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"Can agroecological farming feed the world?
Farmers' and academia's views"

What is the contribution of organic agriculture to sustainable development? A synthesis of 12 years of long-term trials SysCom

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Abstract

Organic agriculture (OA) is advocated for its benefits to human health, environment and socio-economic well-being of farming communities. However, there are concerns about its productivity and economic sustainability. Research conducted mainly under temperate conditions in developed countries has demonstrated the potential of OA. However, empirical evidence on the performance of OA under tropical conditions is still limited.

In 2006–07 FiBL started the 'Long-term Farming Systems Comparison in the Tropics (SysCom) Program' in collaboration with local partners in three tropical countries to produce scientifically sound data on the agronomic, ecological and socio-economic performance of organic and conventional production systems over a long-term. The programme comprises of a network of four long-term experiments (LTEs) in Kenya, India and Bolivia, in concert with participatory on-farm research (POR) aimed at developing locally adapted sustainable technologies. Our research in the tropics shows that organic agriculture respectively agroforestry systems have large potential to contribute to sustainable development especially in the field of soil fertility and biodiversity conservation while productivity and profitability is usually equal. Higher returns on investment and higher labour productivity make organic and agro-forestry systems interesting for resource poor small-holder farmers. A more pronounced role of organic inputs such as compost, manure or litter-fall into the systems leads to a slow but steady built-up of soil organic matter, even under tropical conditions.

Yet, for full exploitation of the benefits of organic agriculture major efforts are needed to tackle agronomic/ technological challenges (lack of input, pest management), capacity development for farmers (technical know how) and institutional/governance challenges (markets, agri-business).

Keywords: Agroecology, cross-continental comparison, food security, long-term trials, organic farming

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