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Research strategy for the development of the organic farming and food sector in Germany

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Contents

- Background information
- Goals of the strategy
- Approaches to success
- Priorities for research
- Lessons learned

Ulrich Hamm, Anna Maria Häring, Kurt-Jürgen Hülsbergen, Folkhard Isermeyer, Stefan Lange, Urs Niggli, Gerold Rahmann & Susanne Horn . Research strategy of the German Agricultural Research Alliance (DAFA) for the development of the organic farming and food sector in Germany. Org. Agr. (2017) 7: 225. https://doi.org/10.1007/s13165-017-0187-5
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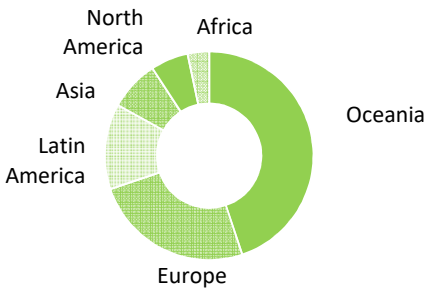
WORLD: ORGANIC FARMLAND 2015

World
50.9
Mio ha

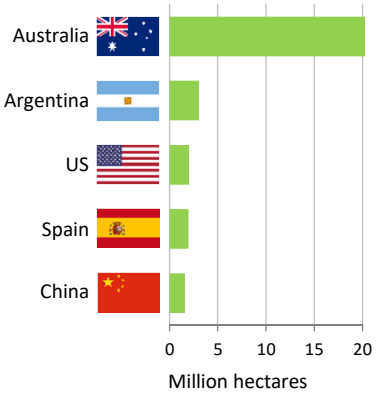
In Oceania there were 22.8 Mio ha, in Europe 12.7 Mio ha, and in Latin America 6.7 Mio ha.



Distribution of organic agricultural land by region 2015

Australia
22.7
Mio ha

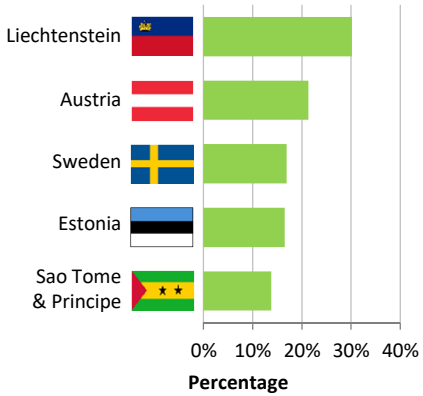
The ten countries with the largest organic agricultural areas represent 74% of the world's organic agricultural land.



The five countries with the largest areas of organic agricultural land 2015

1% of the world's farmland is organic

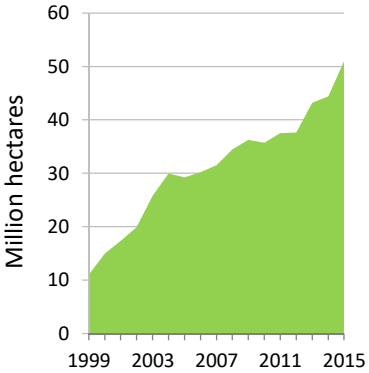
11 countries have 10% or more of their agricultural land under organic management.



Top 5 countries , where more than 10 percent of the farmland is organic 2015

+360%
since 1999

In 2015, almost 6.5 million hectares more were reported compared with 2014.



