



Session: Resilience to Food Systems Shocks in Africa
Current global challenges and shocks impacting African Food Systems and the Agroecology/Organic Opportunity

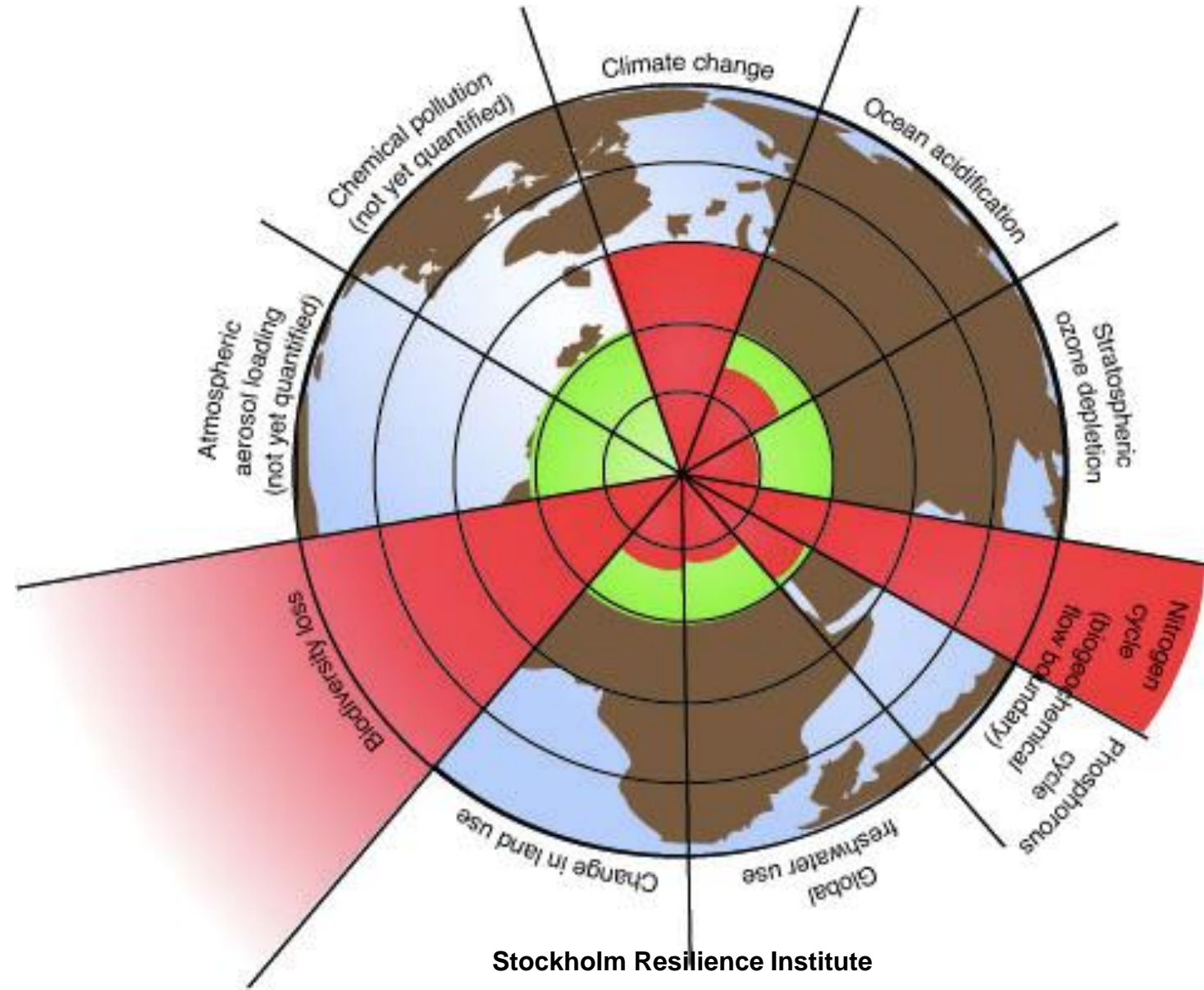
13 December 2023, Markus Arbenz. Senior Consultant of FiBL International Department, Ambassador of IFOAM Organics International, and owner of Organics4Development

markus.arbenz at fibl.org

ToC

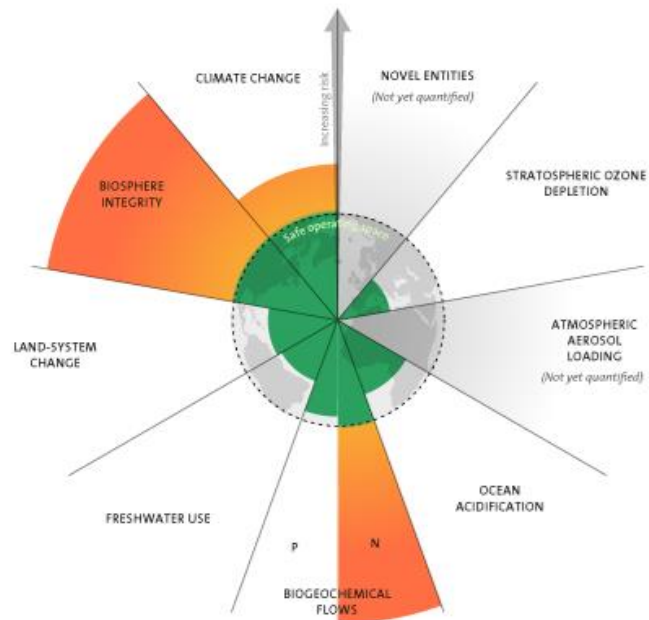
- The world is challenged: Stockholm
- Hunger, where is progress
- Sustainability, Our resources? Soil, Seed, Climate, Biodiversity
- Challenges for AG in Africa
- Response of the Industrial Paradigm
- AE paradigm. What is the difference
- AE and Organic
- Syscom System Comparison
- Conclusiones

