Swedish Society for Nature Conservation

Report

Organic food and farming for all

Green Action Week 2013 & 2014
– Consumers and farmers for food security, safe and sustainable food.

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Foreword

Our patterns of consumption can give rise to many environmental problems. Focusing attention on one issue simultaneously in many places is an effective way to increase awareness about these issues. For more than twenty years the Swedish Society for Nature Conservation has been organizing a *Green Action Week,* which has engaged thousands of volunteers all over Sweden and contributed to increased consumer awareness about these issues as well as policy changes that have contributed to more sustainable consumption patterns. This success has inspired SSNC to promote a *Global Green Action Week* in which we support environment, consumer and farmer organizations around the world to carry out short-term campaigning activities oriented towards consumers, to raise awareness of these issues. The activities will mainly be carried out during week 40 (2013: September 1 – October 6 and 2014: September 29 – October 5).

The theme for 2013 and 2014 is food and the environment and, as part of this campaign, the advantages of organic food will be highlighted. This report summarizes the multiple benefits of organic farming. We have commissioned it in order to increase knowledge about organic farming among the organizations who will work with the campaign. The report is not targeted at consumers, but at the campaigning organizations themselves, providing them with background information to develop their own campaigning materials.

Through coordinated public awareness campaigns across many countries, the participating organizations will be able to strengthen their message and increase their impact by making reference to global activities. We believe that, through joint campaigning on sustainable consumption, organizations can strengthen each other - both nationally and internationally - and also exchange experiences of the methods and strategies which deliver good results. Together our voices are stronger.

1. What is organic farming?

The term “organic agriculture” or “organic farming” is used to describe different methods of farming that work in balance with nature and avoid the use of chemical fertilizers and pesticides. There are certain principles or standards for organic farming that form the basis for the work of many farmers and their organizations all over the world. These farming systems are sometimes also referred to as ‘ecological’ or ‘biological’ agriculture. Farmers and their organizations engage in organic agriculture because of benefits such as increased long term productivity, lower production costs, a healthier working environment and other social, environmental and economic considerations. The benefits can differ greatly, depending on the local situation. In some cases, there is a specific market for organic products. In that case, it can be important that the consumers get a ‘third-party’ guarantee that the product is grown organically. This is called certified organic agriculture. While there are millions of organic or ecological farms in the world, only two million or so of them are certified organic, producing for domestic or export markets, and usually getting an organic premium for these products (and sometimes a Fair Trade one too). In a sense though, these farms are the tip of the iceberg. Many farms are also involved in Participatory Guarantee Systems (PGS), an alternative to third party certification. These are locally focused quality assurance systems, involve the active participation of stakeholders and are built on a foundation of trust, social networks and knowledge exchange. This approach is probably the main guarantee system for organic products in the South. Section six describes in more detail the market for certified products and section eight the certification systems. There are many organic farmers especially in (sub) tropical and semi (arid) countries for whom formal certification does not have any advantages, but PGS is much cheaper and more adapted to local market conditions.

There are many different organic or ecological farming systems. Organic agriculture is by definition adapted to local circumstances defined by soil, climate and culture. It has emerged from different agricultural circumstances and different cultural (scientific, environmentalist) backgrounds. Although organic systems can be quite different, they share the goals of maintaining long-term soil fertility through the use of organic materials and the recycling of nutrients and avoiding the use of chemical inputs. In that sense, organic agriculture is quite close to how traditional farming has maintained a sustainable balance with the environment for a very long time. Organic and ecological approaches can be seen as an upgraded, structured and systematically organized application of traditional principles and practices in farming that also use relevant results from research and technical development.

Old style, low or no input farming can be seen as ‘organic by default’ although generally it does not actively apply organic principles. Traditional methods in agriculture, that have been sustained for ages, are changing and under pressure because of population growth and external influences. While many smallholder farmers may not use chemical inputs, their activities are often no longer sustainable and deplete the resource base on which they rely, the soil. All around the world people are asking how to maintain soil fertility and the capacity of the land to produce enough food and to provide sufficient income for farming families. Organic agriculture seeks to establish a sustainable system by improving the conditions for plant growth through managing organic matter and enhancing soil life. Soil life and soil

organic matter play a key role in enhancing soil structure, the availability of nutrients and water, and in preventing nutrient and soil losses. These are particularly key issues in (sub) tropical and (semi) arid agriculture. Other important issues include how to make better use of nutrients and balance the nutrient flow. Nutrient deficiencies and imbalances are key constraints to crop production and plant health. A negative nutrient balance means the natural capital of the farm is being mined.

This will lead to a decline in yields and the protective plant cover and a gradual degradation of the system. Organic and ecological farming systems use a number of mechanisms to prevent and/or compensate for losses and exports of nutrients and organic matter. These include: the prevention of erosion, nutrient harvesting, recycling of organic matter, nutrient pumping (using deep-rooting plants), fixing nitrogen and mobilizing phosphates, using animals to collect nutrients and organic matter and careful handling of fertilizers.

An increasing number of farmers, development workers and scientists are coming to the conclusion that the capital-intensive Green Revolution techniques are simply not a feasible alternative for more than 1 billion farmers who live in regions that for ecological, geographical and or socio-economic reasons are viewed as 'less-favourable' for agricultural production. In these relatively diverse, complex, risk-prone areas, external inputs are either too expensive, or simply not available. To improve their productivity, it is widely thought that these farmers need to make more use of local resources, ecological processes, recycling and site-specific genetic materials. This comes close to the principals of organic and ecological farming. In some areas of Africa, Asia, Latin America and the mountainous areas of Eastern Europe, there are quite well-established low-input farming systems that make use of some of the guiding principles of organic farming, with a focus on maintaining soil fertility, ecological balances and producing healthy food. By using fewer inputs they aim to increase farmers' profits. If these systems can market their produce as organic this can contribute to improving farmers' incomes.

2. The differences between organic and conventional farming

With the introduction of synthetic fertilizers and pesticide application around a hundred years ago agriculture started to change drastically. At around the same time, the first commercial companies started to work on breeding new seed varieties which produced higher yields in combination with the use of fertilizers. This, together with the massive development of transport facilities, led to dramatic changes in agriculture. In the ensuing period hundreds of millions of farmers have left agriculture and moved to the cities. In Europe, Northern America, Brazil, Argentina, Australia and many other formerly colonized countries, farms and plantations have become much bigger, using less labour to do all the work involved in crop production and animal husbandry and using more energy, machines and chemicals. This is an ongoing process and has been established worldwide for several decades. Yet there are still

more than a billion smallholders, peasant farmers and households that rely on subsistence farming.

Almost one hundred years ago some farmers and agricultural specialists in Europe noticed the disadvantages of this process and began to develop a more ecological sound and locally adapted method of farming: organic agriculture. One of its aims is to empower to farmers and local communities and prevent them from becoming overly dependent on (large) agrochemical and seed companies.

Multifunctional production

Organic agriculture does not use chemical fertilizers and pesticides because these can be harmful for nature, the environment and human health. These inputs, and also genetically modified (GM) seeds, make farmers dependent upon standard industrial solutions and obstruct local adaption and development of the farming system, which is the basis of organic farming. Instead of chemical inputs, organic systems focus on avoiding nutrient losses through recycling them, using manure and compost, green manure and varied crop rotations or agro-forestry systems. The prevention of nutrient losses also avoids environmental damage (e.g. damage to local water supplies). In preference to using GM seeds, organic farmers prefer resilient indigenous varieties that are adapted to local circumstances and have a natural resistance against pests, diseases and drought. For example, there are hundreds, or maybe even thousands, of different local maize varieties, which are at risk of being lost because of the widespread use of a small number of hybrid and GM varieties produced on a large scale all over the world. Producing these seeds is complex and can only be done by multinational seed companies, who also own the Intellectual Property Rights over them. While organic maize growers do not necessarily only use old, local varieties, there is a tendency within the organic movement to support a large diversity in varieties and breeds and to encourage farmers to use, develop and share their own seed materials. While organic farmers can use modern varieties, GM seeds are prohibited.

