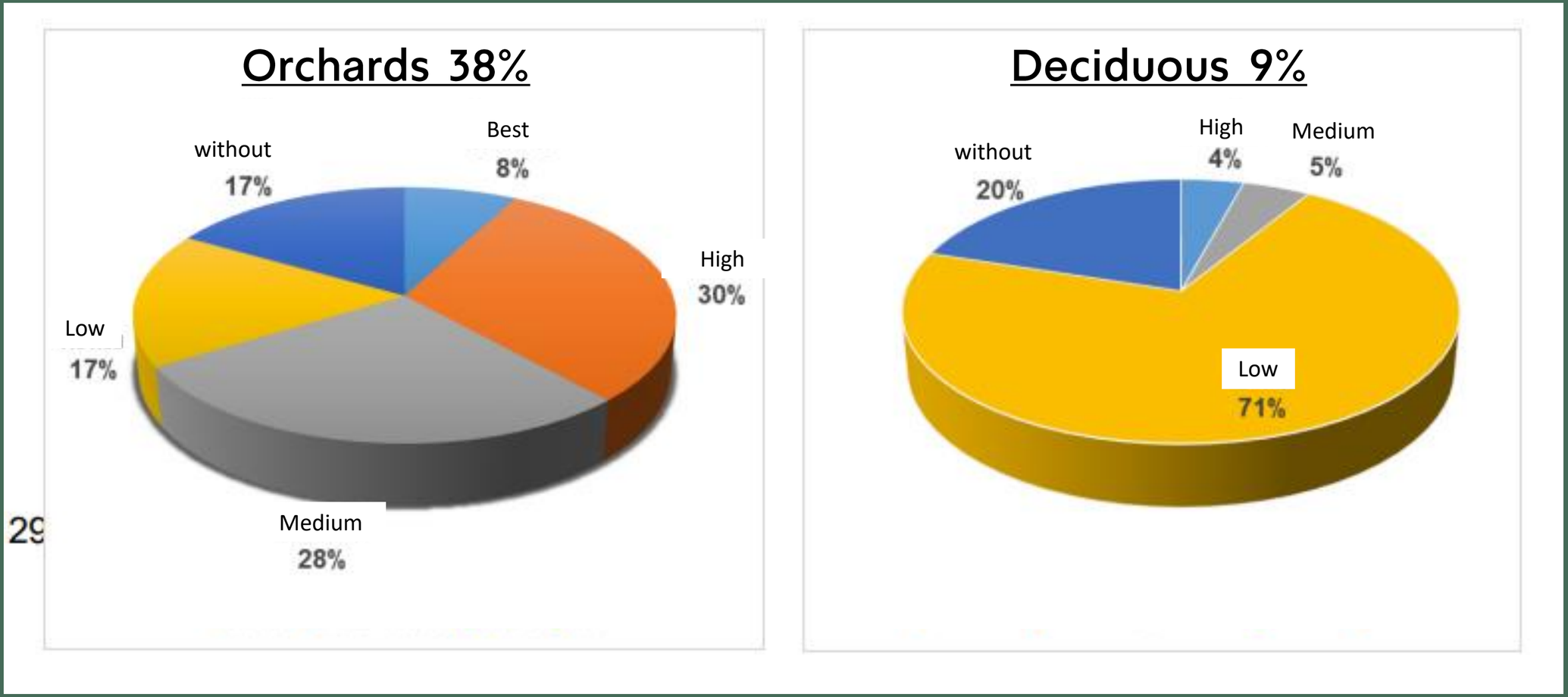


Implementation of Conservation Agriculture in Israel





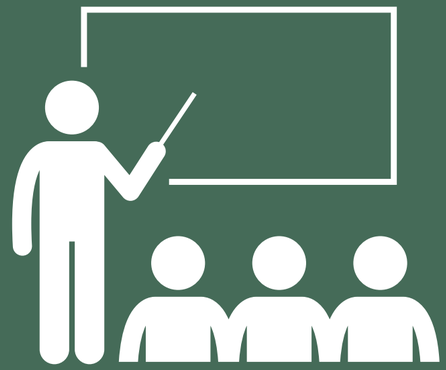
Conservation Agriculture in Israel: Orchards & Deciduous



