High Sequestration, Low emission Food Secure Farming

International Federation of Organic Agriculture Movements

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Sofia 28-9-09

The International Organic Farming Movement and Climate Change Policies

Markus Arbenz, Executive Director of IFOAM

Content

Organic farming as response to recent challenges of agriculture

from Commodity to Farming System

from Food Production to Food Security

from Fashion to Sustainability

Or

Why is Organic Agriculture an asset in present climate policy setting?

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The world is challenged!!

There are:

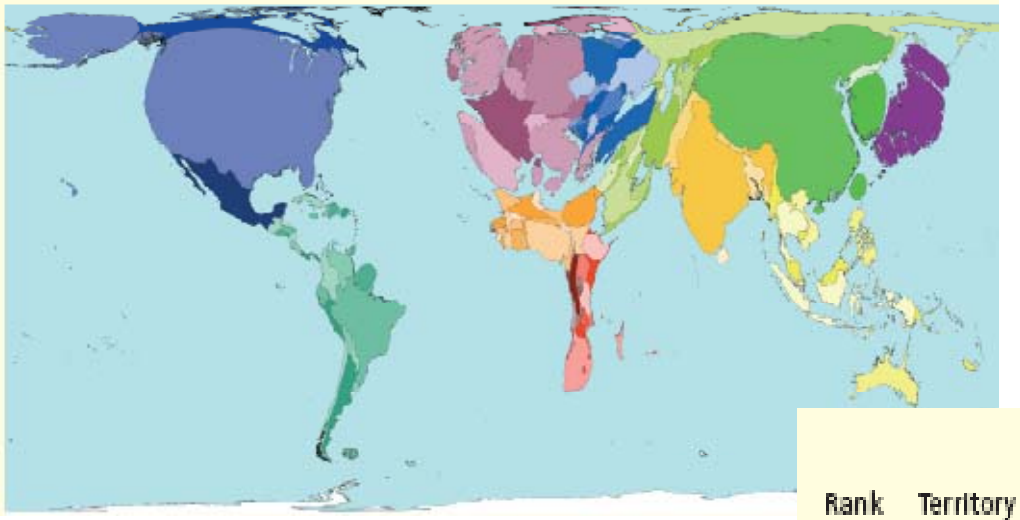
A Unsolved development gaps

B Unsustainable (agriculture) practices

C Economic crises

e.g. Unsustainable practices

Ecological Footprint



LARGEST AND SMALLEST ECOLOGICAL SHOE SIZES

Rank	Territory	Value	Rank	Territory	Value
1	United Arab Emirates	10.6	191	Nepal	0.61
2	United States	9.7	192	Democratic Republic of Congo	0.58
3	Greenland	7.7	193	Zambia	0.58
3	Bahamas	7.7	194	Congo	0.58
5	Canada	7.5	195	Malawi	0.57
6	Kuwait	7.4	196	Haiti	0.57
7	Australia	7.0	197	Cambodia	0.55
8	Finland	6.8	198	Bangladesh	0.47
9	Estonia	6.1	199	Somalia	0.23
10	New Zealand	6.1	200	Afghanistan	0.11

*ecological footprint in global hectares per person, 2002**

"People consume resources and ecological services from all over the world, so their footprint is the sum of these areas, wherever they may be on the planet."

The Living Planet Report, 2006

Map 322

SUSTAINABILITY: unfortunately misused, but in its core a convincing concept

DEFINITION: Sustainability is development that meets the needs of the present without compromising the ability of future generations to meet their own needs*

- The Bruntland Commission:
  - Sustainability is about survival of our communities & economies*
  - Environmental, social and economic sustainability are intertwined*

IFOAM's vision is the worldwide adoption of ecologically socially and economically sound systems that are based on the Principles of Organic Agriculture

-> A development into depth (more sustainability) and width (more expansion)

-> Full SUSTAINABILITY is in the centre of the

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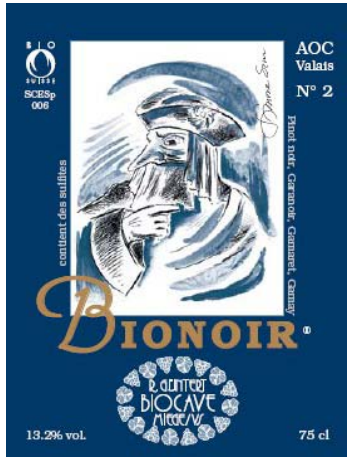
Organic Agriculture much more than fulfilling the demands of a niche market



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Scaling up Organic Agriculture: An opportunity to address global challenges

- In more than a 100 countries, Organic Agriculture provides implemented well tired opportunities to address global challenges.

