



# Agriculture production as a tool to multifunctional development of rural areas

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# Content

- Agriculture impact on environment
- Multifunctional role of agriculture
- Ecosystem services
- Organic farming as a tool for food production and environmental protection
- Key agronomic practice supporting ecosystem services
- OF supported by CAP
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# Agricultural impact on the environment

- Agricultural management has an impact on the soil degradation, plants, animals, and landscape, by:
- Poor crop rotation
  - cereals are 72% of all crops
- Pesticides use and overuse –
  - pesticides residues in food
- Artificial fertilization
  - nitrogen in drinking water and nitrate in food
  - Biodiversity
- Intensive tillage
  - diminish humus content and carbon storage
- GMO
  - threat for health and ecosystem

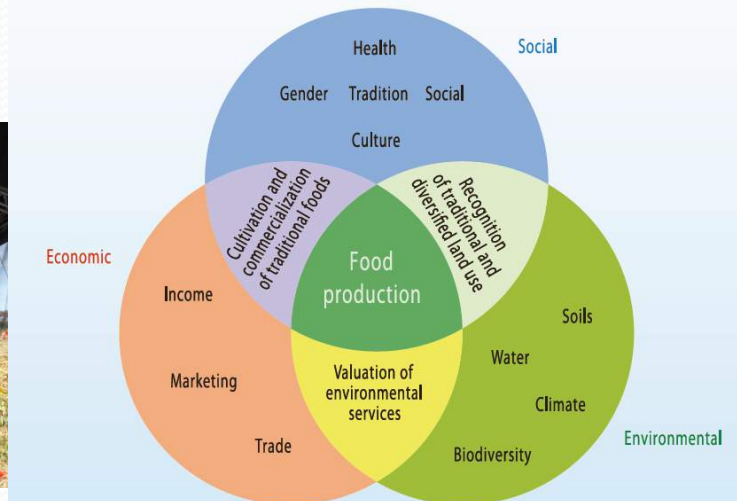


# Impact of organic farming on the various groups of organisms

Group	Positive	Negative	Not relevant
Birds	7		2
Mammals	2		
Butterflies	1		1
Spiders	7		3
Earthworms	7	2	4
Beetles	13	5	3
Other invertebrates	7	1	2
Plants	13		2
Soil microorganizms	9		8
<b>Sum</b>	<b>66</b>	<b>8</b>	<b>25</b>

# Multifunctional role of agriculture

- Beyond its primary function of producing food and fibre, agricultural activities can also:
  1. Provide environmental benefits:
    1. Shape the landscape, water storage, preservation of biodiversity, land conservation
    2. Socio-economic tasks – create working places and living environment
    3. Contribute to cultural tasks (cultural identity & heritage, spiritual services, tourism)

