

# FORUM AGROECOLOGIA LOMBARDIA **2024**

Agricultori e consumatori per la  
transizione agroecologia

**GIOVEDÌ 28 NOVEMBRE**

h 9:30 - 13:30

Cascina Nascosta | Viale Emilio Alemagna, 14, 20121 | Milano



AIDA  
Associazione Italiana  
di Agroecologia

## L'agroecologia spiegata ai consumatori

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Università degli Studi di Milano

Co-fondatore e primo presidente di AIDA Associazione Italiana di Agroecologia





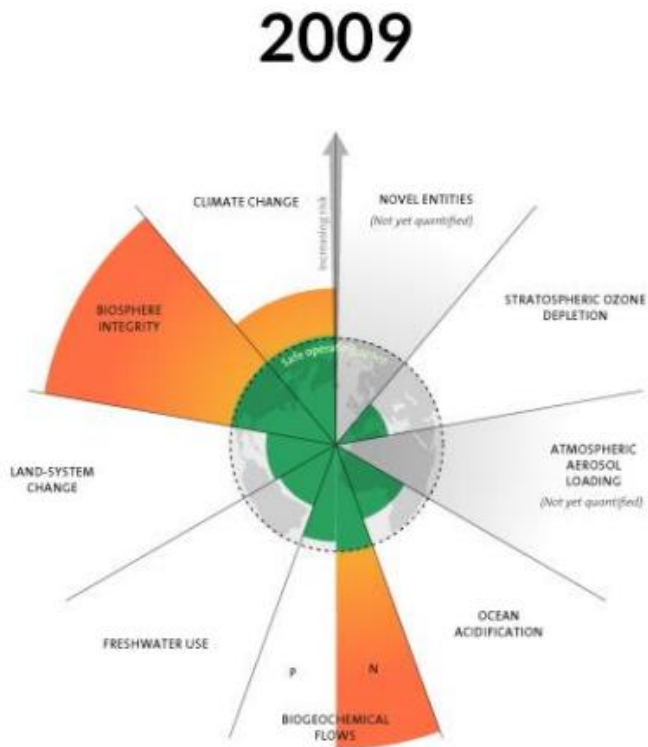
# Definizioni (oggi)

“Oggi, il termine agroecologia significa **sia** una disciplina scientifica, **sia** pratiche agronomiche, **sia** movimenti politici e sociali” (Wenzel et al. 2006)

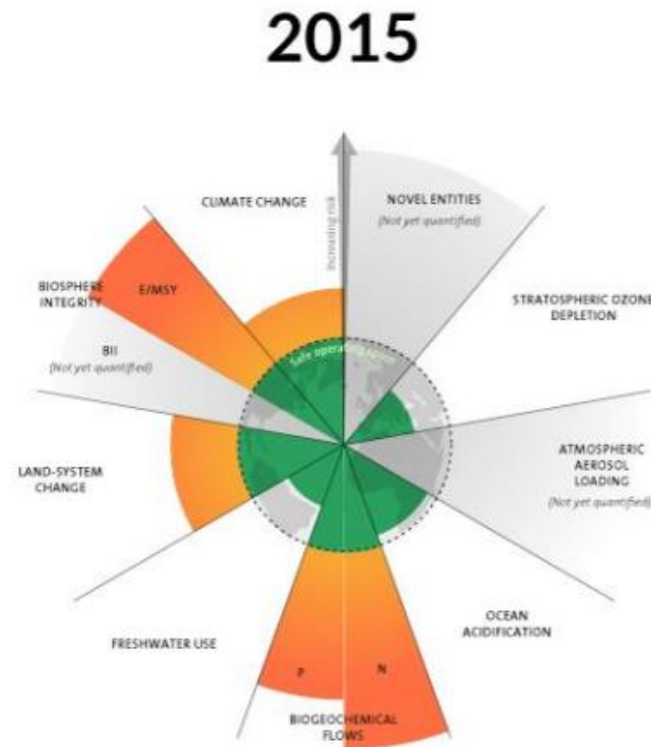
“Agroecologia: l’ambito scientifico di applicazione di concetti e principi ecologici per **progettare e gestire sistemi agroalimentari sostenibili**” (Gliessmann, 2015)