Implementation of Regenerative Agriculture in Israel: main challenges

Policy / public awareness

Research and development



Training and implementation

Policy Adaptations

- Strengthening competitiveness & innovation
- Supporting rural communities in peripheral regions
- Switching to non-distortive support measures
- Supporting R&D and extension services
- Encouragement of farmer cooperatives
- Developing agro-tourism and other non-agricultural activities in rural areas

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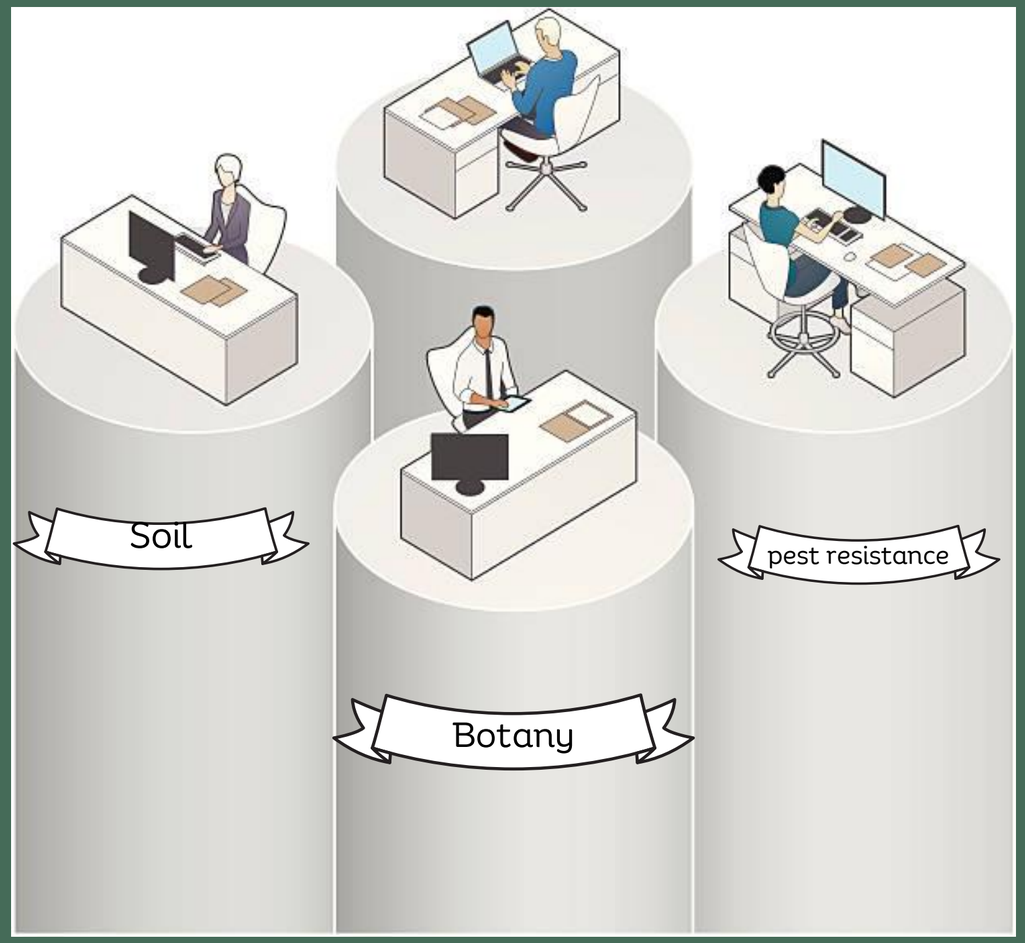
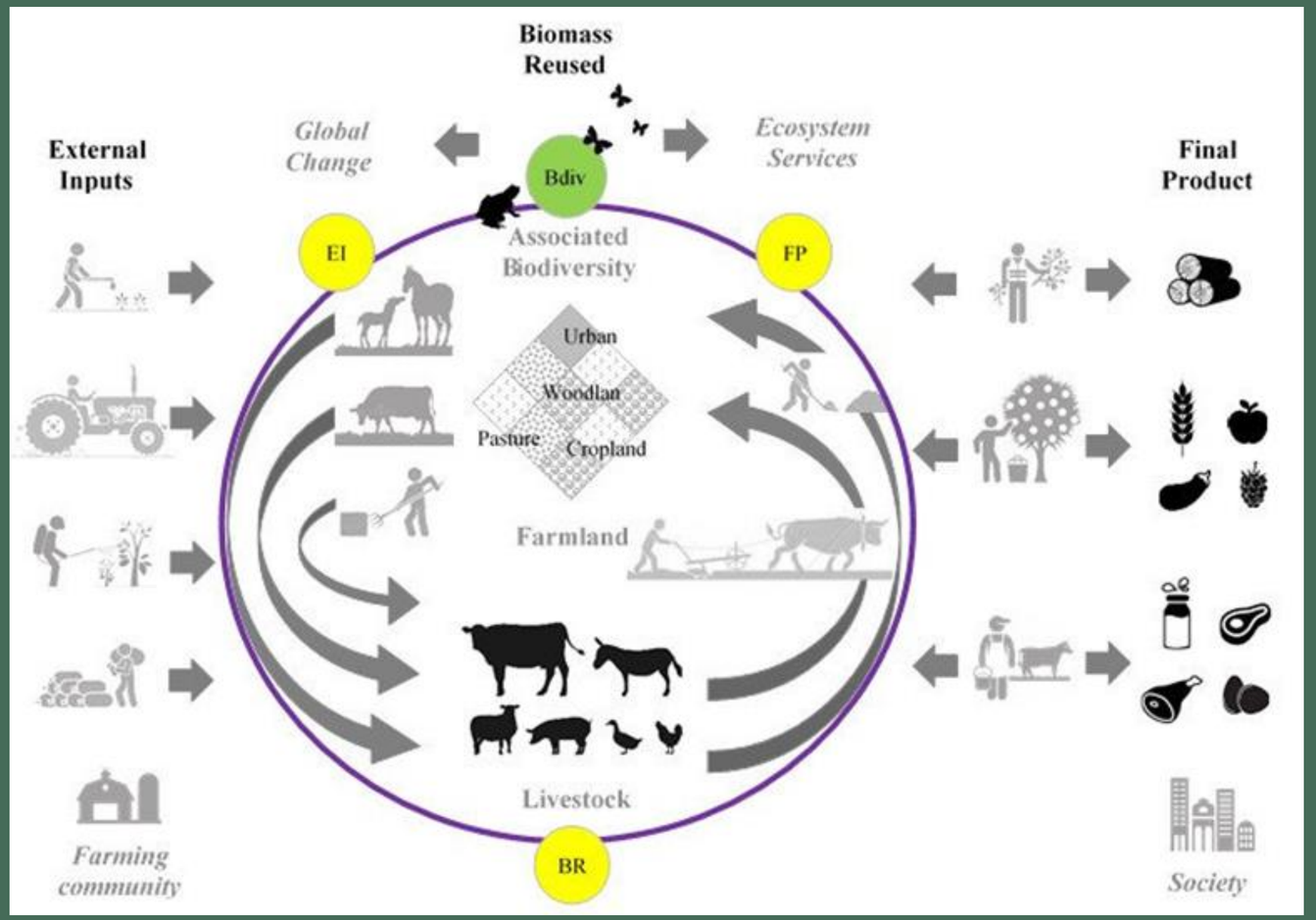
Scientific research: basic, working in Silos and short-term schemes