Planet Boundaries/global challenges, 15 years ago



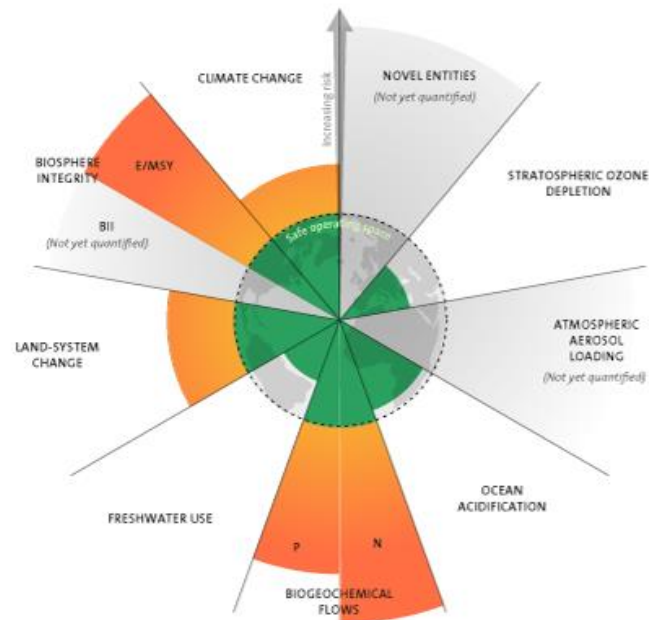
Planet Boundaries

2009



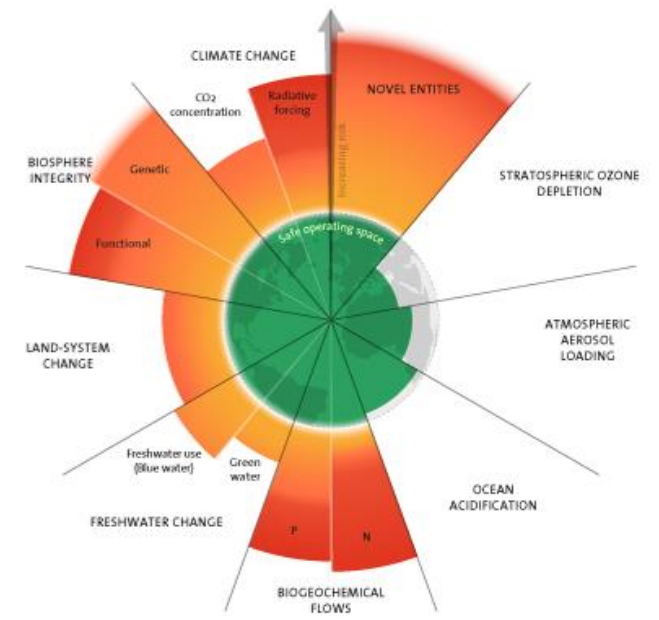
3 boundaries crossed

2015



4 boundaries crossed

2023

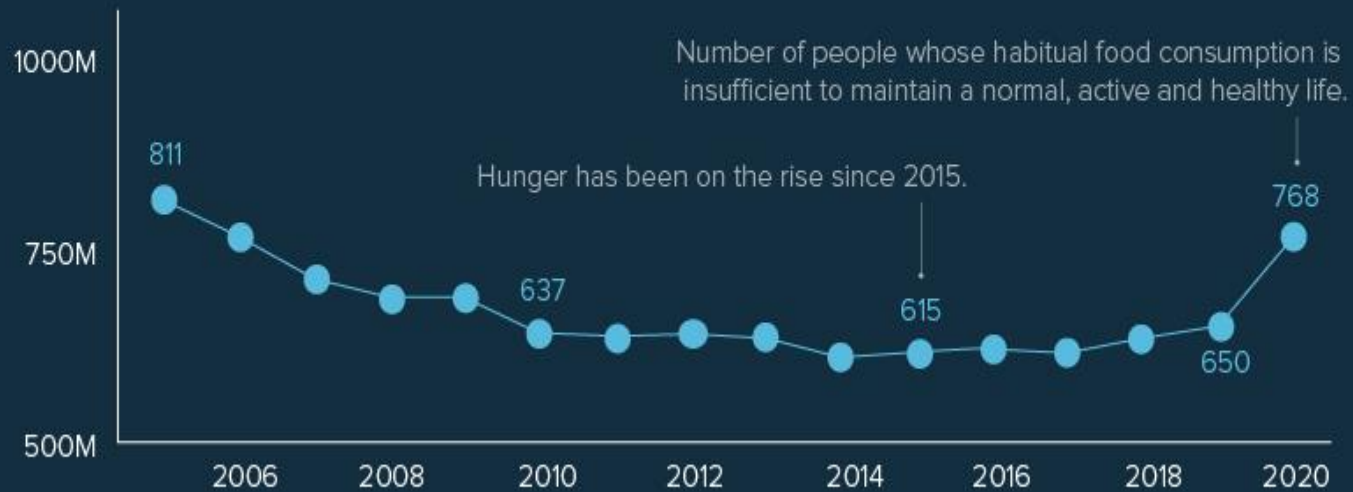


6 boundaries crossed

Social and Economic challenges

Chronically Hungry

768 million people were chronically hungry in 2020.



Source: WFP



Food scarcity is largely a result of climate change, civil unrest and declining food production.

Public investment in agriculture is also declining. Small-scale food producers and family farmers require increased investment in infrastructure and technology to reduce hunger, poverty, and unemployment.

In 2019, nearly one in ten people in the world did not have regular access to safe, nutritious, and sufficient food.

Source UN Association of USA

GDP 2 End Hunger by 20230 is not on track

GLOBAL HUNGER INDEX

[Home](#) [Methodology](#) [Ranking](#) [Trends](#) [Issues in Focus](#) [Policy Recommendations](#) [Resources](#) [Download](#)

GHI score and Indicators

Year*

Countries

Severity scale

GHI Score

2023

All countries

All severities

Global GHI Score trend*



How to read the map

- Extremely alarming ≥ 50.0
- Alarming 35.0-49.9
- Serious 20.0-34.9
- Moderate 10.0-19.9
- Low ≤ 9.9
- Not included or not designated (see Methodology for details)

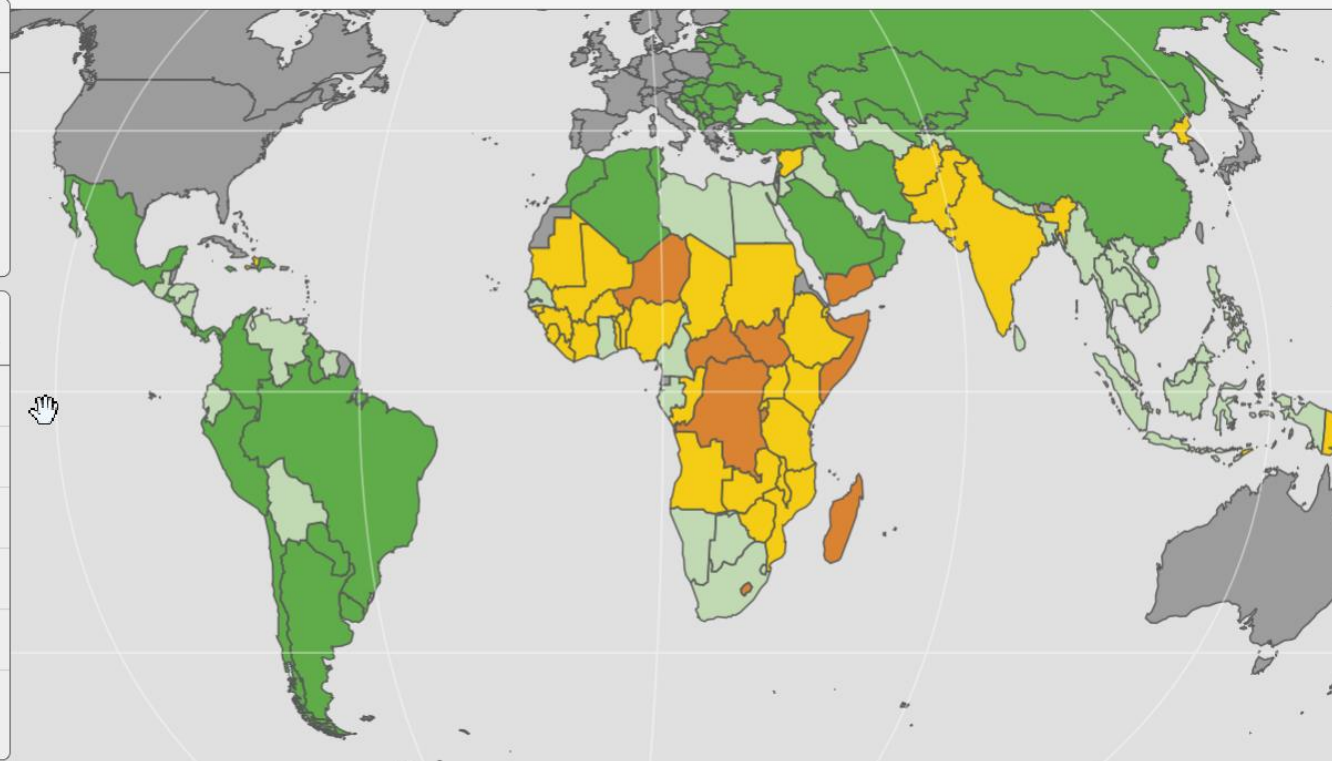
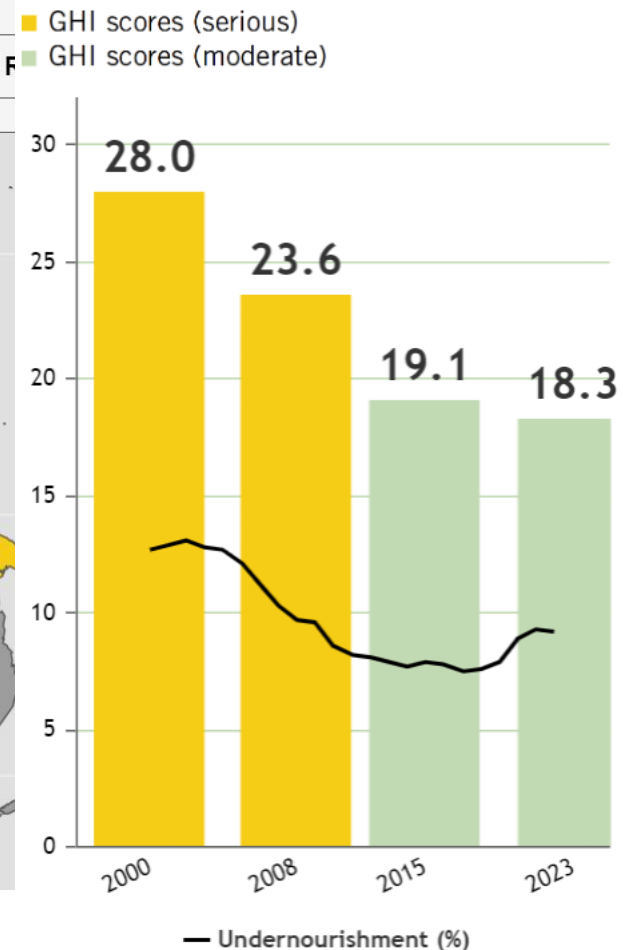


