

Institute of Organic Farming in Trenthorst (Northern Germany, close to Hamburg)

- Belongs to the German Ministry of Agriculture (established in 2000)
- Goal: develop and inspire the „organic farming of the future“
- 100 employees (35 scientists)
- Annual budget: 10 Mio. €
- Modern laboratories
- 600 ha organic research station



my office ☺ in Trenthorst















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Prof. Dr. habil. Gerold Rahmann
President of ISOFAR, world board member IFOAM

Good News - Bad News

World of Food and Farming



Food and Farming impressions from all countries of our World



Ethiopia 2015-2017:
Establishment of the German project:
One World-No Hunger

Prof. Dr. habil. Gerold Rahmann
President of ISO FAR, world board member IFOAM

Two farm visits last days

Friday: Ethiopia

6 persons (woman lead), 1.5 ha farm land (wheat), 5 cattle, biogas, 500 USD/y





Tuesday: Finland

6 persons (woman lead), 220 ha
farm land (forage, wheat), 60 cattle,
biogas, 500,000 USD/y

Two farm visits last days

Future agricultural challenges:

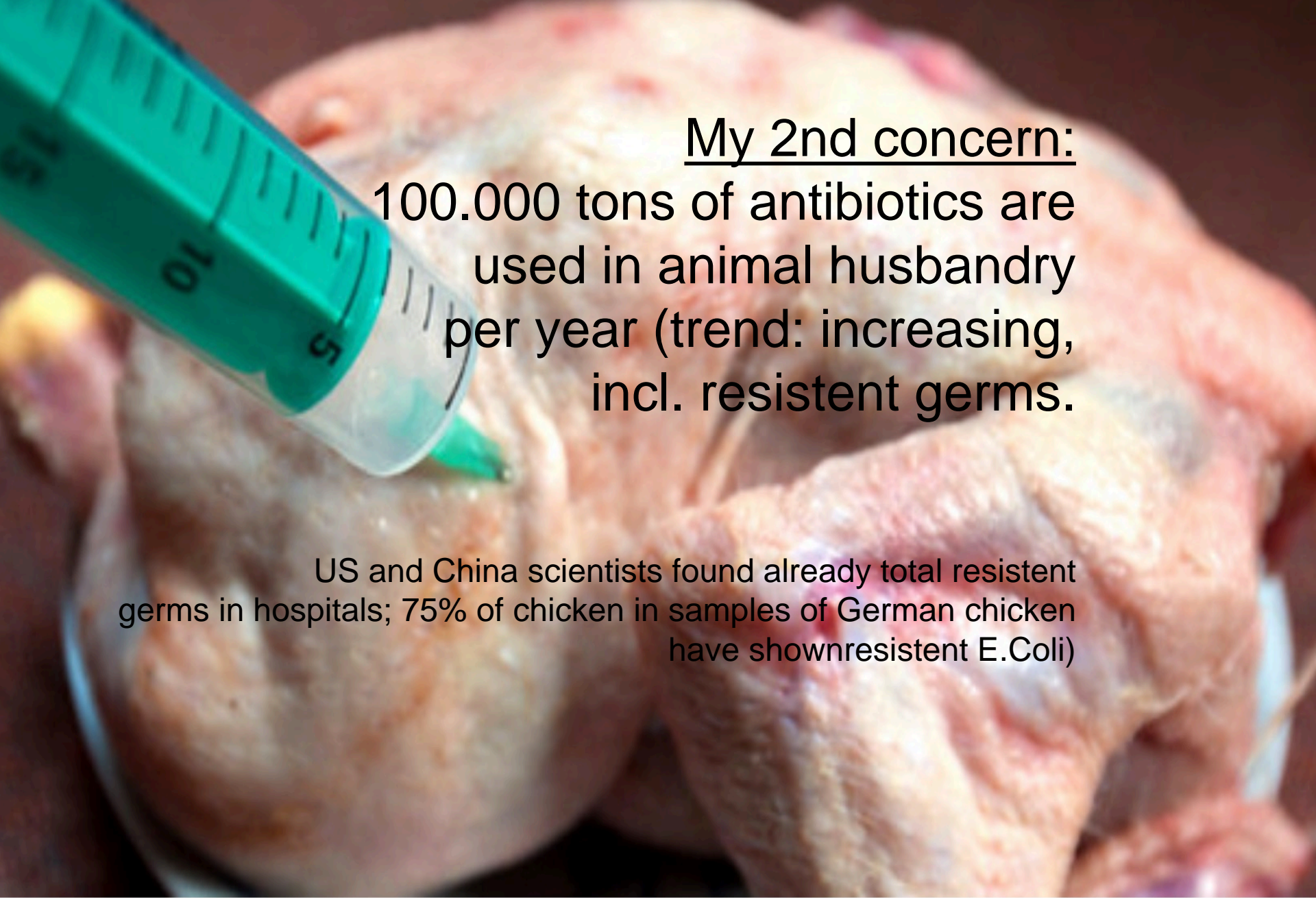


- Enough, good and affordable food
- Fossil resources ends: energy, phosphate, etc.
- Climate will change
- Avoid pollution: soil, air, water
- Changing ethics and food habits
- Economics and globalisation

Recently we use our world 1.5-times

My 1st concern: 5 mio tons of pesticides are used per year (trend: increasing) (4 kg / ha; 0.7 kg / capita and year)





My 2nd concern:
100.000 tons of antibiotics are
used in animal husbandry
per year (trend: increasing,
incl. resistant germs.

US and China scientists found already total resistant
germs in hospitals; 75% of chicken in samples of German chicken
have shown resistant E.Coli)

What needs to be initiated today to tackle with the challenges till 2050 and 2100?

