



# The sustainable development goals and the food system: where are the connections?

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International Conference:  
**Organic Farming and Our Future Food System**  
Organized by Avalon in cooperation with IFOAM



# What is wrong with our food systems?

## It is not sustainable

- **Triple burden of malnutrition**
  - Hunger, micronutrient deficiencies, obesity & NCDs
- **Environmentally unsustainable**
  - Biodiversity losses, water pollution, soil degradation, GHG emissions, Climate Change, unsustainable use of natural resources, low resilience ...
- **Social inequities**
  - Poverty, disempowerment, access to land issues
- **Neglect of cultural values**

... the world today.....hunger, malnutrition, migration, conflicts, inequity, NCDs, etc.

Annual costs resulting from Endocrine Disrupter Chemicals exposure  
(Attina et al 2016;Transade et al 2016)

## ANNUAL COSTS RESULTING FROM EDC EXPOSURE

**\$217**  
**BILLION**

.....  
EU - 1.28% of GDP

**\$340**  
**BILLION**

.....  
USA - 2.33% of GDP

**\$42**  
**BILLION**

.....  
USA - Pesticides alone

**...the push for more efficiency at the cost of resilience**



**Loss of soil, biodiversity, ecosystem services. Climate change**

...agriculture has been on the UN Agenda for a while, but



The Earth Summit (Agenda 21) 1992



The Millennium Development Goals (MDGs, 2000)

SD Summit Johannesburg, 2002 IAASTD Report commissioned

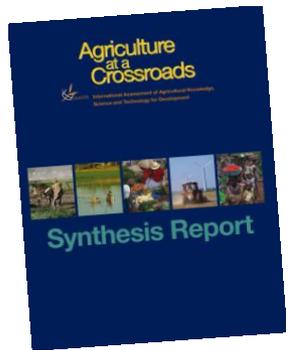
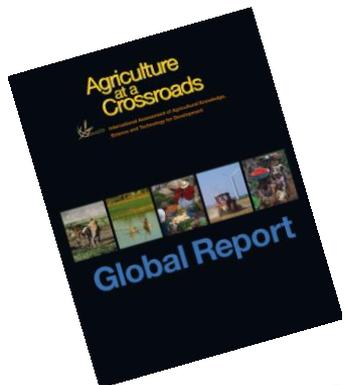
SD Summit RIO+ 20



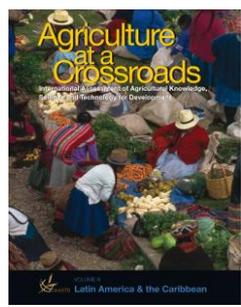
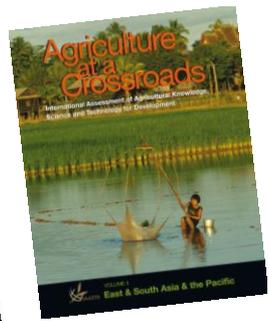
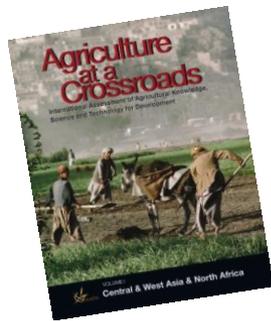
SDGs 2015

The Sustainable Development Goals (SDGs) and COP 21.....24

# ...what is wrong with our food systems?



«Business as usual is not an option» (IAASTD 2009)  
<http://www.globalagriculture.org>



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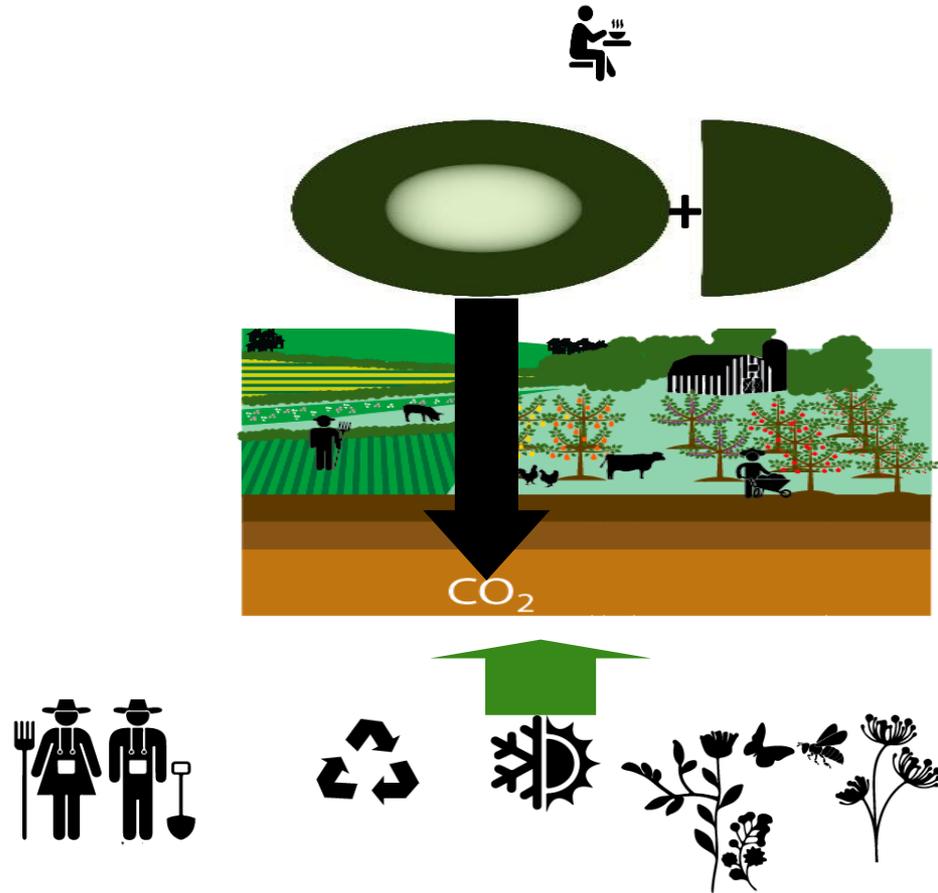