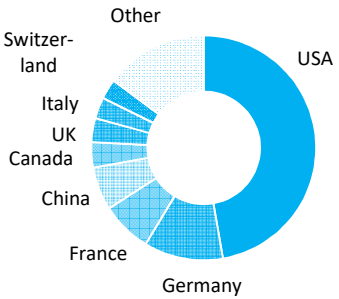
Growth of the organic agricultural land 1999-2015

Source: FiBL survey 2017 www.organic-world.net

WORLD: ORGANIC RETAIL SALES 2015

World
Approx.
75 billion €

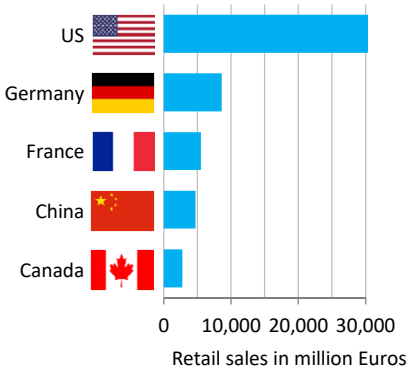
The largest single market is the USA followed by the EU (27.1 billion €) and China. By region, North America has the lead (38.5 billion €), followed by Europe (29.8 billion €) and Asia.



Distribution of retail sales value by country 2015

North America
almost
39 billion €

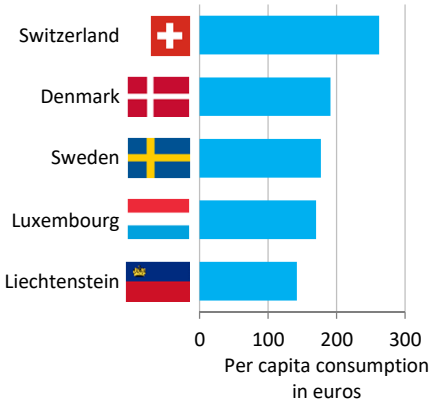
The countries with the largest market for organic food are the United States (35.8 billion €), followed by Germany (8.6 billion €), France (5.5 billion €) and China (4.7 billion €).



The five countries with the largest markets for organic food 2015

262€
are spent per person in Switzerland

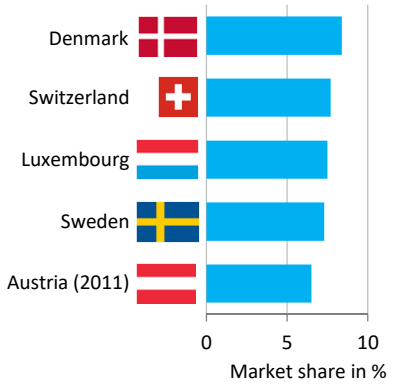
Switzerland has the highest per capita consumption worldwide, followed by Denmark and Sweden.