FIGURE 1.1

WORLD GHI SCORES AND PREVALENCE OF UNDERNOURISHMENT IN RECENT DECADES



The positive message: improvement is there

Global Hunger Index Interactive Map

Interact with the map to dive deeper

Download data 

GHI score and Indicators

Year*

Countries

Severity scale

GHI Score

2000

All countries







All severities

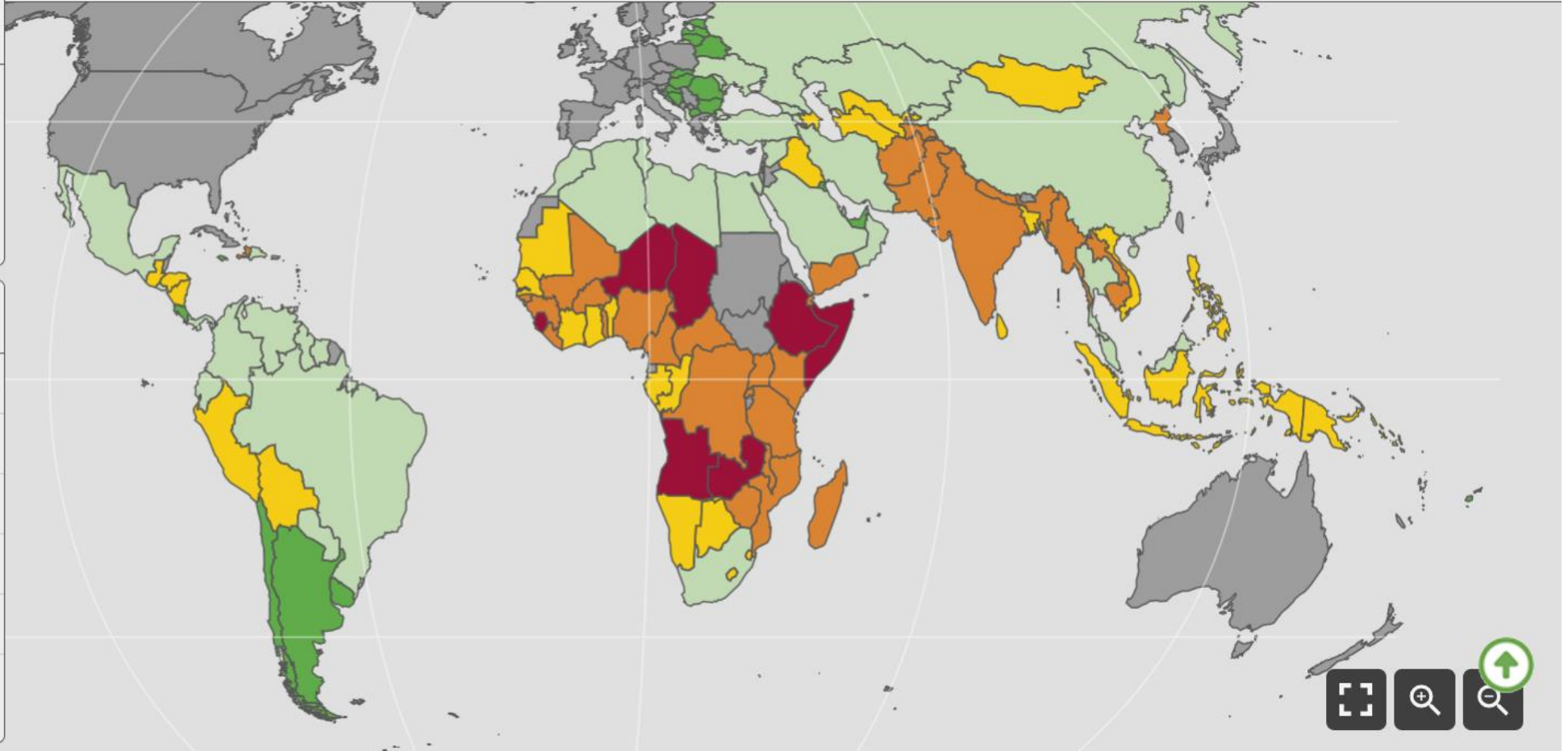
Reset selection

Global GHI Score trend*



How to read the map

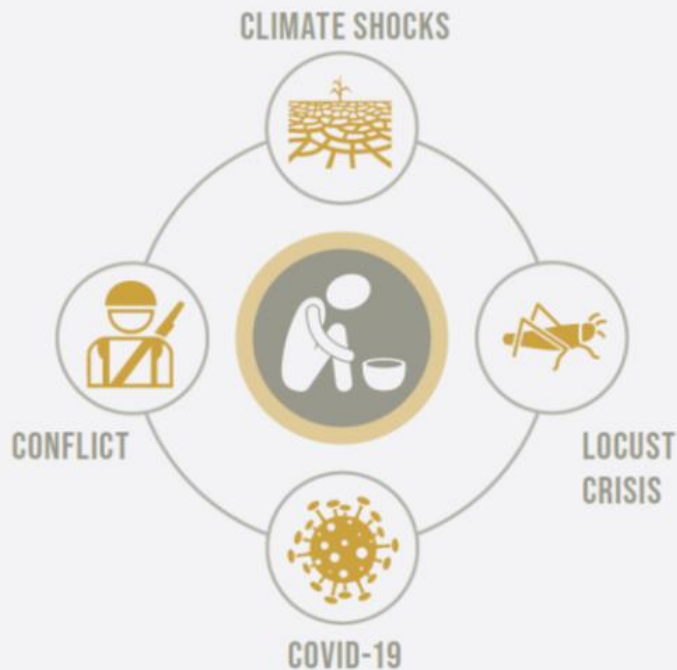
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Shocks and Crises Have Hit Hard

COVID-19 IMPLICATIONS

THE PANDEMIC IS AN
ADDITIONAL **THREAT** TO
FOOD SYSTEMS



- **The crises have aggravated inequalities**
- **Less resilient regions, countries, and communities are expected to experience lasting hunger and nutrition setbacks and stand less prepared for future crises.**
- **Low- and middle-income countries have been particularly hard hit.**
- **Youth in low- and middle-income countries are especially vulnerable to food security and nutrition crises.**

Hunger Levels
Are Affected
by Structural
Conditions ...



