



Farming without agro-chemicals
The stance of organic farmers

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Isabella Lang –Policy Analyst

Who does IFOAM EU represent?

Representing the organic movement and sector with 200 members in all Member States and neighbouring countries

- Organic farming associations
- Organic food processors, retailers, traders
- Organic food and farming advisors and researchers
- Organic certifiers

Based on the IFOAM principles of organic agriculture :

- Health, Ecology, Fairness & Care
- Closed nutrient cycles / reduction of external inputs
- Combine **tradition, innovation and science**

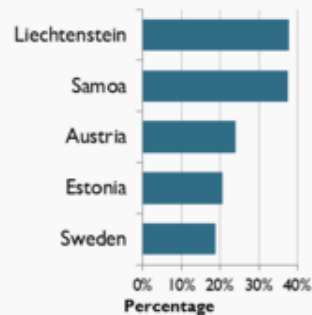
The world of organic farming 2017

69.8 m ha Organic farmland in million hectares

+20% From 2016

181 Countries with organic farming

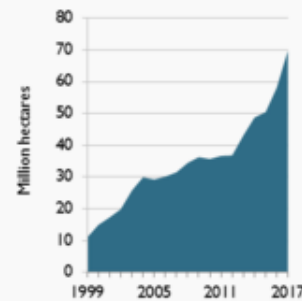
14 countries have 10% or more of their agricultural land under organic management.



Top 5 countries with more than 10 percent of organic agricultural land 2017

+533% since 1999

In 2017, over 11.7 million hectares more were reported compared with 2016.



Growth of the organic agricultural land 1999-2016

13.3% of the food market in Denmark is organic

The highest shares the organic market of the total market is in Denmark, followed by Sweden, Switzerland, Austria, and Luxembourg.



The five countries with the highest organic shares of the total market 2017

rey 2019 www.organic-world.net – statistics.fibl.org

Plant health care in organic farming

- Not just an input replacement

- Regulated in the Regulation (EC) 834/2007, Art. 4

→ **Inputs limited to** “Natural or naturally derived substances”

Synthetic pesticides are replaced by **strategies:**

- choosing **appropriate species and varieties** less susceptible to pests and diseases and adapted to local conditions,
- appropriate **crop rotation**,
- the enhancement of functional **agro-biodiversity**,
- the release of **macrobiotics**,
- **mechanical** and **physical** methods.



Source: LIVESEED



Inputs in organic farming

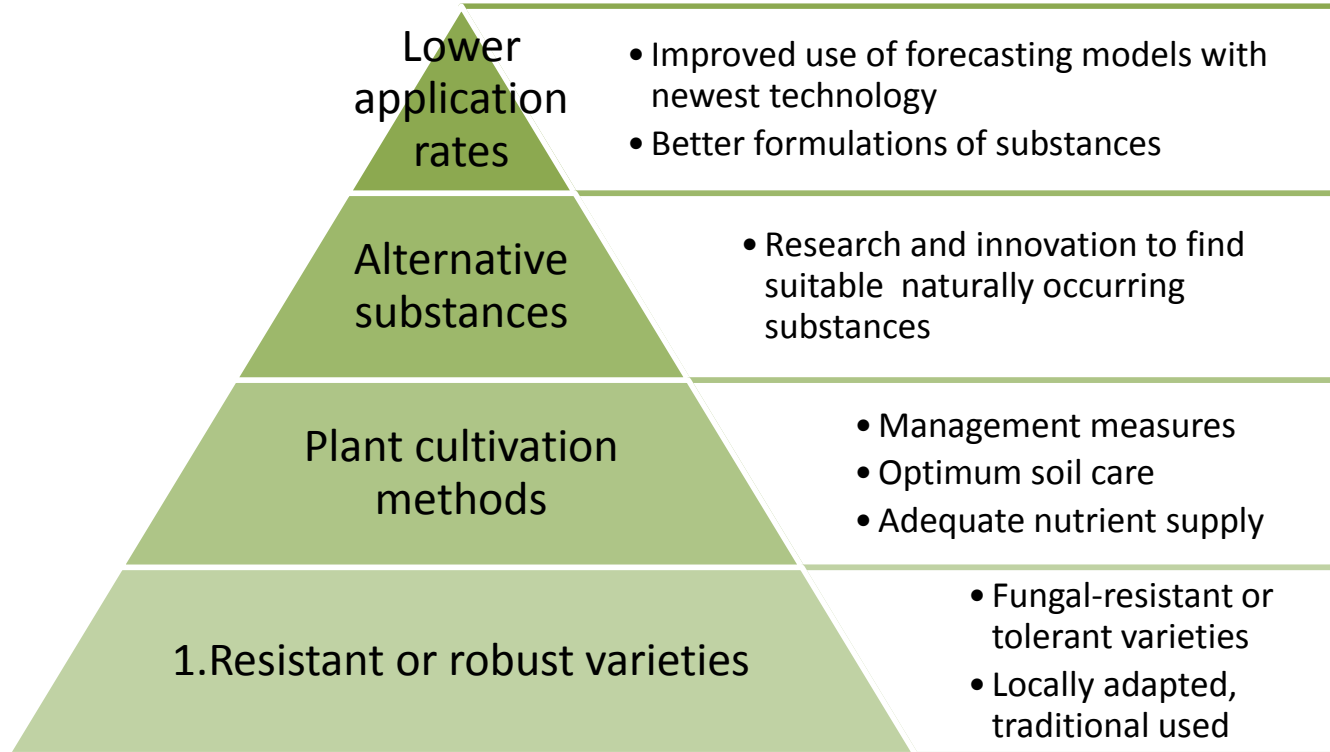
Inputs limited to substances that are already naturally occurring in the system:

- Simple mineral substances (e.g. Calcium)
 - Substances of plant origin (e.g. Orange oil)
 - Microorganisms (e.g. *Bacillus thuringiensis*)
 - Substances of animal origin (e.g. Pheromones, Whey)
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- Annual growth of biocontrol 15 – 20 %



Copper in Organic Agriculture:

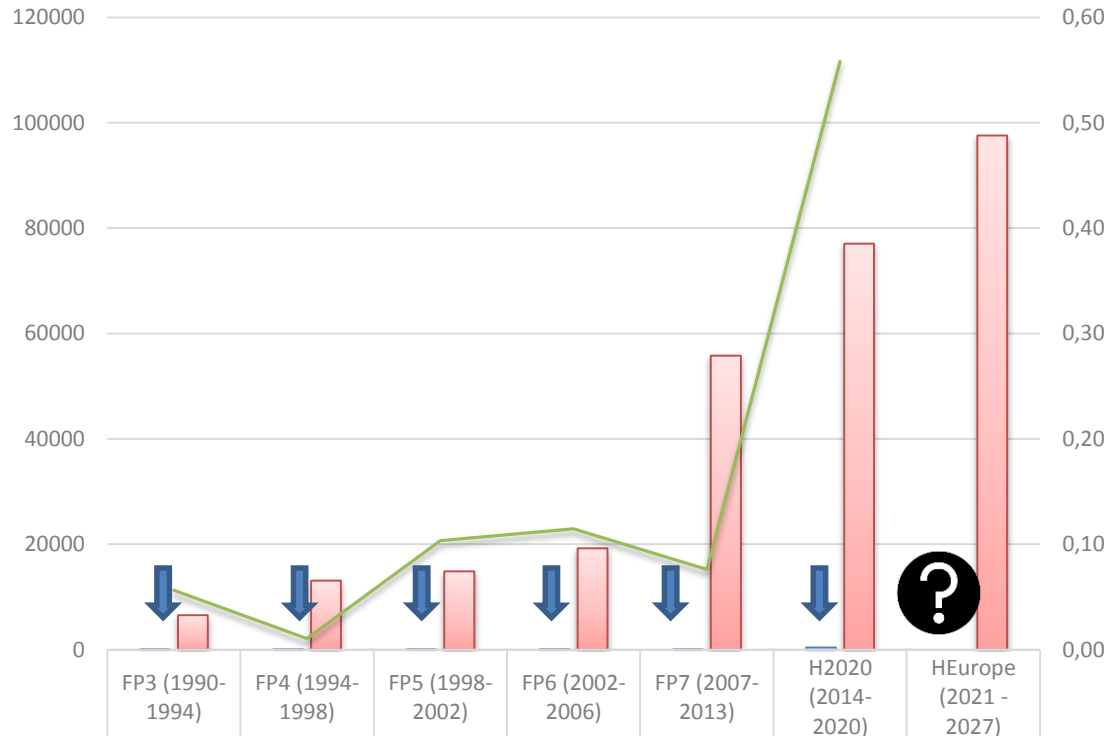
A system approach



- Organic movement first to put a limit on copper use
- Reduction of external inputs – Lowest level of ANY external inputs
- Correct and science based assessment key to ensure appropriate measures: Develop Guidance for the risk assessment of minerals