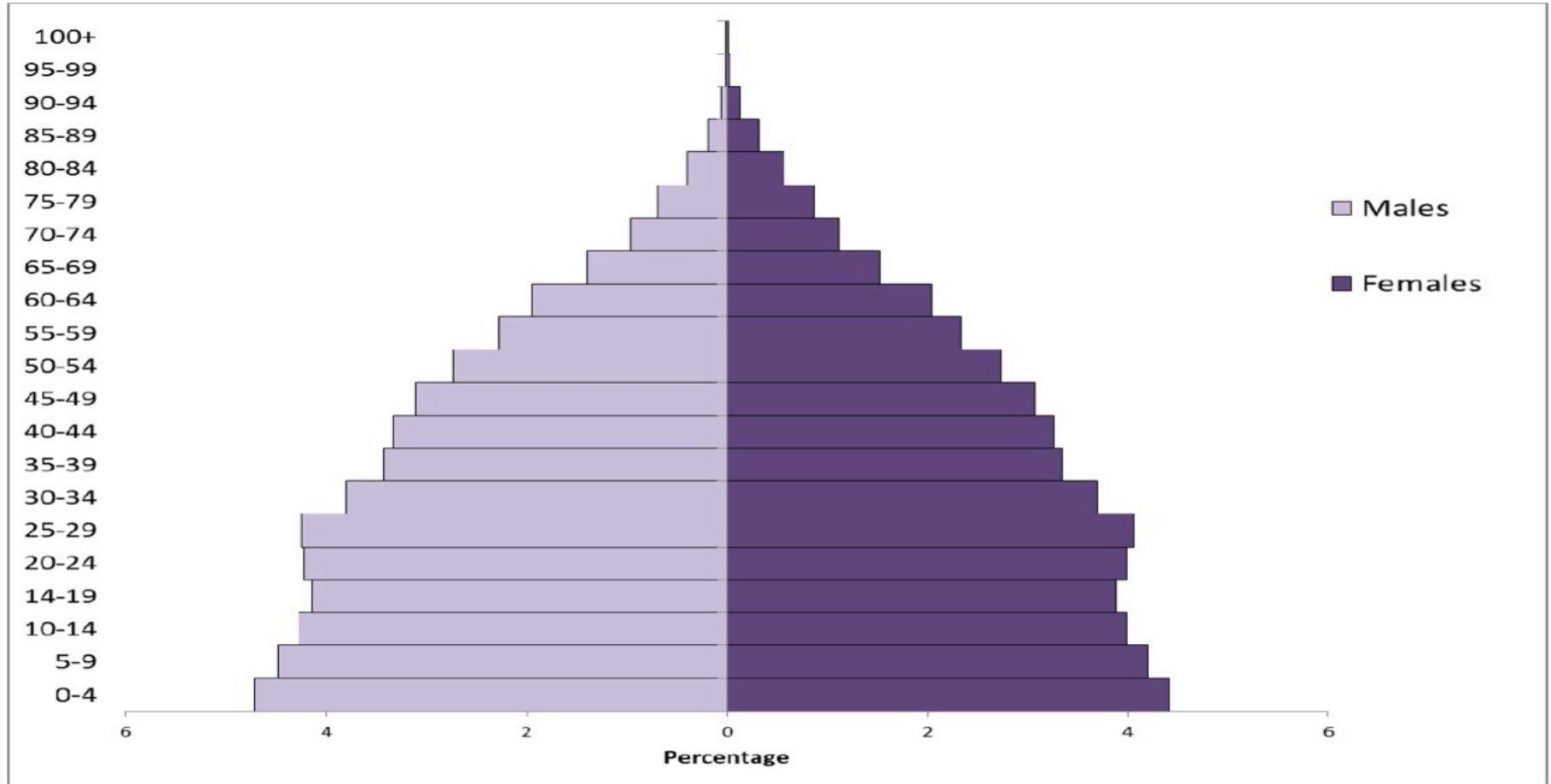


TABLE 1. POPULATION OF THE WORLD AND MAJOR AREAS, 2015, 2030, 2050 AND 2100,
ACCORDING TO THE MEDIUM-VARIANT PROJECTION

<i>Major area</i>	<i>Population (millions)</i>			
	<i>2015</i>	<i>2030</i>	<i>2050</i>	<i>2100</i>
World	7 349	8 501	9 725	11 213
Africa	1 186	1 679	2 478	4 387
Asia	4 393	4 923	5 267	4 889
Europe	738	734	707	646
Latin America and the Caribbean	634	721	784	721
Northern America	358	396	433	500
Oceania	39	47	57	71

Source: United Nations, Department of Economic and Social Affairs, Population Division (2015).
World Population Prospects: The 2015 Revision. New York: United Nations.

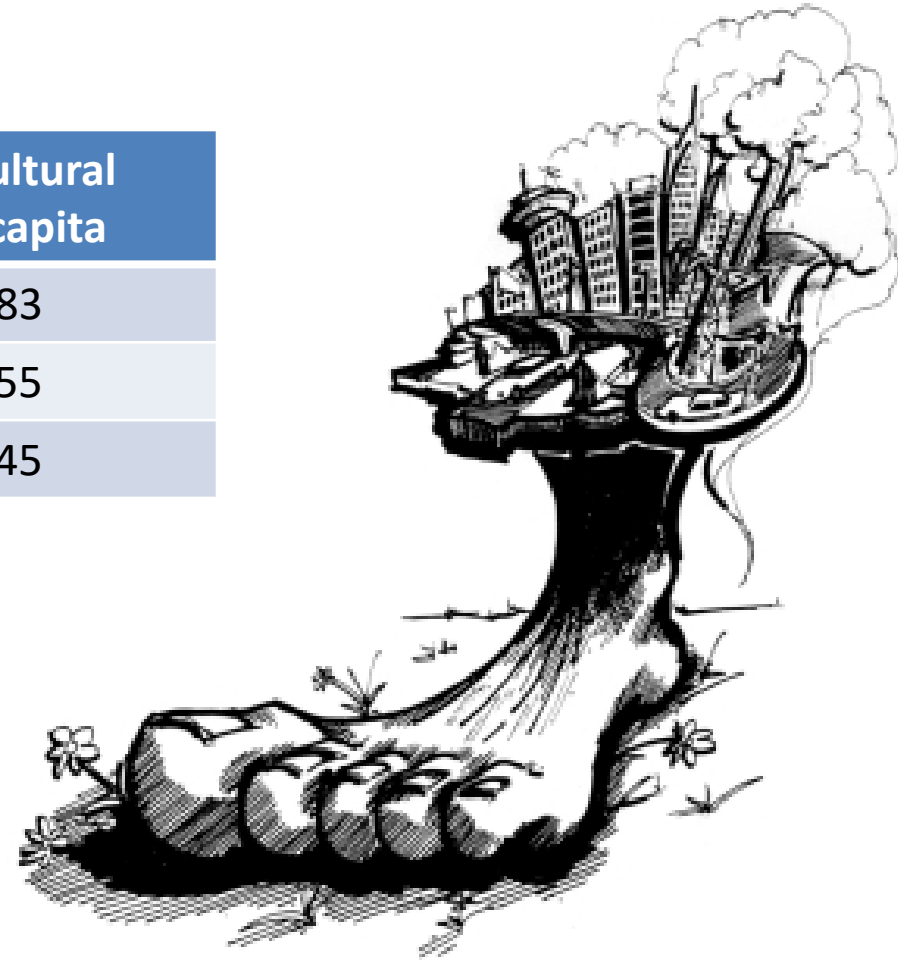
Distribution of the world's population by age and sex, 2015



Source: United Nations, Department of Economic and Social Affairs, Population Division (2015). World Population Prospects: The 2015 Revision. New York: United Nations.