The five countries with the highest per capita consumption 2015

8.4%
of the food market in Denmark is organic

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



The five countries with the highest organic shares of the total market 2015

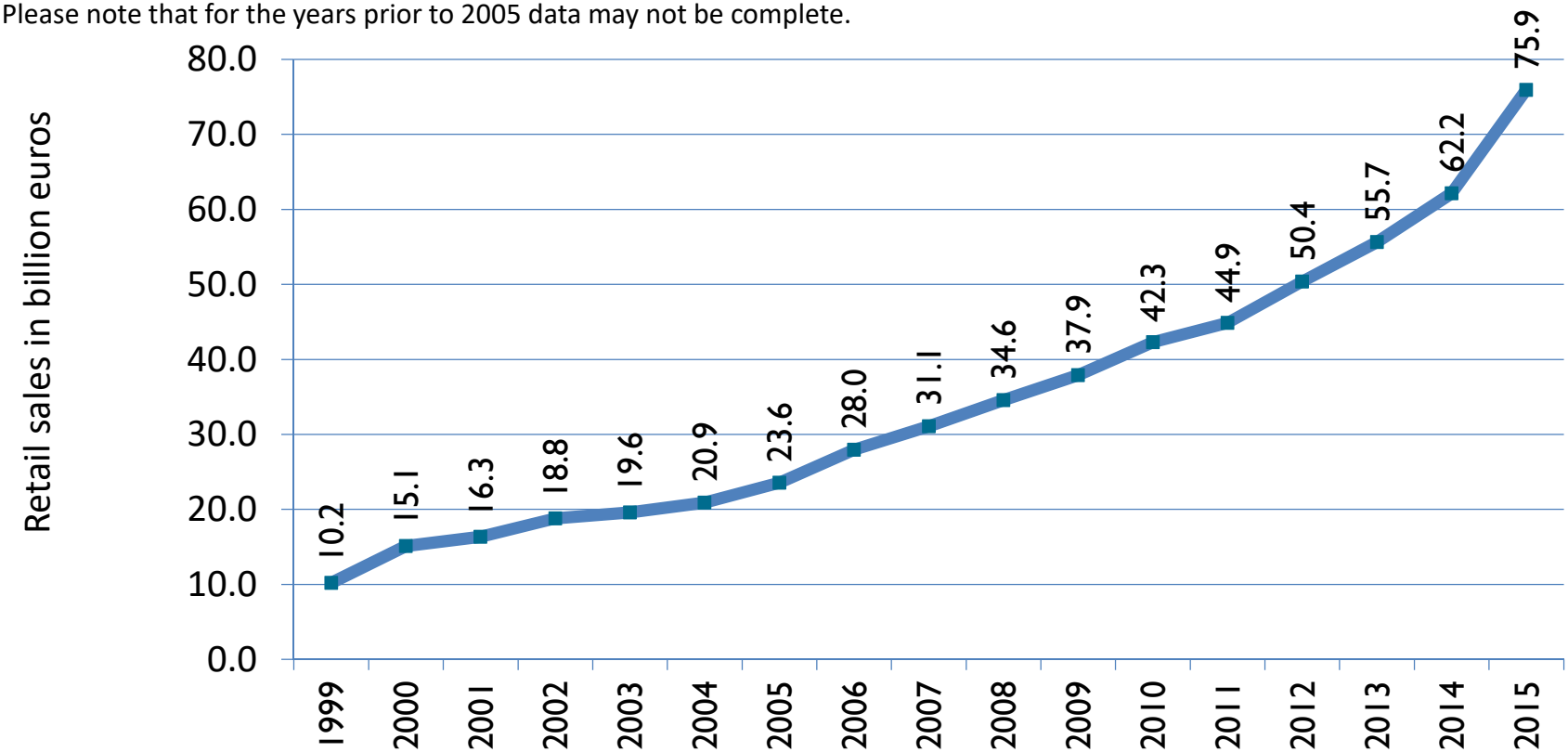
Source: FiBL survey 2017 www.organic-world.net

World: Development of organic retail sales 1999-2015

Development of the organic retail sales 1999-2015

Source: FiBL surveys 2002-2017

Please note that for the years prior to 2005 data may not be complete.