Pests and diseases

Pests and diseases can harm the crops, reduce their yield and badly damage their quality. A wide range of (often highly toxic) chemical pesticides has been developed to control pests and diseases. Organic farming differs from conventional agriculture in that it prohibits the use of chemical pesticides. Organic farmers employ other methods to prevent an unacceptable level of pests and diseases; choosing strong varieties and creating the best conditions for crop growth. Organic farmers improve the fertility and structure of the soil through the use of for example compost. They plant a wide variety of crops, often inter-cropping, and leave or plant species that can create habitat for beneficial wildlife and/or improve the micro-climate. The right micro-climate is important for low trees or shrubs such as coffee, cocoa and bananas. In conventional systems these types of crops are often grown on a large scale in open fields or plantations, whereas they naturally grow as a secondary layer in the forest. Organic farmers use shade trees, so that the crop is not in the full sun. Their production is somewhat lower, but because the crop is growing in micro-climate to which it is better suited, it is not so prone to devastating diseases. In Costa Rica conventional bananas are sprayed every 10- 15 days

against the *black sigatoka* fungus. On organic bananas, in an agro-forestry system, one does not spray at all. Organic farmers and researchers have also developed an array of biological formulations to help manage pests and diseases. These methods use locally available materials, usually edible food substances which pose no harm to consumers even if applied shortly before harvesting. For example, extracts from the seeds of the Neem tree are widely used to control pests in India and large parts of Africa and Latin America[1].

Box 1: Organic Management in Practice. The Push –Pull system for maize[2]

The push-pull system, used to control stem borers in maize in Africa is a good example of how organic systems seek to control pests. This involves inter-planting maize with a fodder crop *Desmodium*. This species repels ('pushes') stem borers from the maize and attracts their natural enemies. Other species (Napier or Sudan grass) are planted around the edge of the plot which attract ('pull') the stem borer away from the maize. The sticky residue from these grasses traps the emergent larvae, drastically reducing their population. As well as being a fodder crop *Desmodium* is a legume that fixes nitrogen in the soil. It also suppresses striga grass, a very persistent and harmful weed which normally requires much labour to remove.

Weeds

Weed control is another area where there is a big difference between conventional and organic agriculture. Instead of using chemical herbicides, organic farmers use a different toolkit to manage weeds. A wide crop rotation helps to prevent the establishment of a few really difficult weeds which particularly thrive in monocultures. Organic farmers use a mixture of good composting, fast growing crop varieties that suppress weeds, mechanical weed-control, mulching, cover crops and hand weeding as the main methods of weed control. These are generally more labour intensive methods than applying herbicides (and this is one of the main reasons why organic agriculture employs relatively more people than conventional agriculture).

Fertilizers

Whereas modern conventional farming uses chemical fertilizers to stimulate crop production, organic farming relies on manure, on composting waste materials from the farm and on recycling nutrients. The ideal model is a mixed farm, with food and fodder crops and animals. In such a system the animals can eat the fodder, crop residues and products that are

1 Schmutterer, H. (Editor) (2002) *The Neem Tree: Source of Unique Natural Products for Integrated Pest Management, Medicine, Industry And Other Purposes* 2nd Edition, Weinheim,Germany: VCH Verlagsgesellschaft

2 Amudavi , D. K. Zeyaur & J. Pickett (2007) *Enhancing the Push-Pull strategy.* LEISA Magazine 23:4 http://www.agriculturesnetwork.org/magazines/global/ecological-pest-management/enhancing-the-push-pull-strategy

not suitable for human consumption. The animal manure and the crop residues are often composted together and used to fertilize the soil. Such compost is rich in organic matter and in nutrients. This not only feeds the plants, but also all the other organisms that live in the soil. Organically managed soils generally have a much higher content of organic matter. This provides a better soil structure, allowing for stronger root development and more water storage. The combination of these two factors allows the crops to grow better (the roots are larger and so can find more nutrients, and water is principle means through which nutrients are transported in the soil). Nitrogen is the nutrient with the strongest influence on crop growth, but producing nitrogenous fertilizers is very energy intensive. Organic farmers use legumes and green manure to fix nitrogen from the air and make it available for the crops. Many soils in (sub) tropical and (semi) arid regions are deficient in phosphorus and/or phosphate and this can be addressed by importing phosphate and by improving the efficiency of phosphorus uptake in an active, living soil.

Agro-forestry

In (sub) tropical and (semi) arid regions agro-forestry systems are often an essential element of organic management practices. These can provide a wide range of produce (fruits, fodder, timber) control the micro-climate, provide habitats for wildlife and insects, stabilize the soils, increase water retention, take up nutrients from deeper in the soil and provide shelter for humans and animals. These systems often mimic the natural eco-system, and can be developed through observation and experimentation.

Yields

One of the main critiques of organic agriculture, particularly in terms of enhancing food security and improving the incomes of poor small-scale farmers, is that in countries where intensive agriculture is widely practiced the yields from organic farming tend to be around 20% lower. However, some recent long-term research from the In the United States showed that the over-all results of organic farming are better than conventional systems[3]. In (sub) tropical and (semi) arid countries there is not much evidence on this issue. A UNCTAD/UNEP report [4] shows that production per hectare is often higher on organic farms than on comparable farms, but that this may be due to the farmers being better trained. Although organic farms may have a lower yield (in the order of 20%) than intensive, high-input farms, the yields are comparable to or higher than on average or low-input farms.

[3] Mirsky et all, 2012: *Cover crop-based organic rotational no-till grain production in the mid-Atlantic region, USA.* Renewable Agriculture and Food Systems

[4] Hine R,, J. Pretty & S. Twarog (2008) *Organic Agriculture and Food Security in Africa*. UNCTAD/UNEP Geneva/New York

3. The advantages of organic and ecological food and farming

Organic food and farming have many advantages – for the planet and for people. All over the world organic and ecological farming systems operate holistic cycles. This means that their goal is to work in balance with nature, respecting the environment as well as the needs of animals and humans. These advantages are the result of farming practices that are based on four fundamental organic principles defined by IFOAM (the International Federation of Organic Agriculture Movements - see www.ifoam.org), the global organization that advocates the adoption of organic and agro-ecological food and farming. These principles are: health, ecology, fairness and care. They are the basis of the methods and standards that set organic and ecological food and farming apart from other approaches. These include a cleaner environment, fair treatment of animals and healthier food. Together these ecological methods of food production help to care for our future.

Around the world, increasing numbers of farmers are using organic and ecological methods and more people are buying and eating the food that these farmers produce. This means that producers and consumers together ensure that these benefits become more widespread.

Feeding the world

With more than 800 million people in the world hungry and another one and a half billion obese, it is obvious that the global food and farming system is not working. Global food commodity trading, speculation and increasingly unpredictable weather conditions and other factors have led to food price increases that have made it harder for poorer people to feed themselves. In 2008 increases in the price of basic foods led to riots in several cities around the world. More than half the world's population now lives in towns and cities and feeding these people is an enormous challenge. There is a growing dependency on farms that are highly reliant on excessive use of non-renewable resources. In a world of diminishing resources this cannot be sustained.

IT ALWAYS SEEMS IMPOSSIBLE UNTIL IT'S DONE

NELSON MANDELA

Ecological and organic methods can help resource-poor small-scale farmers increase yields and improve food security without using chemical fertilizers or pesticides, inputs which often are not available at the right time or are too expensive. These agricultural chemical inputs in farming can have a detrimental impact on the environment and biodiversity, and also pose a risk to the health of people working on farms, who may be directly exposed to the active ingredients, as well as to those living nearby who may be exposed to spray drift. A report to the UN General Assembly by the Special Rapporteur on the Right to Food[5] recently emphasized these advantages of ecological farming methods. A detailed study of the yields of

[5] De Schutter O. (2010) *Report submitted by the Special Rapporteur on the Right to Food to the United Nations Human Rights Council*, 16th Session, December 2010

ecological and non-ecological farms in the global South showed that farmers who used ecological and organic methods had higher yields[6]. Both food security (the right to food) and food sovereignty (the right of people to define their own food systems) depend on enabling small-scale farmers to feed their families and communities, allowing them to survive and flourish using agro-ecological approaches (see section 5 for more on poverty reduction and food security). Organic and agro-ecological systems make a significant contribution to creating a fairer world.

Environmental advantages

Organic farms utilize mixed farming and agro-forestry practices, enhancing biodiversity in the natural areas around the farm as well as within the cropped fields. This increases the range of species of wild plants, birds and animals and increases the number and variety of insects and living micro and macro organisms in the soil. Organic and ecological farming depends on this diversity of wildlife – which helps to keep pests and diseases in check and to produce healthy crops[7]. In India, research on organic and non-organic farms showed that ecological farms had an average of 200 trees per hectare, five times more than on non-ecological farms[8].

