More ecology - less hunger?

Organic agriculture is appropriate for smallholder farmers because it makes optimal use of the scarce resources in marginal areas. But international standards are preventing smallholders from participating in the booming international organic market. Instead, they have to use their own standards and build up regional and local markets. Johannes Kotschi argues that overcoming the narrow perspective on organic agriculture and expanding towards diversification would benefit the hungry and help this strategy to regenerate smallholder farming.

A Chinese farmer setting off to plough in his green manure crop before cultivating paddy.
Credit: Johannes Kotschi

"Organic agriculture cannot feed the world" is a statement often heard in research and development circles. The argument is that, without chemical inputs and without genetic engineering, hunger cannot be alleviated. At the same time, the statement suggests that conventional agriculture can solve the problem. The truth, however, is much more complex than this.

Who suffers hunger?

Two facts demand to be faced when considering the problem of hunger. Firstly, according to latest findings, 80 percent of the hungry live in rural areas and two thirds of them are smallholders.

Secondly, in purely quantitative terms, the world produces enough food to provide everyone with enough to eat. Thus, the reason for hunger is not food scarcity, but poverty. Many people do not have access to sufficient land and other resources to be able to grow their own food. Trade regulations and unattractive terms of trade discourage smallholders from producing a surplus for the market and discourage traders from serving marginal areas.

If it holds true that hunger concerns primarily people in rural areas and is due to lack of purchasing power and to unequal distribution of resources, then development strategies have to be aimed at empowering the hungry to produce their own food. Here, organic agriculture is playing a key role and should be part of an appropriate strategy to combat hunger.

Why organic agriculture?

Organic agriculture is commonly equated with "no mineral fertiliser and no pesticides". This is not, however, a sufficient description and reflects a false understanding. The guiding principle of organic agriculture is to cultivate land or raise animals in harmony with nature or - expressed in modern terminology - according to the laws of ecosystems. Natural processes are enhanced; nutrient and energy flows are kept as cyclic as possible; plant and animal husbandry are closely linked. The agricultural enterprise - "the farm" - with its people, land, plants and animals is conceived as a manifold whole, as an organism.

Methods of organic agriculture aim to use nutrients as efficiently as possible and, as far as possible, to recycle them. Mineral fertilisers are not excluded but strictly limited and are used to enhance soil fertility, especially in marginal areas. In contrast, in conventional agriculture, fertilisers serve primarily to maximise yields. Optimising inputs instead of maximising outputs is probably the most profound difference between the two types of agriculture.

This is the key issue: making optimal use of resources for production in marginal areas where resources are, by definition, limited. Resource-poor people need to be empowered to make use of a minimum of inputs - nutrients, water, and seed - to obtain at least modest yields so that they can secure their subsistence and, wherever possible, sell their small surpluses.

Can organic agriculture generate adequate yields?

Research provides little evidence with respect to the performance of organic agriculture in resource-poor areas. However, the boom in farmer initiatives worldwide that seek to work with ecologically-oriented agricultural techniques is an indication of widespread conviction that this is a promising approach.

These initiatives of smallholder farmers - some of them supported by international donors in rural development, some of them genuinely local initiatives - have been very successful.

For example, in the north Indian mid-hills of the Himalayas, many villages have converted to ecological agriculture. After years of input-intensive farming under the banner of the "Green Revolution", the degraded soils have been rehabilitated and, within a relatively short period of time, good yields are being harvested, sometimes higher than under conventional methods of production.

To be sure, under very fertile conditions, organic agriculture cannot bring the same physical yields as can conventional agriculture. On degraded or marginal soils, however, such success stories are numerous and demonstrate that organic agriculture can compete successfully with conventional agriculture.

In economic terms, the superiority of organic agriculture is sometimes even more pronounced, and the continuous deterioration of trade - increasing

costs of production versus stagnating or decreasing prices of products - support this trend. However, the most important argument in favour of organic agriculture is that it is less susceptible to production risks in periods of drought - an impact that has been obvious during the past three years in the poorer areas of Southern Africa.