SDGs 2015

The Sustainable Development Goals (SDGs) and COP 21.....24

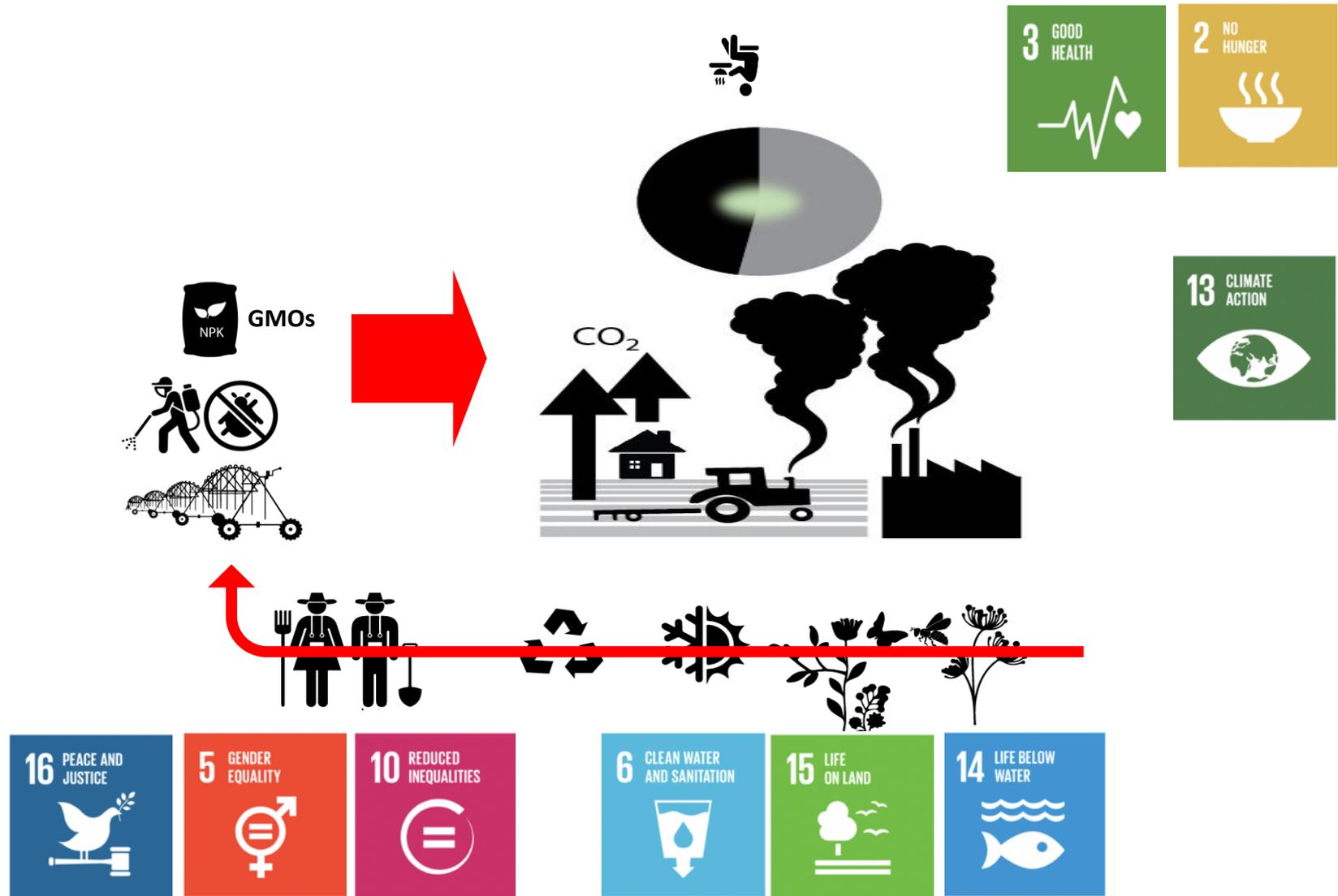
# Agriculture's biggest problem is self inflicted

where does the CC problem originate?



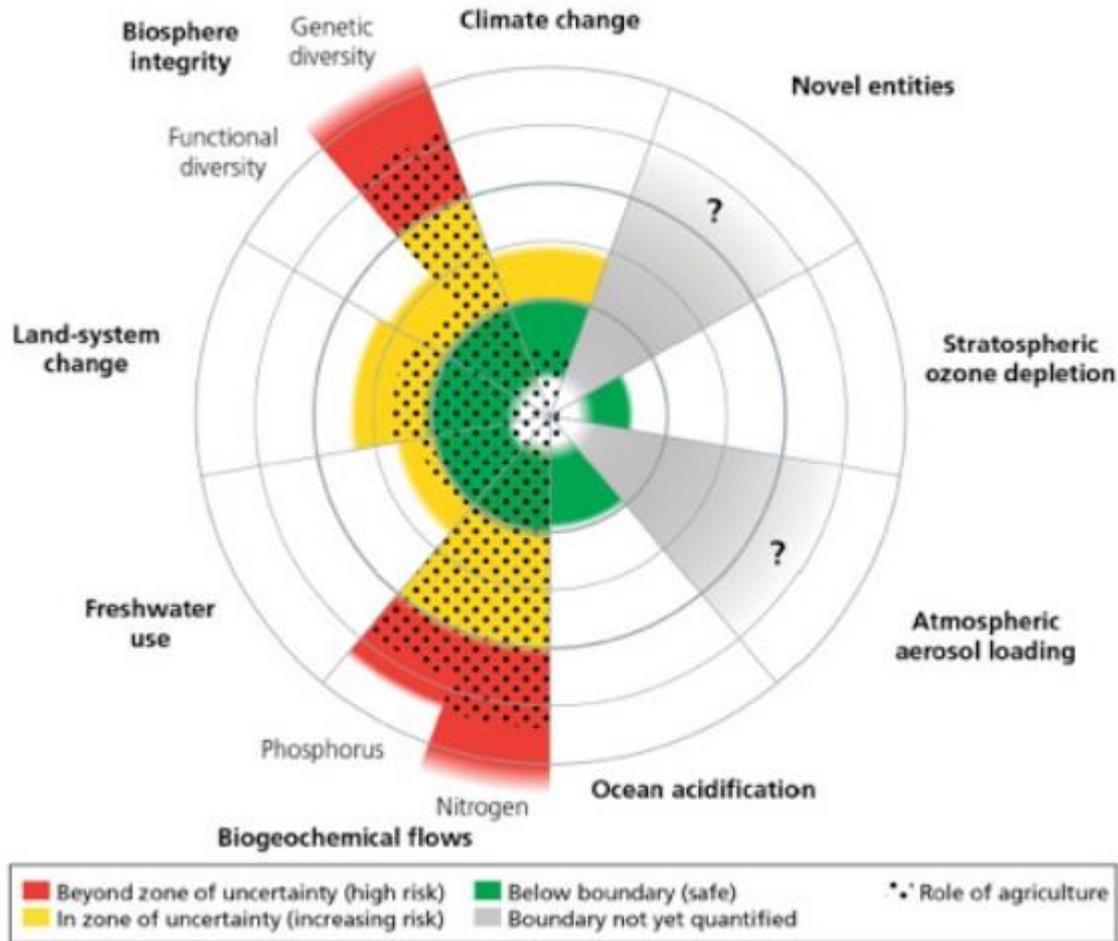
# Agriculture's biggest problem is self inflicted

