

The Relationship between Nature Conservation, Biodiversity and Organic Agriculture

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Introduction

Although conservationists have long tacitly accepted of the importance of reflecting nature conservation values within agricultural systems, this has generally taken second place to conservation of 'natural' areas. Furthermore, in the context of nature conservation and environmental protection, the conservation movement has often overlooked the potential of the various organic farming methods to contribute within the area of nature conservation. To raise the profile of organic farming within the international conservation movement, IFOAM submitted a motion to the World Conservation Congress of IUCN in Montreal, Canada in October 1996.

This motion, was the only one of the 125 submitted that focused on agriculture. Although it was challenged by a number of IUCN members, especially from the governmental sector, and attempts were made to widen its scope to include integrated pest and crop management, negotiations during the congress led to a final compromise, and the General Assembly approved the motion.

Since the World Conservation Congress, IFOAM and IUCN have been working towards the implementation of the motion – in particular the need for an international workshop on the linkages between organic agriculture and nature conservation. A workshop in May 1999 in Vignola, Italy was the realisation of this plan, and provided the opportunity for IUCN and IFOAM to draw up the joint *Vignola Declaration and Action Plan* (see pages 4-6), which recognises the role of organic agriculture in conserving biodiversity and suggests a number of policy options for achieving these aims.

Biodiversity under threat

In the minds of most people agricultural practice is closely linked to countryside preservation. Many countries have a mosaic landscape of cultural uses and, particularly in countries with high populations, few large areas of 'wilderness' remain. Much of the biodiversity in these 'cultural landscapes' is influenced, and to some extent maintained, by traditional forms of agriculture. However, over the last century agriculture has moved from being an integral part of the cultural landscape to being a far less benign influence, typically imposing a single agricultural model onto a wide range of ecosystems. Increases in productivity have been gained at the price of many ecosystem values. From creating or maintaining a system which encourages biodiversity, agriculture has, at its most extreme, now become a system that aims to produce one or two species, a monoculture, whilst managing (i.e. trying to eliminate) everything else. Thus it modifies landscapes and destroys biodiversity.

As a result, agriculture and the landscape within which it operates have, in many cases, become alienated – to the detriment of biodiversity. As agricultural production has intensified there has been a decline in those species traditionally associated with agricultural land. For example, a survey by Birdlife International found that farmland habitats account for nearly 60 per cent of bird species of European Conservation Concern, the largest of any habitat (Tucker *et al*, 1994). These changes are important; in many countries agriculture is the largest form of land use, so maintenance of biodiversity within agricultural land is an urgent priority.

In much of Europe, the agricultural landscape that was formed over many centuries has been seriously degraded by the intensification of agriculture in the latter half of the 20th century. In the UK, for example, agricultural changes since 1945 have resulted in the loss of 95 per cent of flower-rich meadows, 30-50 per cent of ancient lowland woods, 50-60 per cent of lowland heathland, 192,000 kilometres of hedgerows and over 50 per cent of lowland fens, valley, and basin mires (Ratcliff, 1984).

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The global market for food has also resulted in significant land changes. For example, cattle ranching has been a major factor in the deforestation of Central America and Amazonia. Much of the more than a quarter of all Central American forests that have been destroyed in the past thirty years were converted to ranches to earn foreign exchange by producing beef for the United States (Ehrlich *et al*, 1981).

Livestock grazing also has a major impact on the world's surviving grassland habitats. In the past, grasslands covered approximately 40 per cent of the earth's surface. Today, estimates of the amount of grassland remaining vary from a low of 16 per cent to a high of 23 per cent. The reduction of the US Midwest oak savanna is typical, with only 0.02 per cent of its the more than 12 million hectares remaining in around 100 scattered remnants (Breining, 1993).

Freshwater ecosystems have also suffered as excess nutrients enter surface and ground waters and inefficient irrigation systems deplete water sources. Cotton, a crop associated with very high rates of external inputs, has been linked to the contamination of drinking supplies by pesticides, declining freshwater biodiversity and, most dramatically, to the 60 per cent reduction of water in the Aral Sea over the last 30 years due to the change in river flows caused by large scale irrigation projects (Myers and Stolton, 1999).

Indeed, repeated surveys find agriculture to be the single greatest threat to biodiversity in many ecosystems. Analysis of key biodiversity areas, such as the IUCN *Centres of Plant Diversity*, Birdlife International's *Endemic Bird Areas* and WWF's Global 200 Ecoregions, for example, all show agricultural encroachment, agricultural pollution and agricultural intensification to be the top threat listed by experts in the areas involved.

Until recently, attempts to address this have focused on reducing land under agriculture and indeed agricultural intensification has been seen as one way of *reducing* impacts. However, the importance of maintaining a proportion of biodiversity within agricultural areas has recently come to be accepted as a high priority, as part of balanced land use. Whilst increasing efficiency – and in many cases more importantly greater equity in land tenure – could help reduce the amount of land under agriculture, agriculture will continue to dominate land-use in many parts of the world and reducing its environmental impact is therefore a top priority.

Organic agriculture and nature conservation

The world cannot stop producing food and, arguably, the world can little afford to lose more of its biological diversity. The challenge, therefore, is to find a system of agriculture that will produce food in a sustainable manner that enhances biodiversity rather than depleting it.

Organic agriculture relies largely on locally available resources and is dependent upon maintaining ecological balances and developing biological processes to their optimum. The protection of soil and the environment is fundamental to organic farmers and not something that is 'tacked on' as an afterthought if profits allow. Organic agriculture encompasses agricultural systems that promote environmentally, socially and economically sound production. These systems take local soil fertility as a key to successful production. By respecting the natural capacity of plants, animals and the landscape, organic agriculture aims to optimise quality in all aspects of agriculture and the environment. It dramatically reduces external inputs by refraining from the use of synthetic chemical fertilisers, pesticides and pharmaceuticals. Instead, it manages nature to determine agricultural yields and disease resistance.