A global strategy

Organic agriculture is more than just a technology. In concert with obligatory standards for production and processing and a well-functioning system of inspection and certification, it has become a comprehensive strategy of global dimension. Be it green tea from China, coffee from Mexico or cotton from Tanzania, organic foods and textiles are being produced worldwide for the wealthy North: for Europe, North America and Japan.

The binding character and the transparency of the strategy created confidence among consumers. In 2002 the trade volume of organic products was estimated at 23 billion USD, and the trend is increasing. At the same time, producers were obliged to seek technological alternatives to be able to meet the standards, thus making organic agriculture a generator of innovations, many of which have already been integrated into mainstream agriculture. The development of methods in biological pest control for European fruit growers is a good example.

Despite this success, only a small group of privileged farmers, who have managed to produce for this Northern market, are benefitting from the higher prices. In the hopes of improving their marketing chances, an increasing number of smallholder groups (also in resource-poor areas) are seeking access to the international system of certified organic agriculture.

Most of them, however, are not very likely to succeed, because:

- the quantities they produce are too small, and the quality is not homogeneous enough;
- they offer crops that are not in demand on the international market or are easily perishable;
- certification is often too expensive and too complicated, even if they seek the more reasonable variant of group certification.

The major reason, however, is that demand in the industrialised countries is not keeping up with the supply from developing countries. In the case of some products, for instance coffee, a certain saturation of the international market can now be observed. It is therefore necessary to develop regional, national and local markets for organic produce. But according to what rules of the game, according to which standards and procedures?

The dilemma of unified standards

Standards are a key feature of organic agriculture and part of its success. At the same time, they are increasingly becoming a hindrance to expansion, because they have become more and more elaborate, and have been transformed into laws and regulations by many national governments as well as at international level (IFOAM, FAO, WTO, EU). Global compliance with International Basic Standards is increasingly demanded.

This process has not only reduced the scope of organic agriculture to develop, but is also excluding resource-poor farmers. This can be illustrated by the following example.

In many parts of Asia, pesticide residues in vegetables have reached such an alarmingly high level that eating them jeopardises human health. Therefore, in North Sumatra, Indonesia, local NGOs and the farmer groups they are supporting have developed alternatives to chemical pesticides. They also began to define their own standards and local guarantee systems so that they could market their pesticide-free produce locally. The demand for such vegetables appears to be enormous - in the populous towns of North Sumatra and in neighbouring Singapore.

A closer look at their standards reveals that the use of synthetic mineral fertilisers is reduced but not completely excluded. This is primarily because there is not enough organic fertiliser available locally. During the "Green Revolution", the water buffaloes were replaced by tractors and mineral fertilisers - a "development" that is not easy to reverse. Having chosen to convert to organic, the smallholders now find that their use of even small amounts of synthetic fertilisers would violate the International Basic Standards and the Indonesian National Standards that will soon come into effect.

Other cases could be cited, but the question is: who owns "organic"? Should certified organic agriculture be left to the better-off farmers in favoured sites that can afford organic manure? This approach to enhancing ecology at a global scale is of no benefit to the poor.

Conclusions

Firstly, in technological terms, organic agriculture is clearly superior in resource-poor areas, where food security is the main concern. Secondly, binding standards and control of compliance are preconditions for the development of a market for organic produce.

The assumption that the future of organic agriculture lies in internationally uniform standards is questionable. It assumes that the global market could grow only if there is increasing equivalence in production and processing. This may hold true for the international

A farmer group in Bangladesh discusses methods of soil fertility improvement through short intensive fallows.

Credit: Johannes Kotschi

market, but it is not valid for smallholders in resource-poor areas - and not only in the South. These farmers produce for local or, at the most, regional markets where equivalence is not an issue.

The discourse on organic agriculture - and the understanding on what this is or is not - should be opened up. International framework standards, such as those developed by IFOAM, should be simplified and kept more general, rather than becoming increasingly detailed. At the same time, principles and models of organic agriculture should be further developed and used as yardsticks. Only then will it be possible to overcome the existing dichotomy of "poor and rich organic farmers".

Overcoming the current narrow perspective on organic agriculture and expanding towards diversification and a focus on processes rather than on final compliance with standards would benefit not only the hungry. It would help the organic agriculture movement to regenerate and cope with a rapidly changing world.

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