

## HARVEST HIGHLIGHTS

# What agroecology brings to food security and ecosystem services: a review of scientific evidence



*The Harvest Highlights series provides insights of past events and reports, and illustrates how they are relevant for ongoing discussions and developments*



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Agroecology integrates scientific, practical, and social principles to enhance food security and ecosystem services. Explore the concept and underlying principles by visiting [agroecology\\_pool.org](http://agroecology_pool.org)

## Relevant now because

agroecology is increasingly acknowledged as a key contributor to more sustainable food systems, making them more resilient to the impacts of climate change, enhancing biodiversity and increasing social equity.



## Levers for agroecology to improve food security



- **Agroecology and Crop Diversification:** Utilizes diverse biological mechanisms for food security.
- **Agroecology and Legume-Based Systems:** Nitrogen fixation improves soil health and nutrition.
- **Agroecology and Agroforestry:** Supports resilience, nutrient recycling, stable yields.
- **Agroecology and Mixed Crop-Livestock Systems:** Nutrient recycling, added value with meat and milk.



## Agroecological approaches contribute to food systems transitions

- **Integrated Soil Health Management:** Soil health is crucial for sustainable farming, supported by legume integration, livestock, and agroforestry.
- **Agroecological Integrated Pest Management (IPM):** Agroecological IPM reduces pesticide dependence



## Agroecology provides additional ecosystem services

### Ecosystem & Biodiversity Benefits:

Agroecology enhances biodiversity by 24%, water quality by 50%, and pest control by 60%.

### Climate Change Adaptation & Mitigation:

Agroecology promotes resilience through plot diversification, agroforestry, and pest control.

### Socio-Economic Benefits:

Higher income and productivity with sustainable practices.

Agroecology provides a sustainable way forward, enhancing food security, biodiversity, and resilience. This Knowledge Brief draws on an extensive analysis of scientific literature, including a comprehensive review of articles, meta-analyses, and modeling studies.



Based upon DeSIRA-LIFT Knowledge Brief 4:  
*Guy Faure, Matthias Geck, Maria Luisa Paracchini, Nadine Andrieu.*  
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*a review of scientific evidence. Knowledge Brief 4. DeSIRA-LIFT*

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