“lo studio integrato dell’**ecologia dell’intero sistema agroalimentare**, includendo le dimensioni ecologica, economica e sociale” (Francis et al. 2015)

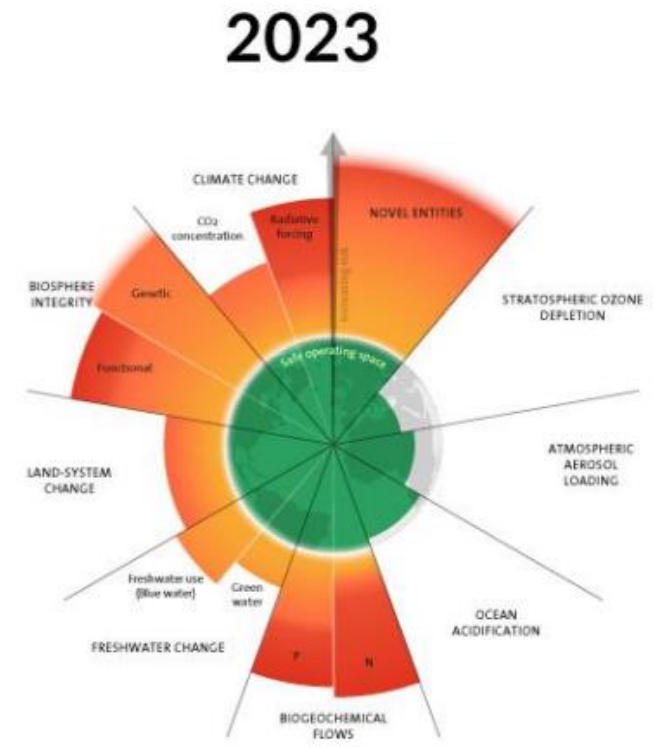
# Il cruscotto mondiale



3 boundaries crossed



4 boundaries crossed



6 boundaries crossed

# ARTICLE

<https://doi.org/10.1038/s41586-018-0594-0>

## Options for keeping the food system within environmental limits

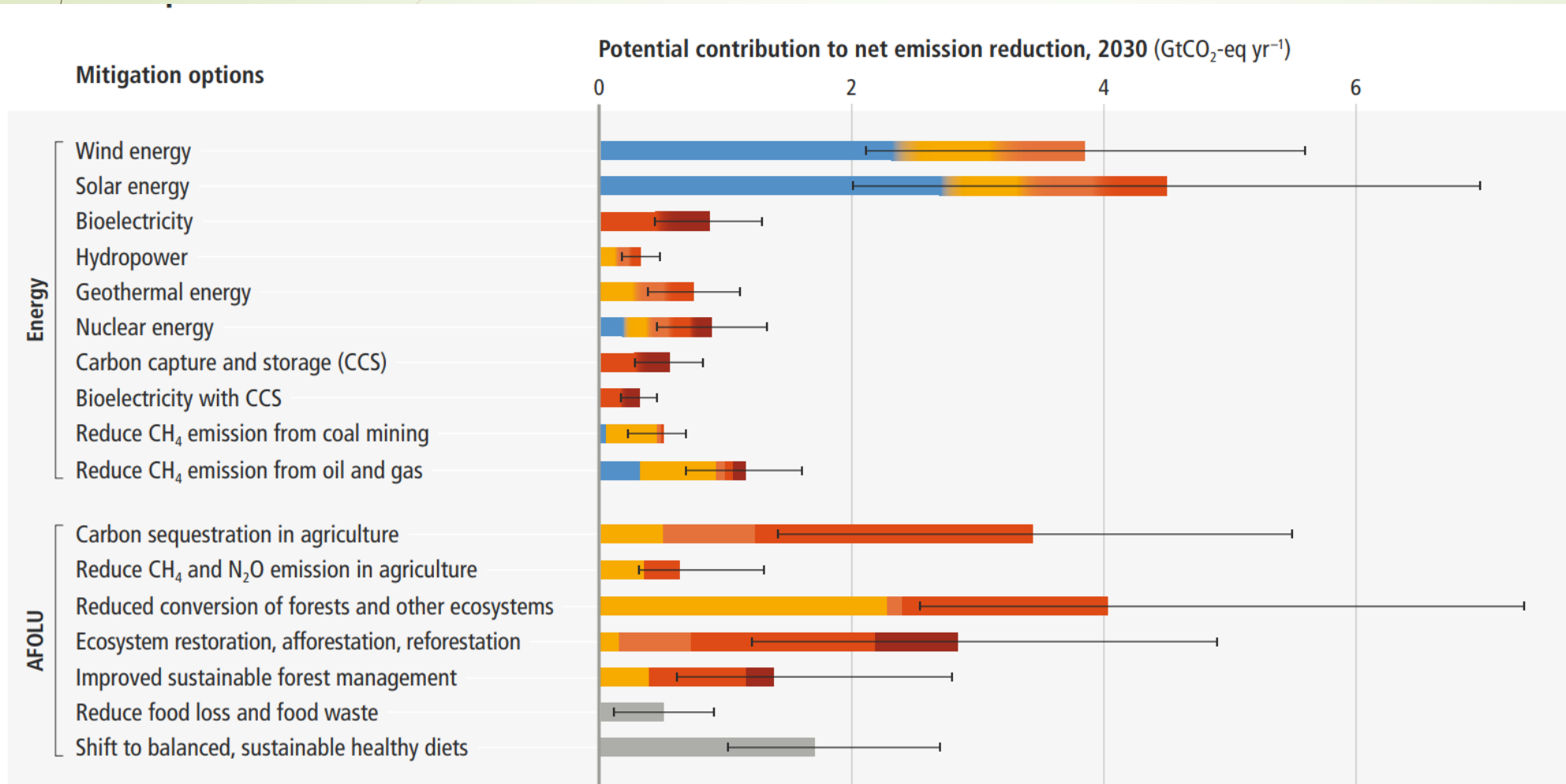
Marco Springmann<sup>1,2\*</sup>, Michael Clark<sup>3</sup>, Daniel Mason-D'Croz<sup>4,5</sup>, Keith Wiebe<sup>4</sup>, Benjamin Leon Bodirsky<sup>6</sup>, Luis Lassaletta<sup>7</sup>, Wim de Vries<sup>8</sup>, Sonja J. Vermeulen<sup>9,10</sup>, Mario Herrero<sup>5</sup>, Kimberly