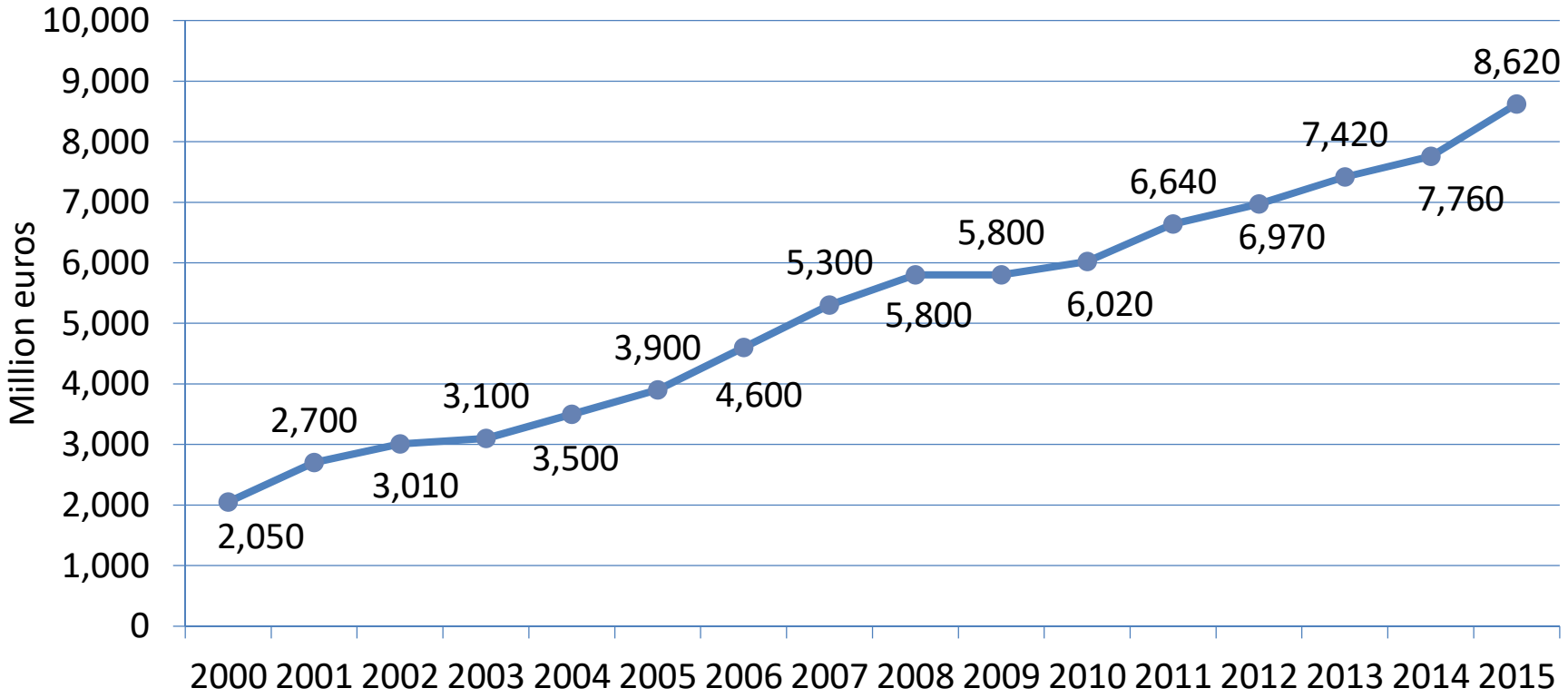


Source: FiBL survey 2017 www.organic-world.net

Germany: Growth of retail sales in Germany 2000-2015

Germany: Growth of organic food and beverages retail sales 2000-2015

Source: FiBL-AMI surveys 2000-2017



Source: FiBL survey 2017 www.organic-world.net

Comparing SDGs to what organic agriculture delivers

Economic

Increase global food production by ~ 50 %. ✗

Stabilize and secure yields of cash crops (and staple foods?). ✗

Social

Foster learning and cooperation of farmers ✓

Foster farmer-owned knowledge instead of external inputs & knowledge ✓

Increase productivity of subsistence & small holder farms ✓

Literature to be found:
Niggli, U (2014) Sustainability of Organic Food Production: Challenges and Innovations. Proceedings of the Nutrition Society. doi:10.1017/S0029665114001438, 6 pages.