Levels of inequity
and poverty

...As Well As
Shocks and
Crises



Economic
downturns



Quality of
governance



Climate
extremes

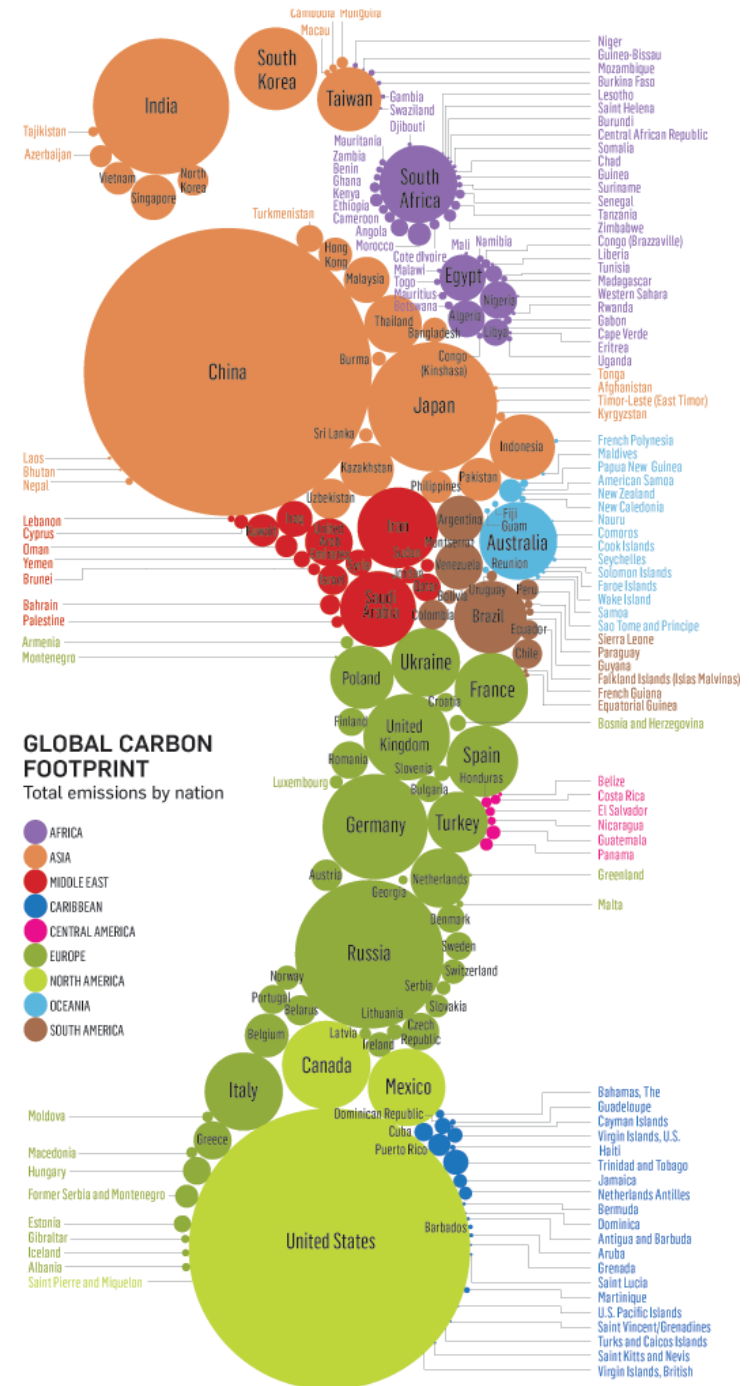


Demographic
conditions



Conflict

Global Footprint



Natural Resources depletion



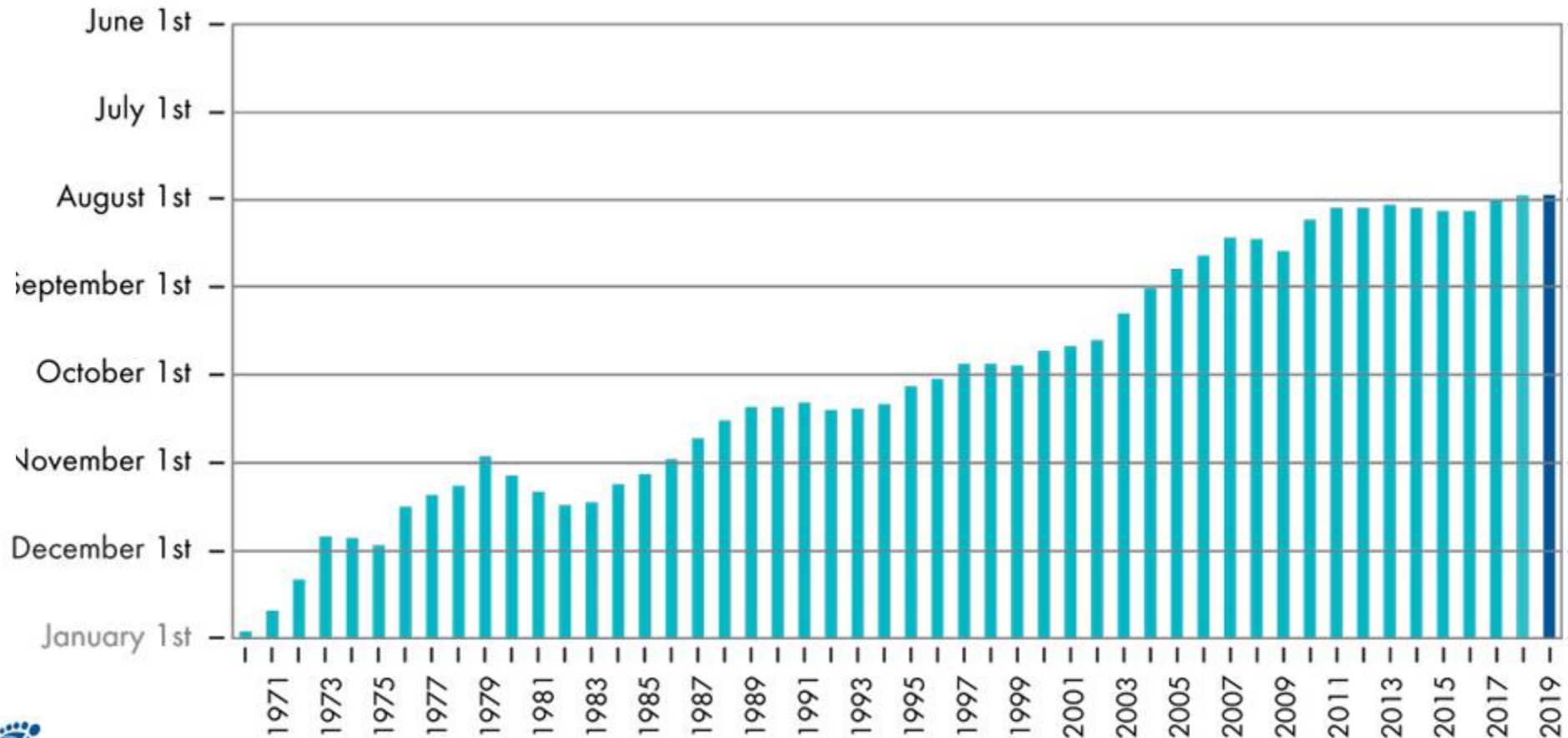
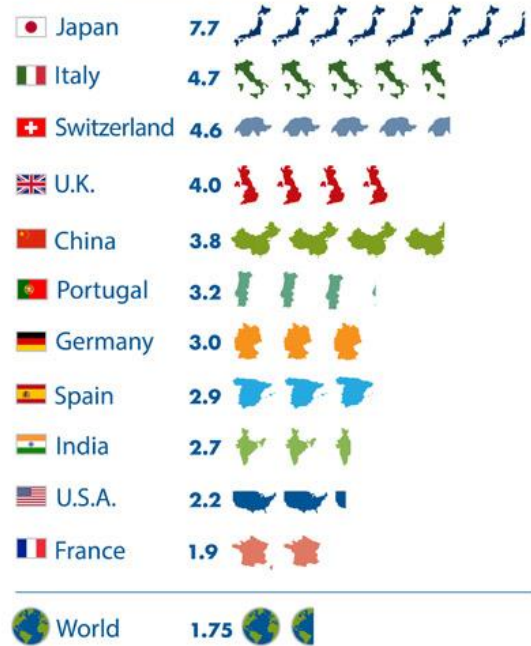
1 Earth

Earth Overshoot Day
1970-2019



1.75 Earths

How many countries are required to meet the demand of its citizens...



1,000yrs



2015
International



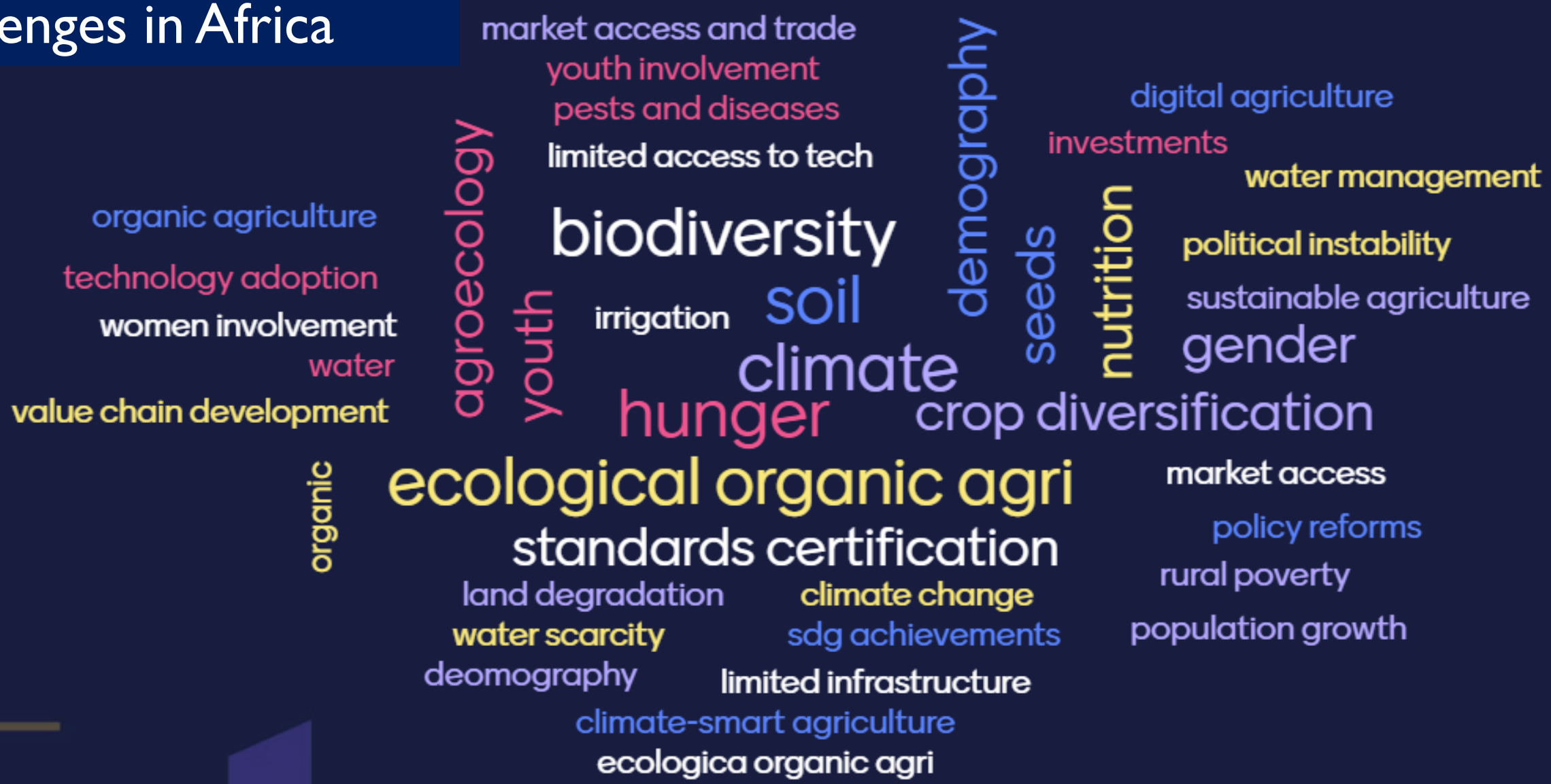
Prof. Rattan Lal
Soil scientist

When people are poverty stricken, desperate and starving, they pass on their sufferings to the land.