M. Carlson<sup>11</sup>, Malin Jonell<sup>12</sup>, Max Troell<sup>12,13</sup>, Fabrice DeClerck<sup>14,15</sup>, Line J. Gordon<sup>12</sup>, Rami Zurayk<sup>16</sup>, Peter Scarborough<sup>2</sup>, Mike Rayner<sup>2</sup>, Brent Loken<sup>12,14</sup>, Jess Fanzo<sup>17,18</sup>, H. Charles J. Godfray<sup>1,19</sup>, David Tilman<sup>20,21</sup>, Johan Rockström<sup>6,12</sup> & Walter Willett<sup>22</sup>

*«The agrofood system is the major driver of climate change, changes in land use, depletion of freshwater resources, and pollution of aquatic and terrestrial ecosystems through excessive nitrogen and phosphorus inputs»*



# Sistema Agro-alimentare: la più potente leva di cambiamento

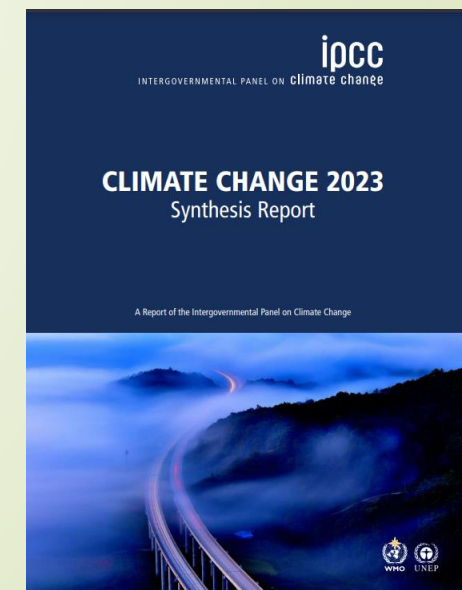
## (Report IPCC)