Funding for organic farming research under EUs framework programm

- **Only 0.56 % of H2020 budget** for research in Organic Food & Farming*
- We need **more resources**, especially for organic plant breeding!
- **New gaps** are to be expected (climate change, new pests and diseases)



	FP3 (1990-1994)	FP4 (1994-1998)	FP5 (1998-2002)	FP6 (2002-2006)	FP7 (2007-2013)	H2020 (2014-2020)	HEurope (2021 - 2027)
Budget for Organic Food and Farming Research (M€)	3,7	1,4	15,4	22,1	42,5	430	
FPs Global Budget (M€)	6552	13121	14871	19256	55806	77028	97600
% of budget for Research in Organic Food and Farming	0,06	0,01	0,10	0,11	0,08	0,56	



*Source: Elaboration TP Organics on Cuoco, E. et al. (2018) – H2020 total sum doesn't include calls 2020 as the information are not available

Organic Farming Systems

DOK trial Switzerland

In summary, organic yield levels over 35 years of the trial and taken together for all crops were approx. 80% of those produced by the conventional system.

Over the years of the trial, there was

- 34-53% lower input in fertilizers and fossil energy and
- 97% reduction of pesticides in the organic cropping systems
- The energy input per **unit of yield** (harvested crop) was 19% lower in the organic systems and
- “The consistent results [...] support the hypothesis that a more diverse community is more efficient in resource utilisation.”

“Feeding the world”, really?

- The reasons for hunger are complex and varied. It is more a problem of **lack to access to food, because of conflicts or poverty**, or of lack of access to the means of producing food (land), than of insufficient production.
- According to IPES Food (2016 report), **a highly industrialised agri-food system generates negative outcomes on multiple fronts**: “widespread degradation of land, water and ecosystems; high GHG emissions; biodiversity losses; persistent hunger and micro-nutrient deficiencies alongside the rapid rise of obesity and diet-related diseases; and livelihood stresses for farmers around the world.”
- **Land use: “How land is farmed (not how much) may in fact be the most pressing concern**. Globally, 20% of land is now considered to be degraded, with industrial agriculture contributing significantly to this trend. Most developed countries have become net importers of animal feed and biomass for human consumption, exacerbating environmental pressures and competition for land in supply regions.”
- **Food waste and of the consumption of animal products are the key variables that impact land use globally.**



How to measure productivity?

- Solely measuring yields disregards the level of input needed and the **negative externalities**
- Agroecological agriculture systems can be highly productive. According to IPES Food: *“Diversified systems are by definition geared towards producing diverse outputs, while delivering a range of environmental and social benefits on and off the farm. Narrowly-defined indicators of agricultural performance fail to capture many of these benefits, including: high total outputs, high nutrient content of outputs, reduced health risks, resilience to shocks, provision of ecosystem services, high resource efficiency, job creation”*.
- Example, the cost on ground water pollution is of 1298 euros for a hectare of conventional potatoes, while it is of 0.4 euros for a hectare of organic potatoes.
- Organic agriculture is more profitable for farmers as it is less input intensive. Instead organic farming is knowledge intensive



Further agro-industrial intensification...



...or transition to agro-ecological intensification...



We can produce sufficient healthy food in an environmental and social sound way through agro-ecological practices and biocontrol.

Thank you for your attention

isabella.lang@ifoam-eu.org

Further reading / reference

UN reports

[Human Rights Council](#) 2010: UN Special Rapporteur on agroecology as a mode of agricultural development

[UNEP-UNCTAD Capacity-building Task Force](#) on Trade, Environment and Development 2008: Organic Agriculture and Food Security in Africa

<https://inra-dam-front-resources-cdn.brainsonic.com/ressources/afile/442690-5075f-resource-priroites-scientifiques-horizon-europe-food-2030-pesticide.pdf>

<https://www.theguardian.com/society/2014/nov/20/obesity-bigger-cost-than-war-and-terror>

Marques, A., Martins, I.S., Kastner, T., Plutzer, C., Theurl, M.C., Eisenmeger, N., Huijbregts, M.A., Wood, R., Stadler, R., Bruckner, M., Canelas, J., Hilbers, J., Tukker, A., Erb, K., Pereira, H.M. (2019). Increasing Impacts of land use on biodiversity and carbon sequestration driven by population and economic growth. *Nature Ecology and Evolution*,

IPES 2016: From Uniformity to Diversity: A paradigm shift from industrial agriculture to diversified agroecological systems.

Paul Maeder, et al. Soil Fertility and Biodiversity in Organic Farming. *Science* 296, 1694 (2002). DOI: 10.1126/science.1071148