Combating climate change is now an urgent global priority and is one of the biggest environmental challenges that we face. Agriculture produces a significant amount of the greenhouse gases that lead to climate change. One way to help reduce the production of greenhouse gases is by moving to climate friendly food production. There are two main ways in which organic systems contribute to offsetting climate change. Firstly they use less non-renewable fossil fuels (artificial pesticides and fertilizers are based on fossil energy reserves as oil and gas and their production is highly energy intensive). Secondly, organic and ecological farming methods hold (sequester) more carbon from the atmosphere in the soil, since these farming methods build up organic matter through the use of animal manures, mulches, composts and green manures. Although there is a wide range of different soil types around the world, it has been estimated that soils on organic farms hold, as a global average, 450 kg/ha/yr more carbon than the soils on non-organic farms[9]. If we are to avert the worst effects of climate change it is important that all farmers - whether a small-scale farmer in Africa or a large-scale farmer in Europe or America - maximize the holding of carbon in their soils.

For a small-scale farmer in Africa, Asia and South America, improved soil quality can have many benefits, reducing the risk of soil erosion and increasing the ability of soils to retain more water, thereby guarding against the effects of drought. Ecological farms are also able to cope better with extreme weather conditions (i.e. they show a greater degree of environmental

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[6] Badgley C., J. Moghtader, E. Quintero, E. Zakem, M. Jahi Chappell, K. Aviles-Vazquez, A. Samulon & I Perfecto (2007) *Organic agriculture and the global food supply.* Renewable Agriculture and Food Systems 22(2): 86-10

[7] Schader C., M. Stolze & A. Gattinger (2012) *Environmental performance of organic farming.* Chapter 8 in J. I. Boye & Y. Arcand (eds) Green technologies in food production and processing. Springer Science.

[8] Van der Werf E. (1993) *Agronomic and economic potential of sustainable agriculture in South India.* American Journal of Alternative Agriculture 8(4): 185-191

[9] Gattinger A., A. Muller, M. Haeni, C. Skinner, A. Fliessbach, N. Buchmann, P. Mader, M. Stolze, P. Smith, N. E. Scialabba & U. Niggli (2012*) Enhanced top soil carbon stocks under organic farming*. Proceedings of the National Academy of Sciences

resilience) as shown in a comparative study of organic and non-organic farms in for example in Honduras. The researchers showed that the organic farms coped better and recovered more quickly from the devastating effects of Hurricane Mitch[10]. This was due to the greater diversity within the farms, better ground cover and better soil quality.

YOU CANNOT SOLVE A PROBLEM FROM THE SAME CONSCIOUSNESS THAT CREATED IT. YOU MUST LEARN TO SEE THE WORLD ANEW

ALBERT EINSTEIN

Traces of pesticides and chemical fertilizers used by non-organic farmers inevitably find their way into surface and underground water and into air and soils, sometimes causing serious environmental pollution. Since organic farmers don't use these chemical pesticides and fertilizers, potentially hazardous substances are kept out of the environment, thereby reducing the risk of pollution and protecting wildlife.

Human health

One of the reasons why many people choose to buy organic is to reduce their intake of potentially hazardous pesticide residues. Government authorities generally agree that eating organic food reduces exposure to hazardous pesticides[11]. Such pesticides also pose a risk to the health of farm workers. Therefore organic and ecological farms provide a safer working environment. This is particularly important where smallholder farmers in the South using pesticides may not have access to, or value the use of the protective equipment that can help reduce their exposure to these hazardous substances. In Uganda, consumers are demanding chemical free vegetables. Previously farmers tended to spray tomatoes and watermelons before harvesting as this was believed to increase the shelf life of these products. With heightened awareness of the possible dangers of consuming such produce the public is increasingly demanding organic products.

Our food should contain all the nourishment and nutrients we need for good health. A balanced diet (as well as enough exercise) is essential to keep us healthy, but the composition of the food – the balance of vegetables, fruit, milk or meat and the balance of vitamins and minerals that a food contains – is also all-important. Eating a wide range of different foods can help ensure we get all the right nutrients. A diverse diet from an ecologically diverse and sustainable farming system can help in maintaining people's health. Furthermore, land is an expensive resource in developing countries (and elsewhere). This has led made organic advocates amongst smallholder farmers to propose establishing kitchen or 'sack' gardens. In sack farming, the farmer collects soil in a sack so that he or she can plant a collection of vegetables through holes in the sack for home consumption, thus reducing household expenditure on buying vegetables.

[10] Holt-Giménez (2002). *Measuring Farms' Agroecological Resistance to Hurricane Mitch*. Low External Input and Sustainable Agriculture 17: 18-20.

[11] Benbrook C. (2008) *Simplifying the pesticide equation: The organic option.* The Organic Center Critical Issues Report, March 2008.

There is much debate about whether organic food has more beneficial nutrients than non-organic food, but there is some evidence to show that the nutrient content of organic food in some aspects is higher[12] and this may mean that organic food is better for health[13, 14]. However, it is important to acknowledge that there just has not been enough scientific study to prove this one way or another. It is obviously very difficult to do long term studies on the impact of eating organic food on human health, partly because there are so many other factors involved. Nevertheless, many people who buy organic food do so because they think that it is better for their health.

Animal welfare

Care means being diligent about looking after animals as well as people. On organic farms animals are given the space (and thus the opportunity) to express their natural behaviour, so organic farming can make a contribution to improving animal welfare[15]. Organic livestock husbandry does not allow industrial factory farming. In organic systems the animals are able to be outside when the conditions are suitable, and when they are housed (for example during the winter or in very dry conditions), they have more space and somewhere comfortable to rest. Taken together, this often means healthier, happier animals, another reason why many people in Europe and North America buy organic livestock products.

Good welfare also depends on ensuring that livestock animals are fed in a way that matches their digestive system. For cows, sheep and goats that means a diet that is largely based on grass and bulky foods rather than on the high levels of cereals and soya currently used in intensive husbandry systems in order to get maximum yields. These grains could otherwise be used to feed people. Small-scale farmers in the South usually feed their livestock on locally available fodder (unsuitable for humans), meaning that the animals do not compete with humans for cereals.

The health of animals in low-input organic and ecological systems is supported by these non-intensive conditions, so that fewer animal medicines such as antibiotics are needed. In organic systems antibiotics are only used to treat disease, unlike in industrial systems which often use them widely as a preventive measure. This indiscriminate use of antibiotics in livestock production is leading to increased resistance among animals and among humans who consume the livestock products. This also poses a threat to human health, since antibiotics are important human lifesavers all over the world. Increasing resistance, in part caused by overuse in intensive livestock production threatens the effectiveness of antibiotics in human medicine[16]. In these three respects there is generally no real difference between traditional

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[12] Lairon D. (2010) *Nutritional quality & safety of organic food. A review.* Agronomy for Sustainable Development 30(1): 33-41

[13] Brandt K., C. Leifert, R. Sanderson & C. J. Seal (2011) *Agroecosystem management and nutritional quality of plant foods: The case of organic fruits and vegetables*. Critical Reviews in Plant Sciences 30(1-2): 177-197

[14] Huber M., E. Rembialkowska, D. Srednicka, S. Bugel, L. P. L. van de Vijver (2011) *Organic food and impact on human health: Assessing the status quo and prospects of research*. NJAS – Wageningen Journal of Life Sciences 58: 103-109

[15] Pye-Smith C. (2003) *Batteries not included, organic farming and animal welfare*. Soil Association, UK.

[16] Soil Association (2011) *Case study of a health crisis: How human health is under threat from over-use of antibiotics in intensive livestock farming.* Soil Association, Compassion in World Farming and Sustain, UK

and organic animal husbandry within smallholder farming in (sub) tropical and (semi) arid countries.

The welfare of humans and the welfare of animals are linked, and this is as important in the global South as it is in the North. The FAO recognizes that good animal welfare practices can bring benefits for both people and their animals, and they are keen to inform and support producers in the South so that they can avail themselves of the benefits of good animal welfare practices[17]. Better animal welfare and healthier animals are important matters all over the world. Organic and ecological methods improve the life of the animals that we use to produce our food.