Other Challenges for African Agriculture

- **Climate Change**
- **Limited Access to Technology**
- **Land Degradation**
- **Water Scarcity**
- **Limited Infrastructure**
- **Rural Poverty**
- **Pests and Diseases**
- **Political Instability**
- **Market Access**
- **Population Growth**

Word Cloud for (Organic) Agriculture Challenges in Africa



Green revolution and industrial agriculture: Corporate farming



Key indicators of Sustainability

Productivity



Soil and Water



Biodiversity



Profitability



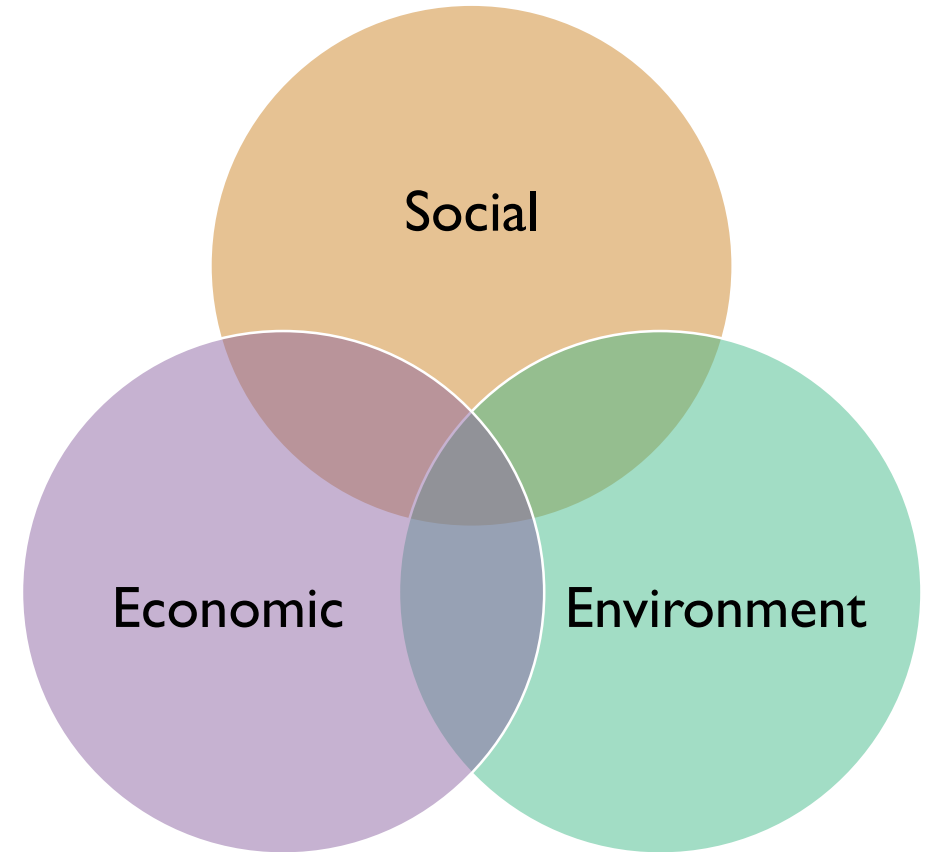
Livelihood



Food Security

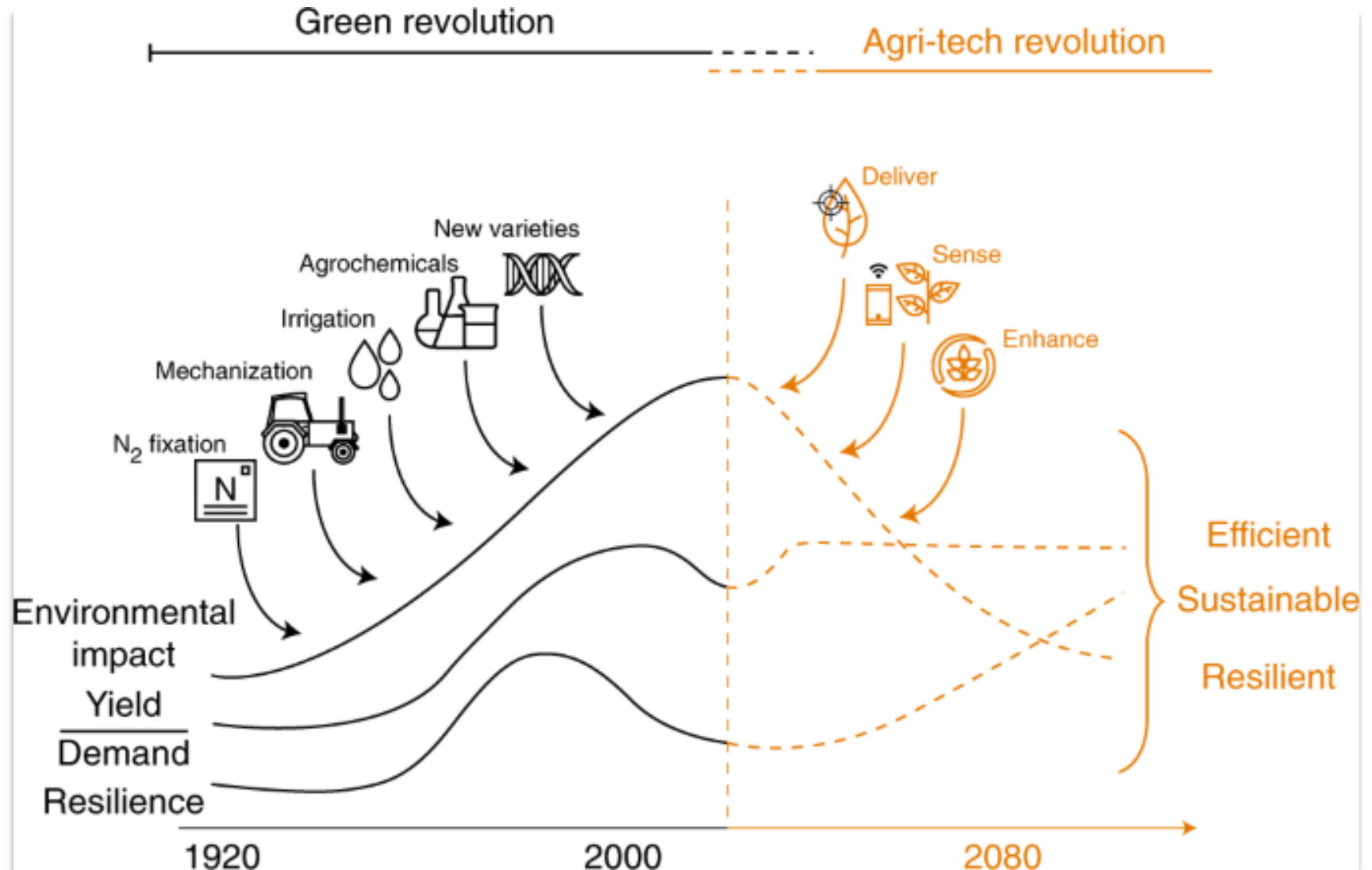


Climate change mitigation



Sustainability indicators help to determine whether our intervention is meeting its objectives.

Response of Industrial Agriculture



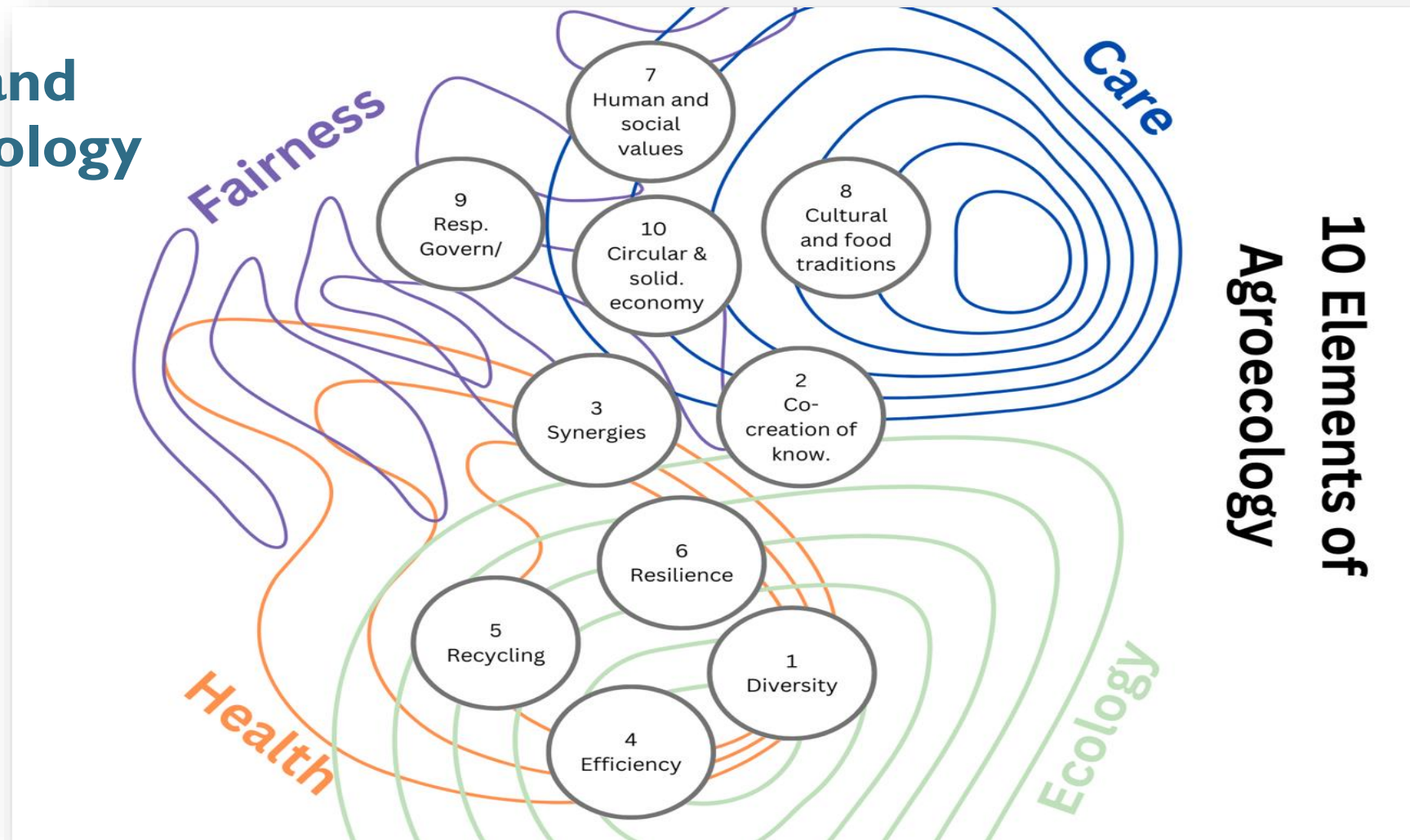


“ The future of agriculture is not input-intensive, but knowledge-intensive. We need the integrated approach that agroecology can offer. ”

