

# 18<sup>th</sup> Organic World Congress

Written inputs from panelists  
of the Main Track Session

## 4A: [Social and environmental challenges](#)

Climate change, loss of (bio)diversity, natural resource depletion, social marginalization etc: Our adaptation and mitigation contribution (Fish bowl)

Monday, 13 October 2014 (16:30 – 18:00)

**Social and Environmental Challenges:** Climate change, loss of (bio)diversity, natural resource depletion, social marginalization etc. Our adaptation and mitigation contribution.

The environmental and social challenges of the planet are a sad reality. Organic Agriculture advocates often espouse its contributions to mitigating the negative effects of farming. But mitigation alone is not enough. Farmers also need to adapt to a changed climate, reduced biodiversity and depleted resources as well as to an ever-changing socio-cultural environment.

### **Session Objectives**

This session will look into the mitigation contributions and the potentials to measure, communicate and improve the impact of organic farming. It will also explore the coping strategies of organic farmers around the globe, in order to improve their livelihoods not only economically but also environmentally, socially and culturally.

### **Leading Questions**

- What are the main environmental and social challenges relevant for Organic Agriculture?
- How does Organic Agriculture contribute to the mitigation of these challenges and how can we measure and communicate its impacts?
- Are we on the right track or do we need strategy changes?
- Do we have conflicts of interests? What about conflicts of priorities?
- What would help Organic farmers to better adapt to existing environmental challenges?
- How should we cope with socio-cultural challenges?

**Methodology:** Fish Bowl with 4 panelists and 2 open chairs.

**Moderator/Rapporteur:** Eva Torremocha/Konrad Hauptfleisch

### **Speakers**

- James Benjamin Cole, IFOAM WB & Eloc Farms, Uganda
- Andreas Gattinger, FiBL, Switzerland
- Bernd Horneburg, George August University, Germany
- Andre Leu, IFOAM WB, Australia
- Cecilia Sundberg, Swedish University of Agricultural Sciences, Sweden

## **Andreas Gattinger**

### **What are the main environmental and social challenges relevant for Organic Agriculture?**

Agriculture and food production in general has to cope with on-going land and soil degradation, at the one side and with an increasing demand for food and energy on the other side, both in the context of a changing climate. These are important challenges for agriculture in general and organic agriculture in particular. Concepts and solutions are urgently needed in regions with a high competition for biomass. There are trade-offs for biomass usage like human and animal consumption/fuel and raw material/ and soil organic matter reproduction and soil management.

### **How does Organic Agriculture contribute to the mitigation of these challenges and how can we measure and communicate its impacts?**

Agriculture can contribute to the mitigation of these challenges by a systematic implementation of sustainable management practices in food production systems as organic agriculture (OA) aims at. This can be reached by applying the concept of eco-functional intensification which starts with the embedding of ag. systems into the site-specific bio-physical and socio-economical context and closing nutrient cycles which takes also the human waste and household refuse into consideration. OA provides already quite a bunch of concepts aiming at a closing nutrient cycles at farm and community level.

### **Are we on the right track or do we need strategy changes?**

OA is definitely on the right track, by implementing a systems approach rather than building upon single practices. However, solutions are required to enable food production and sufficient crop growth under harsh conditions such as on degraded soils. The combined application of organic and synthetic fertiliser for a certain time to enhance crop growth and stimulate soil formation at the same time might be worth to think about.

### **Do we have conflicts of interests? What about conflicts of priorities?**

We do certainly have conflicts of interests if synthetic fertilisers are allowed to some extent and this certainly leads to a conflict of priorities: Do we want to develop soils as the living basis first and then feed people or should we rather go for a compromise like feeding people and developing soils right from the beginning by following an approach that allows for an integrated plant production concept at least for the first 5-10 years.

### **What would help Organic farmers to better adapt to existing environmental challenges?**

Farmers should be aware that production conditions may change rapidly especially in environments of weather extremes. A further development towards higher farm diversification where failures of production activities can be compensated by another might be one strategy to strengthen the adaptive capacity of organic farmers. These concepts should rather build upon the implementation of on-farm resources (= eco-

functional intensification) rather than applying external organic inputs which create new dependencies and restrictions.

**Dr. Bernd Horneburg**

**What are main environmental and social challenges relevant for Organic Agriculture?**

Loss of biodiversity at the inter- and intraspecific level. Human nutrition (and other needs) are based on an ever decreasing number and diversity of species / cultivars / breeds. This is accompanied by an ongoing concentration in seed industry and chemical industry and animal breeding. Fewer people live on the land (and off the land) and understand farmers daily reality, the processes of plant and animal growth, and organic product quality.