4. Local sustainable development

Cropping systems in organic farming tend to be more diversified than in conventional systems. This often results in higher employment levels per hectare, as the crops and livestock generally require more detailed management. Research has shown that organic farms in Africa employ and provide an income to 25% more people than the same number of conventional farms. Given the number of organic farms in Africa (more than half a million) organic agriculture probably already provides more than 750,000 extra jobs.[18] This, combined with higher incomes (see section below) is significant for poor rural areas, where many young people leave for the cities, seeing few prospects in agriculture. In the global North too, organic farming generates more jobs per hectare than conventional systems, 32% more in the case of the UK[19].

Organic farming also tends to be more accessible to women and young people, who face fewer barriers to participation as they are less likely to need to borrow money for seeds or fertilizer. In addition the absence of pesticides (and residues) in the fields means it is safer for family members to participate in weeding, harvesting, etc.

Organic farmers also tend to be pioneers, who look for new ways of doing things. This, combined with the changes (both in farming practices and market relations) implied by going organic, often places organic farmers at the forefront of rural development. At the farm level, this essentially involves becoming more *multifunctional*, shifting away from producing for commodity markets and seeking new ways to valorize the farm's resources (including the farming family's skills and knowledge). Some rural development practices involve *retaining more value added* from the farms' primary production – through developing short supply

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[17] FAO (2008) *Capacity building to implement good animal welfare practices*. FAO Expert meeting, 2008, FAO, Rome

[18] Brul, P. (2012) '*The growth of jobs in the organic sector'*. In Ecology and Farming, May 2012

[19] Green, M. & R. Maynard (2006) '*The Employment Benefits of Organic Farming'*, in Aspects of Applied Biology 79, pp 51-56

chains (such as subscription schemes, farm shops or farmers' markets – see text box 3 below) or processing on or close to the farm.

Others seek to *valorize other farm-based rural resources* through, for example, agritourism, care farms and environmental services (eg, biodiversity, landscape preservation or water catchment). These activities often have spin offs that enhance the ecological and economic resilience of the locality: increasing local employment (as well as the skills base and job satisfaction), the proportion of value added retained locally and the attractiveness and profile of the locality.

Box 2: Redesigning supply chains in Brazil[20]

Ecovida is a network of farmers', technicians' and consumers' associations, cooperatives and informal groups which works alongside small traders and processing units. These actors share a joint commitment to developing and multiplying initiatives in agroecology through stimulating collaborations between producers and consumers and spreading information among organizations and individuals. By uniting, the farmers and consumers exchange ideas and rescue and recover popular knowledge. Ecovida has a label that guarantees organic authenticity but also express commitment solidarity and quality.

The network is based on decentralized and regional nuclei, which gather members of a region with similar characteristics, allows for participatory certification and facilitates the exchange of information. There are 28 regional nuclei in around 170 municipalities. They are made of about 220 farmers groups, 20 NGOs and 8 consumers' cooperatives. The members of the network sell their products on more than 200 ecological street markets and through other alternative commercial circuits.

Each *feira* is located in a different agro-ecological zone, meaning that they can grow different crops at different times of year. These *feira* are linked through transport lines organized by the farmers themselves. Any surplus produce from one market is delivered (by members with their own vehicles) to other markets. The proceeds of these sales are paid to the producing *feira.* In 2012 these groups transported some 2,500 tonnes of merchandise, with a value of 6 million Reais, between *feira*s from one place to another. This added an average 2,000 Reais to the income of every participating family (equal to around 1,300 US$). Several of the local *feiras* are also linked with the government's food procurement programme (PAA) and the school meal programme (PNAE), which are mandated to buy a high proportion of the food they use from local small scale farmers, a shining example of how public procurement policies can stimulate regional (and organic) production.

[20] Ploeg, J.D. van der, Ye, Jingzhong and S. Schneider (2012), *Rural development through the construction of new, nested, markets: comparative perspectives from China, Brazil and the European Union*, in: Journal of Peasant Studies, Vol 39, no 1, January 2012, pp 133-173, Centro Ecologico, *Pers corr*.

Box 3: Organic farmers at the forefront of rural development in Europe

A major survey sought to estimate the extent of the shift towards multifunctional agriculture and its economic significance[21]. It covered seven EU countries, which (at the time) accounted for more than 50% of the EU's agricultural area. It found that between 0.8 and 3.1% of farmers in each country were registered as organic (since then, the figures have increased substantially) and this was often linked with other changes in the management and focus of their farms and market relations. Organic farmers were often at the forefront of developing short supply chains (which by shortcutting major retailers re-establish a link between producers and consumers), on-farm processing, care farms, agritourism, educational visits and on environmental schemes. Often a change in production methods (eg, using lower-yielding but also longer-living cows) would lead to a change in how revenues were secured (.g, cheese or yoghurt production), leading to a change in market relations (eg, direct sales). Taken together, these activities made a substantial contribution to overall farm income: outgoings were less (as no agrochemicals were purchased), the farms retained more added value, had a larger number of income streams and were less dependent on spot market prices. In addition the greater variety of work increased job satisfaction. More recent work by members of this research team in some countries has shown how this process has continued, with multifunctionality now becoming the norm in France and Italy and strongly associated with farmers' optimism about the future and the likelihood of farm succession.

Box 4: Improving the livelihoods of smallholder farmers in Uganda through organic farming[22]

The National Organic Agricultural Movement of Uganda (NOGAMU) was established in 2001, with the aim of promoting and coordinating the organic fraternity through market promotion and linkage. This membership-based organization started with four exporter companies and now (2012) has 44 export companies that are directly working with farmer groups in Uganda. NOGAMU mobilizes and trains farmers in organic production systems for home consumption, domestic and export markets. It also links farmers (through their organizations) to exporters from Europe, Japan and the Middle East. NOGAMU has helped improve the practices of more than 1.2 million farmers. The number keeps increasing because of the desire of farmers to earn a premier price from their organic produce. In addition NOGAMU has helped established two organic outlets in towns in central Uganda to increase the accessibility of organic products on local markets.

[21] Ploeg, J.D. van der, Long, A. & J. Banks (2002) *Living Countrysides: rural development processes in Europe – the state of the art*. Elsevier, Doetinchem (NL). See especially chapter 13

[22] NOGAMU, Kampala. *Personal corr.*

5. Poverty reduction and food security

Organic farming can contribute to poverty reduction and food security in three ways, which can sometimes be mutually reinforcing. The first of these is through market premiums, (sometimes accompanied by state subsidies for environmental services). The second is through reducing costs on purchased agrichemicals and seed. Here there is there often a trade off with higher labour demand, although this is not a problem if family labour is used and there are few competing opportunities. The third is through improving the productivity and yields of the farm system itself. We deal with these in reverse order, as this probably reflects the magnitude of their potential in addressing these problems in the global South .

Organic farming often involves diversifying the farm and the crops (and other activities) within it. This may involve inter- or multi-cropping of annual crops or a shift to longer-term rotations including shrubs or tress (agroforestry – see section 2).This shift usually contributes to more stable and higher incomes (see previous section). In situations where little or no fertilizer was previously used, the switch to organic methods (particularly the use of organic fertilizer, which also increases water retention and biological activity in the soil) can increase yields. (Where high dosages of chemical fertilizer were previously used it can take some time for the soil to recover its health and there can be a dip in yields). Badgely et al[23] found that organic systems in developing countries generally yield slightly higher than conventional systems (although the later often use limited amounts of artificial inputs).

[23] Badgley et al (2000) '*Organic Agriculture and the Global Food Supply*', in Renewable Agriculture and Food Systems 00(0) 1-24

Box 5: Leguminous trees: fixing nitrogen and providing other benefits[24]

The Dogon people live in part of the Sahel that is highly prone to drought. Yet several Dogon villages near Koro, Mali, have developed a very simple green manure/cover crop system that embodies several principles of organic agriculture.

They plant leguminous trees (trees that fix nitrogen into the soil), including several varieties of Acacia, in their fields and trim the lower branches just before the rains every year, to provide nutrients and reduce the shade. These trees fix nitrogen, provide fodder and firewood and help improve water retention in the soil. They also intercrop millet with a short-cycle variety of cow pea and a range of other cover crops, including Bambara nuts, *fonio* (a variety of millet) and peanuts. This intercropping pattern protects the soil against erosion and evapotranspiration and is designed to minimize inter-crop competition. As a result of these innovations, these villages see millet yields of two tons per hectare, about three times the average in areas of the Sahel with similar rainfall. The other crops provide additional food security throughout the year; this in an area where it is very difficult to grow green manure and cover crops.