FAO Director-General José Graziano da Silva, April 2018

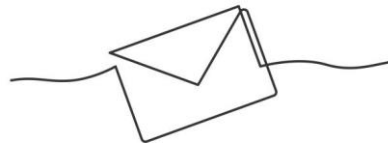
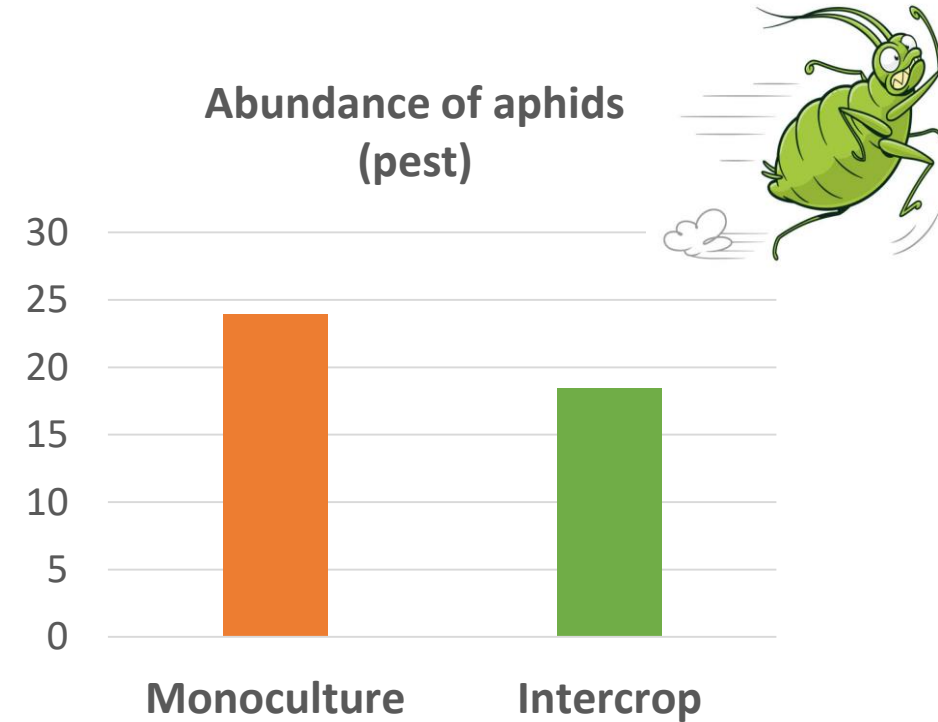
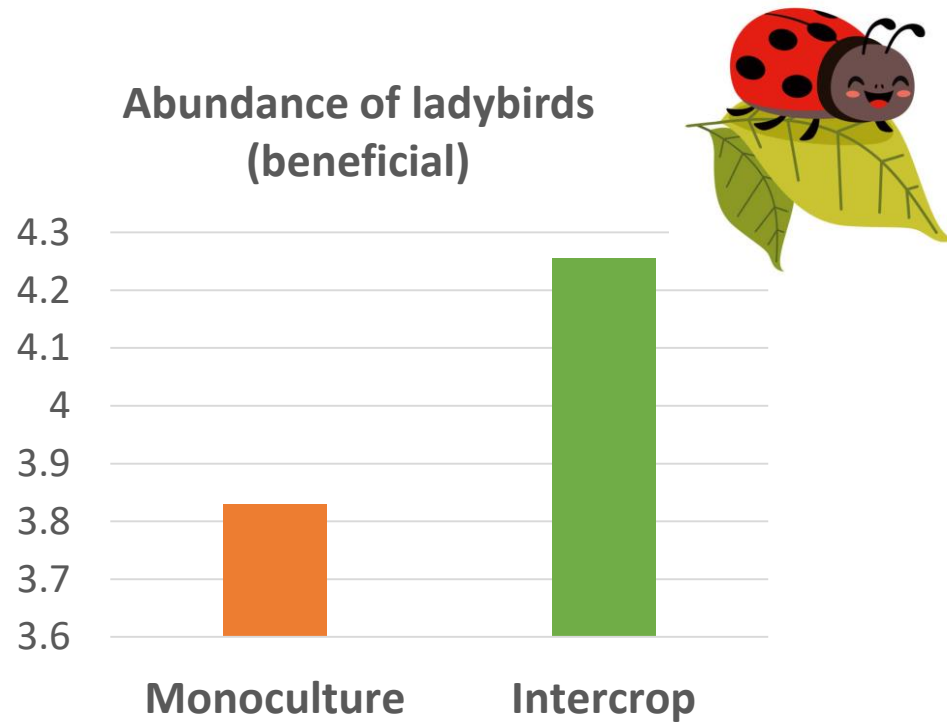
Organic principles and elements of Agroecology

- Agroecology is “a holistic and integrated approach.
- Organic agriculture is a production and marketing system. Certified or non-certified.
- Both provide multiple benefits for people and the planet



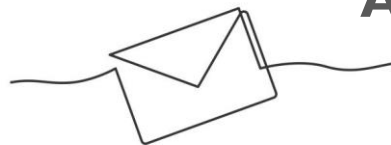
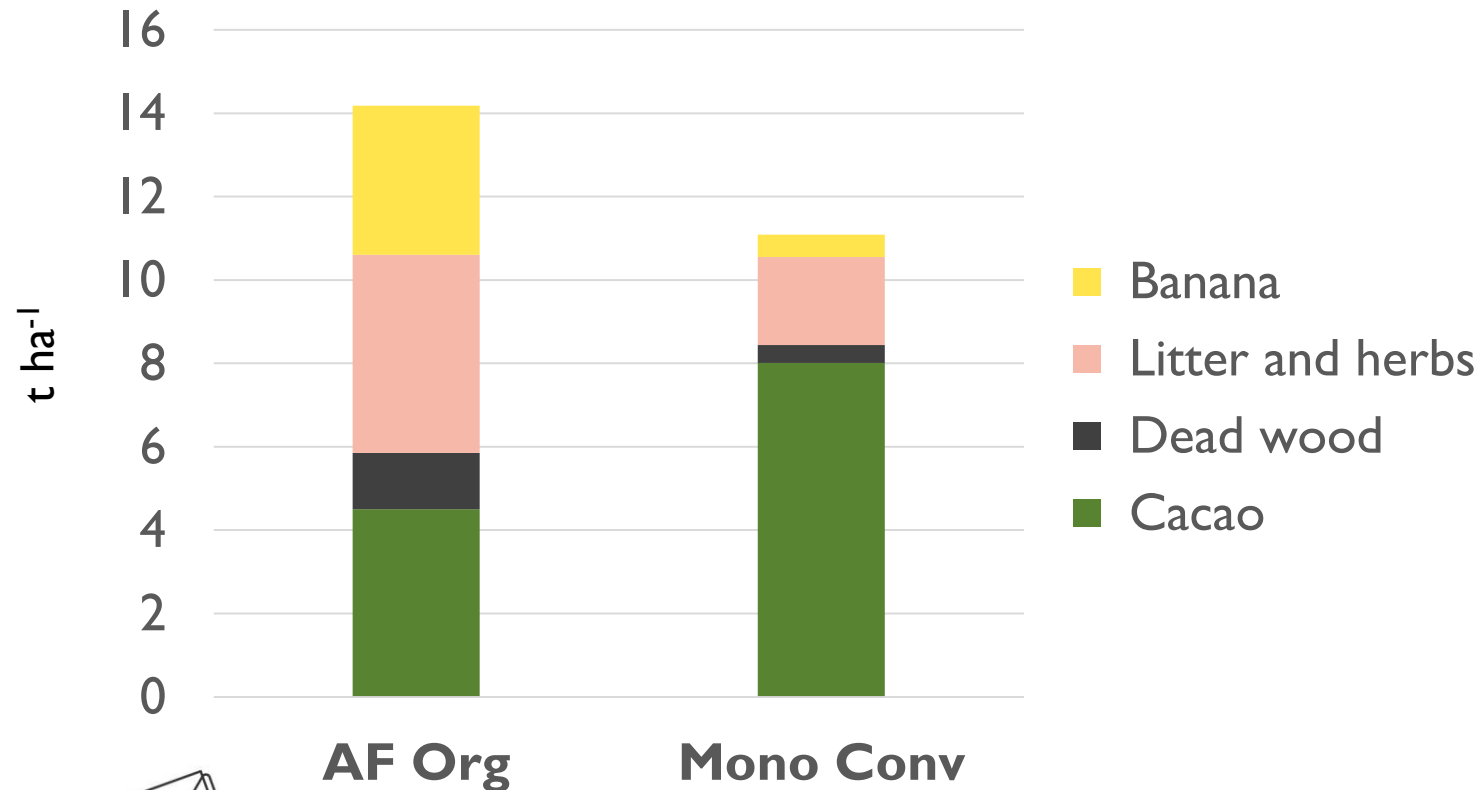
Overlap between Agroecology's ten elements & Organic agriculture's four principles