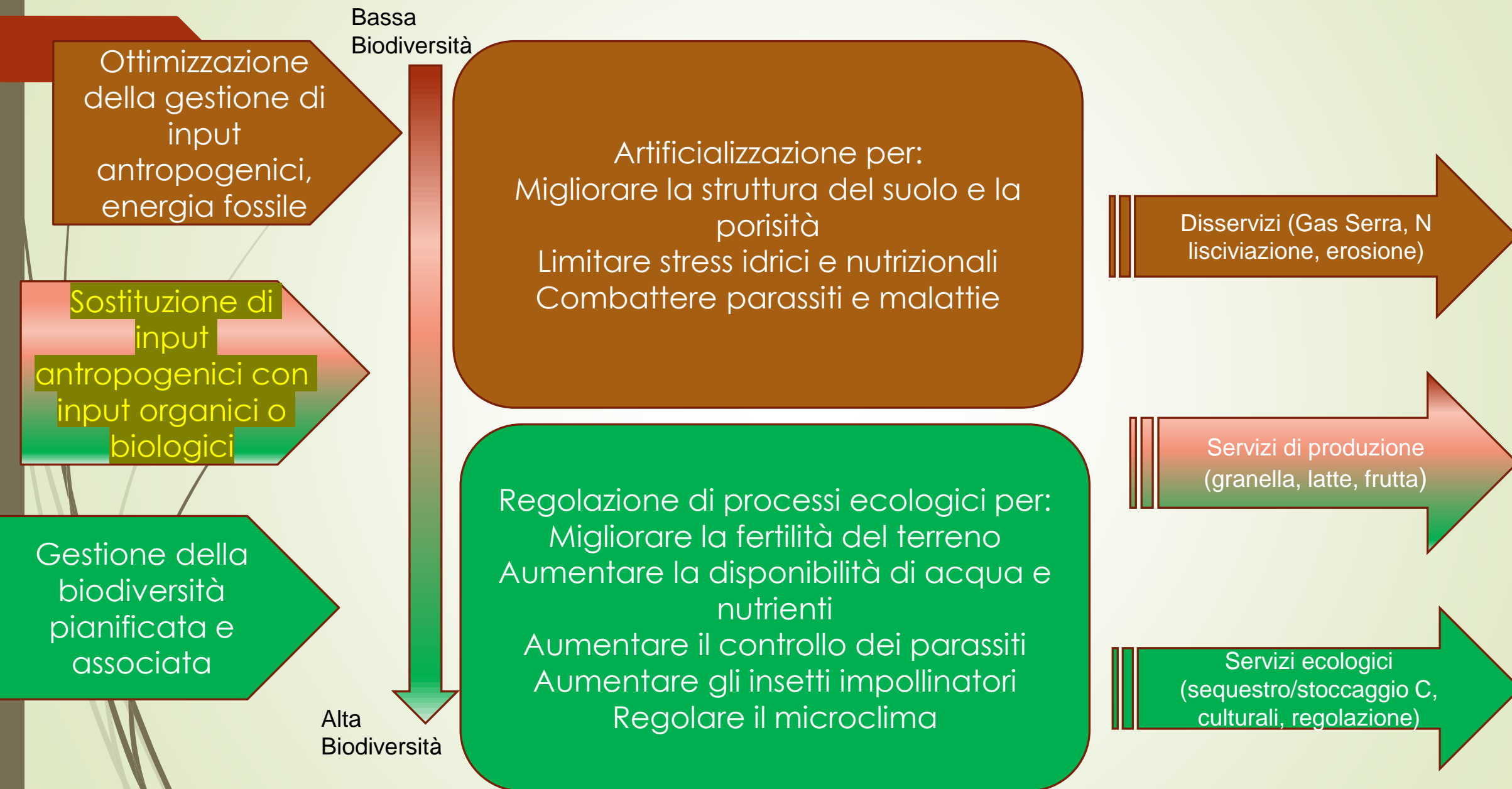
**Margini importanti di riduzione di questi impatti sul nostro pianeta grazie a significativi interventi su opzioni diverse.**

Le principali (in figura), che avrebbero anche risvolti di convenienza economica, sono quelle che riguardano

- 1) le tecniche di sequestro/stoccaggio del carbonio,
- 2) la riduzione/azzeramento della deforestazione,
- 3) azioni di rigenerazione degli ecosistemi e riforestazione.