..the complex and resilient nature and the farmers have been replaced with a reductionist, short term and mercantile approach



# We have reached overshoot the planetary boundaries

The dotted areas show agriculture's impact (Campbell et al 2017)



# ... the world today.....negative externalities from UK agriculture 2000

Sources of adverse effects	Actual costs from current agriculture (£ M yr <sup>-1</sup> )	Scenario: costs as if whole of UK was organic (£ M yr <sup>-1</sup> )
Pesticides in water	143.2	0
Nitrate, phosphate, soil and Cryptosporidium in water	112.1	53.7
Eutrophication of surface water	79.1	19.8
Monitoring of water systems and advice	13.1	13.1
Methane, nitrous oxide, ammonia emissions to atmosphere	421.1	172.7
Direct and indirect carbon dioxide emissions to atmosphere	102.7	32.0
Off-site soils erosion and organic matter losses from soils	59.0	24.0
Losses of biodiversity and landscape values	150.3	19.3
Adverse effects to human health from pesticides	1.2	0
Adverse effects to human health from micro-organisms and BSE	432.6	50.4
Totals	£1,514.4	£384.9

## What **are** Agroecology / Organic Agriculture 3.0:

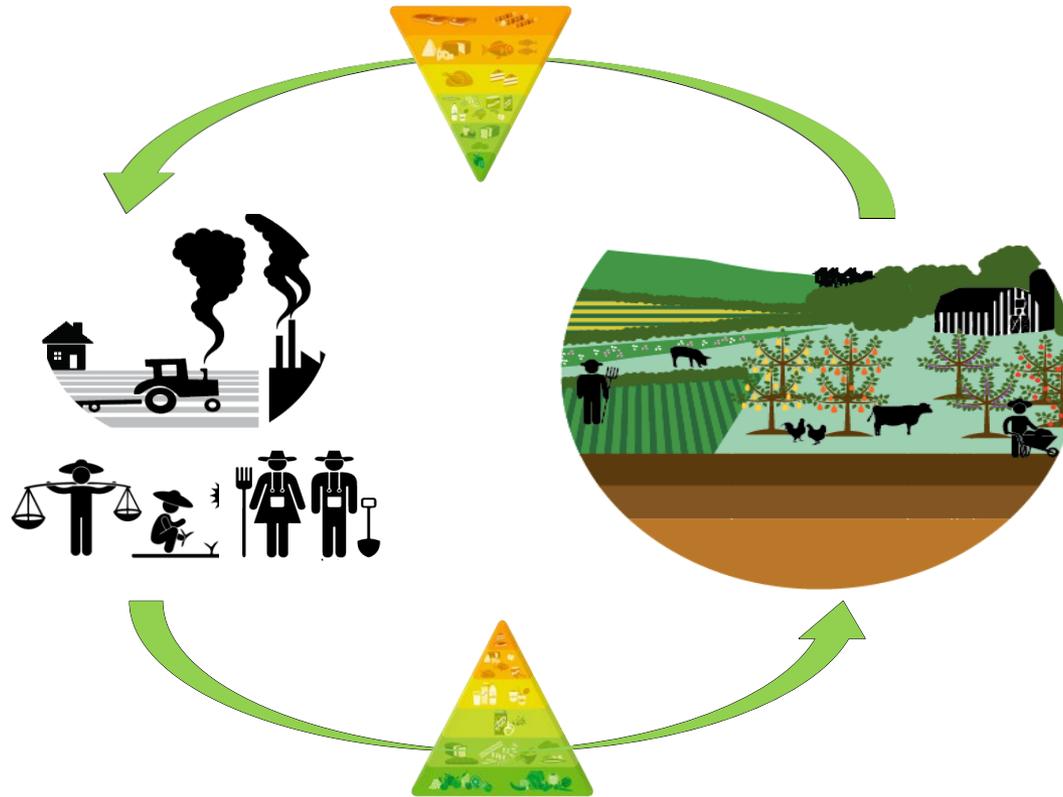
...its the study of the **interactions between plants, animals, humans and the environment** within agricultural systems.

**and consequently**, AE/OA are inherently multidisciplinary, and multifunctional

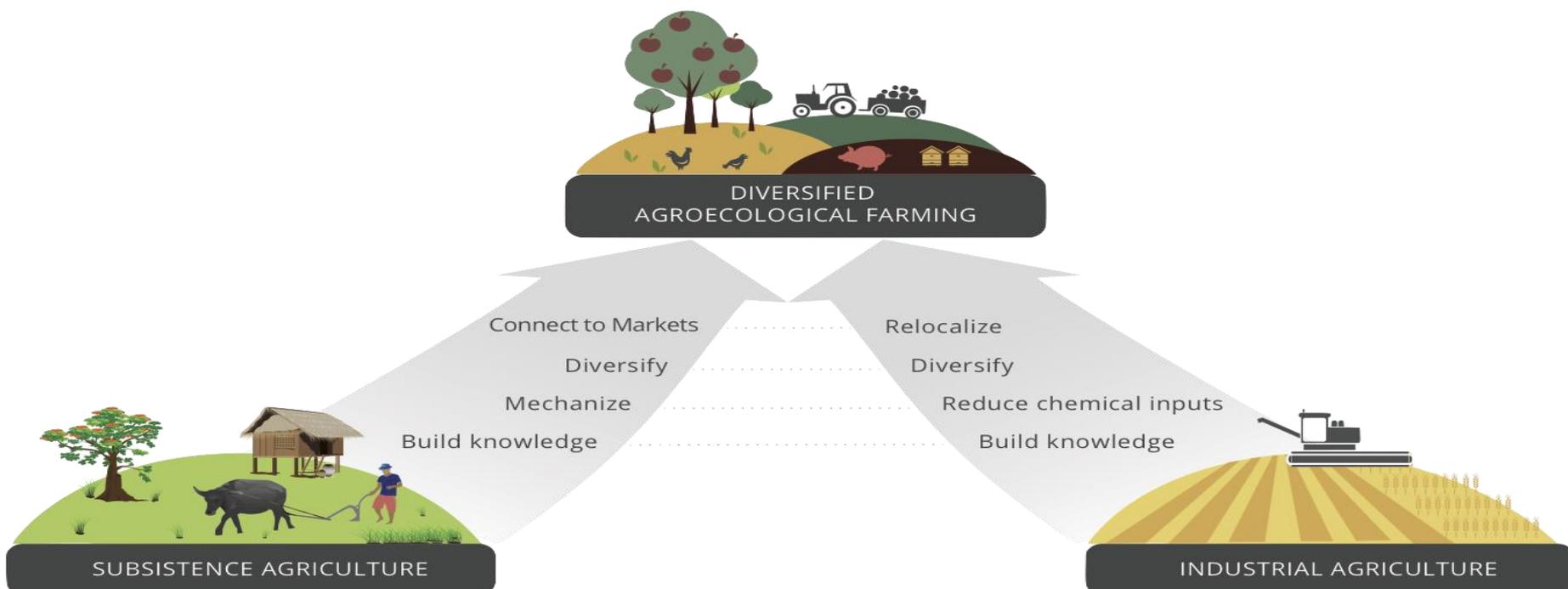
## What are the expectations **from** AE/OA?