Land becomes scarce

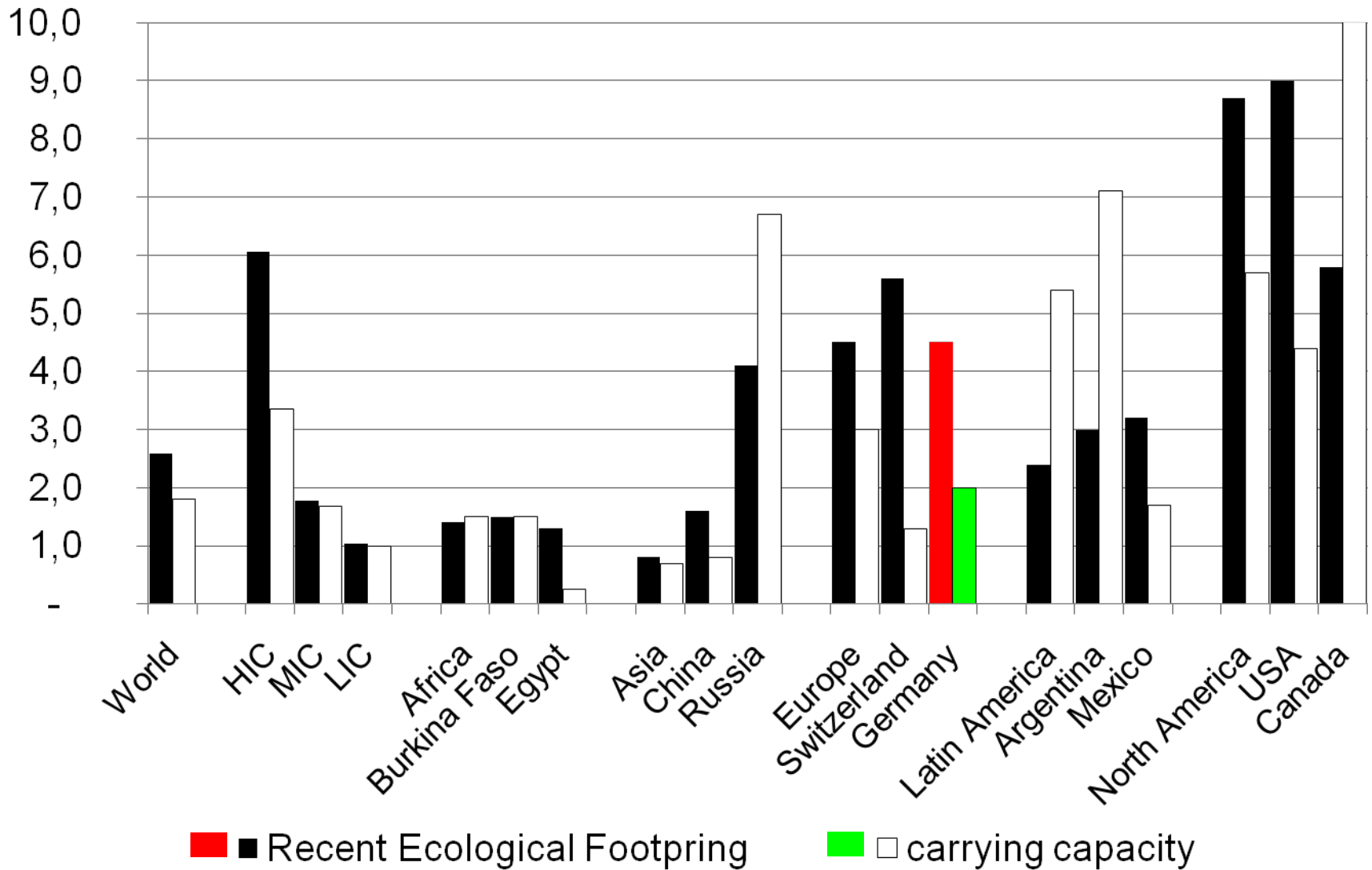
Year	billion people	Total available ha / capita	Agricultural ha / capita
2015	7	1,7	0.83
2050	9	1,2	0.55
2100	11	1,0	0.45