Reduce poverty of farm families ✓

Strongly reduce negative environmental externalities ✓

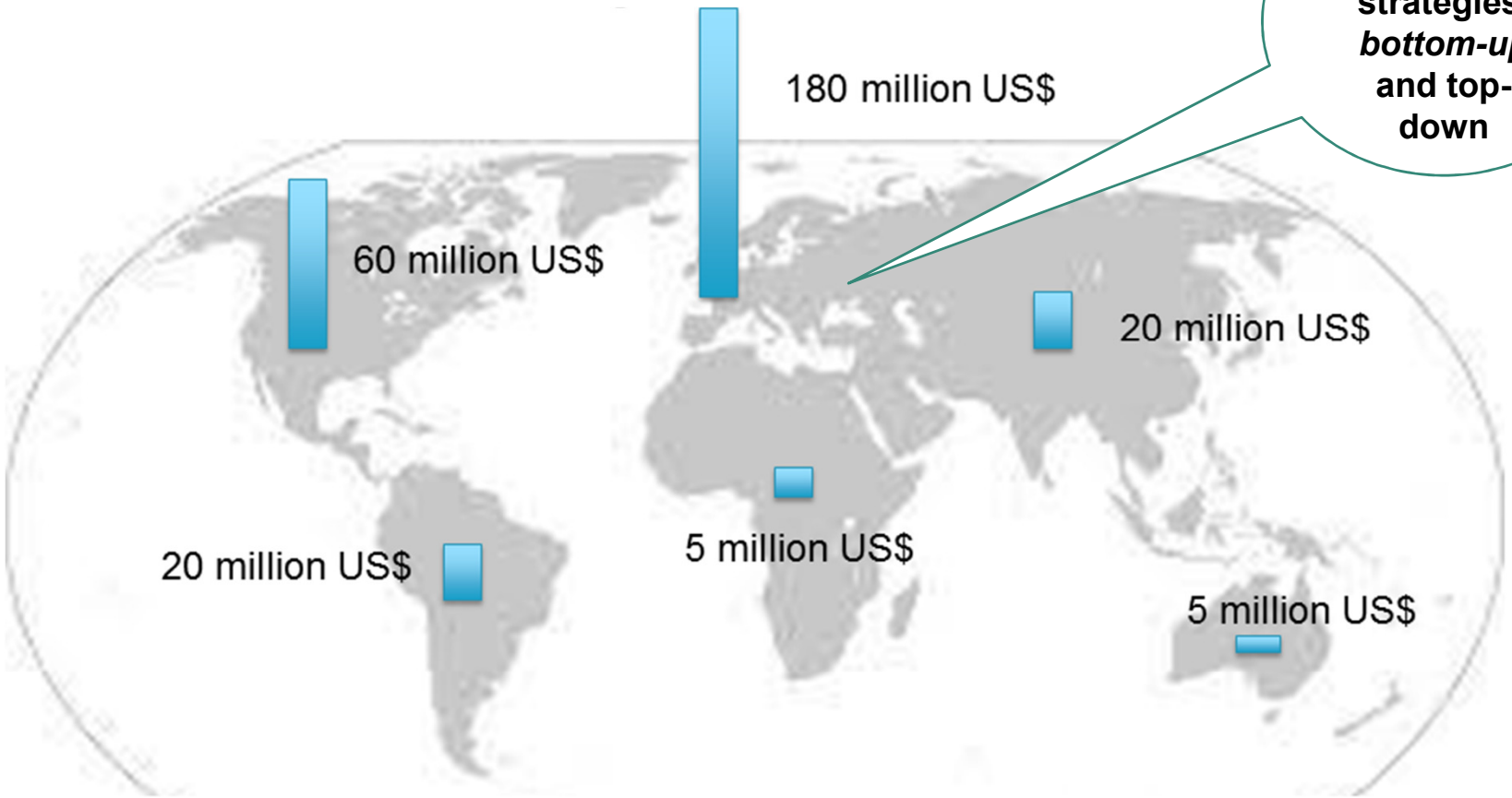
Create value addition in food chains ✓

Environmental

Increase agronomic and ecological resilience ✓

Use ecosystem functions for productivity increase ✓

Annual spendings for organic research



290 million = 0.6% of total research funding

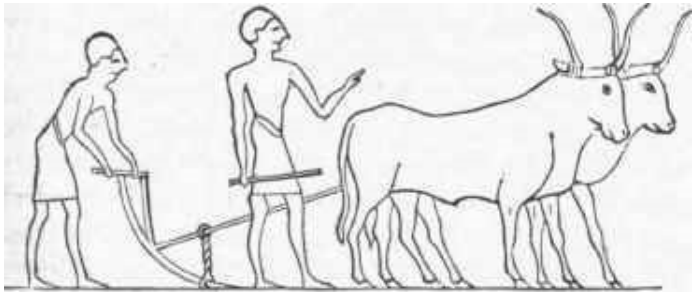
Niggli U, Andres Chr, Willer H & Baker B (2016) Building a global platform for organic farming research, innovation and technology transfer. Org. Agr. Springer, DOI 10.1007/s13165-017-0191-9