Fostering Green Growth in Agriculture

The Role of Training, Advisory Services and Extension Initiativ

Knowledge investment supporting the adoption of environmentally friendly farm practic
driver behind innovation processes in agriculture, yet impact evaluations and financial as
of existing initiatives remain scarce despite dramatic changes in orientation, organisatio

08 May 2015 | 96 pages | English | Also available in: French

https://doi.org/10.1787/9789264232198-en | 9789264232198 (PDF)

Author(s): OECD

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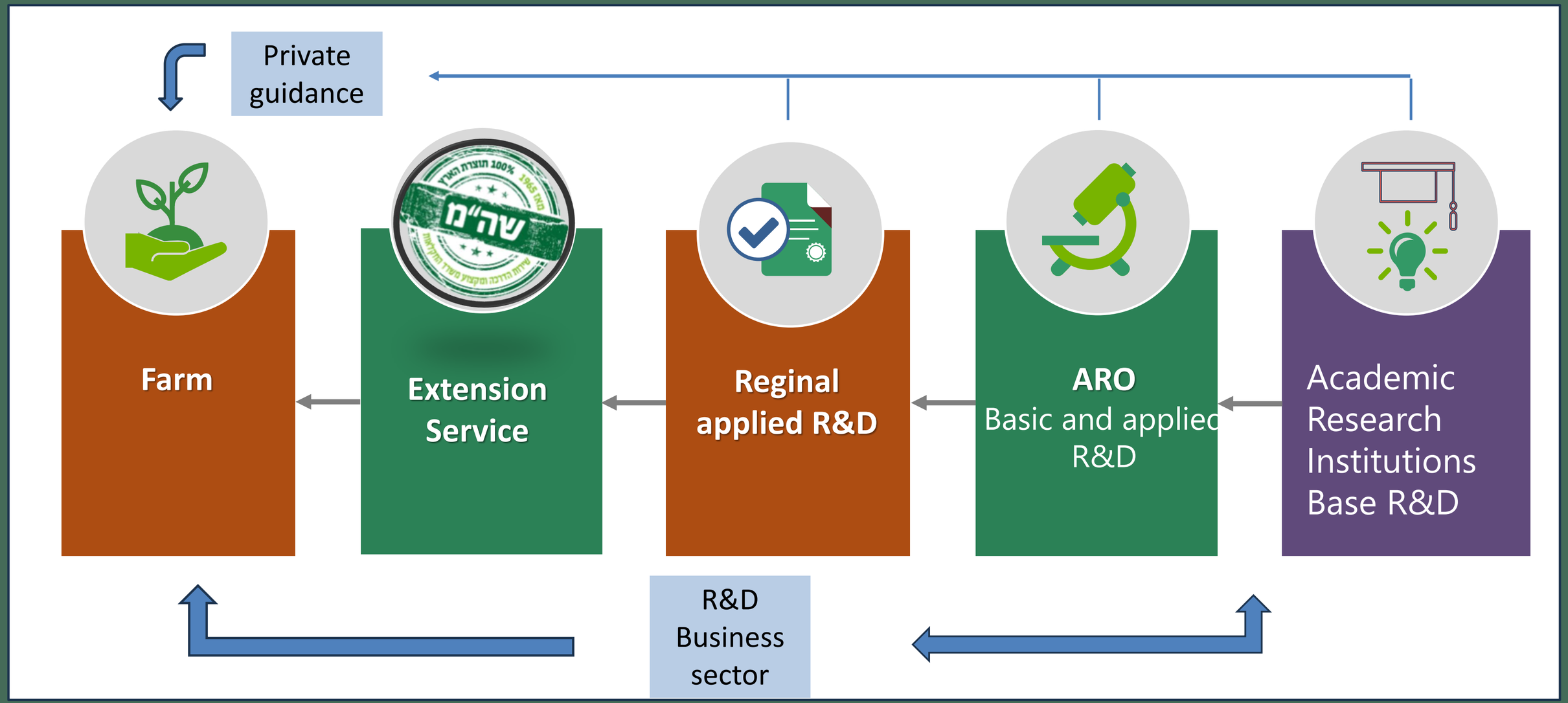
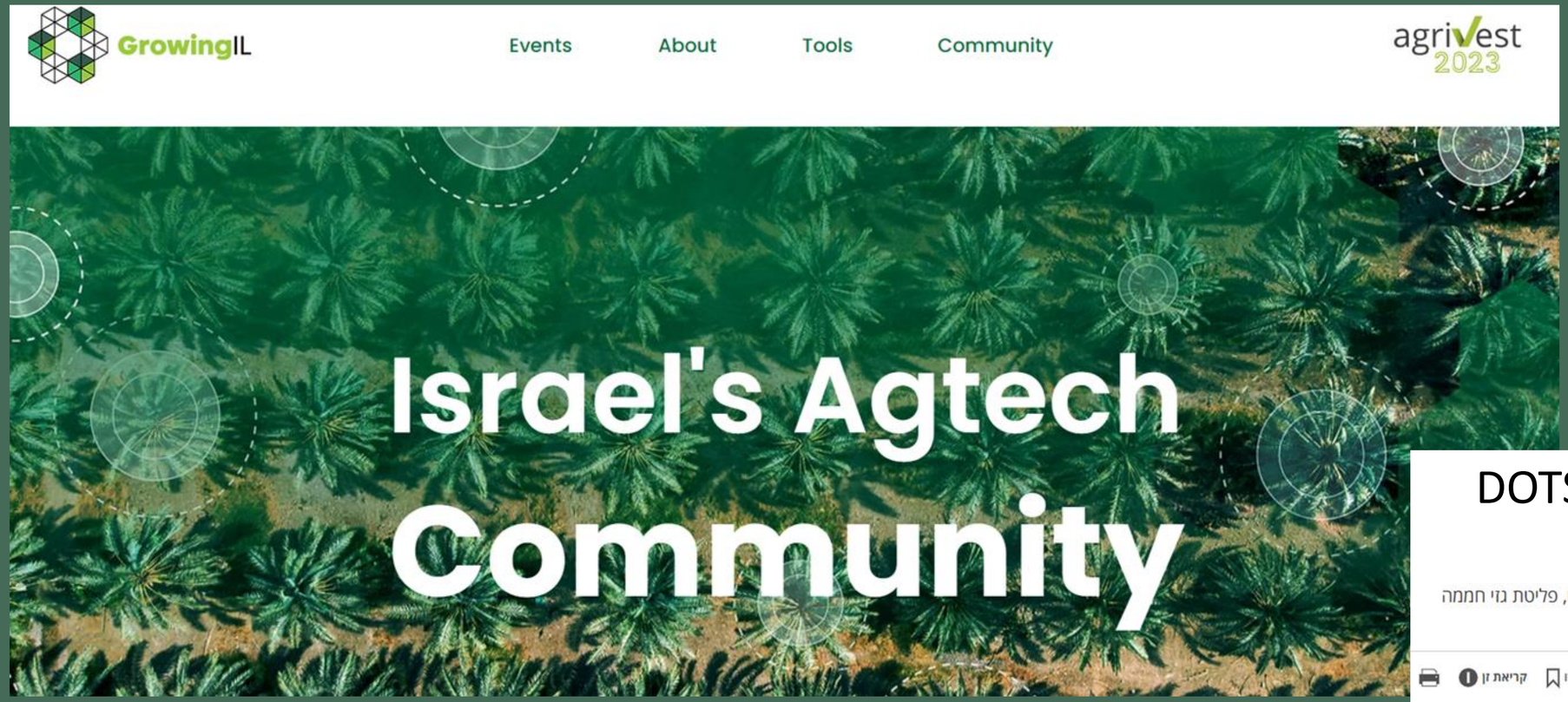
Israel - Development & Implementation of Applied Knowledge