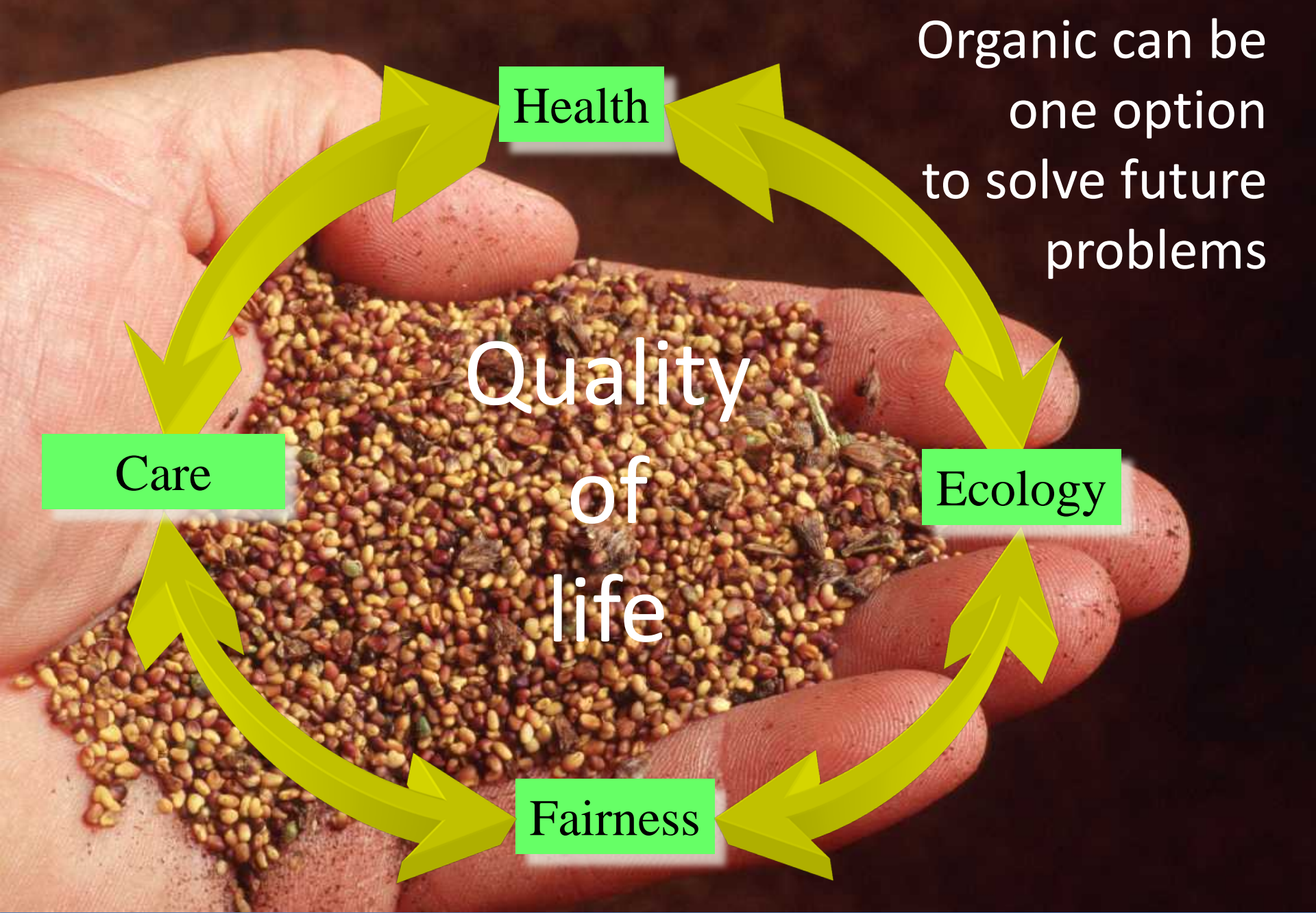


Total land: 11 billion ha

Total agricultural land: 5 billion ha

Ecological footprints of selected countries and regions





Organic can be
one option
to solve future
problems

Health

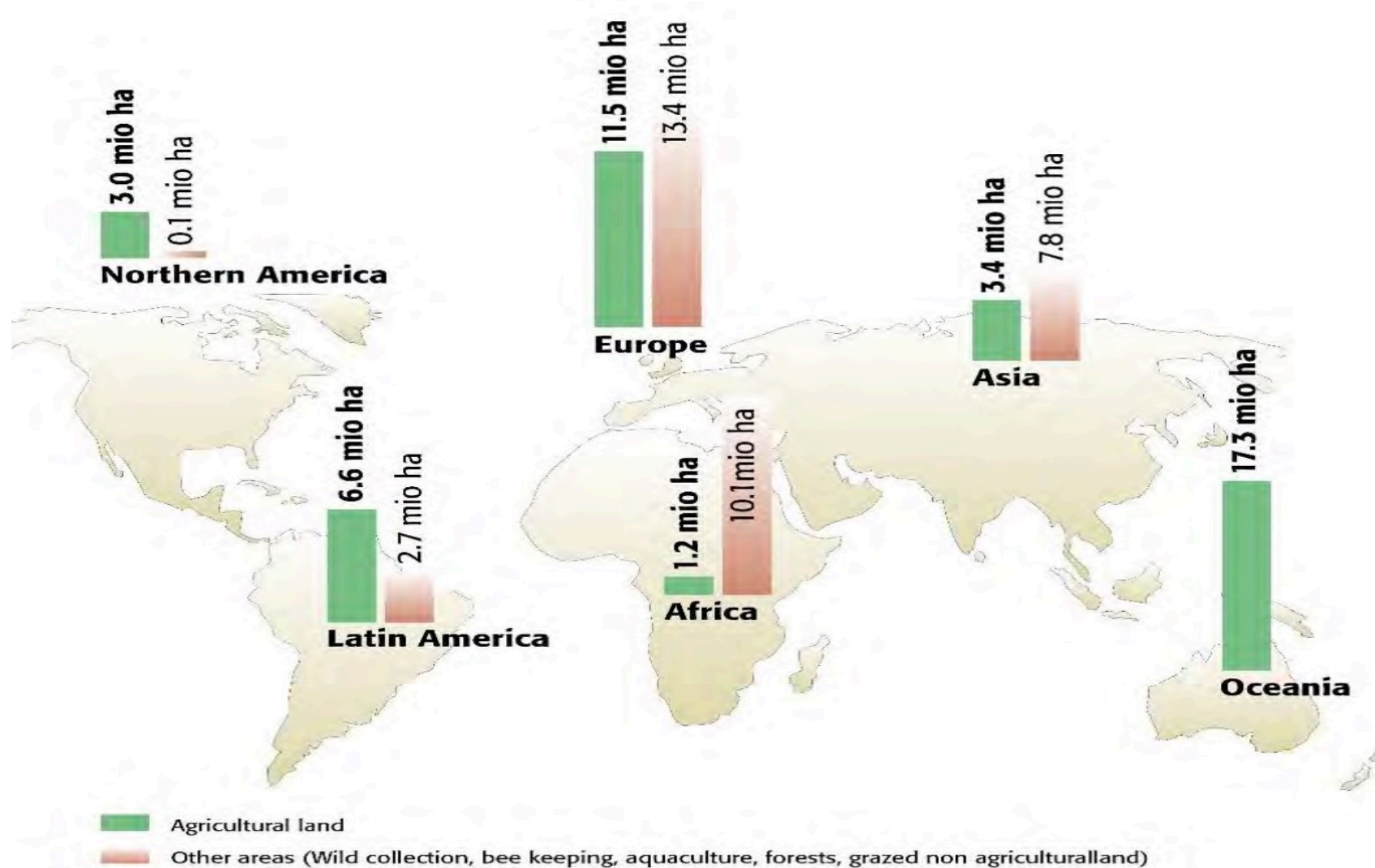
Quality
of
life

Ecology

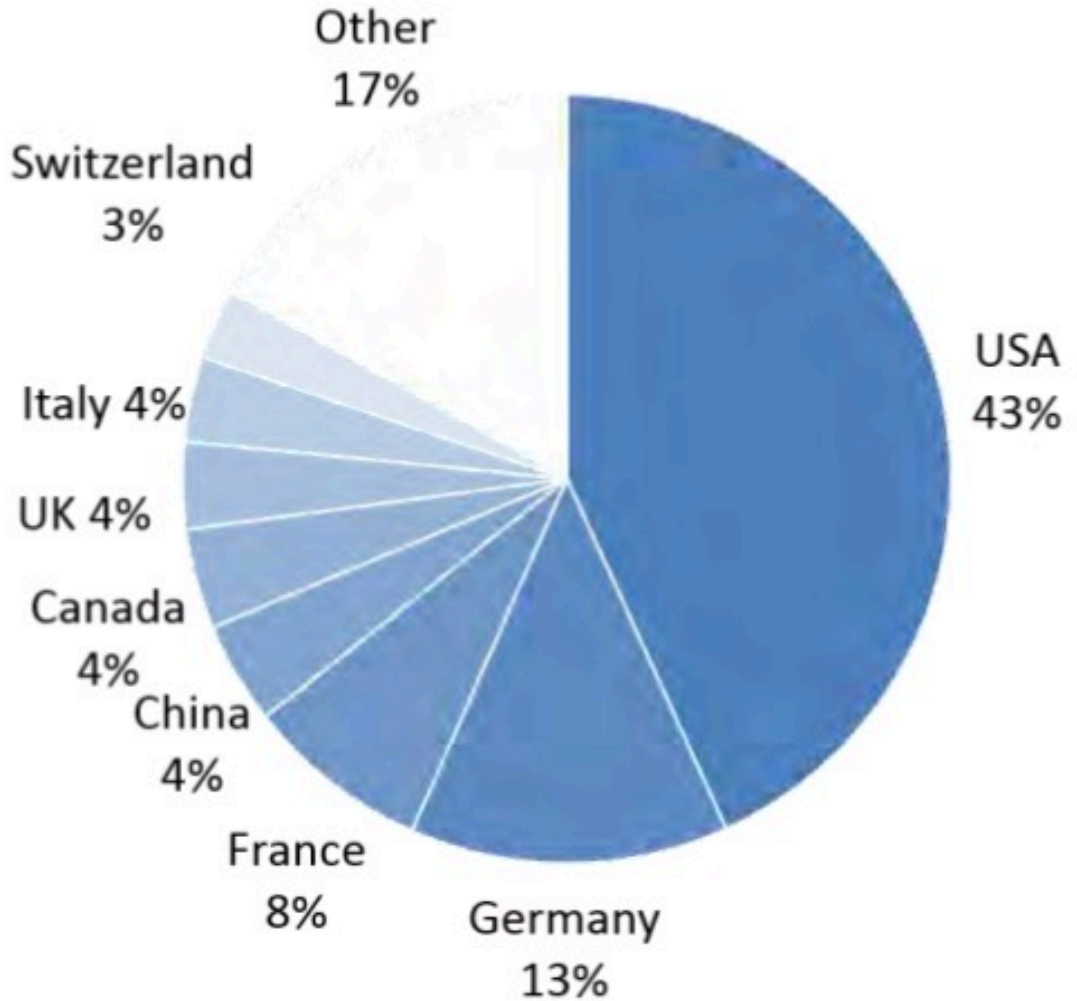
Fairness

Care

The world of Organic Farming 2016



Organic world market: 90 billion US-\$ (2016)