- **Meets the SDGs** and respond to the new priorities and changing needs
- **Addresses multifunctionality**, the needs of the small-scale and family farms (different scales), by emphasizing the social, environmental and economic dimensions and their interactions and synergies

**...we have overwhelming scientific evidence in support of the needed transformation process (Reports from the IAASTD in 2009 to-date, plethora of scientific papers ....**



# Different pathways, but one common goal



A paradigm shift from industrial agriculture to diversified agroecological ( Organic, Bio-dynamic, permaculture, regenerative, natural, systems

Three questions:

What are the outcomes of industrial agriculture vs diversified agroecological systems?

What is keeping industrial agriculture in place?

How can the balance be shifted?

***IPES-FOOD 2016***

# The so(i)olution is in the...soil

## Soil Power! The Dirty Way to a Green Planet

By JACQUES LESLIE DEC. 2, 2017



27.09.2018

### Sounding Soil - eine Weltpremiere

Am Agrikulturtag am 20. Oktober im Zentrum Paul Klee in Bern wird die Kunstinstallation "Sounding Soil" der Öffentlichkeit vorgestellt (14 - 16.15 Uhr). Die Ausstellung dauert bis am 25.11.18.

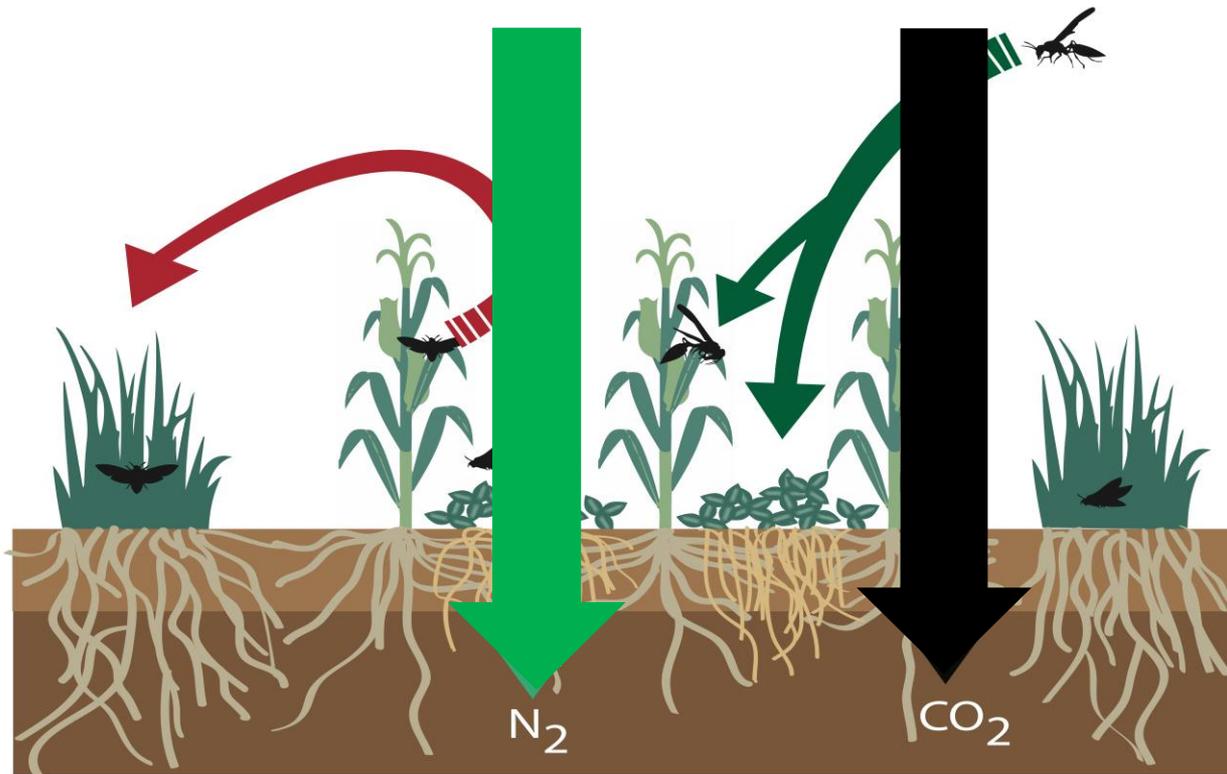


Eleanor Taylor

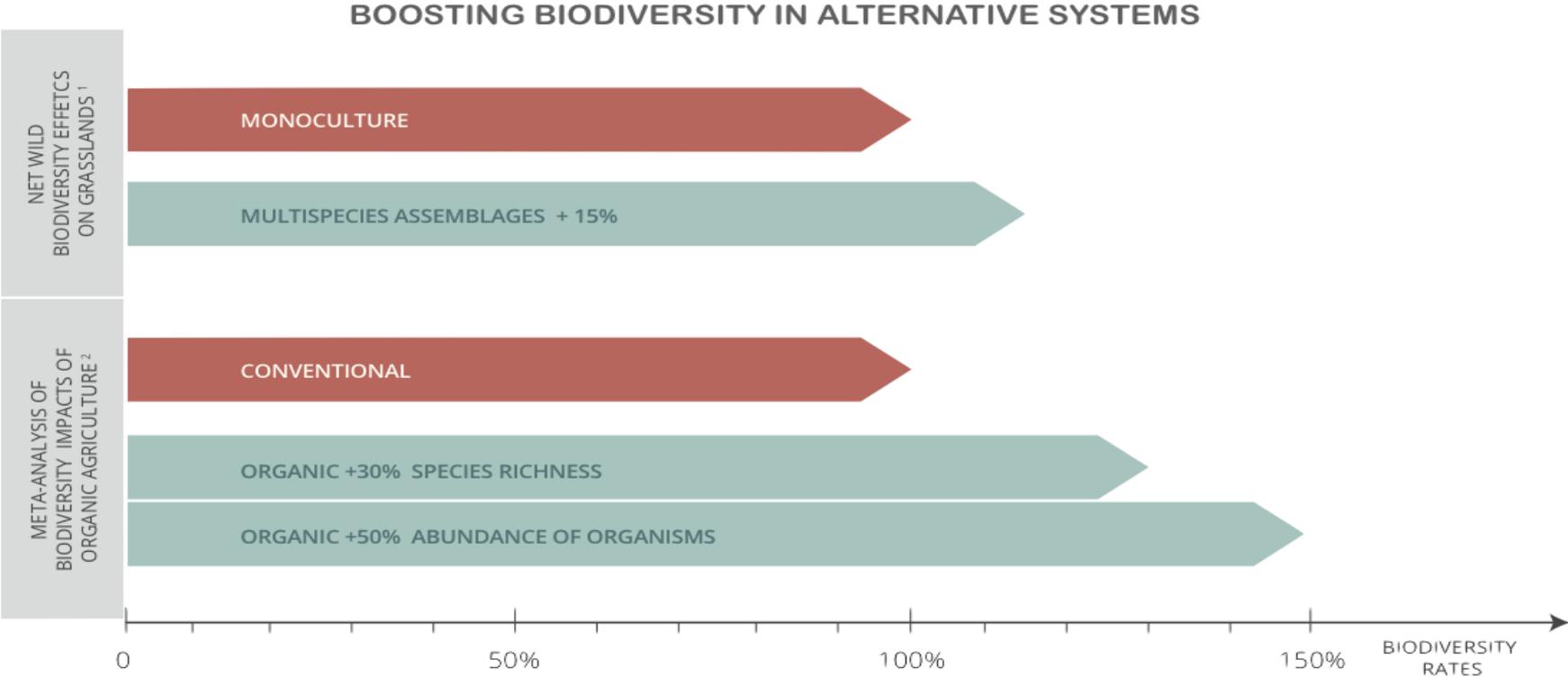


...what's needed for the paradigm change?

So(i)lutions (ecosystem services, fixing N and C into the soil, self regulating systems), natural pest control (agroecology)



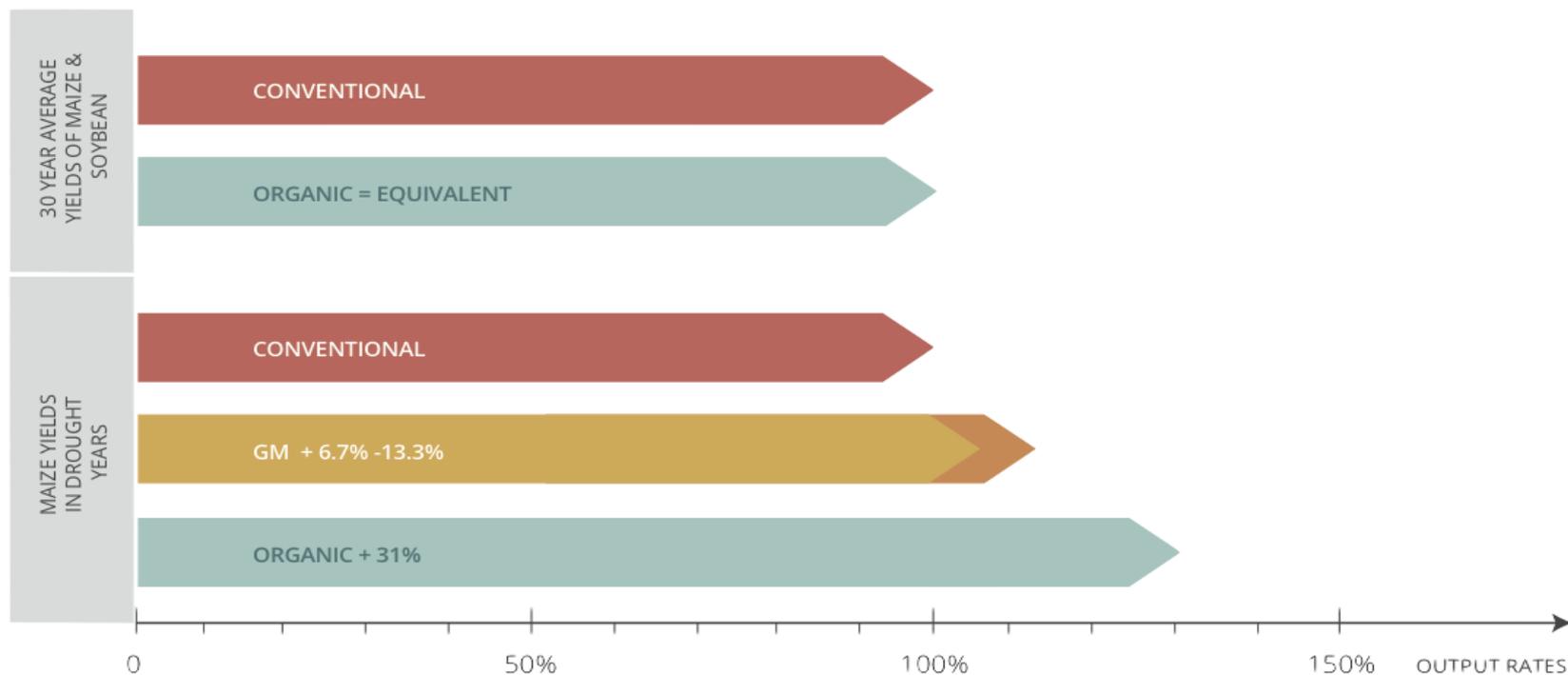
# Outcomes of diversified agroecological, OA systems: boosting biodiversity