- It deserves intergovernmental, Governmental and NG Organizational support on local, national, regional and international level to help it scale up

Positions and attitudes of Organic Agriculture towards global challenges:

- From man-made problems to man-made challenges to man-made solutions - adoption of OA as an alternative agriculture concept
- People and sustainability are at the center of our farming systems and solutions

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Vision & Purpose

The principles of Health, Ecology, Fairness, and Care are the roots from which organic agriculture grows and develops. They express the contribution that organic agriculture can make to the world, and a vision to improve all agriculture in a global context.

- ÖA hasn't evolved accidently
- ÖA is purpose driven intending to create sustainable agricultural systems with people's needs at its centre
- <u>Real sustainable development that puts people first</u>

Climate Change

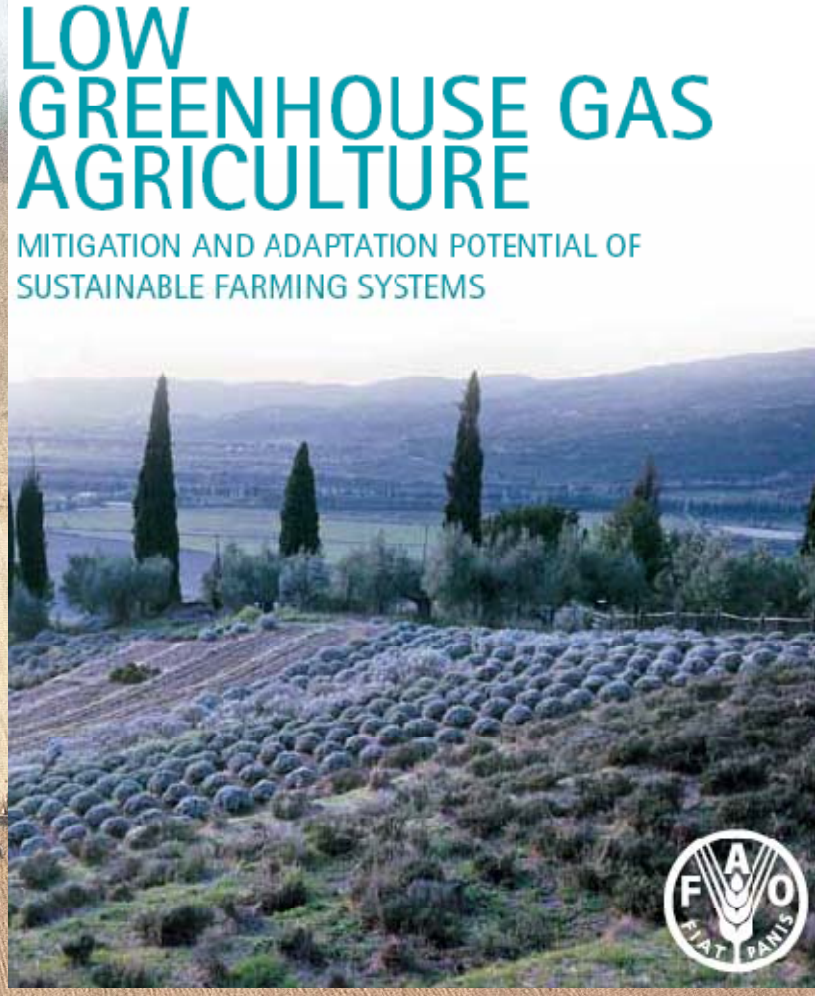
- ØA practices deliver significant and proven
  - mitigation benefits
  - adaptation benefits
  - development 'co-benefits'
  - systems, global recognition and demand