	USA and EU
citizens	830 mio (11% of all)
organic farm land	14 mio ha (32%)
organic purchases	83 billion USD (92%)

(IFOAM 2016)

Future action areas for Organics



solutions

problems

5 action areas up to 2050:



For example:



Nutrient cycles



Crop rotation & mix crops



Improve animal welfare

1. Conventional can learn from Organic



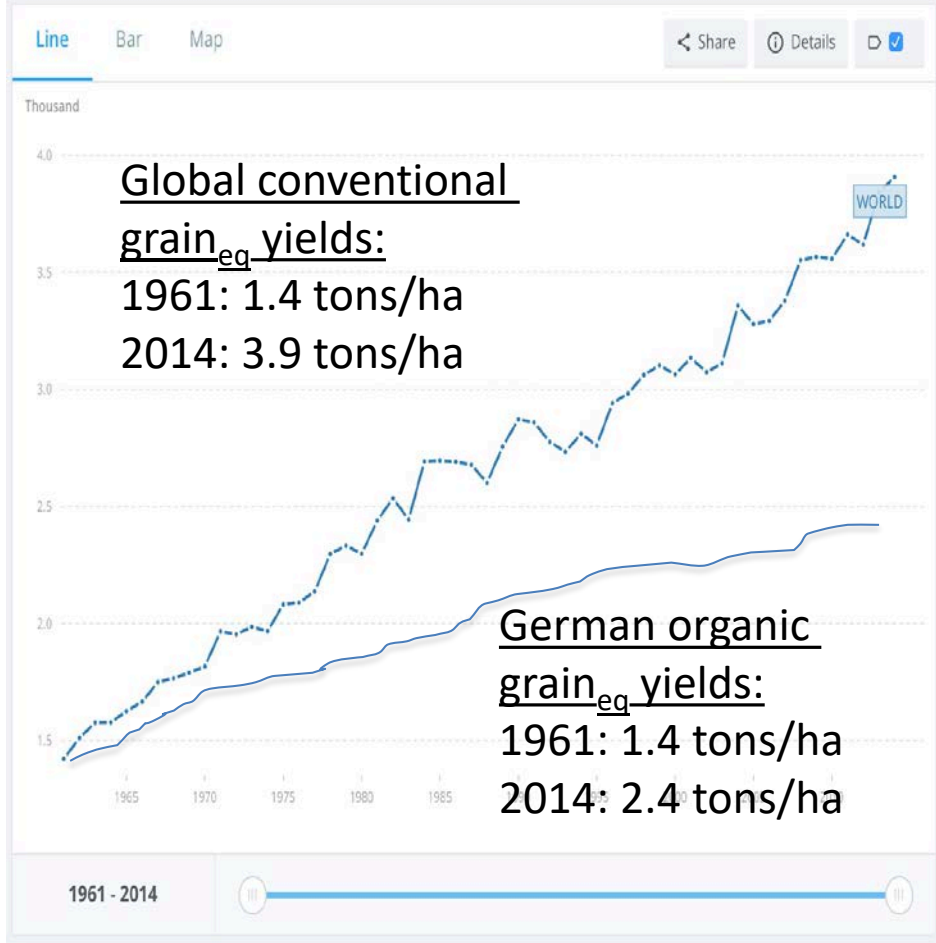
Avoiding pesticides with machines and knowledge