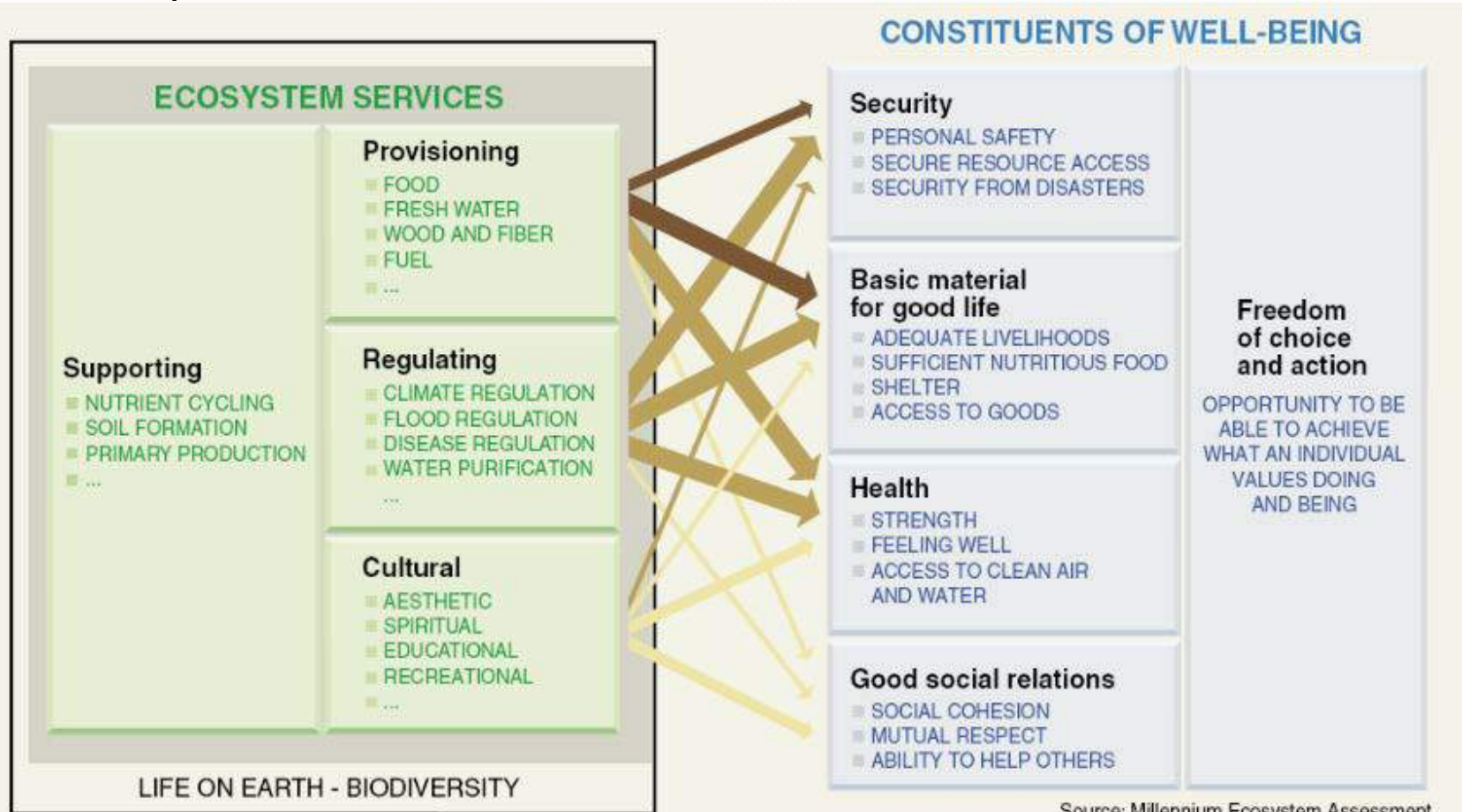


Van Huylenbroeck et al. 2007



# Ecosystem services

- Therefore agriculture should be considered throughout its multifunctional role. Sustainable agriculture gives benefit whole society.



# Ecosystem services

Ladybug larve

aphids



# Key organic agriculture methods

- Sustainable management and of soil organic matter and enhanced soil biotic activity
- Recycling of nutrients and energy on farm
- Diversification of crops and genetic resources in time and space
- Integrating crop and livestock
- Systems approach