Scientists have long recognized the potential of leguminous trees to provide the gift of nitrogen for free. While many successful experiments have been performed, resulting in widespread uptake, the results have not always been successful or picked up by local communities. Finding the right species for an area, which fits with existing agricultural practices, is sometimes problematic. This reflects the challenge of developing agroecological solutions, which have to be tailored to local conditions, rather than coming in off-the-shelf, one-size-fits-all, packages. Diverse local approaches are less attractive to agro-industry, and also make more demands on researchers, as they are more culturally specific.

Organic systems generally have a more diverse cropping regime than conventional farms and they reduce the risk (of eg, extreme weather conditions or pest infestation, as well as market volatility), extend the harvesting period and improve nutritional variety. In other words, organic farms can offer more stable yields (through offering greater protection against drought, disease or pests) and incomes (by offering more protection against volatile markets) than their conventional counterparts. Moreover, using local resources to build soil fertility, etc, reduces reliance on external markets for inputs and reduces the farmer's exposure to debt.

A comparative study[25] of conventional and organic farmers in three states (Uttarakhand, Madhya Pradesh and Tamil Nadu) of India, areas where 20% of people are food insecure, found that total food production was comparable between the two systems. Organic farming reduced input costs, thereby reducing indebtedness (interest rates are often punitively high in

[24] Bunch, R. (2003) '*Adoption of Green Manure and Cover Crops'* in LEISA Magazine, 19(4) pps 16-18, WorldWatch Institute (2011) State of the World, Innovations that Nourish the Planet, W.W Norton, New York/London

[25] Panneerselvam, P., J.E. Hermansen, & N. Halberg (2011) *Food Security of Small Holding Farmers: Comparing Organic and Conventional Systems, in India*. Journal of Sustainable Agriculture, 35:48–68

India and inability to repay debt is the major cause for the high rate of farmers' suicides), without affecting total farm production or income.

The benefits described above (higher yields, more food security and more ecological resilience) are often most noticeable in poorer Southern countries and regions. They are in marked contrast to the experience of organic farming in countries with a more industrialized agriculture and larger farm sizes. Here organic farms (which often yield less than neighbouring farms using large quantities of inputs) maintain their economic feasibility through a combination of market premiums and environmental subsidies. Neither of these incentives is widely available in developing countries.

There are no reliable estimates of the number of farmers in developing countries who practice organic methods. While there are figures for those who are organically certified, these farmers are nearly all involved in supplying export markets (eg, Europe, the US and Japan) with high value commodities such as coffee, tea, cocoa, spices and dried and fresh produce including bananas, mangoes and pineapples. However these farmers are certainly only the tip of the iceberg. The cost and complexity of becoming certified mean that only those with access to a secure market will find this avenue worthwhile. Export-led organics conform more to the western model – with farmers receiving sometimes substantial premiums. The experience of Ethiopian coffee projects and other producer groups in Africa has shown that the combination of good organic agriculture practice, good project management and a long-term relationship with an importer can more than double producers' incomes.

However peer-certified and non-certified organic producers are also growing in number and visibility, particularly in the South. Such schemes may or may not attract premiums (depending on context) but can work well in the struggle for food security and to overcome poverty if farmers' expenses are reduced or their total production is higher (see text boxes in section 4).

The great majority of the world's poor and food insecure live in rural areas in the developing world. Opportunities, such as those presented by organic farming, to increase production and/or attract higher prices are essential if the vibrancy and future of these communities is to be sustained. If young people see that (organic) agriculture offers a viable future and can generate the income to provide the sort of services they aspire to (clean water, health, electricity, education) then they will be less likely to choose to migrate to cities.

6. The organic market

Why do consumers prefer organic products? There are a number of reasons. For some people it is because organic food is produced without agro-chemicals, and they want to have food for themselves and their children without running the risk of residue contamination. Other motives include supporting family farming and the benefits it provides in terms of maintaining an attractive landscape, diverse nature and a clean environment. In Europe many people prefer to buy (certified) organic eggs, dairy products and meat because animals on

organic farms have a better life. People may be triggered to buy organic products by any one of these issues or a combination of them. Buying (and producing) organic products is not about one single issue.

Around the turn of the millennium, the only real markets for (certified) organic food were in North America, Europe and Japan. These markets still make up more than 95% of the global market, but in the past eleven or so years we have seen organic markets emerging in more than one hundred countries. Some countries, such as Turkey, Brazil and China, which used only to export organic produce, now have quite large local markets. People in these countries are becoming more aware of the difference in food quality and are choosing organic products when they are available and affordable. This can happen in different ways, such as farmers' markets, specialized health food shops, supermarkets and restaurants. There are organic restaurants in Nairobi, Rio de Janeiro, Shanghai, Tehran and New Delhi. The global market for organic food and drink almost tripled between 2000 and 2011 and is now worth more than 60 billion USD[26] . Until the recession in 2008, this market was growing at more than 10% per annum. Since then the growth has slowed down a bit due to the state of the economy, but it is still growing at almost ten percent per year.

Yet many countries still export most of their organic produce to these three main established markets. The most important organic export crops include coffee, tea, cocoa, bananas, dried fruits and herbs and spices. For many farmers with an organic cash crop, these export markets are important. But for most farmers, the local market is by far the main source of income. The local organic market can have many different facets. Farmers can sell their products via:

- Farm shops, farmers markets, box schemes, where organic producers sell their products directly to consumers.
- Health food shops, which are more specialized shops for organic and other healthy products
- Supermarkets, where organic products are part of a much wider range
- Selling to organic restaurants, often to top chefs who prefer to use organic ingredients

In the larger markets, such as Japan Europe and the USA, it is possible to distinguish different groups of buyers. The group known as 'light users' mostly buys organic produce in supermarkets[27]. They buy organic produce now and then, and mainly because it they want food without the possibility of pesticide residues and because animals have a better life. (Two out of three consumers think organic products are healthier because they do not contain pesticides residues)[28]. Consumers who are more dedicated to organic food, often buy directly from producers or in specialized shops.

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[26] Willer, H. 2013. *The World of Organic Agriculture; Statistics and Emerging Trends 2013*. FiBL/IFOAM, Frick (Switzerland)/ Bonn

[27] L. Bakker, 2011, Biomonitor

[28] *Ibid.*

The production of many certified organic (often combined with a Fair Trade label) exports, such as coffee or tea, cocoa or vanilla is often organized through cooperatives of smallholders. They often work together with the importer to set up an internal control system, both for inspection and certification and to train and support the farmers in organic production methods. Such collaborations are generally long term ventures. In several cases, processing is done in the exporting country through a joint venture between the cooperative and the importer. In this way, the importer invests in the processing and the cooperative has a guarantee of a long term market perspective. The cooperative receives a premium price for its produce, some of which goes to the individual farmer with the rest being used finance projects of common interest, such as a school. The price level for organic produce is generally more stable than the world 'spot' market prices. The cooperative is responsible for the internal control system and the documentation, which is needed for the external inspection. An external inspector visits the cooperative once or twice a year to check if the internal control system is working well. This process of certification is generally done by an international certification organization, as it needs to be accredited in the importing country(ies). There are just a few of these international certifiers, which often have a branch office in the main exporting countries. Most countries also have one or more local certification bodies. They collaborate with the international certifiers over exports and can certify for the domestic market.

In order to further develop and improve organic production systems, it is important that the farmers get regular training and coaching. When there is a long term relationship in the value chain between farmers, farmers' organizations and importers, and the focus is not just on certification and marketing, but also on continuous improvement, the results in economic terms can be very positive.

The marketing of organic produce on local markets is generally organized in a totally different way than the export market. Especially when there is direct contact with consumers, organic production can exist without any third party certification. Standard setting, internal control and coaching can all be done internally by a group of producers. They might run a weekly organic farmers' market, or deliver a range of products in a box scheme. There are many examples of creative collaborations between organic farmers and consumers. Community Supported Agriculture (CSA) is one example. In the CSA system, consumers can discuss with the farmer what they need and what she/he can produce and make financial arrangements for the coming growing season. This guarantees consumers a supply of organic food from a nearby and reliable source, while the farmer gets a secured income and maybe even a supply of labour when needed. In Ghana people have taken this a step further, with organic school gardens. Here the children learn how to grow and prepare healthy food and get a daily organic meal. The school garden also produces the vegetable seeds needed for the next season[29].

[29] Vos, I. (2011) *Organic School Gardens in Ghana*, Ecology and Farming.