Innovation in agriculture

Social innovation

Ecological innovation

Technological innovation



«The most important resource is the human brain, a resource which is pleasantly reproducible»
Johann Norberg, 2016

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Goals of the strategy

- **Support of the goal of the Federal Government of Germany to expand organic farming up to 20% of the agricultural area by**

- improving the performance and competitiveness of organic food and farming;
- while increasing the sustainability in terms of the 4 principles of organic farming (health, environment, fairness, care) of the international umbrella organization of the organic world (IFOAM Organics International).

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Three approaches to success

- (1) Focusing of research on the most important themes with a high leverage effect;
- (2) the establishment of efficient structures for research and funding;
- (3) more funding for research on organic farming.

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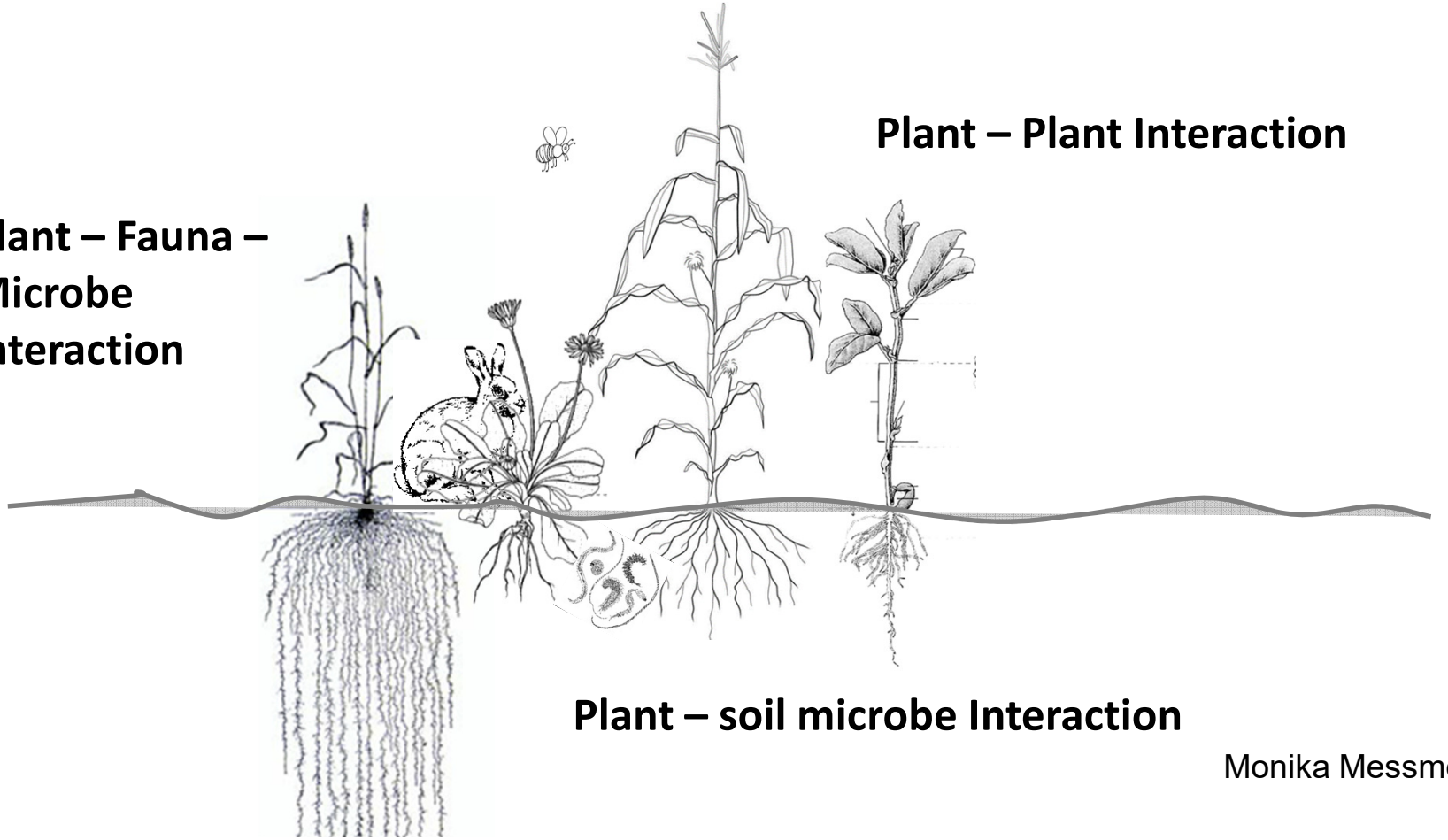
Fields of priority for research