1. Data from Prieto et al., 2015  
2. Data from Bengtsson et al., 2005

# Outcomes of diversified agroecological, OA systems: productivity & resilience

## PRODUCTIVITY AND RESILIENCE IN ORGANIC FARMING SYSTEMS



Data from Rodale Institute, 2015

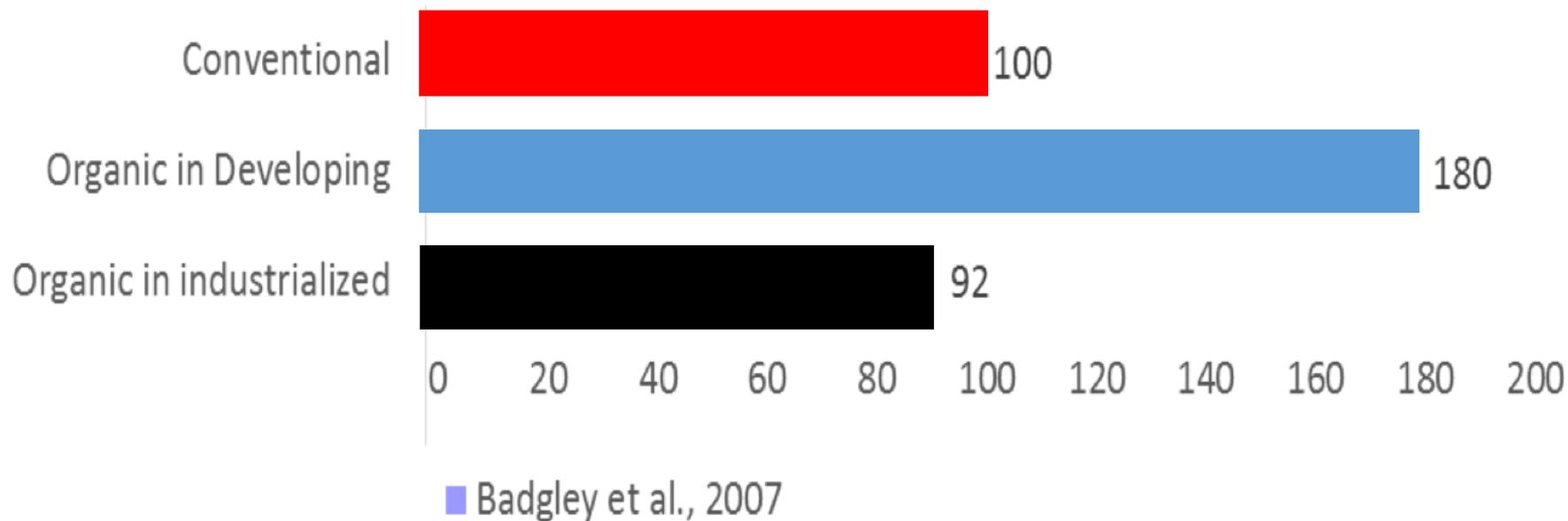
**IPES-FOOD 2016**

## Increased demand....how much where, what and who.....

**Table 5.2** Largest increase in food demand by 2030 is projected for the poorest regions (Source: derived from Alexandratos and Bruinesma 2012) Percentage change in projected demand for food products between 2005-07 and 2030 (per cent)

	World	Developed countries	Developing countries	Sub-Saharan Africa	Near East and North Africa	Latin America and the Caribbean	South Asia	East Asia and the Pacific
Cereals, food	28	6	34	94	42	27	37	14
Cereals, all uses	32	23	38	-	-	-	-	-
Roots and tubers	35	1	52	75	50	23	75	9
Sugar and sugar crops (raw sugar eq.)	38	3	52	107	47	23	65	42
Pulses, dry	36	10	39	103	30	19	24	9
Vegetable oils, oilseeds & products (oil eq.)	47	12	70	110	59	40	85	60
Meat (carcass weight)	45	16	69	109	90	50	189	59
Milk and dairy, excl. butter (fresh milk eq.)	40	13	66	82	61	41	76	71
Other foods (kcal)	34	13	45	79	50	36	63	32
Total foods (kcal)	35	9	43	93	48	31	50	26

