

How Organic Agriculture May Feed the World

Is organic farming a luxury in a world with too many hungry people?

Organic agriculture may play an important role to improve food security.

The increasing food prices have fuelled a discussion about how to best secure food for millions of poor families in developing countries. There is a need for increasing food production where equitability, sustainability and resilience are emphasised.

Organic Agriculture, a farming system based on local resources organic agriculture, can help smallholder farmers to increase yields and be part of the solution.



Organic farming may be the answer

Many consumers associate the principles of organic agriculture with the 'no-use' of chemicals, such as pesticides, in the production. The general consumer is less commonly aware of the holistic and complex principles that are guarding organic food production concerning health, ecology, fairness and care; and the potential of improving soil fertility and water-holding capacity through agro-ecological methods, e.g., integrated pest management, N-fixing crops, and use of compost.

Can organics increase food security?

It is also commonly perceived that conversion to organic agriculture will reduce agricultural production. So the spread of organic farming methods in developing countries has raised a debate whether a large scale adoption of organic farming will increase or decrease global food security.

While present food production in theory is sufficient to cover the energy and protein needs of the global population there are still more than 800 million food insecure people (more than 10 percent of the world's population); the majority live in South Asia and Africa south of Sahara. The total global production of food is thus not a proper measure for food security and elimination of hunger.

Definition of food security

“Food security exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.”

(World Food Summit, 1996)

The UN food summit has adopted the principles of four dimensions of food security:

1. Food availability
2. Food access
3. Food stability
4. Food use and nutrition

Thus, for a poor family to eliminate food insecurity, they need to access food in sufficient amounts and at all times over the seasons and years.

- 1. Availability:** To have enough food of appropriate quality, supplied through domestic production or inputs, food aid and net imports.
- 2. Access:** Access to adequate resources and entitlements for acquiring appropriate foods for a nutritious diet.



3. **Stability:** Access to enough food at all times – and not risking to lose access to food as a consequence of sudden shocks (e.g. an economic or climatic crisis).
4. **Use:** Refers to how food contributes to an adequate diet, clean water, sanitation and health care, and in turn, to a state of nutritional well-being, meeting all physiological needs.

Organic agriculture may improve food security in developing countries

In a recent report ‘Organic Agriculture and Food Security in Africa’ published by UNEP and UNCTAD it is concluded that ‘...organic agriculture can be more conducive to food security than most conventional systems, and that it is more likely to be sustainable in the long term’. The study found an average of 116% increase in crop yields in 114 projects analysed. This study as well as other results indicate that organic agriculture may improve smallholder farming systems and the potential for improving food security and local livelihoods.

Similar findings are reported from Asia. An IFAD report from 2005 on poverty reduction in Asia states as a main result, that organic agriculture is a viable approach that can be suitable for smallholders. It can be very useful in the more difficult environments, where resources are scarce and cultivation is problematic. Further, it also potentially serves to reduce risk by encouraging localized input production, fostering soil and water conservation and encouraging the diversification of production.

Since most farms at a global level are smallholdings, it makes sense to address the needs of smallholder farmers. This is strongly supported by a new report from Chatham House.

Realize the potential!

Modelling studies building on practical experiences have shown that large scale conversion to organic has the potential to reduce future dependence of food imports in developing countries. It is no longer a question of ‘if’, but rather ‘how’!



Photo: Hans Christian Jacobsen

It is important to remember that organic agriculture is knowledge intensive as it depends on advanced agro-ecological methods and insight into the complex relationships of nature. Therefore, training and extension focused on building human, social, natural and financial capital is necessary.

Moreover, known agro-ecological methods may need adaptation and further development in order to function in other eco-climates with different flora and fauna of pests than where they have been developed and previously tested and used.

The need for integrated development

The debate on how to achieve the organic farming potential also needs to look into how farmers’ and consumers’ incentives to engage in a more sustainable production system can be strengthened. Development of organic agriculture in poor rural areas must go hand in hand with other developments, such as secure land tenure, access to organic certification and markets, and political support to sustainable agricultural systems.

More research is required

There is an extensive need for more research and innovation to improve local organic farming systems and adaptation of agro-ecological principles.

More reading on organic agriculture and food security

Halberg, Niels, P. Panneer and Charles Walaga: “*Is Organic Farming an Unjustified Luxury in a World With Too Many Hungry People?*” In: Willer, Helga and Lukas Kilcher (Eds.) (2009): *The World of Organic Agriculture. Statistics and Emerging Trends 2009*. IFOAM and FiBL

Halberg, Niels et al. Eds. (2006). *Global Development Of Organic Agriculture: Challenges and Prospects*. CABI Publishing.
Chapter 10. The impact of organic farming on food security in a regional and global perspective (Niels Halberg, Timothy B. Sulser, Henning Høgh-Jensen, Mark W. Rosegrant and Marie Trydeman Knudsen). Is also available on Ecowiki:
ecowiki.org/GlobalPerspective/HomePage

Badgley, C. et al., 2006. *Organic agriculture and the global food supply. Renewable Agriculture and Food Systems*. 22(2), 86-108

UNEP-UNCTAD Capacity-building Task Force on Trade, Environment and Development, 2008. *Organic Agriculture and Food Security in Africa*. U.N., New York and Geneva.

United Nations (2003). *Organic Agriculture and Rural United Nations Poverty Alleviation: Potential and Best Practices in Asia*, U.N. Economic and Social Commission for Asia and the Pacific.
www.unescap.org/rural/publica.htm

IFAD Report (2005): *Organic Agriculture and Poverty Reduction in Asia: China and India Focus*. Report No. 1664.
The IFAD report can be found at www.ifad.org

Evans, A. (2009). *The Feeding of the Nine Billion – Global Food Security for the 21st Century*. Chatham House Report.
Download the report from www.globaldashboard.org

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About ICROFS

The International Centre for Research in Organic Food Systems (ICROFS) is a “centre without walls” where the research is performed in interdisciplinary collaboration between research groups in different institutions. The centre is an expansion of the former research centre DARCOF, which the Danish Government in 2008 decided to give an international mandate and an international board.

The main purpose of ICROFS is to coordinate and monitor international research in organic food and farming systems in order to achieve optimum benefit from the allocated resources. Further, the aim of ICROFS is to initiate research and create impact of the research results through support and dissemination of high quality research of international standard.

More information at www.icrofs.org