ØA practices
can drive scale-up
& accelerate
realization of bene

Agriculture is also responsible for greenhouse gas emissions

Issues

- Mitigation (low Emissions, high Sequestration)
- Adaptation



Discussion Levels

- Standards
- Present System
- Potential/Offers to policy makers

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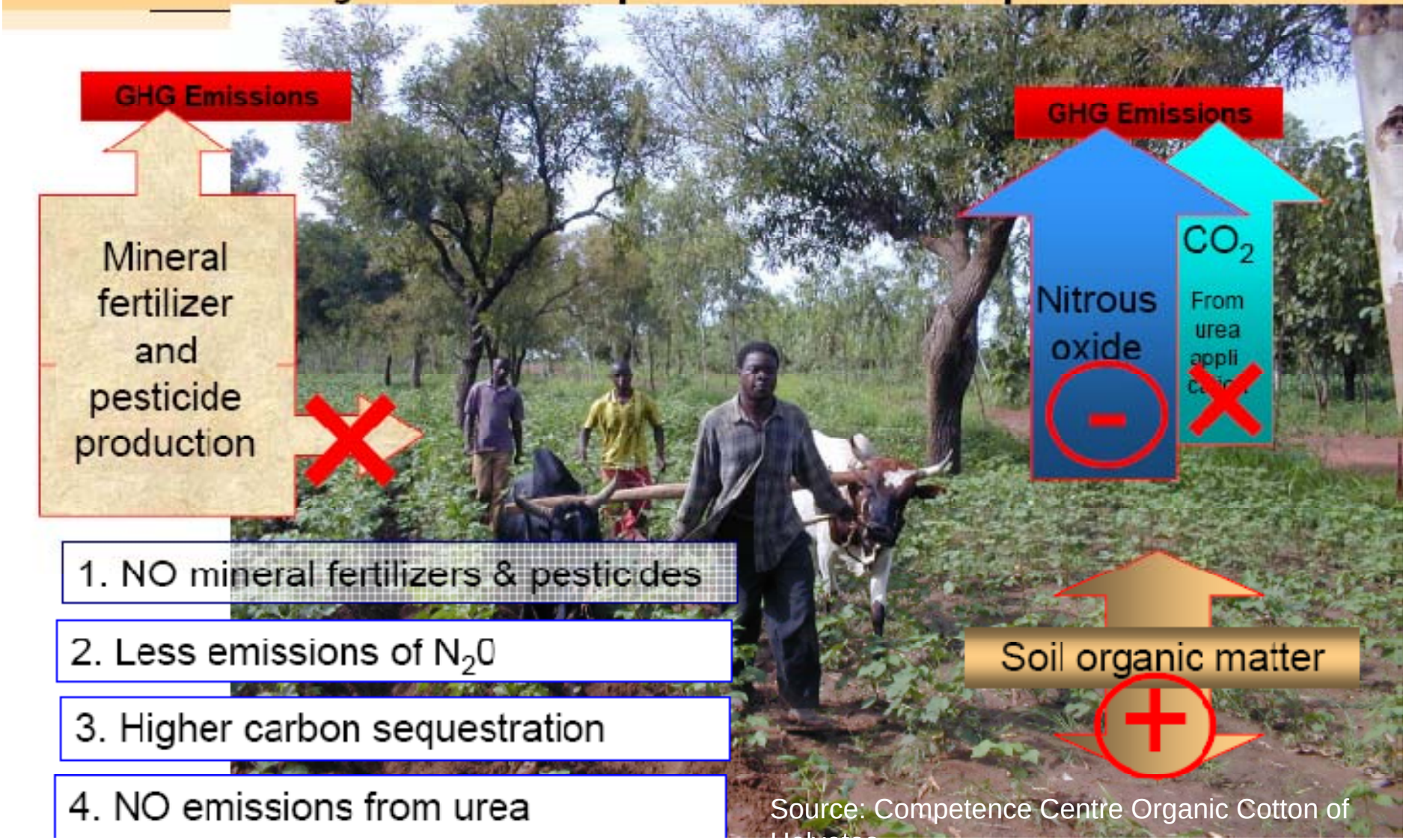
One example: LOW EMISSION, HIGH SEQUESTRATION in organic cotton