## ...outcomes of diversified agroecological systems: OA productivity vs conventional

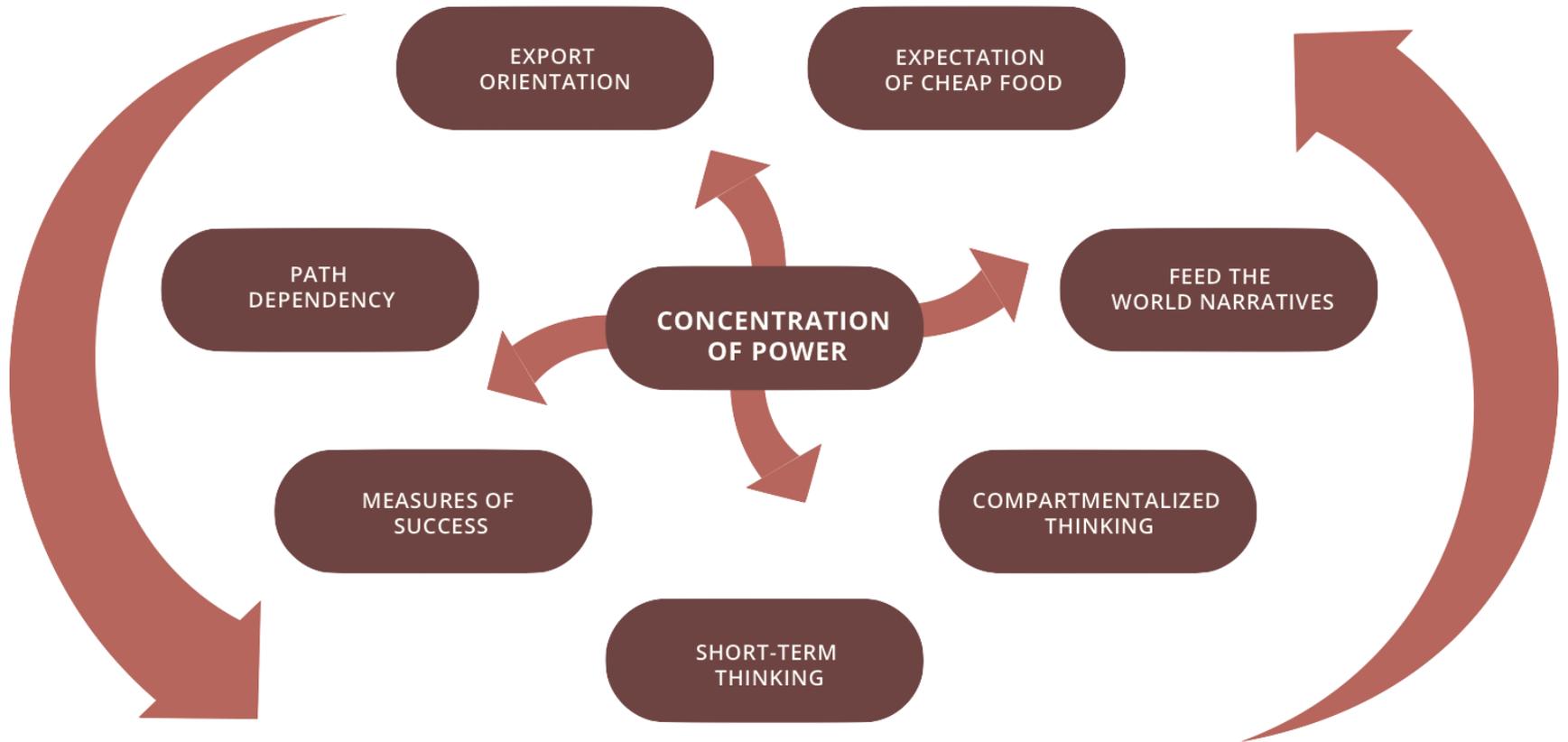


## **A major question**

Why do we not see a major transition towards diversified agroecological systems, given the expanding evidence that they can deliver on all dimensions of sustainable food systems?

→ The political economy of food systems

# What prevents change?: Concentration of power and 8 lock-ins



# Increasing market concentration at the input side.....

## Three Firm Market Concentration: 2013

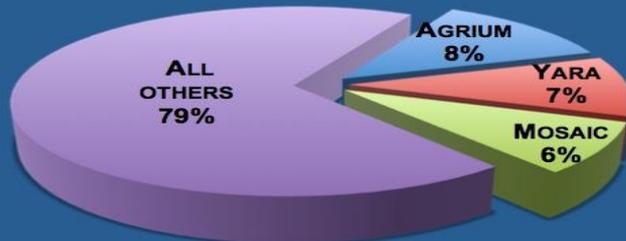
### 51% Agrochemicals



### 55% Seeds



### 21% Fertilizers



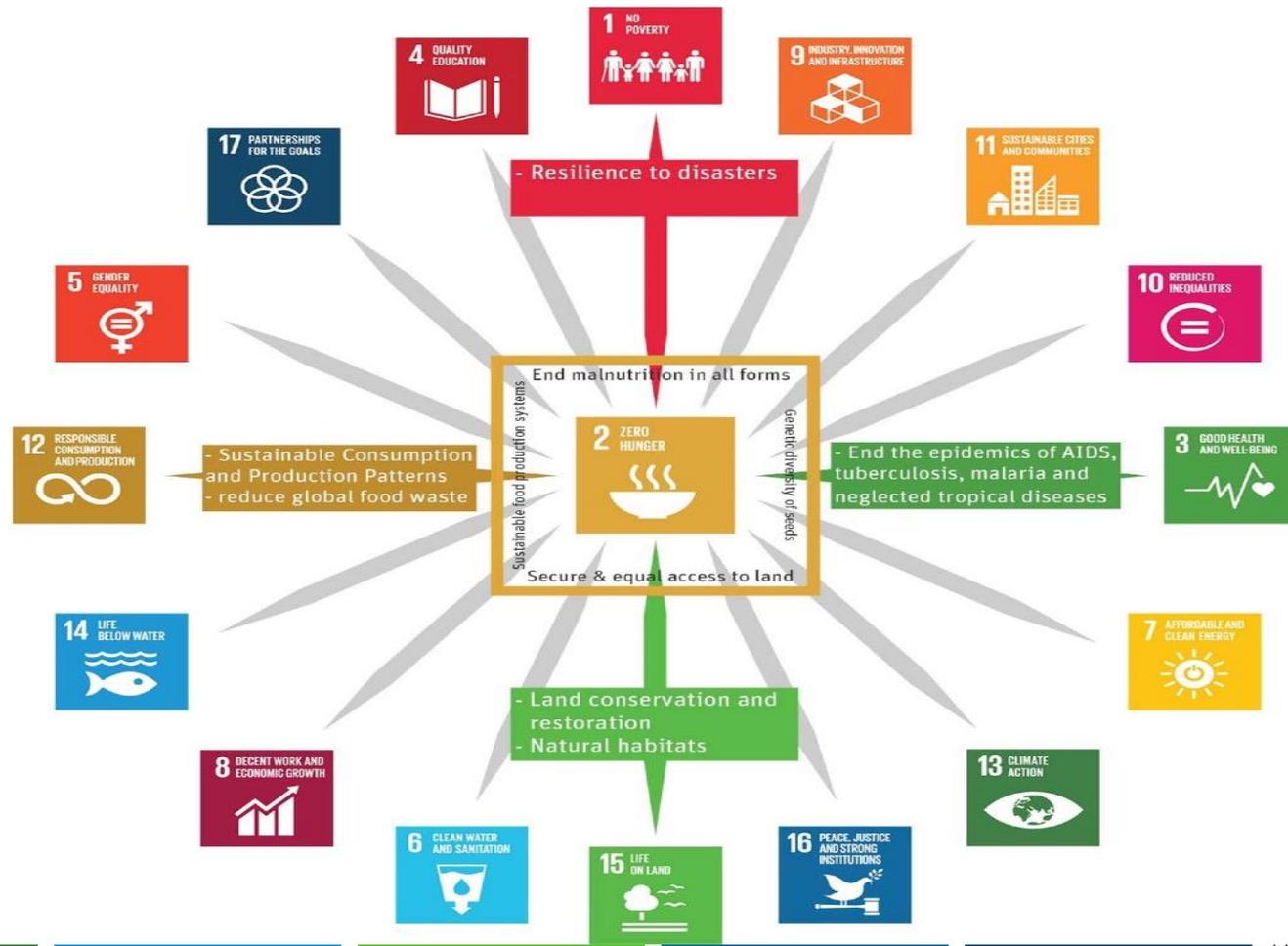
### 49% Farm Equipment



# Increasing market concentration at the retail and consumption side.....



...the call for change ....is not new, was strongly opposed and now also picked up in the SDGs