# Tipologia di azienda agraria



# La transizione agroecologica

TRASFORMATIVO

INCREMENTALE

**LIVELLO 5**  
Costruire un nuovo sistema agro-alimentare globale basato sui territori, la partecipazione, l'equità e la giustizia

**LIVELLO 4**  
Riconnettere consumatori e produttori attraverso lo sviluppo di reti alimentari alternative

**LIVELLO 3**  
Riprogettare gli agroecosistemi

**LIVELLO 2**  
Sostituire gli input e le pratiche convenzionali con alternative agroecologiche

**LIVELLO 1**  
Aumentare l'efficienza d'uso degli input e ridurre l'utilizzo di input costosi, difficilmente reperibili e dannosi per l'ambiente

SISTEMA AGRO-ALIMENTARE

AGROECOSISTEMA





**Strategie  
Agricoltura industrializzata**

Disconnessione dai cicli naturali

Settorializzazione

Dipendenza dal mercato (globale)

Da alimenti a *commodities*

Tecnologie (genetiche, chimiche,  
meccaniche)

Allargamento della scala come traiettoria  
dominante (riduzione di impiego e di posti di  
lavoro)

Intensificazione come funzione tecnologica

Specializzazione (ricerca, produzione,  
istituzioni ecc.)

Rottura tra passato, presente e futuro

Ricerca esterna

Privatizzazione risorse

**Strategia  
Agroecologia**

Integrazione con cicli naturali, coevoluzione

Integrazione settori produttivi, insediativi, ricreativi

Ricerca di autonomia dai mercati degli input  
Differenziazione degli output (integrazione servizi  
ecosistemici)

Da commodity a prodotti contestualizzati



Centralità delle tecnologie orientate alle competenze

Cooperazione, creazione di associazioni

Intensificazione basata su quantità e qualità del  
lavoro, dei processi e dei prodotti

Multifunzionalità all'interno di un modello  
cooperativo

Continuità fra passato, presente e futuro

Interdisciplinarietà e partecipazione

Aumento della ricchezza sociale e territoriale



# L'agroecologia affamerà il mondo, l'Europa e l'Italia ?

SCIENCE ADVANCES | RESEARCH ARTICLE

ECOLOGY

## Agricultural diversification promotes multiple ecosystem services without compromising yield

Giovanni Tamburini<sup>1,2\*</sup>, Riccardo Bommarco<sup>1</sup>, Thomas Cherico Wanger<sup>1,3†</sup>, Claire Kremen<sup>4,5</sup>, Marcel G. A. van der Heijden<sup>6,7</sup>, Matt Liebman<sup>8</sup>, Sara Hallin<sup>9</sup>

Enhancing biodiversity in cropping systems is suggested to promote ecosystem services, thereby reducing dependency on agronomic inputs while maintaining high crop yields. We assess the impact of several diversification practices in cropping systems on above- and belowground biodiversity and ecosystem services by reviewing 98 meta-analyses and performing a second-order meta-analysis based on 5160 original studies comprising 41,946 comparisons between diversified and simplified practices. Overall, diversification enhances biodiversity, pollination, pest control, nutrient cycling, soil fertility, and water regulation without compromising crop yields. Practices targeting aboveground biodiversity boosted pest control and water regulation, while those targeting belowground biodiversity enhanced nutrient cycling, soil fertility, and water regulation. Most often, diversification practices resulted in win-win support of services and crop yields. Variability in responses and occurrence of trade-offs highlight the context dependency of outcomes. Widespread adoption of diversification practices shows promise to contribute to biodiversity conservation and food security from local to global scales.