- Plant breeding tailored to the need of organic agriculture.



Monika Messmer, FiBL

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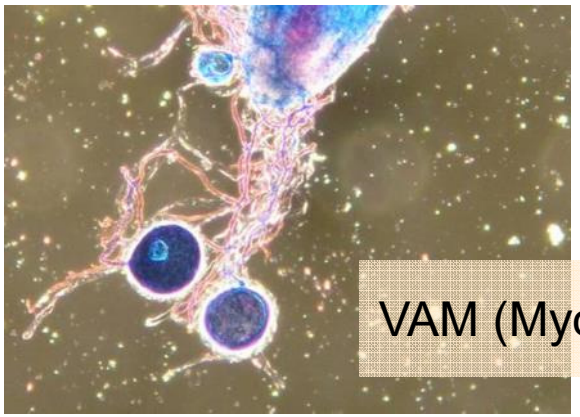
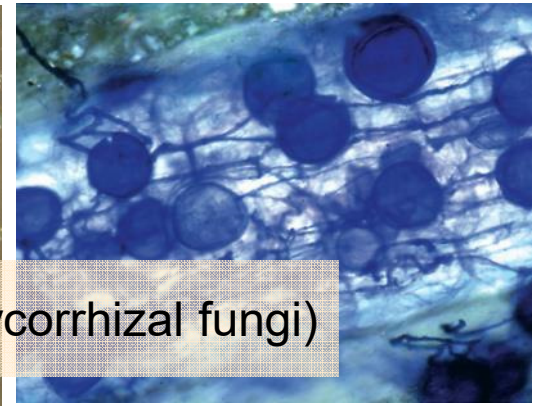
Fields of priority for research

- autonomous field micro-robots,
- alternative control of fungal diseases and
- management of nutrients and soil fertility.





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Fields of priority for research

- In organic livestock production, the most important topics are to meet competing goals in production systems (future production systems—a focus on pigs);
- to ensure optimum supply of essential amino acids in poultry,
- And to foster successful animal production by implementing research-practice networks.



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Fields of priority for research

- **Strengthening the characteristics of organic food systems—processing, retailing, and certification;**
- gentle processing technologies;
- transfer of trustworthiness features (e.g. indicator-based certification, personalized value chains)
- research on societal expectations and consumer behaviour.

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Funding structures

- Funding structures which are no longer strictly time limited;
- research-practice network offering co-learning between farmers, advisors, and researchers;
- real transdisciplinary funding instruments;
- funding for model regions to facilitate transfer of advancement of research and knowledge;
- federal and state co-funded university chairs.

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Lessons learned

- Two year process with many stakeholder involvements;
- Potential is relevant for setting the research agenda and influencing the priority setting:
- A strategy is a paper. Intensive dissemination and conviction work is needed.