Major GHG components in cotton production



Source: Competence Centre Organic Cotton of

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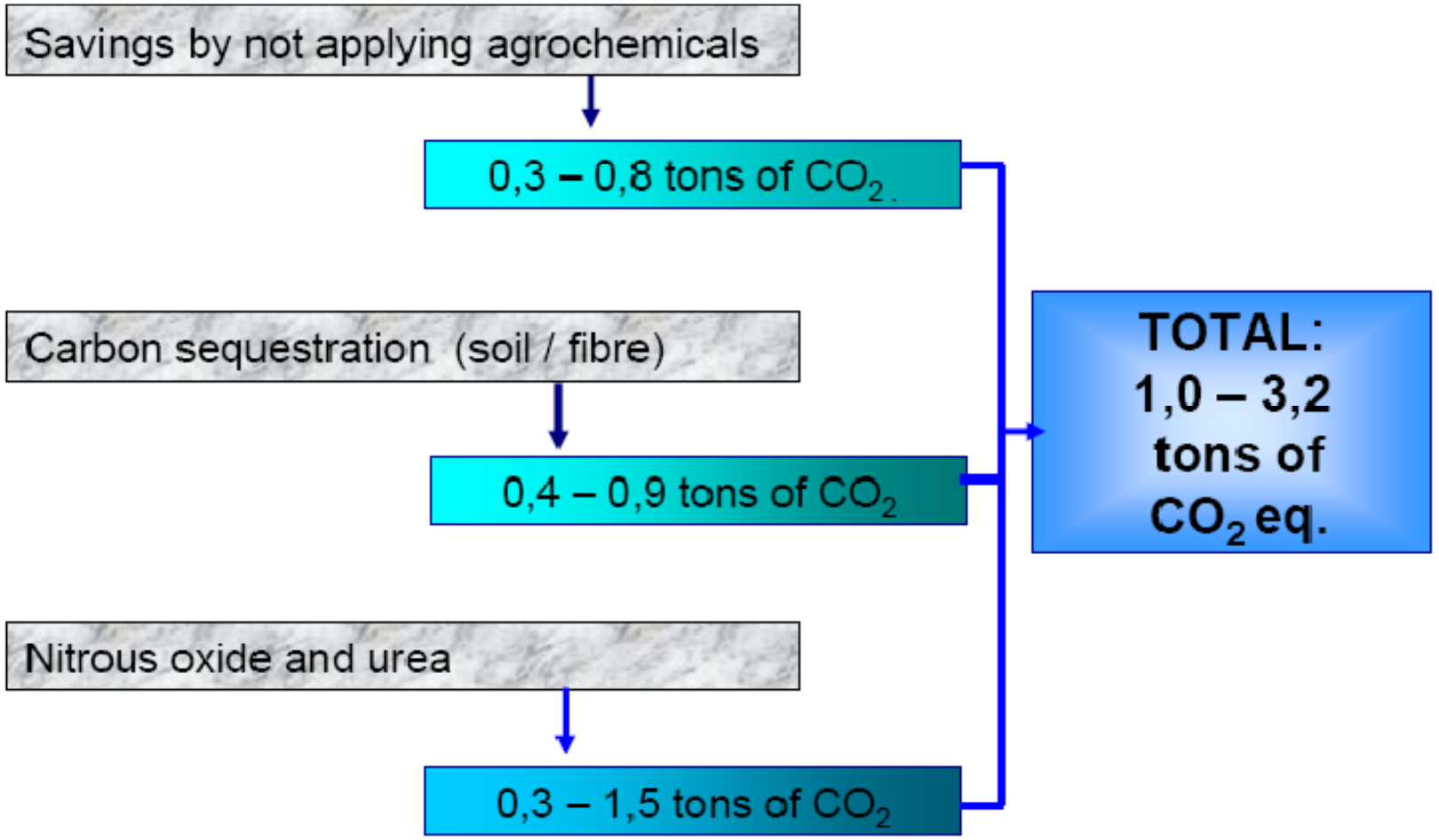
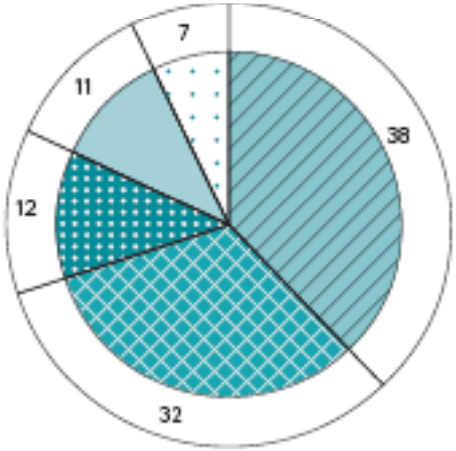
Examples for quantification per ha (organic cotton)