2. Organic can learn from Conventional

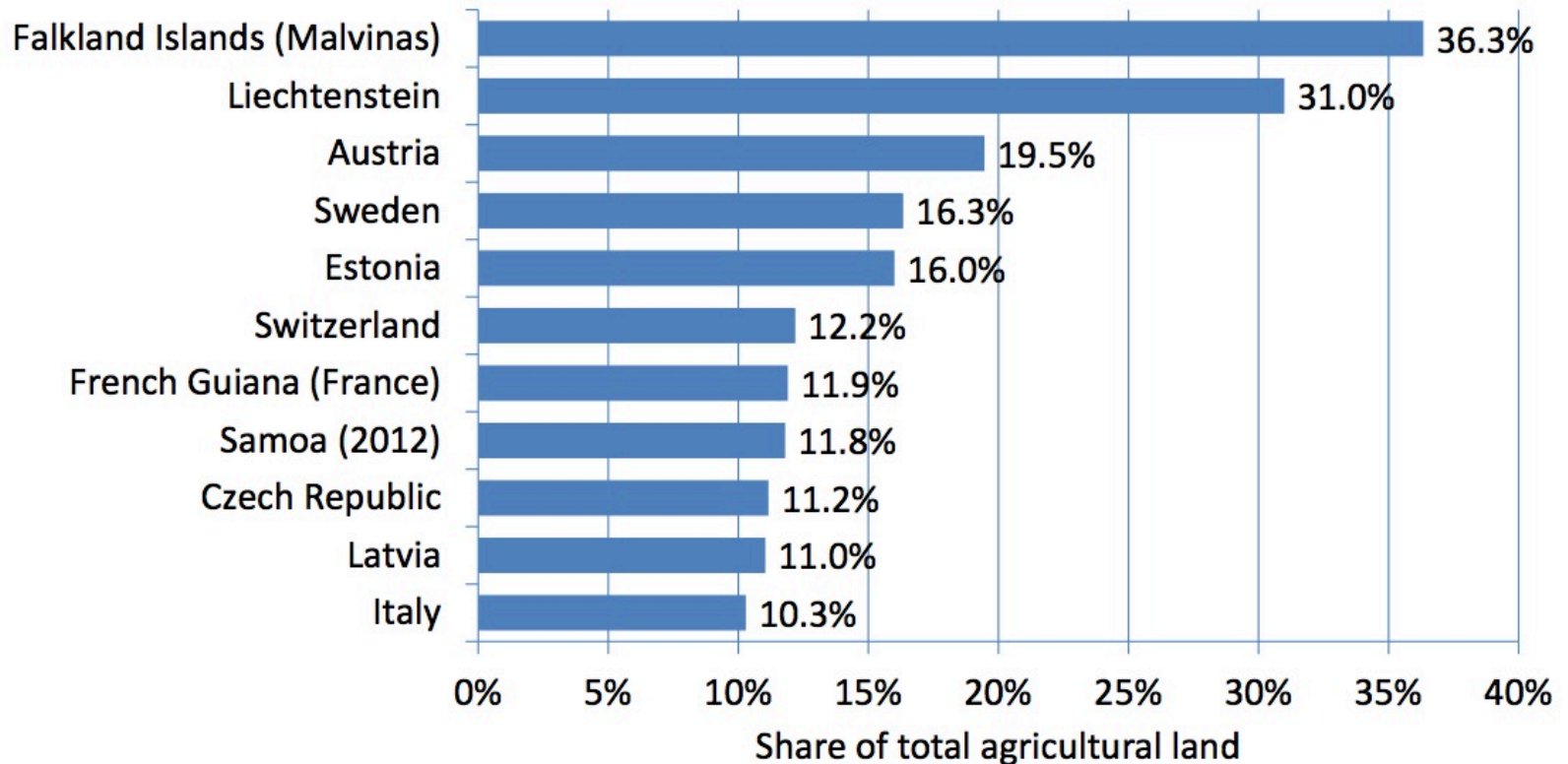
Cereal yield (kg per hectare)

Food and Agriculture Organization, electronic files and web site.

License: [Open](#)



3. Scale-up Good Organic Farming Practice



Global share of Organic farm land (2013): <1.00 %
... (2050): >10.0 %

4. Food production meets Food consumption



5. Farming has to change from „commodity related“ towards „food needs related“ production



+3 action areas for the time after 2050



Less or no livestock



Local versus global food chains



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Food back home



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Food back town



Sustainable artificial food components



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Artificial food components: why not Glucose from reactors?

Sugar farm land:
31 mio ha
(3 % of total;
FAO 2013)