# Organic farming

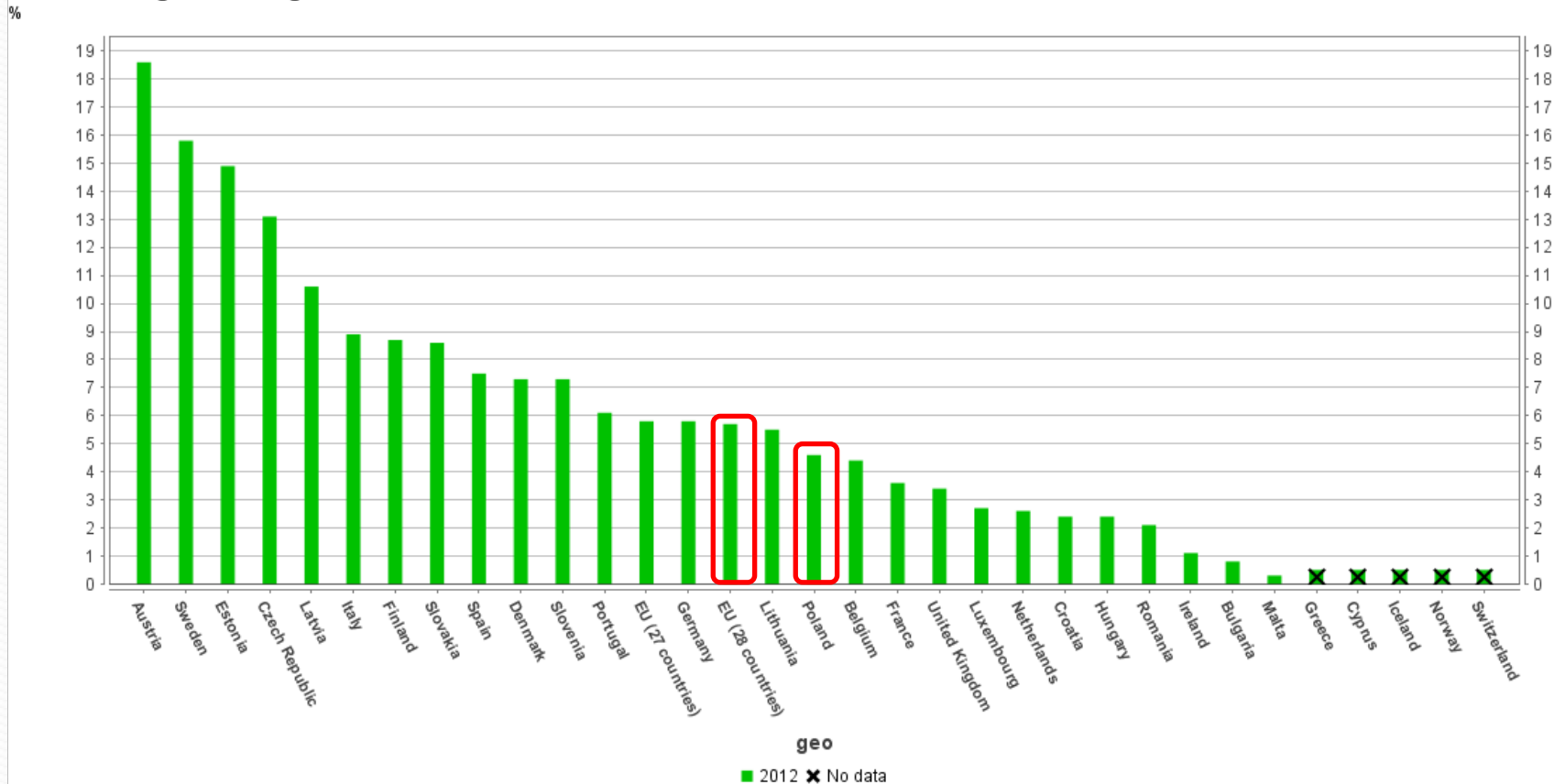


- Unfortunately, conventional farming is focused mainly on the productive role, and downplays other important roles.
- IFOAM definition of organic farming tries to combine all aspects of agricultural production.
  - developed 4 principles: ecology, health, fairness and care.**
  - that become a global reference for sustainability in agriculture and food systems.**
- Organic agriculture is a production system that sustains the health of soils, ecosystems and people.
- It relies on **ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects.**
- Organic agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved.

# Organic farming a great tool of the environment protection

- Increasing importance of organic farming becomes a powerful tool of in sustainable development