Source: Competence Centre Organic Cotton of Helvetas

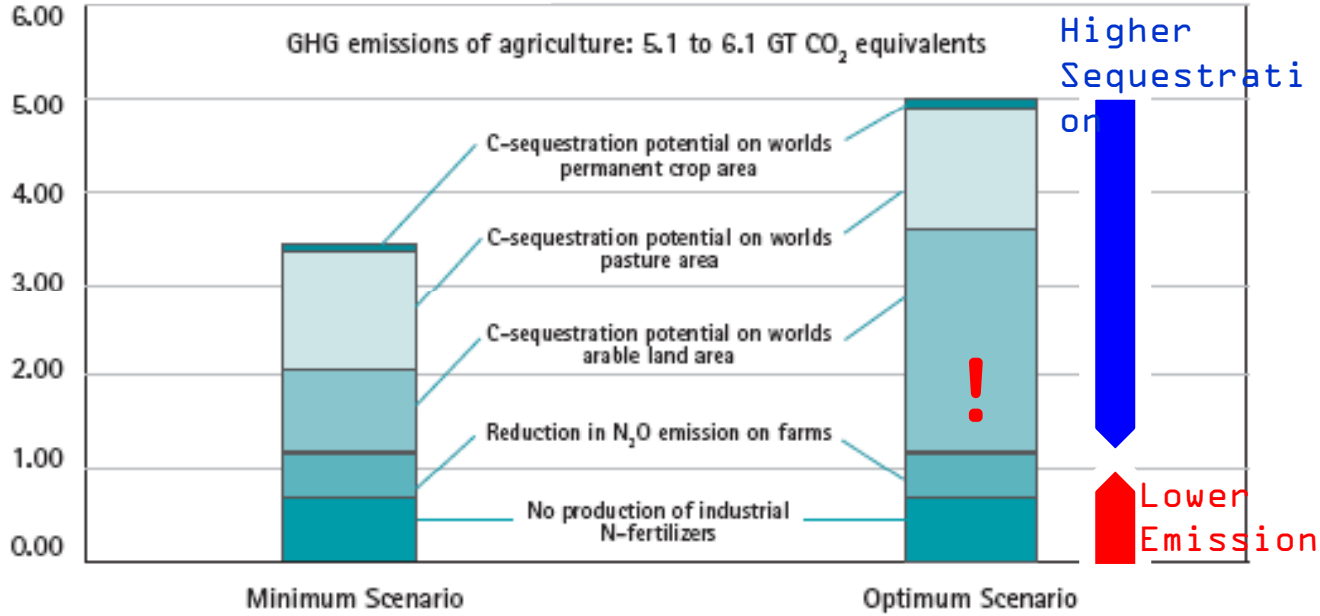
Agriculture emissions and reduction potentials

GHG emissions of the agricultural sector (Smith *et al.*, 2007)



38%		Fertilisers N_2O
32%		Enteric fermentation CH_4
12%		Paddy rice CH_4
11%		Biomass burning CH_4 and N_2O
7%		Manure handling CH_4 and N_2O

GHG reduction and mitigation potentials



Minimum: No N fertilizer

Optimum: No N fertilizer, no tillage

Yield reduction?

Eventually, a 100 percent conversion to organic agriculture could decrease global yields. According to various studies, this yield reduction could be 30 to 40 percent in intensively farmed regions under the best geo-climate conditions. In less favourable regions, yield losses tend to zero. In the context of subsistence agriculture and in regions with periodic disruptions of water supply brought on by droughts or floods, organic agriculture is competitive to conventional agriculture and often superior with respect to yields. Numerous case studies show that in comparison to traditional subsistence farming, organic yields were 112 percent higher due to crop rotation, legumes and closed circuits.

Minus 30-40% in intensive farmed regions

Plus 12 % in difficult environments

Source

LOW GREENHOUSE GAS AGRICULTURE

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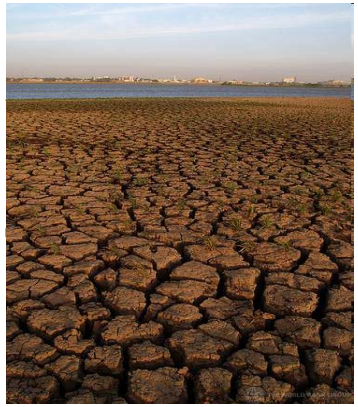
High Sequestration ↓ Low Emission ↑

Mitigation - Carbon Sequestration:

- OA has the potential to reduce total CO2 concentrations in the atmosphere by 3.5 - 4.8 Gt of CO2 per year or 55% to 80% of total greenhouse gas emission from agriculture
  - increased applications of manures, intercrops, green manures
  - higher shares of perennial grassland d hedges
  - use of intensive cropping systems su forestry etc



Mitigation - Emission Avoidance:

- Organic inputs reduce

Source: Niggli et al 2008

Food Secure

Adaptation - key to farming for sustainability & development:

- Robust and highly productive farming systems
- Soil quality and water holding capacity
- Protect against erosion and desertification & regenerates degraded lands
- Minimize barriers to farming for individuals, families and communities
- Set local solutions and own consumption as priorities
- Facilitate crop diversity including cash crops for trading, value adding, rural enterprise development and energy security
- Provide guarantee systems, market access & fair trade partners
- Provide real sustainable benefits & development outcomes

Conclusion

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challenges of agriculture

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Organic Agriculture is an asset in present climate policy settings! Agriculture is heavy GHG emissive and has to develop better farming systems. Mitigation and Adaptation are key to keep food security for all and there is no alternative to sustainability. The way there includes the

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