7. Producers and consumers

The *Global Green Action Week* is about getting more people: shoppers, cooks, consumers, citizens – people in all walks of life – to think about where our food comes from and to make a positive choice for organic and ecological food. Sustainable production requires sustainable consumption. There is a need for people in rich countries to change their eating habits so they place less demands on the planet's resources. This would also address the problem of the 1.5 billion people who suffer from obesity as a result of poor diets - as well as a lack of exercise. At the same time we have to address the needs of the 800 million people in the world that go hungry. Section 5 outlines the ways in which organic and ecological farming can help feed resource poor farmers and their families in the global South. In the global North (and some cities in the South), where obesity is on the increase, it is possible that if people became more aware of where food comes they might shift to a healthier diet that is less reliant on meat and fast food. The Shop and Act Green Week is run during week 40 (2013: September 1 – October 6 and 2014: September 29 – October 5).

Why people buy organic and ecological food

Farming and eating sustainable and organic food has lots of advantages for people and the planet (see section 3). People around the world choose organic for different reasons; personal health, care for animals or to protect the environment (see Table 1). Whatever their reasons, they are building a bridge with producers based on understanding what happens with their food and why it matters to them – wherever in the world it is produced and eaten.

Table 1: Why consumers choose organic food

Reasons to eat organic	**Priority for consumers – 1-5***			
	UK	Sweden	Brazil	Uganda
Personal health – less additives and pesticide residues, possibly higher nutrient content	1	3		1
A cleaner environment & more wildlife	2	1		3
Kinder to animals	3	2		5
Better taste	4	4		4
Less chemicals	5	5		2

* 1 = most important and 5 = least important

Demand around the world – linking producers and consumers with better food

Globally, the market for certified organic food in 2011 was worth $63 billion, ninety percent of this in Europe and North America (see section 6) [30]. However, a significant proportion of the certified organic food sold in Europe and North America is actually produced in the rest of the world, in Latin America, Africa and Asia. So in these countries society benefits from a cleaner, better environment while their certified organic farmers can get a better income and do not rely on chemical fertilizers, hazardous pesticides and GM crops.

WE MUST BE THE CHANGE WE WISH TO SEE IN THE WORLD

MAHATMA GANDHI

Outside Europe and North America, in many countries such as Brazil, China and India, the local market for certified organic food has been growing rapidly in recent years. In Brazil this is being supported by the government, which has even made a commitment to make organic food available during the World Cup in 2014 and the Olympics in 2016. This will highlight and support the country's policy towards ecological agriculture and show farmers that organic opportunities are not just restricted to exports (see Box 6).

Box 6: Promoting Organic Production in Brazil

In August 2012, President Dilma Rousseff launched the *National Policy for Agroecology and Organic Production* (PNAPO). This policy establishes a series of actions to promote agroecology and organic production systems. The main aims of the policy are to strengthen organic (mainly family farming) production, increase organic research efforts, make credit and technical assistance more widely available, train professionals in the area, and promote participatory guarantee systems, short supply chains and public procurement of organic products. Some of these policies are already in place, but the idea behind PNAPO is provide more consistent and joined-up support to agroecology and organic production to get different ministries committed to supporting the sector. The Brazilian Government aims to use organic agriculture as a tool for rural development, supported by NGOs and farmers' associations running programmes to promote organic and ecological food production A government seal guaranteeing the origin and quality of organic agricultural products has been introduced and a law controlling organic and ecological production came into force in 2011. The NGO 'Centro Ecológico' is the civil society representative on the National Commission for Agroecology and Organic Production (CNAPO) and will be monitoring the implementation of the programme on behalf of civil society.

Organic agriculture is also receiving funding for research with Embrapa and the National Council for Scientific and Technological Development supporting projects. Some municipalities also provide for separate street markets for organic produce. In Rio de Janeiro, a programme promoting agro-ecology in home gardens involves more than 5000 people.

[30] Willer, H. 2013. *The World of Organic Agriculture; Statistics and Emerging Trends 2013*. FiBL/IFOAM, Frick (Switzerland)/ Bonn

It is important to remember that certified organic production is the tip of the iceberg compared to the market for 'non-certified organic' food. While the size of this sector is difficult to estimate, we know that a large proportion of the world's food is produced by many millions of small farmers who use ecological and 'near-organic' methods, which are acknowledged to help improve food security and protect against climate change (see sections 3 and 10). These farmers are feeding themselves, their families and communities, usually supplying other people in nearby or more distant towns and cities as well. In towns and cities in the global South, the supply and demand for greener, non-certified organic food is increasing alongside the market for certified organic food.

Box 7: Organic markets in Nairobi (Kenya)[31]

A monthly organic market was established in Nairobi a few years ago at the Karen Shopping Centre. Recognizing the strong consumer demand the Nairobi Central Business Development Association joined forces with the *Kula Corner* Restaurant (known for its indigenous, organic, foods), the Kenya Organic Agriculture Network and *Maisha Mapya* to set up a weekly organic market at the Hurlingham Shopping Centre. This regular event is not only a platform for marketing organic food but also one where people share information and exchange contacts. Farmers and their customers are building strong links with each other, developing mutual trust and developing friendships.

In Europe, it has been estimated that sales of organic and other quality agricultural products that meet consumers' demand for greener, better food might be worth as much as 15% of the total food market[32]. Aside from certified organic produce there are animal welfare-friendly livestock products (such as free range eggs), regional, specialty and artisanal products and Slow Food. A growing number of consumers are changing their consumption habits to reflect their concerns. The greatest demand for organic food in Europe is in Alpine and Scandinavian countries, with Switzerland and Denmark, where consumers spend an average of €177 and €162 each per year on organic food[33], leading the way.

Where people source organic and ecological food

A large proportion of the world's population depends on growing some or all of their food to feed themselves and their families, and much of this is ecologically produced (although not certified). Trading in food markets is a key source of income for many, selling a surplus to provide cash for other needs. This trade and exchange is outside of the control of big businesses.

For certified organic food there is a wide range of routes to market, some of which bring producers and consumers into close contact. Farmers' markets and farm shops offer

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[31] PELUM Kenya. Pers. Corr

[32] Estimate based on data in European Network for Rural Development (2011) *Agricultural Product Quality: A success story for EU agriculture*. ENRD, Rural Review 8: 6-13

[33] Willer, H. 2013. *The World of Organic Agriculture; Statistics and Emerging Trends 2013*. FiBL/IFOAM, Frick (Switzerland)/ Bonn

consumers the chance to meet the people who have produced their food (and vice versa) and this helps strengthen the links and understanding between the two. Direct and local supplies are also more environmentally friendly (less 'food miles'). Some farmers supply consumers with weekly deliveries of produce direct from the farm – for example vegetable box schemes.

In Europe, supermarkets account for between 40% and 75% of sales of organic food. In other countries specialist shops and small chains are more important. For producers there is a risk that supermarkets will prices that are too low or conditions that are too harsh, making it hard for the supplier to survive. By contrast, direct supply (farmers' market, farm shop and vegetable boxes) can help the farmer to add value to their produce whilst keeping close to their consumers.

Much food is also eaten in schools, hospitals and workplaces, and the way that this food is produced is becoming an increasingly important consideration for governments and local authorities. 'Green' public procurement initiatives are being developed to meet demands that public money is spent in a way that provides added benefits: a better environment, healthy, local food and stimulating the local food economy. Where these programmes are put into place, school children and those in hospital can enjoy organic, ecological, seasonal and local food.

There are many other ways that organic and ecological food and farming brings people together, and these don't necessarily involve buying and selling in shops or markets. Urban agriculture initiatives around the world, Community Supported Agriculture in Europe and Food Hubs in the USA, all represent community-based initiatives that help people take control of their own food production, bridging the gap between producer and consumer.

Box 8: Organic farming in the Philippines[34]

A recent study in the Philippines compared the food security, health and family income of three cohorts of 280 fully organic, in conversion and conventional farmers. It showed that food security was significantly higher for the organic farmers who ate a more diverse, nutritious and secure diet and grew on average 50% more crops than the conventional farmers. The health of the organic farmers was also substantially better than the other groups of farmers and their farms had more fertile soils, less soil erosion, increased crop tolerance to pests and diseases, while the organic farmers also displayed better management skills.

The organic farmers had, on average, a net farm income that was one and half times more that of conventional farmers. Moreover, organic farmers incomes had increased since 2000 whereas those of conventional farmers were either stagnant or in decline. As a result organic farmers were less indebted, showing the benefits of organic methods, particularly among the poorest groups of farmers.