Influence of intercropping on the abundance of beneficial insects



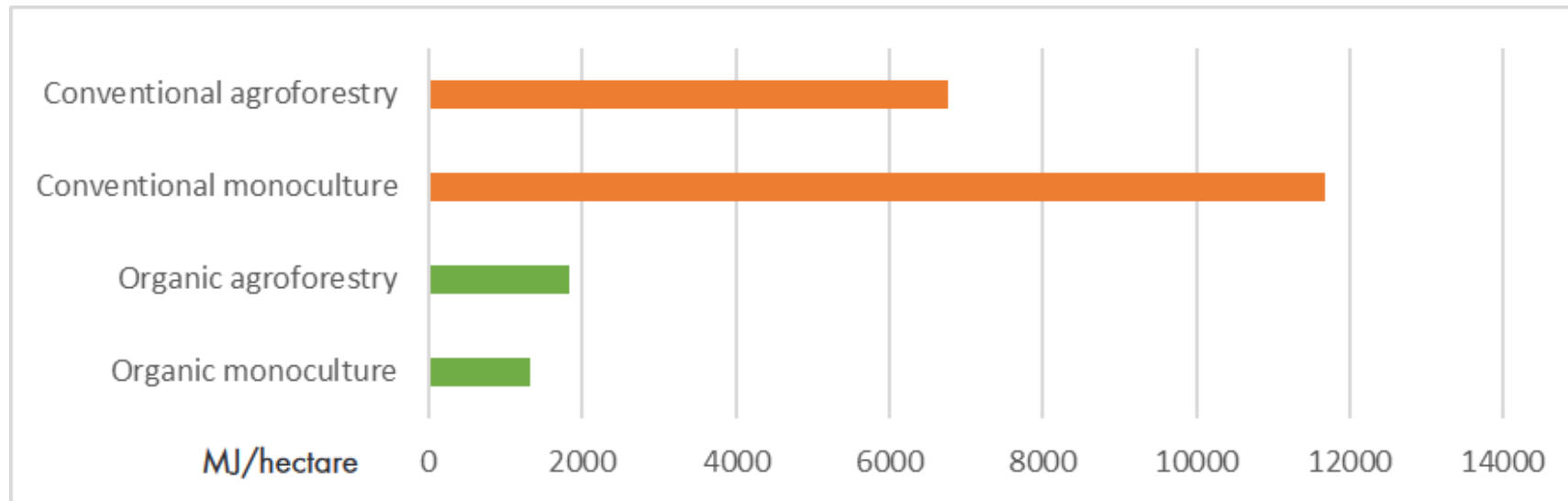
More diverse systems enhance functional biodiversity

Above ground carbon stocks from trees, litter, herbs and deadwood in Bolivia



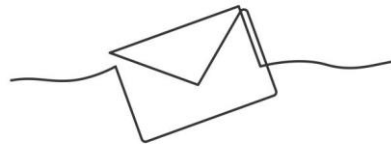
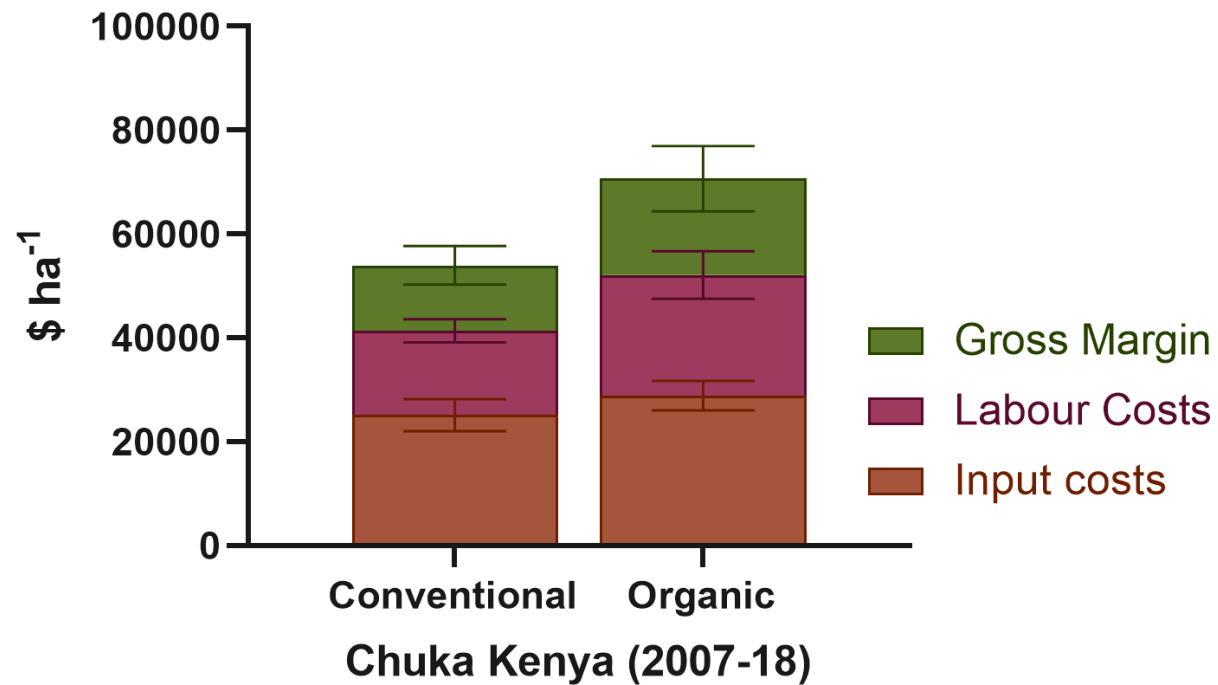
Higher potential for climate change mitigation by sequestering/storing more carbon in soil and biomass

Cumulative demand for non-renewable energy in Conventional and Organic Systems



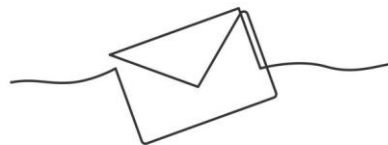
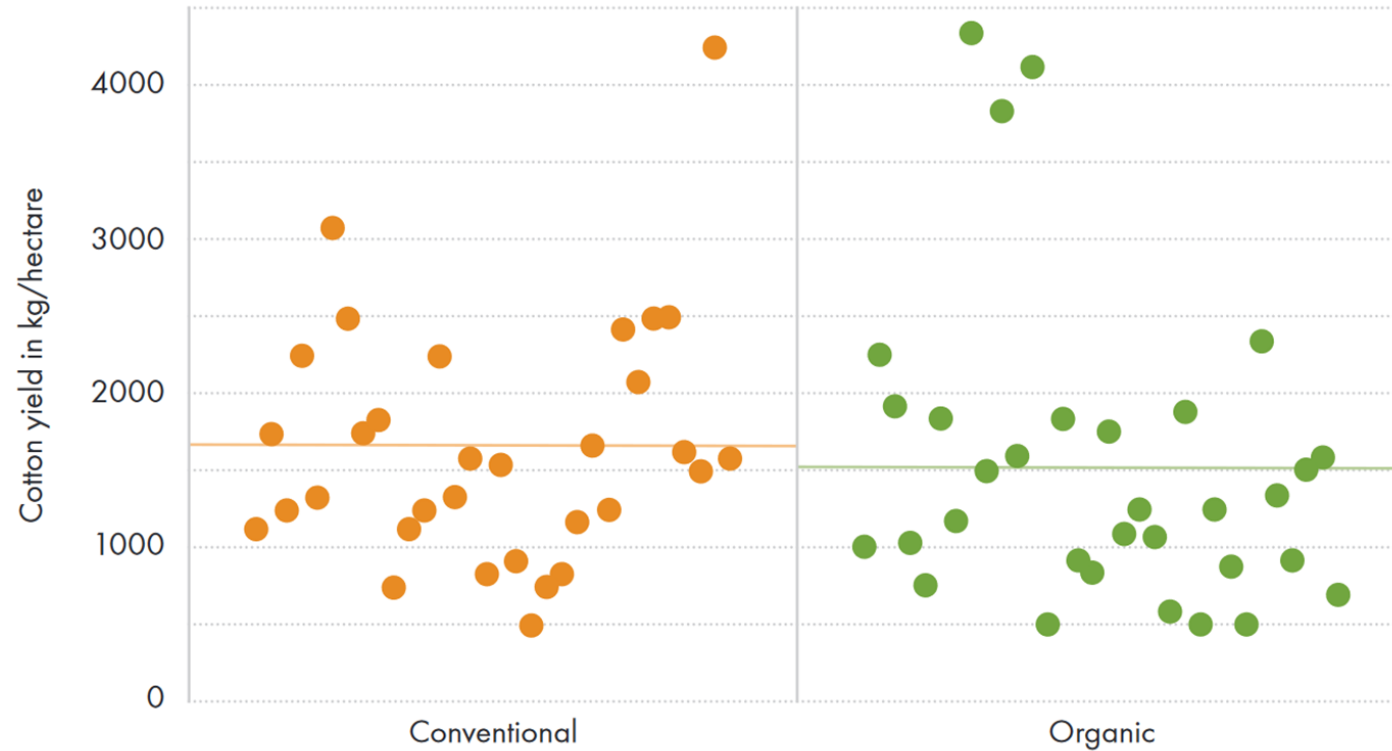
Higher potential for climate change mitigation due to smaller carbon footprints

