

Organic Agriculture and the World Food Supply

Organic agriculture is a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Organic agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved.



Organic agriculture has the potential to produce enough food on a global per capita basis to sustain the total human population without increasing the agricultural land base and it can contribute substantially to the global food supply¹.

- Organic agriculture yields are often much higher than conventional yields in tropical countries and only slightly lower than conventional yields in developed countries.
- Organic systems are diverse and evaluated on the basis of total farm productivity they produce more than just one single crop. Moreover organic systems provide environmental services for cleaner water and increased biodiversity.
- Organic farming uses green manures (leguminous plants), compost, mulch, and seaweed for fertilization. It is estimated that nitrogen fixation from leguminous cover crops are sufficient to replace the global amount of synthetic fertilizer currently in use.
- Many studies have demonstrated the positive impact of organic farming on soil fertility, showing an increase in soil organic matter and available nutrients.
- Organic agriculture systems have great resilience which is helpful as climatic conditions become more extreme.
- Organic systems rely on local ecosystems, they increase food availability and access exactly in those locations where poverty and hunger are most severe.



'Can organic agriculture feed the world?' does not seem to be the right question; better is 'How do we feed the world in a sustainable manner?'

Organic food systems ought to be evaluated in a wide development context in contrast to the detrimental environmental impact of conventional agriculture.

¹ Badgley et al 2007, *Organic Agriculture and the global food supply*. FAO 2007, *Conference on Organic Agriculture and Food Security*

Conventional agriculture does not feed the world in a sustainable way

- There is enough food being produced in the world to feed everyone, still more than 850 million people remain without even one adequate meal a day.
- Through pesticide use, intensification, and wrong irrigation practices, over 200 million hectares of agricultural land go out of production each year.
- Chemical nitrogen fertilizers used in conventional agriculture are expensive. They are unaffordable for most subsistence farmers. Moreover, they emit considerable greenhouse gases, both through their production and their composition of mainly nitrous oxide. With energy prices going up, the cost of synthetic fertilizers will increase even more.
- Conventional agriculture damages immediate surrounding wild areas that actually have a function in stabilizing productive agro-ecosystems.



Achieving a global food supply that is accessible to all people

- Food, ideally, should be produced where it is needed, by those communities who depend on it. Governments should think more in terms of fair distribution of production possibilities, rather than solely in terms of production figures.
- Investments in breeding programs that concentrate on locally adapted animal and plant varieties pay off in terms of local and regional food supply.
- Subsidies that encourage natural resource degradation or depletion should be eliminated.
- More insight and so ongoing monitoring is needed about how environmental crises, like lack of energy and climate change, will influence the food supply in the future.
- Food aid should be used only as an emergency measure. Local markets are negatively affected by permanent food aid making it uneconomical for farmers to produce for the needs of their region. Instead of importing food, local food production should be encouraged and supported.

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