**How does Organic Agriculture contribute to the mitigation of these challenges and how can we measure and communicate its impacts?**

**Are we on the right track or do we need strategy changes?**

Yes, we have achieved much, indeed! More of the same, please!!

No, we should make common efforts to develop and carry out farther reaching concepts:

Example 1: So far we have not established a global organic alliance to tackle common problems; e.g. breeding open pollinated broccoli for the wholesale market to phase out the use of cultivars derived from cms.

Example 2: Can we create model regions with different agricultural and social structures that develop and demonstrate the use on organic seed / cultivars / breeds?

Example 3: Presently millions are spent globally on the development of hybrid breeding systems in rice and wheat. Can we offer alternative approaches?

**What would help Organic farmers to better adapt to existing environmental challenges?**

Professional organic seed / breed systems that strongly relate to local conditions and needs. Care for high quality seeds and breeding as integral part of farm or garden.

Act well embedded in the value chain.

For an introduction to Achievements, Opportunities, and Challenges of Organic Plant Breeding see [http://orgprints.org/19756/1/OWC\\_2011\\_Keynote.pdf](http://orgprints.org/19756/1/OWC_2011_Keynote.pdf)

Looking forward to lively discussions!

**Cecilia Sundberg**

**What are the main environmental and social challenges relevant for Organic Agriculture?**

Climate change and future global food security (in a bio-based economy)

Nutrient cycles, including also urban waste from human excreta

**How does Organic Agriculture contribute to the mitigation of these challenges and how can we measure and communicate its impacts?**

By requiring the use of local and renewable resources, organic agriculture is in a strong position to embark on a journey towards renewable and fossil-free energy system. The Swedish Organic Association KRAV has included climate standards into their certification rules. This type of initiatives has to spread. Customers expect organic products to contribute to climate change mitigation, but for that expectation to be fulfilled more work on renewable energy and greenhouse gas emission reduction is required.

By not accepting the use of chemical fertilisers, organic agriculture heads the way or a circular use of nutrients in society. Moreover, by questioning all use of chemicals in agriculture and food production, organic agriculture contributes to reducing the toxic load on humans, and therefore higher quality of human manure, making it potentially useful as a nutrient source.

**Are we on the right track or do we need strategy changes?**

Organic agriculture must become a front-runner in the transition to renewable, fossil-free energy in agriculture. So far, use of fossil fuels is unrestricted in most organic standards. It is time to change this.

Sustainable agriculture and food supply requires that we reduce the consumption of animal products in Europe. However, organic agriculture in Sweden and some other countries in Europe is very geared towards animal products (dairy and eggs). The conditions for farming in Scandinavia are favourable for grass-clover-ley-based dairy farming. However, organic farming has to push the transition to more plant-based food consumption, which implies that there is a need for production of more plant-based foods. That is in line with the worldview and desires of the consumers on organic food. We should not depend on imports of organic plant-based organic food, but also produce more ourselves.

Organic agriculture needs to engage with those looking for new solutions for management of human excreta from urban areas. Urban human excreta is a major environmental and societal problem as it pollutes rivers, lakes and coastlines, and it is spreading diseases. In growing cities in the developing world this is a major

challenge that requires development of new technologies and systems. On the other hand, human manure is a potential high-quality source of plant nutrients for agriculture. Organic agriculture should join forces with those trying to find innovative solutions for human excreta management (with excreta kept separate from industrial waste and wastewater) such as urine diversion, blackwater systems, biogas and vermicomposting. Just like animal manure is a crucial resource for organic agriculture in many systems today, human manure has the potential to become a resource, not a problem.

### **Do we have conflicts of interests? What about conflicts of priorities?**

There is a conflict of interest regarding the use of human excreta as fertiliser. It is not allowed (in Europe), which is justified by the fact that it may contain unwanted substances such as pharmaceuticals. This is a challenge that has to be addressed, the potential positive contribution to sustainability by using this resource beneficially, rather than letting it pollute waters with nutrients has to be weighed against the potential risks.