Ten years cumulative System Income dynamics of Organic and Conventional Systems in Kenya



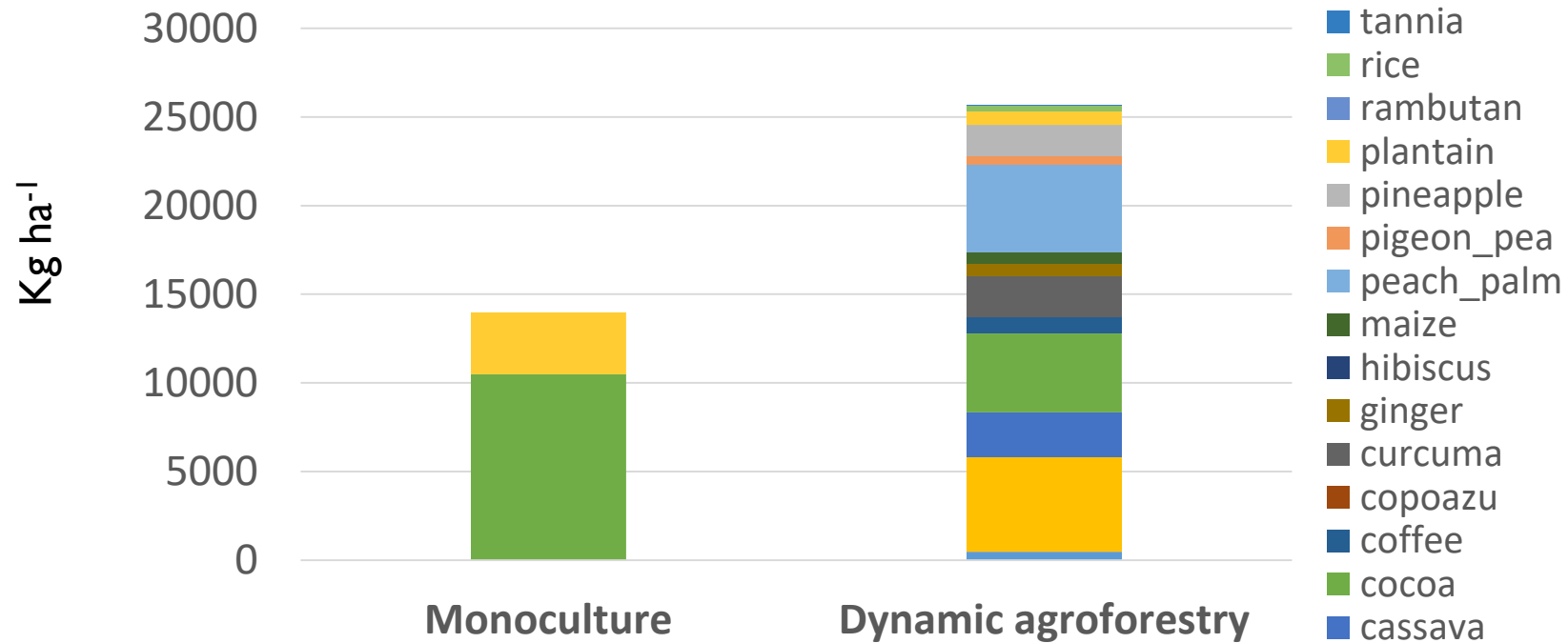
Agroecological and Organic Systems can exceed conventional in profitability

Cotton yield on organic and conventional farms



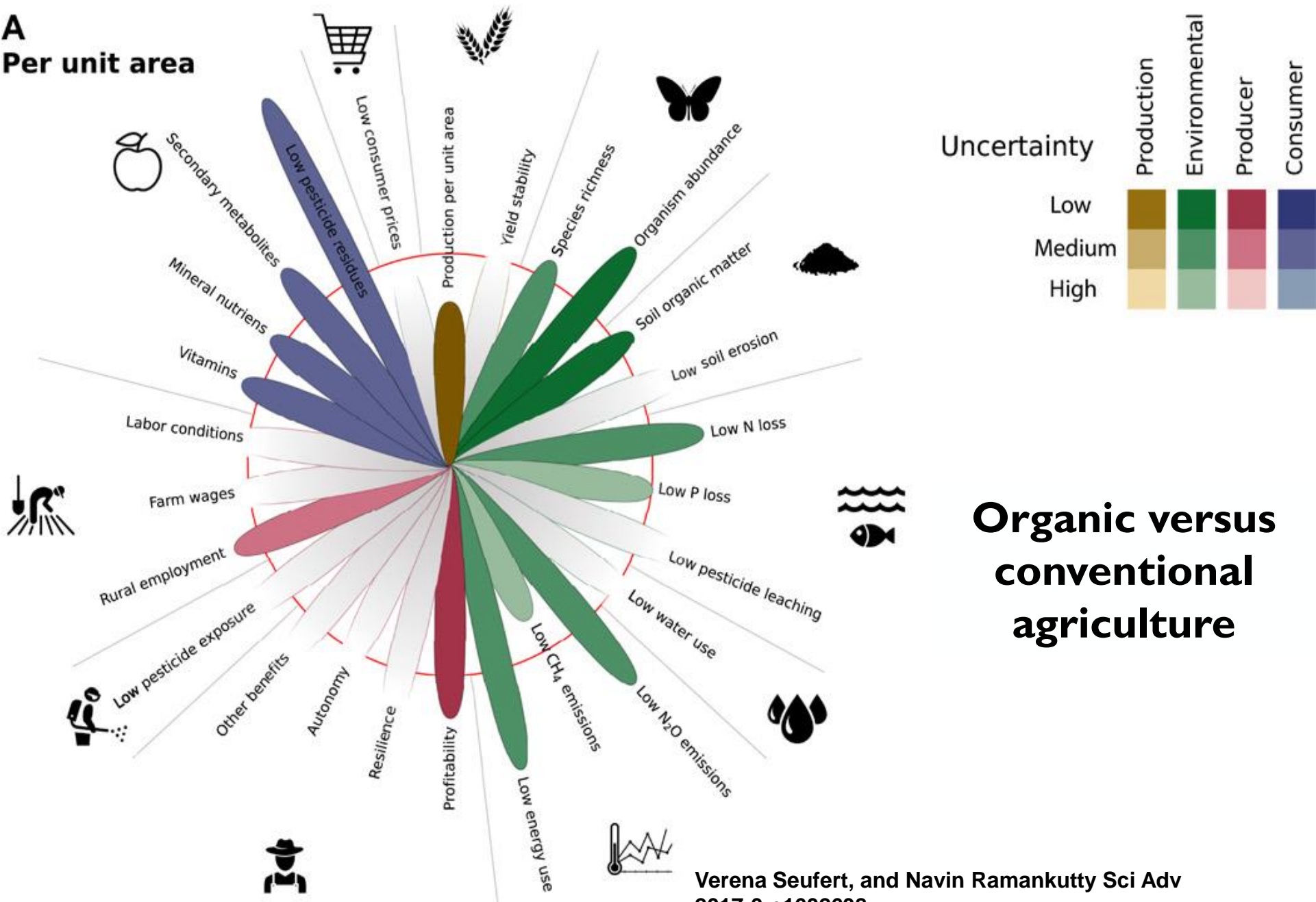
Increasing productivity needs improved capacities among farmers and farmer organizations.

Total system yields of a dynamic agroforestry system

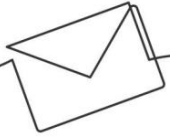


Adopting more diverse agroecological systems results in improved household food security and dietary diversity

A
Per unit area



Verena Seufert, and Navin Ramankutty Sci Adv
2017;3:e1602638



Take Home and Office messages

African Agriculture is challenged.

1. Progress despite increased and new challenges in fighting hunger. Environment worsened.
2. More agreement on the need for resilience and sustainability
3. Industrial Agriculture and Agroecology promote solutions. But not the same.

Agroecological and organic (A+O):

1. Yields and profitability can match or exceed conventional in many cases.
2. Production systems store more carbon in soil and biomass, have higher functional biodiversity, and smaller carbon footprints (i.e. having a higher potential for climate change mitigation).
3. Improved and diverse production needs improved capacities among farmers and farmer organizations.

Call for Action:

1. To promote A+O from both the side of production and consumption!
2. To pursue a systematic approach considering all costs and benefits of conventional versus A+O agriculture → connecting better 'agriculture' & 'health' & 'environment'

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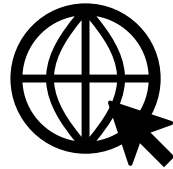
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