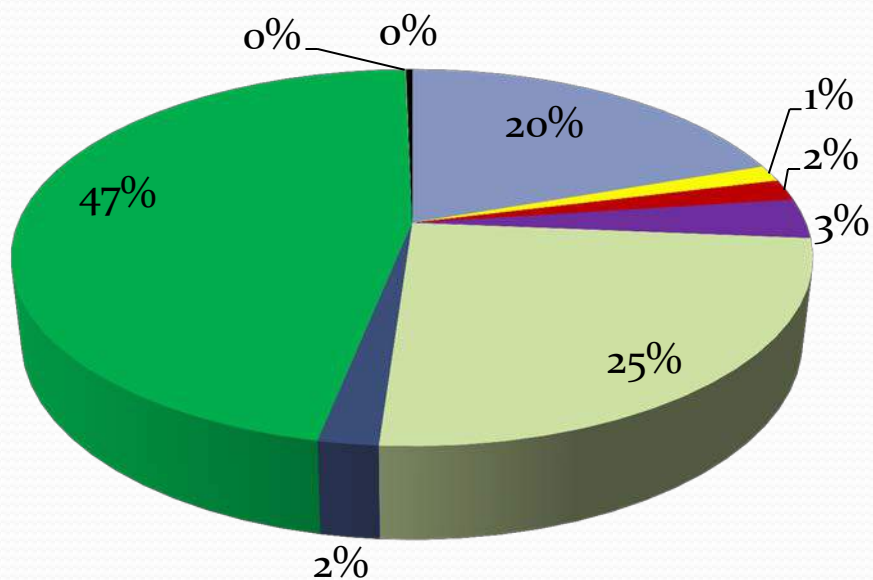
Area under organic farming



# Production structure in UE

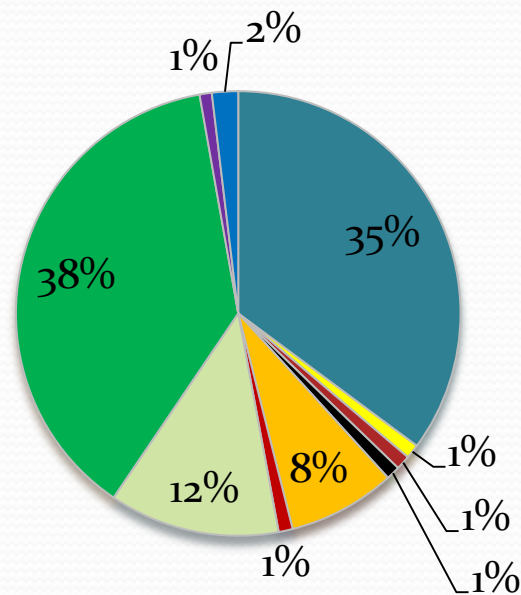
Utilised agricultural area (UAA)

## Organic farming



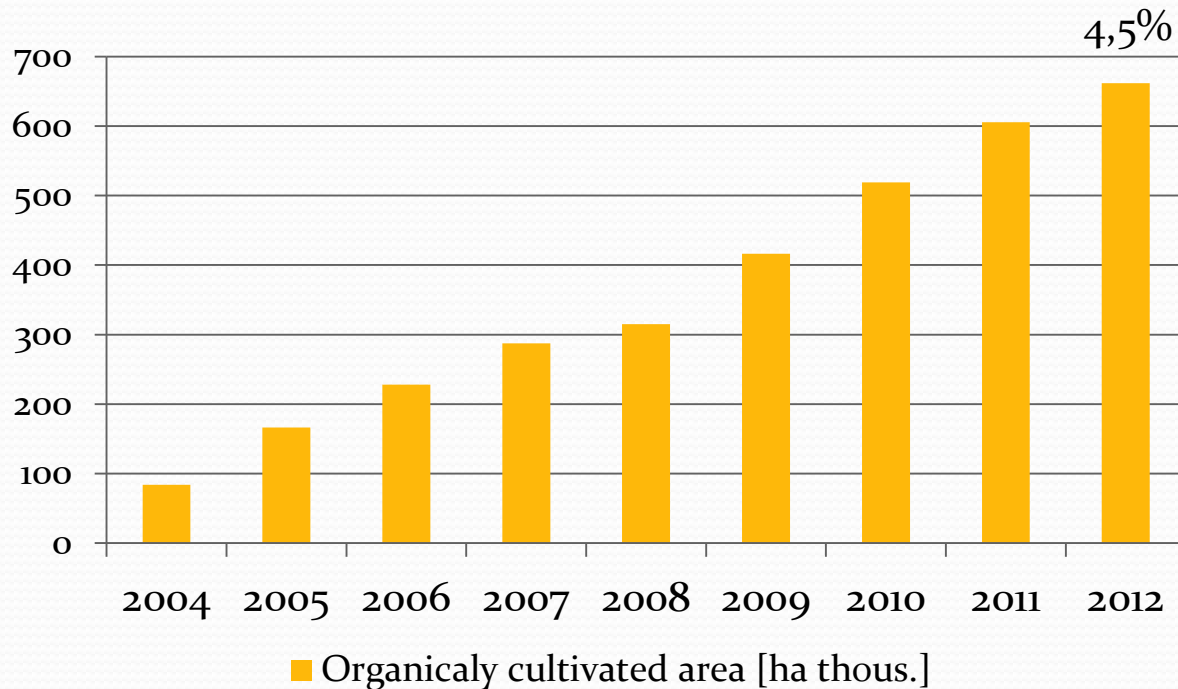
- Cereals, excl. rice
- Fresh vegetables
- Green fodder from arable land
- Permanent grassland
- Root crops
- Dried pulses
- Fruit
- Industrial crops (total)
- Root and tuber vegetables