[34] Bachmann, L., Cruzada, E. & Wright, S. 2009. Food Security and Farmer Empowerment. A study of the impacts of farmer-led sustainable agriculture in the Philippines. 152pp. MASIPAG, Los Banos, Laguna, the Philippines.

8. Standards, certification and labelling

Certification in organic agriculture generally refers to a system through which an independent certification body checks if a producer is fulfilling the standards required to be able to label a product as organic. The need for certification arises when there is no direct contact between producer and consumer. If the consumer knows about the production methods on the farm, then certification is not needed.

All parties involved in the production of an organic product should be included in the certification system. Everyone in the supply chain should be involved: the farmers, their cooperatives, the processors, wholesalers and importers. An example might be coffee grown in Uganda which is roasted in Sweden. The farmers and the initial processors in Uganda should be certified, as well as the Swedish coffee roaster.

The certification system usually involves the organic farmer documenting the farm production system, following the requests of the certification body. An inspector from the certification body visits the farm and checks that the farmer is meeting the standards. If satisfied, the certification body certifies the production and the farmer can label and sell the products as organic. Farmers and processing companies can be certified as individuals or in groups. Group certification is a common practise for smallholder producers in Southern countries.

A Participatory Guarantee System (PGS) is another way of assuring that products are organic. A PGS involves many stakeholders, such as farmers and consumers but also environmental NGOs, consumer groups, advisers, local government agencies and others. In a PGS the members of the group inspect each other and at the same time can exchange their experiences and knowledge within the group. There are different forms of PGS systems, which have evolved to work well under many different production and assurance conditions. PGS systems are successfully used in several countries, mainly in Latin America, but also Africa, Asia and the US. The system is chiefly used for local sales but in some places PGS certified products are also recognized as being equivalent to third party certified products.

Standards and regulations for organic agriculture

There are two international worldwide standards: the Codex Alimentarius Guidelines for organic production (FAO) and IFOAM Organic Standard. These form the basis for legislation in the EU, USA, Japan and other countries. Today a total of 110 countries have legislation for organic production, either established or in draft stages. Some of the most important countries with legislation are the USA, Canada, China, India, South Korea, Japan, the EU and its Member States, Argentina and Brazil.

There are four regional organic standards, in East Africa, the Pacific, Central America and Asia. These regions have formulated regional interpretations of organic production which

facilitate regional trade. There are at least 120 private standards for organic production[35]. They are most common in Europe, but are also spread around the world on all continents.

Many of these private standards have more stringent or additional requirements than national legislation, which sets a 'minimum standard'. For example they might include issues related to social justice or tighter animal welfare standards. In addition these standards cover areas of production not covered by legislation, such as cosmetics, textile production, aquaculture or restaurants.

The key issue that is regulated by the legislation is the use of the word 'organic'. Almost all legislative and private standards are backed up with a logo to ensure easy public recognition.

9. Ecological movements and organizations

The organic agricultural movement emerged from concerns about the loss of quality in crops and the health of the soil, following an increase in diseases and pest attacks after the introduction of chemical fertilizers at the end of the 19th Century. Some decades later, the publication of Silent Spring (in 1962) by Rachel Carson significantly raised public awareness about the dangers of the pesticides that were being widely (and often indiscriminately) used in farming at the time. This created a strong concern about chemical residues in food and in the environment and was the beginning of the consumer movement that demanded food grown without toxic chemicals. It also was the beginning of a wider awareness about how farming was affecting the environment, and gave rise to a number of holistic systemic approaches that are broadly in line with the organic paradigm.

IFOAM, founded in 1972, is the international umbrella movement that has the role of both leading and uniting the organic sector around the world. It has around 870 member organizations in 120 countries. It sets the international standards, policies, definitions and positions around organic agriculture.

There are today many local and national organizations active in the organic sector around the world. There are national organic movements working on a range of organic issues, providing information and advice about production and marketing, doing research and lobbying. Many more organizations have a more specific focus. Many of these organizations are members of IFOAM. Details of members in your country can be found in IFOAM's Member's Directory[36]

10. Policies for organic and ecological farming worldwide

At a global level there is a broad consensus that 'business as usual' in agriculture and food production and consumption is no longer an option. Major studies around the world by

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35 Mattsson, E. 2013, *'Fewer Standards'* in The Organic Standard 142, Grolink.

36 IFOAM Members' Directory 2013. http://www.ifoam.org/organic_world/directory/index.html

scientists, policy makers and civil society organizations agree on the need to support and develop ecological farming methods, including organic (see Box 9). They recognize that these approaches can help meet the needs of the resource poor and the challenges of climate change while helping communities achieve food security and sovereignty. Policies in support of organic and ecological approaches are important, but need to be supported by a real shift towards sustainable consumption that will support sustainable production.

Box 9: International agencies recognize the need to make farming and food ecological/organic

IAASTD *"The way the world grows its food will have to change radically to better serve the poor and hungry if the world is to cope with a growing population and climate change while avoiding social breakdown and environmental collapse*."[37]

FAO: *"In subsistence agricultural systems, conversion to organic farming can increase yields by up to 180%"*[38]

UNEP: *"Farmers in Kenya, Tanzania and Uganda have increased their productivity more than 100 per cent – and ensured food security – by shifting their production to organic or near-organic methods. About 80 per cent of organic producers (a significant proportion of them women) are in developing countries, and about 97 per cent of sales revenue for organic products is generated in industrialized countries. This is offering an opportunity to small farmers to become part of the rapidly growing global trade of organic products."*[39]

UNHCR ESCAP: "*The Governments of the region [Asia-Pacific] stand at a crossroads: business as usual, continuing with short-term profits for the few through chemically cultivated, irrigation- and energy-intensive monoculture, with the burden of long-term costs shouldered by the many; or, a new, long-term commitment to ecologically balanced, socially just and economically equitable agriculture to ensure food security for all."*[40]

A global perspective on food and farming

Forty per cent of the world's population (2.5 billion people) depend on agriculture for their livelihoods (a number that has increased by 1 billion over the past 50 years)[41]. Over 70% of

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[37] IAASTD (2009) *Agriculture at a Crossroads: Global Report. International Assessment of Agricultural Knowledge, Science and Technology for Development.* See: http://www.agassessment.org

[38] Nadia El-Hage Scialabba, 2007, *'Organic Agriculture and Food Security,'* FAO, p. 8. Available at ftp://ftp.fao.org/paia/organicag/ofs/OFS-2007-5.pdf.

[39] UNEP-UNCTAD CBTF, 2008, *'Organic Agriculture and Food Security in Africa,'* United Nations Environment Programme (UNEP), published by United Nations Conference on Trade and Development (UNCTAD). See: http://unctad.org/en/Docs/ditcted200715_en.pdf

[40] UN Economic and Social Commission for Asia and Pacific (ESCAP), 2009, *'Sustainable Agriculture and Food Security in Asia and the Pacific,'* ESCAP, p. 15, Available at http://www.unhcr.org/refworld/pdfid/49f589db2.pdf

[41] De Schutter (2010) *Report submitted by the Special Rapporteur on the Right to Food*. UN Human Rights Council 16th session. December 2010.

the world's poor live in rural areas and most are involved in farming. Agriculture is the engine of the rural economy and for these farmers, pro-poor agriculture is essential. The widespread uptake of ecological approaches, based on organic farming principles and drawing on traditional, locally adapted knowledge and innovation is a positive step in this direction.

SUSTAINABLE DEVELOPMENT IS A NOTION OF DISCIPLINE. IT MEANS HUMANITY MUST ENSURE THAT MEETING PRESENT NEEDS DOES NOT COMPROMISE THE ABILITY OF FUTURE GENERATIONS TO MEET THEIR NEEDS

GRO HARLEM BRUNDTLAND

Policy support for organic and ecological farming

In many parts of the world governments are taking serious steps towards supporting the development and uptake of organic and ecological methods of farming, more than half the 196 countries in the world have policies for organic agriculture in place, in the process of implementation or in development (see Table 2). In the global South, governments are often aware of the need to enable greener, more ecologically based farming (whether certified organic or not), to help meet the needs of the resource poor and improve food security. In many cases they are also eager to exploit the opportunity to supply the major world markets with certified organic products (see Section 3). The Himalayan Kingdom of Bhutan recently announced its intention for its agriculture to become wholly organic[42].