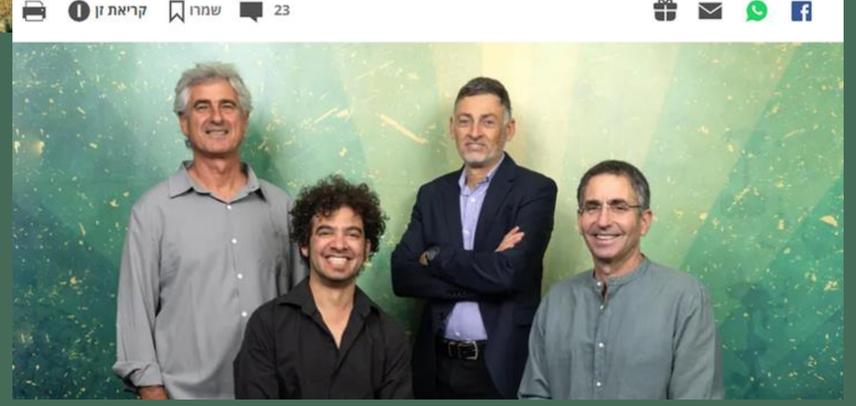
Reasons for optimism: #1 growing public interest

Reasons for optimism: #2 Innovation atmosphere

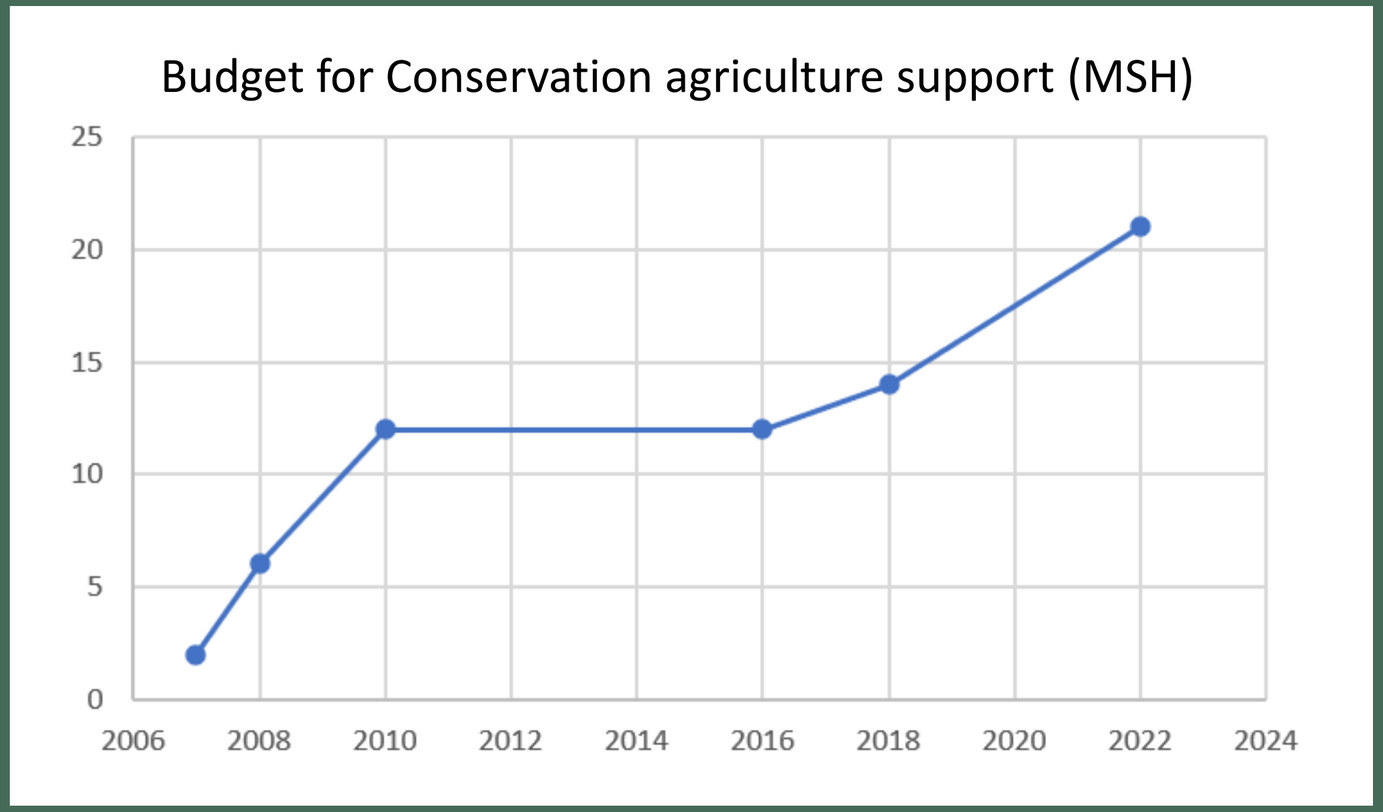


DOTS: Start-up that deal with overdose fertilizing

הייחודית שלה שואפת לפתור את בעיית דישון היתר — שגורמת לזיהום מי תהום, פליטת גזי חממה ובעיות רפואיות ■ "ניסויים שערכנו עם חקלאים בשטח הראו חיסכון של 30%"



Reasons for optimism:# 3 Increased governmental activity



State of Israel
Ministry of Agriculture
& Rural Development
Chief Scientist Office

מדינת ישראל
משרד החקלאות
ופיתוח הכפר
לשכת המדענית הראשית

16 אוגוסט 2022
י"ט אב תשפ"ב

<u>New</u>: Governmental Support for Research of Regenerative Agriculture scientific challenges