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### Can agroecology improve food security and nutrition? A review

Rachel Bezner Kerr<sup>a,\*</sup>, Sidney Madsen<sup>a</sup>, Moritz Stüber<sup>b</sup>, Jeffrey Liebert<sup>c</sup>, Stephanie Enloe<sup>a</sup>, Noélie Borghino<sup>b</sup>, Phoebe Parros<sup>b</sup>, Daniel Munyao Mutiyambai<sup>c</sup>, Marie Prudhon<sup>b</sup>, Alexander Wezel<sup>b</sup>

<sup>a</sup> Department of Global Development, Cornell University, Ithaca, NY, United States  
<sup>b</sup> Iauu, AgroSchool for Life, Agroecology and Environment research unit, Lyon, France  
<sup>c</sup> Soil & Crop Sciences Section, School of Integrative Plant Science, Cornell University, Ithaca, NY, USA

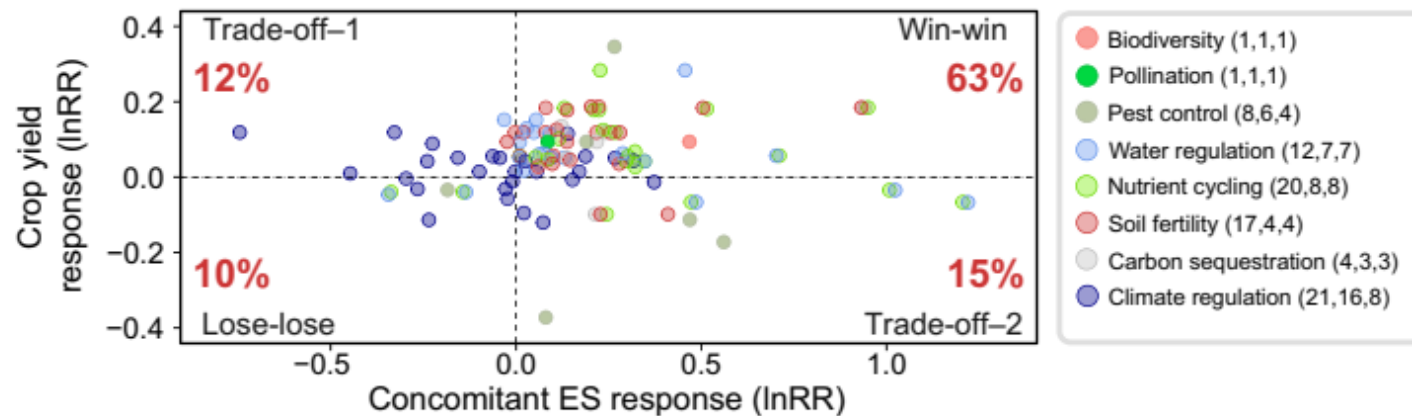
#### ARTICLE INFO

Keywords:  
 Agroecology  
 Food security  
 Nutrition  
 Dietary diversity  
 Crop diversity  
 Sustainable agriculture

#### ABSTRACT

Agroecology increasingly has gained scientific and policy recognition as having potential to address environmental and social issues within food production, but concerns have been raised about its implications for food security and nutrition, particularly in low-income countries. This review paper examines recent evidence (1998–2019) for whether agroecological practices can improve human food security and nutrition. A total of 11,771 articles were screened by abstract and title, 275 articles included for full review, with 56 articles (55 cases) selected. A majority of studies (78%) found evidence of positive outcomes in the use of agroecological practices on food security and nutrition of households in low and middle-income countries. Agroecological practices included crop diversification, intercropping, agroforestry, integrating crop and livestock, and soil management measures. More complex agroecological systems, that included multiple components (e.g., crop diversification, mixed crop-livestock systems and farmer-to-farmer networks) were more likely to have positive food security and nutrition outcomes.

SCIENCE ADVANCES | RESEARCH ARTICLE



**Fig. 3. Agricultural diversification generally promotes win-win scenarios, simultaneously supporting crop yield and the provisioning of a concomitant ecosystem service category.** The visualization is based on a subset of meta-analyses, which simultaneously presented the responses to agricultural diversification of crop yield (y axis) and at least one concomitant ecosystem service (ES) (x axis) (in total 24 studies, 111 pairs of effect sizes). Numbers in red indicate the proportion of effect size combinations in each quadrante. Points represent combinations of raw effect sizes (lnRR) and the colors correspond to the specific service, as indicated in the box to the right. Values in parentheses after each service indicate the number of effect sizes for the concomitant service, crop yield, and the number of meta-analyses.

# Agroecologia e Global Health