Table 2: Countries with policies for organic agriculture in place, in the process of implementation and in development – 2011[43]

Region of the world	Number of countries
Africa	15
The Americas & Caribbean	23
Asia & Pacific region	22
Europe (EU and non-EU)	41
TOTAL	101

In most countries in the world there is increasing local demand for organic food, whether certified or not. In the global South non-certified and PGS products are more important than certified organic produce. These approaches have a clear potential to improve the lot of small

[42] Vidal, J. & A. Kelly (2013) *Bhutan set to plough lone furrow as world's first wholly organic country*. Guardian 11.2.13. http://www.guardian.co.uk/global-development/poverty-matters/2013/feb/11/bhutan-first-wholly-organic-country?INTCMP=SRCH

[43] IFOAM (2011) World of organic report 2012. IFOAM, Bonn

and subsistence farmers and governments are now recognizing this and making it a priority. For example, Uganda is in the process of drafting an organic law, which expresses the government's commitment to develop ecological approaches to food and farming (see Box 10, below).

Box 10: Uganda - greening with ecological farming[44]

Uganda is taking important steps in transforming conventional agricultural production into an organic system, recognizing the significant benefits for its economy, society and the environment. Very low levels of chemical inputs are used in Uganda (amongst the lowest in Africa), and this is being turned into a comparative advantage through developing organic agriculture, which generates better incomes for smallholder farmers. In Uganda 85% of the population work in agriculture, contributing 42% of national GDP and 80% of export earnings (2005/06 figures). Uganda already has more certified farmers (almost 200,000) than any other country in the world, except India.

On the policy side, in 2004 the Uganda Organic Standard was adopted, while in 2007 - as part of the East African Community- Uganda adopted the regional standard, the East African Organic Products Standards (EAOPS) developed under a joint UNEP-UNCTAD initiative. In September 2009, the government released its Draft Uganda Organic Agriculture Policy. The draft policy describes the vision, mission, objectives and strategies to support the development of organic agriculture as "one of the avenues for delivering self-sustaining growth as it provides mechanisms for individual farmers to improve productivity, add value and access markets which are keys to the achievement of the Poverty Eradication Action Plan objectives". The draft policy was approved by in March 2012 by the Ministry of Agriculture, Animal Industry and Fisheries and is currently awaiting discussion in cabinet. It is attracting political support and according to the organic sector, it is foreseen that the policy will be passed before the end of 2013.

In the global North, where the market for certified organic products is most developed, governments have cautiously but consistently promoted the regulated growth of the organic market. This has been matched, to a varying extent in different countries, by pro-organic policies, backed by public money (see Box 11 for an example of how Denmark has supported organic developments to meet public policy goals). As a result in some EU countries organic farming accounts for over 10% of the total area of farmland. Although this is really encouraging it shows that there is still a long way to go to make the world green and organic!

[44] UNEP (undated) Organic agriculture in Uganda. See *http://www.unep.org/greeneconomy/SuccessStories/OrganicagricultureinUganda/tabid/29866/language/en-US/Default.aspx*

Box 11: Organic Denmark[45]

Denmark has the longest history of policy support for organic farming, introducing its first measures in 1987. The Danish Council for Organic Agriculture (a partnership between Government, organic producer organizations, conventional farming groups, trade unions, and consumer and environmental groups) have developed Danish Organic Action Plans in 1995 and 1999 that set ambitious targets and introduced policies that have effectively supported the development of the organic sector and encouraged people to buy organic products. The latest plan, the most ambitious yet, was announced by the Danish Minister for Agriculture in June 2012.

Denmark plans to double the area of organically managed land by 2020 by introducing a bundle of measures including supporting catering in public institutions and the distribution of organic fruit to schools. Organic farmers and companies will receive state aid for investment and product development. According to Evald Vestergaard, the chairman of Økologisk Landsforening, an association of organic consumers, farmers and companies, "*What we are now putting into practice with the new action plan means that Denmark has got the best environmental policy in the world. This applies to organic labeling, consumer information and investment in product development. Moreover, we export many organic products, and in the public catering sector Denmark is well in the lead. The plan is a breakthrough and a big promise, so that our organic farmers can practice environmentally friendly agriculture and nature conservation. This approach will also benefit Denmark's communal water resources*".

One of the targets of the plan is to achieve 60% of organic products in catering in public institutions by 2020. It also includes recommendations to further improve the performance of organic agriculture with respect to environmental and animal health and welfare goals, including research and development initiatives, administrative streamlining and policy development. The Danish approach to action planning for the organic sector is very well developed with a clear focus on public goods and policy issues. The Danish government recognizes that organic systems provide a well-defined and controlled means of achieving these goals.

After the Second World War, Europe established the Common Agricultural Policy (CAP) to help the continent achieve food security. It has achieved this goal, but with extensive collateral damage to the environment, rural society and risk to human health. Subsequent CAP reform has gradually addressed these issues and there is now a commitment to a greener CAP with the organic sector recognized as 'green by definition'. The new CAP, which should be in place from 2014, will be finalized during 2013, and it is hoped this it will build on and expand existing organic programmes that benefit the environment and promote rural development.

In a quality driven – public goods for public money – context, improving and developing organic and ecological farming is essential. That is why research and development matters. Farmers are always innovating, and on-farm, participatory research is very important. There is a real opportunity to benefit from good science to develop even better systems, based on

[45] UNEP-UNCTAD (2008) *Best practices for organic policy: What developing country Governments can do to promote the organic agriculture sector.* Capacity Building Task Force on Trade, Environment and Development. See: http://www.unep.ch/etb/publications/UNCTAD_DITC_TED_2007_3.pdf. Oneco (2012) *New eco-action plan for Denmark up to 2020 introduced*. Oneco Organic News Community. See: http://oneco.biofach.de/en/news/?focus=528c6582-5b3a-4e17-beb8-6951c2917f75

cycles respect nature. It is very important that these on-farm and farmer led participatory approaches are well supported by government research funding and by the universities and institutes that carry out research. The amount of money spent on organic research in Europe neither reflects the current extent of organic farming, nor its future potential. For example, in the EU, around 0.2% of agricultural research money is spent on organic research, although organic production accounts for around 5% of the agricultural land area (and in some countries up to 15%).

Buying organic food helps all of us to demonstrate a collective commitment for better food, a healthier environment and a more equitable economy. It is part of a more general move towards sustainable consumption. Changing our eating habits so that they reflect ecological and other values clear can have a big impact on society and on the economy. It will also encourage policymakers to be more responsive to these ideas, encouraging them to support the efforts of producers and the commitment of citizens to protecting the earth's fragile resources and safeguarding the future of the world's most vulnerable people.

THE VULNERABLE NEED SOLUTIONS FROM YOU; AND FUTURE GENERATIONS NEED A VISIONARY LEGACY FROM YOU

CHRISTIANA FIGUERES

Read more about organic and ecological farming around the world

Ecological in Ethiopia – Farming with nature increases profitability and reduces vulnerability. 2008. Swedish Society for Nature Conservation. 28 p.

Organic Farming in Brazil – Participatory certification and local markets for sustainable agricultural development. 2009. Swedish Society for Nature Conservation. 24 p.

Organic Farming in the Philippines – Rice growers and researchers learning from each other in a unique plant breeding project to increase biological diversity and decrease vulnerability. 26 p.

For more than twenty years the Swedish Society for Nature Conservation has been organizing a Green Action Week, which has engaged thousands of volunteers all over Sweden and contributed to increased consumer awareness about these issues as well as policy changes that have contributed to more sustainable consumption patterns. This success has inspired SSNC to promote a Global Green Action Week in which we support environment and consumer organizations around the world to carry out short-term campaigning activities oriented towards consumers, to raise awareness of these issues

The theme for 2013 and 2014 is food and the environment and, as part of this campaign, the advantages of organic food will be highlighted. This report summarizes the multiple benefits of organic farming. We have commissioned it in order to increase knowledge about organic farming among the organizations who will work with the campaign. The report is not targeted at consumers, but at the campaigning organizations themselves, providing them with background information to develop their own campaigning materials.

Swedish Society for Nature Conservation

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The Swedish Society for Nature Conservation is an environmental organisation with power to bring about change. We spread knowledge, map environmental threats, create solutions, and influence politicians and public authorities, at both national and international levels. Moreover, we are behind one of the world's most challenging ecolabellings,

"Bra Miljöval"(Good Environmental Choice). Climate, the oceans, forests, environmental toxins, and agriculture are our main areas of involvement.

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