## Conventional farming



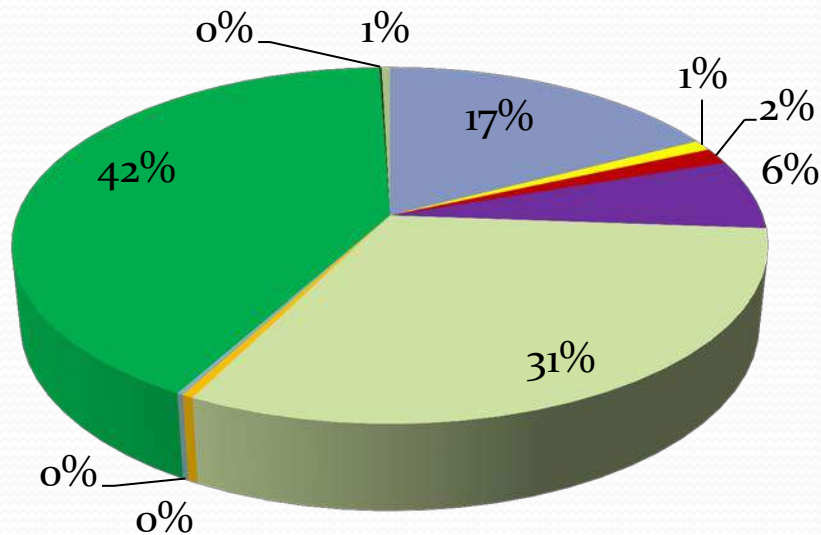
- Cereals
- Potatoes
- Fodder crops
- Fruit
- Pulses
- Sugar beet
- Fresh vegetables
- Permanent grassland and meadow
- Vineyards - total

# Increasing importance of organic farming in Poland make it powerful tool of the environment protection



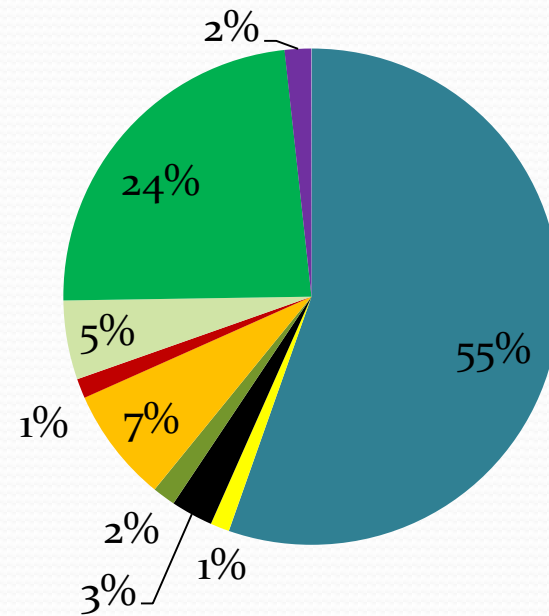
# Production structure in Poland

## Organic farming (UAA)



- Cereals
- Fresh vegetables
- Green fodder from arable land
- Nuts
- Root and tuber vegetables
- Dried pulses
- Fruit and berries
- Industrial crops (total)
- Permanent grassland
- Root crops