Artificial sugar
would probably
need 100 ha
for reactor space

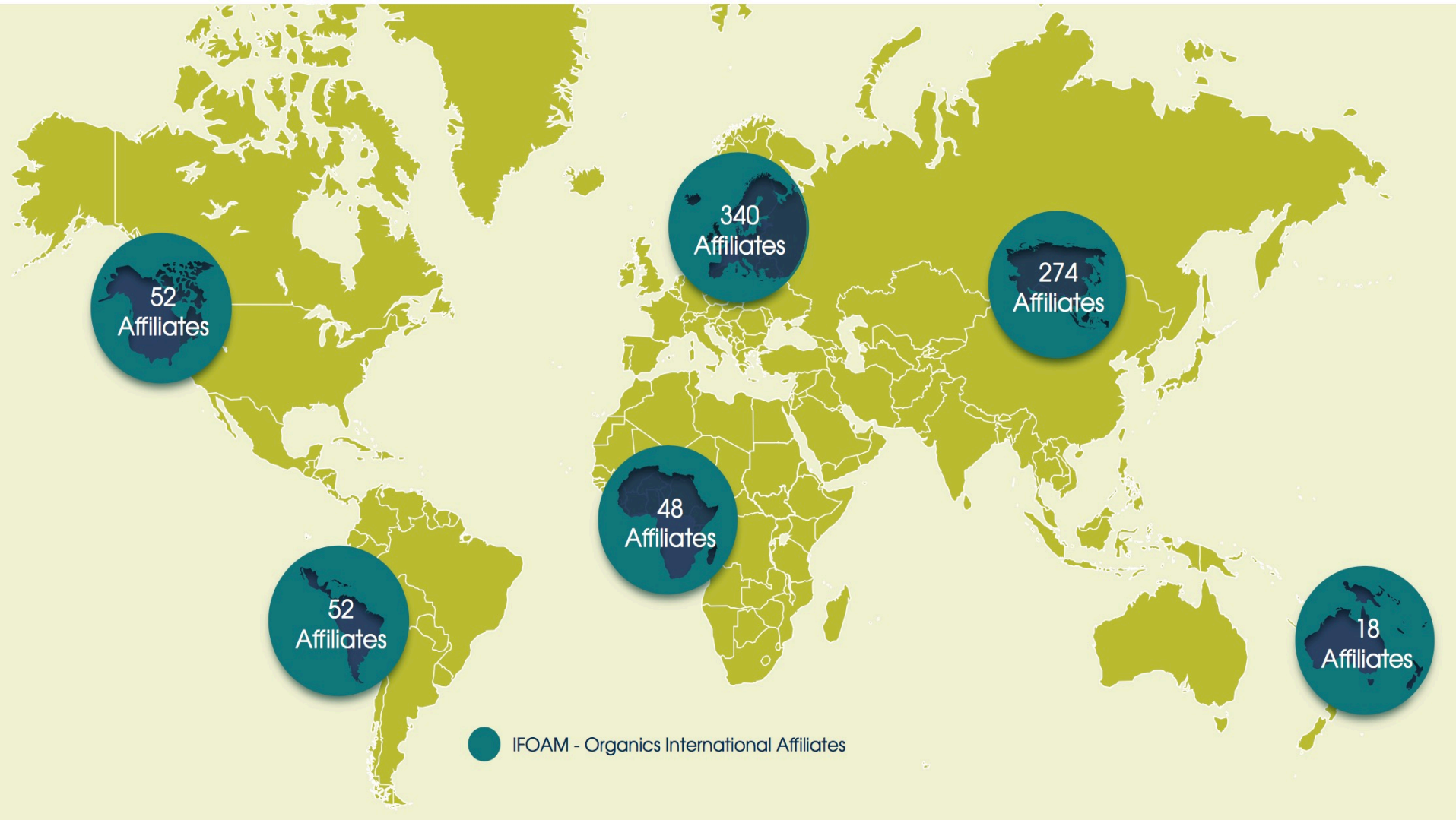




INTERNATIONAL FEDERATION OF
ORGANIC AGRICULTURE MOVEMENTS

OUR AFFILIATES

784 organisations in 117 countries; representing 2.3 mio farmers, processor, trader, research institutions, ...



STRATEGIC PLAN 2017-2025

of

IFOAM
ORGANICS
INTERNATIONAL



1998

2000

2002

2005

2008

2011

2014

2017



Join us at the

19TH ORGANIC WORLD CONGRESS

जैविक कृषि विश्व कुंभ

9 - 11 November 2017 | New Delhi, India

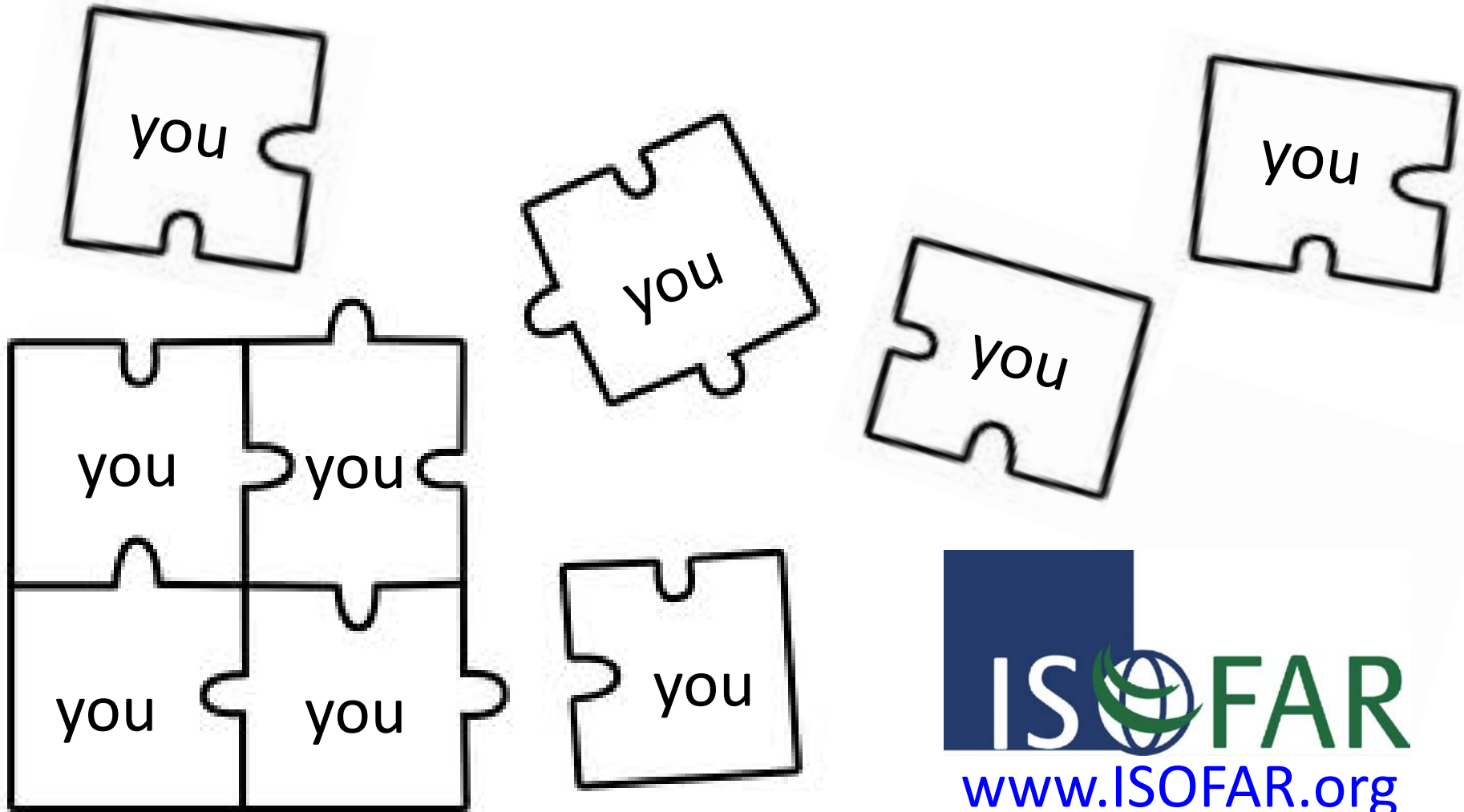
**SCIENTIFIC
TRACK**

'Innovative Research for Organic 3.0'

The future challenges of global agricultural are severe.