## **Charito P. Medina<sup>1</sup>**

### **Short Biography:**

Charito Medina is the national coordinator of MASIPAG, a network of farmers, scientists, and NGOs in the Philippines working for the empowerment of small-scale farmers. MASIPAG has 27 years of experience in organic farming, participatory and farmer-led research including breeding of crops and improvement of indigenous livestock. He is the NGO representative of the National Organic Agriculture Board (NOAB) within the Department of Agriculture, a policy making body involved in the implementation of organic agriculture programs. He is one of the lead authors of the International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD) ESAP subglobal, sponsored by UN agencies and the World Bank. He also served in the Panel of Experts at the Global, ESAP regional, and Integrated design during the preparation of the assessment design. He is also part time faculty member in two universities in the Philippines teaching environmental science and natural resource management, ecosystem dynamics, and biodiversity conservation. His interests include sustainable organic agriculture, food systems, participatory research, and rural development. He holds a Ph.D degree in Environmental Biology from the University of Guelph, Canada.

### **Description of Ideas about the Session and Answers to the Lead questions:**

Agriculture is affecting climate change, but also, climate change is affecting agriculture. The bigger issue, however, is how to protect agriculture, and ultimately, how agriculture become a mitigating activity to climate change. Data shows that conventional farming emits much greenhouse gases and thus contributes much to climate change. But organic farming can make agriculture a net carbon sequestering activity mainly through longer residence time of carbon and higher organic content of the soil. Organic farming is the right approach to make agriculture a net carbon sink.

Loss of biodiversity and natural resource depletion are multidimensional issues which includes ecosystem destruction, displacement and replacement of diverse crops and varieties, as well as livestock and breeds. Likewise, technologies that were developed by the formal research institutions to the exclusion of farmers have promoted simplification of agroecosystems. The use of “quick result” inputs like chemical fertilizers and pesticides have a lot of impact towards this. Mechanization also played a role to promote uniformity in size, stand and maturity. Consumer preferences were also shaped by the dominant technology. Natural resources depletion is a consequence of all these, directly or indirectly, through elimination, negligence, contamination, or over harvesting.

Social marginalization is even more complex. It emanates from lack of access to basic productive resources, especially land, to technologies, markets, that is

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economic marginalization. More than this, poor people are also marginalized in terms of social and political decision making. That dominant system, including seeds, breeds and technologies, and policy of governments are often imposed on society further aggravating marginalization.

For organic agriculture to contribute to adaptation and mitigation of the environmental and social challenges, we must at least have a balanced implementation of the IFOAM four basic principles of organic agriculture: health, ecology, fairness and care. This is important because practitioners often have differential degrees of knowledge and success in implementing these principles. I suggest that we need to develop a methodology and evaluation system to assess how we are implementing these principles so as to guide every farmer which aspects needs further improvement.

We have to look at agriculture as a multifunctional (IAASTD, 2008) and agroecology can be a good starting point for further improving organic agriculture.

Answers to leading questions:

1. Main environmental challenges relevant to organic agriculture include climate change; natural resource depletion and contamination that may lead to ecosystems collapse; loss biodiversity in the form of species and genetic resources by displacement, contamination, or even patenting. Above ground and below ground biodiversity are equally important. Main social challenges relevant to agriculture include further marginalization of small scale farmers; consumer preferences incompatible of sustainable organic farming systems.
2. Organic agriculture can contribute to the mitigation of these challenges by: practicing all the principles of organic agriculture (not just market and profit); make organic farming design that explicitly incorporate natural resource conservation and refugia; make a program of seed conservation, utilization and improvement at community level (in small scale farmers) or regions run by organic farmers association or cooperatives; For social challenges, functional organizations and shared leadership is a must for small scale farmers. Measuring and communication of impacts shall evolve later. What is important is that the initiatives must take off.
3. To me, we are in the right track if we practice all the principles of organic agriculture. As I mentioned above, practitioners have an asynchronous implementation of the principles of organic agriculture. We need to balance them in practice.
4. Conflict of interest and conflict of priorities? It may not be conflict of interest and priorities but obsessions to particular organic agriculture components and missing the holistic approach. For example, some might be overly focused on marketing their product in supermarkets in the cities, or worse, exports; others too focused on production and simplification of processes by only buying the organic inputs, jeopardizing diversification and nutrient integration, etc.
5. Organic farmers would be in a better position to better adapt to existing environmental challenges by producing and reproducing their inputs especially seeds, organic fertilizers, and having their own technologies. Local markets/ shorter food mileage contributes something to this. Organic farmers fora at the local or regional level contribute to exchange of experiences, technologies.

6. We can cope with socio-cultural challenges through organizing small scale farmers and organize collective marketing. Through organizations, there is mutual support to cope with any challenges. Socio-cultural challenges also include consumers, that there is a need for continuous education of consumers regarding holistic and sustainable organic agriculture. Finally, we need to confront mainstream conventional farming so that global agriculture will be transformed into a safer and more sustainable food production system.