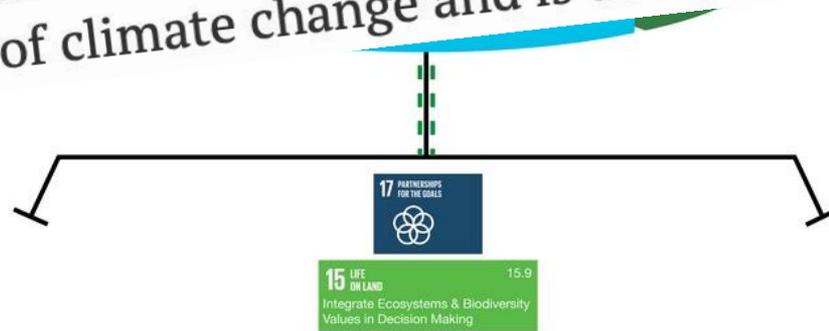
# The SDG Food Cake: Scaling-Up solutions for the SDGs through a three-tiered lens of agriculture and food systems



Published on Tuesday, October 09, 2018 by Common Dreams

## 'One for the History Books!': Dutch Court Puts World on Notice by Ordering Government to Move Faster on Emission Cuts

The government of the Netherlands, said the court, "has done too little to prevent the dangers of climate change and is doing too little to catch up."



There is some how urgency in the need to act....agriculture can be a large part of the solution, just as it is a large part of the problem...and the easiest to tackle

Published on Tuesday, October 09, 2018 by Common Dreams

# What's Not in the Latest Terrifying IPCC Report The "Much, Much, Much More Terrifying" New Research on Climate Tipping Points

"This is the scariest thing about the IPCC Report — it's the watered down, consensus version."  
by Jon Queally, staff writer

**BREAKING NEWS**

The world has  
climate change un  
scientists say

New report says

"There is no documented historic precedent" for the sweeping ch  
planet's warming to just 1.5 degrees Celsius (2.7 degrees Fahrenheit), the  
Intergovernmental Panel on Climate Change found.

changes in all aspects of society' would be  
... and unprecedented



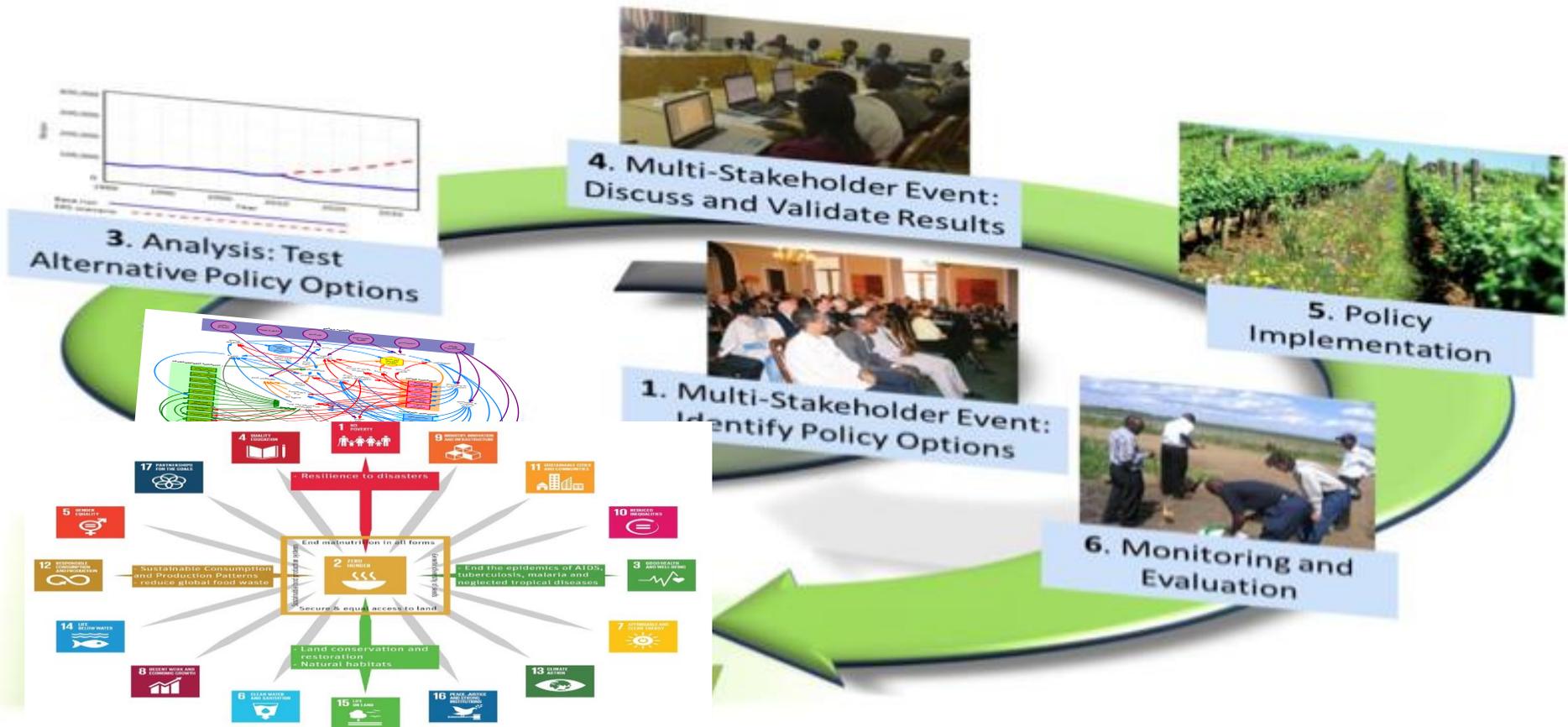
...Are we ready for Full-Cost accounting



Full-Cost is on the way

UNEP TEEB-AG Report 2018

# The process to assure that the changing course in global agriculture and food system is happening



# The way ahead

1. Implement National assessments of ag and food systems
2. Develop **new indicators** for sustainable food systems.
3. Shift **public support** towards diversified **AE/OA** production systems.
4. Support **short circuits & alternative retail infrastructures**.
5. Use **public procurement** to support local agroecological and organic produce.
6. **Strengthen movements** that unify **diverse constituencies** around agroecology and organic agriculture.
7. **Mainstream OA/AE** and holistic food systems approaches into **education and research agendas**.
8. **Develop food planning processes** and **'food policies'** at all levels (**SDGs**)
9. Implement **full-cost accounting**

# Thank you!

MAY 2016



FROM  
UNIFORMITY  
TO  
DIVERSITY

A paradigm shift from industrial agriculture to diversified agroecological systems