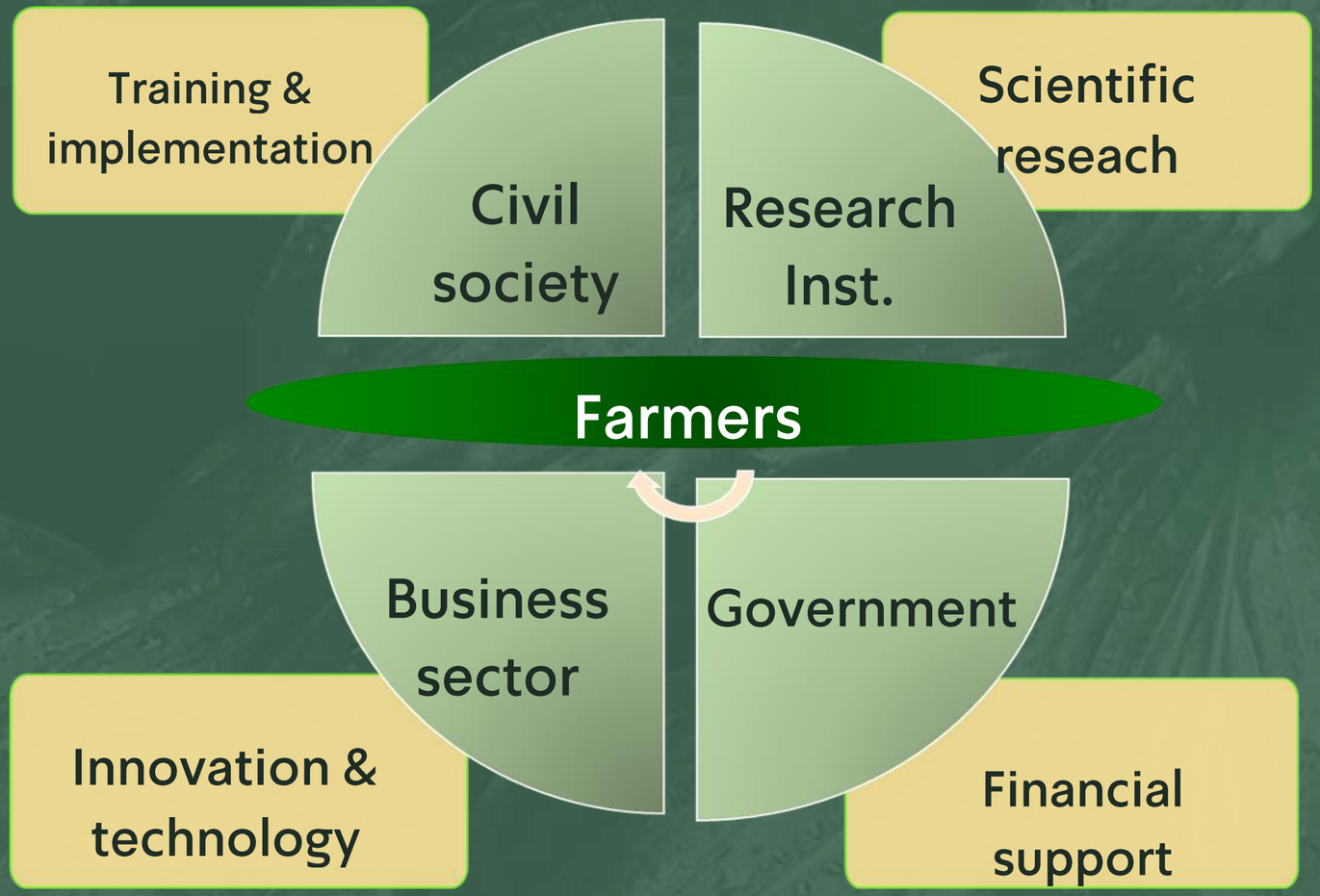
Reasons for optimism:# 4 Entrepreneurs

היינן מיכה ועדיה. בריאות האדמה תורמת לאיכות היין (צילום: אפי שריר)

יין מאדום לירוק: מיכה ועדיה מחוללת מהפכה בכרם

מיכה ועדיה, היינן הוותיק והמוערך של יקב הרי גליל, מחולל מהפכה בכרם במעבר לחקלאות אורגנית ביו־דינמית ובת־קיימא. לדבריו, לא רק הטבע יוצא נשכר מכך אלא גם היינות שנמזגים מהבקבוק (הממוחזר)

Our Theory of Change: 4 Courses of Action of Inter-sectoral Partnership; farmers are central



2 Action Items:

1.Building integrative/applied/long-term research programs

2. Establish Network of model & research farms

Thank you.

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