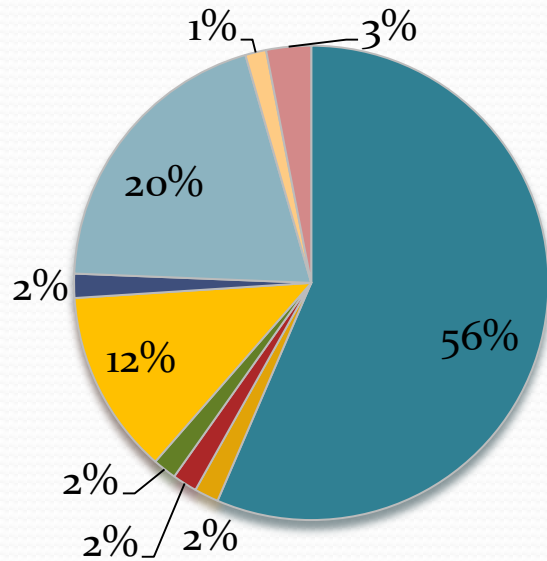
## Conventional farming (UAA)



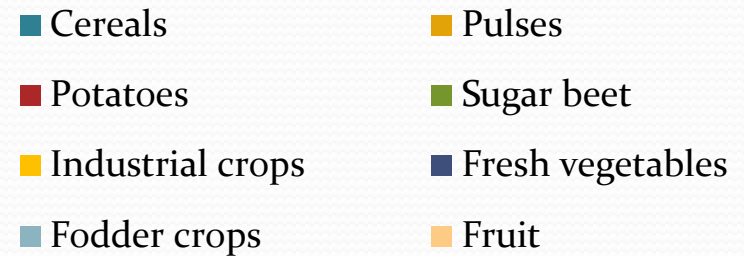
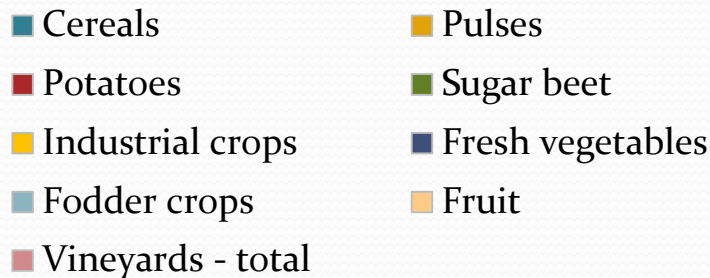
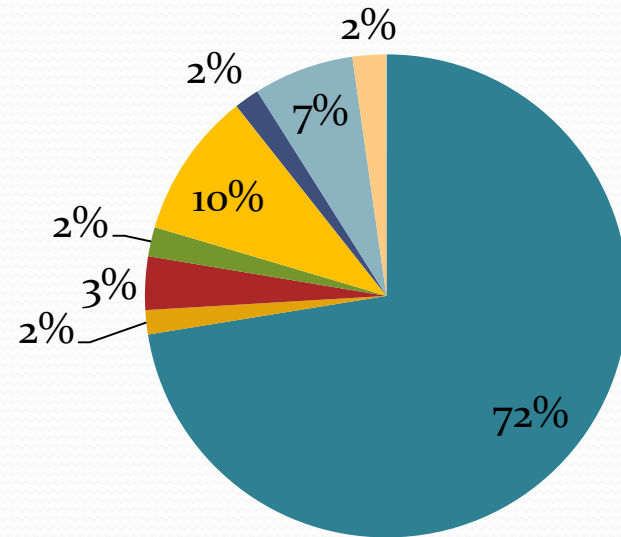
- Cereals
- Potatoes
- Industrial crops
- Fodder crops
- Fruit
- Pulses
- Sugar beet
- Fresh vegetables
- Permanent grassland and meadow

# Conventional arable land production structure

EU



Poland



# Skeptic voice

- There are still many ambiguities and critical voices concerning the organic production system as a tool to protect the environment and support ecosystem services.
- Sceptics ask whether it is really a system creating sustainable and permanent soil fertility, animal health and high quality of the organic products?



# Current state

Organic agriculture is a production system that sustains the health of soils, ecosystems and people.





# Conclusions

- Organic farming much stronger contributed to multifunctional development and ecosystem services than conventional one so it's worth to support.
- Increased food production from agricultural systems with less environmental impact are required.
- Need to answer the question about supporting OF in a way that promote its multifunctionality(combining food production and ecosystem services).





THANK YOU

Questions?