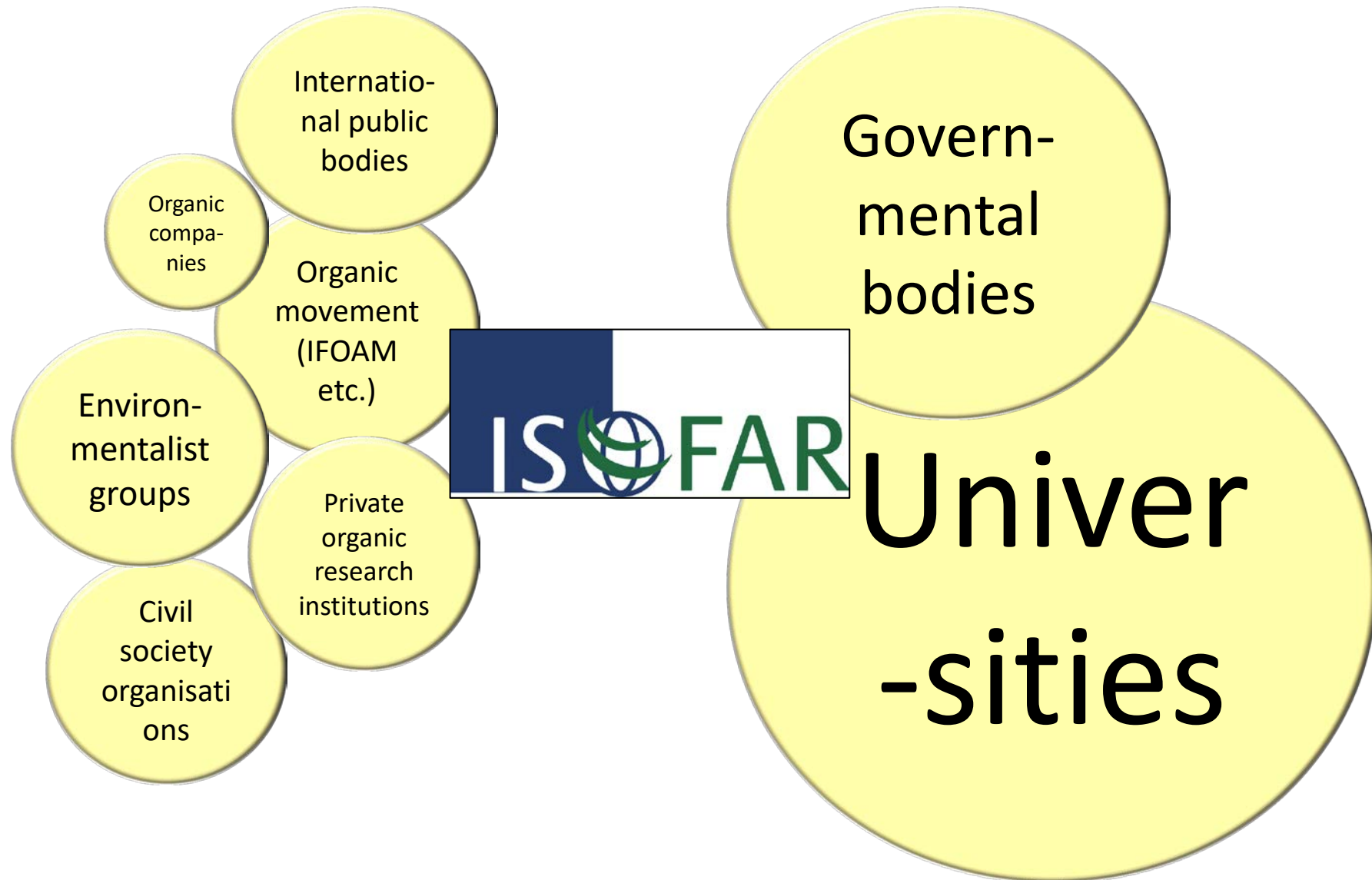
Global Organic Agriculture Research

„bring isolated scientists, ideas, and results together to support the development of the organic sector“



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Link between movement and public research



ISO FAR-International Organic Expo 2015 in Korea

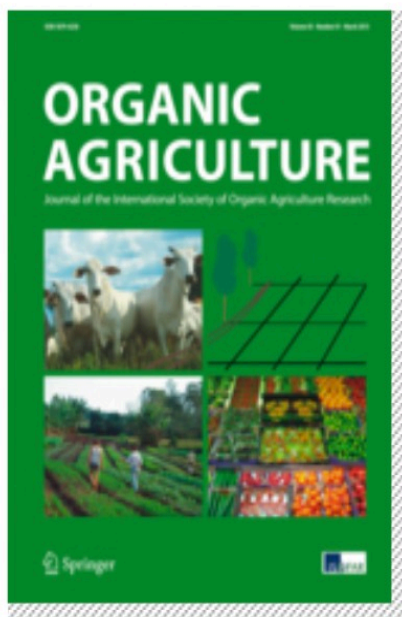


Science meets the public

ISO FAR-Journal of Organic Agriculture

Agriculture Home > Life Sciences > Agriculture

SUBDISCIPLINES | JOURNALS | BOOKS | SERIES | TEXTBOOKS | REFERENCE WORKS



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Human Development Index	Annual membership Fee*
Very High Developed Countries	60 Euro
High Developed Countries	30 Euro
Middle Developed Countries	15 Euro
Low Developed Countries	7.50 Euro
Sum	*students 50%

Why becoming member?

- Supporting the networking the global organic researchers
- Free access to Journal of Organic Agriculture
- Involved in scientific activities: conferences, reviews, statements
- Reduced fees for ISO FAR conferences



Thank you

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