The principal aims of organic agriculture are summarised in the *IFOAM Basic Standards for Organic Agriculture and Food Processing*:

- to produce food of high nutritional quality in sufficient quantity;
- to interact in a constructive and life enhancing way with all natural systems and cycles;
- to encourage and enhance biological cycles within the farming system, involving micro-organisms, soil flora and fauna, plants and animals;
- to maintain and increase long-term fertility of soils;
- to use, as far as possible, renewable resources in locally organised agricultural systems;
- to work, as far as possible, within a closed system with regard to organic matter and nutrient elements;
- to work, as far as possible, with materials and substances which can be reused or recycled, either on the farm or elsewhere;
- to give all livestock life conditions which allow them to perform the basic aspects of their innate behaviour;

- to minimise all forms of pollution that may result from agricultural practice;
- to maintain the genetic diversity of the agricultural system and its surroundings, including the protection of plant and wildlife habitats;
- to allow agricultural producers a life according to the UN human rights, to cover their basic needs and obtain an adequate return and satisfaction from their work, including a safe working environment;
- to consider the wider social and ecological impact of the farming system.

The IFOAM Basic Standards have provided a framework for almost all the national regulations and for the international WHO/FAO *Codex alimentarius* on organic agriculture and are used by organic farmer organisations all over the world as a common platform. The translation of the Standards into 19 languages (including Thai and Kiswahili) is testimony to their significance. Organic agriculture is however a developing production system and as a result the standards are constantly being revised by the IFOAM Standards Committee.

To facilitate international recognition of certification programmes, IFOAM has established the IFOAM *International Organic Accreditation Services Inc.* (the IOAS). IFOAM membership requirements alone do not provide any mechanism for establishing compliance with the Basic Standards or criteria for accreditation. The IOAS aims to ensure that certification programmes meet accreditation criteria in addition to IFOAM Basic Standards, thus ensuring global consistency and compatibility. The IOAS is a voluntary system open to all private or state certification bodies, whether or not they are IFOAM members.

Organic agriculture and biodiversity

Organic agriculture is also committed to the conservation of biodiversity within agricultural systems, both from a philosophical perspective and from the practical viewpoint of maintaining productivity. Biological pest control on organic farms, for example, relies on maintaining healthy populations of pest predators. Using a system of crop rotation, in time (over several years rotations) or in space (through intercropping or growing several crops in the same season in different fields), the build up of harmful pests and diseases can be reduced and biodiversity increased. One of the most important elements in conversion to organic systems has proved to be the time needed to restore a natural ecological balance with respect to pest-predator populations.

Some organic certifying bodies have gone further, by identifying specific conservation aims in addition to the standards that symbol holders have to meet. For example, the UK Soil Association developed conservation standards as long ago as 1989, in collaboration with a range of conservation bodies, and published a separate *Guidelines for Conservation* document to explain these to farmers (Soil Association, 1990).

Over the past decade, long-term research projects have accumulated evidence organic systems are beneficial to biodiversity. A study by the British Trust for Ornithology, funded by the UK Ministry of Agriculture, Fisheries and Food, found higher densities of all bird species studied on organic farms, and populations of skylarks (a species known to have declined because of agricultural changes) were double that of non-organic farms. Research by Oxford University found that the mean number of non-pest butterfly species on organic farms was twice that of similar non-organic farms. The Institute for Organic Agriculture at the University of Bonn found that average plant species also virtually doubled on organic farms, with some endangered species *only* being present in organic systems. A Swiss study also found dramatic increases in soil biota on organic farms (Stolton, 1996).

This has a number of implications. It shows that modern and efficient agricultural practices exist that can help maintain that proportion of biodiversity that has become associated, over a long period of time, with cultural landscapes. It also means that organic agriculture offers a fresh alternative in areas where biodiversity preservation is a priority, for example in those categories of protected areas that permit some level of agricultural use. An organic symbol can also help provide additional income to people living around protected areas – this option is for example being actively developed within the MesoAmerican Biological Corridor and could be an important element in the ecoregional approaches to conservation being advocated by WWF and the bioregional approaches being advocated by the IUCN. Organic agriculture can also be linked to ecotourism initiatives. In many rural areas natural ecosystems and the maintenance of thriving local communities, expressed in artistic heritage, craftsmanship, gastronomic traditions, etc, are encouraged by organic systems.

Policies for sustainability

The need to conserve biological diversity – or biodiversity – (i.e. the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; including diversity within species, between species and of ecosystems) was enshrined in the UN's Convention on Biological Diversity (CBD). The Conference of Parties of the CBD has adopted a detailed workplan on agricultural biodiversity, so the issue is clearly on the international agenda. And the eighth session of the Commission on Sustainable Development (CSD-8) in 2000 will focus attention on Agriculture and Land Resources. The United Nations General Assembly Special Session (UNGASS) in June 1997 called on CSD-8 in 2000 to examine the economic sector of agriculture. In doing so, UNGASS asked governments to *formulate policies that promote sustainable agriculture as well as productivity and profitability*. UNGASS recognised that the *'challenge for agricultural research is to increase yields on all farmlands while protecting and conserving the natural resource base'*. The CSD-8 meeting will provide an important opportunity to implement many of the points raised in the Action Plan drawn up in Vignola.

VIGNOLA DECLARATION AND ACTION PLAN

Organic Agriculture is Essential for Conserving Biodiversity and Nature

An Action Plan to join the organic agriculture and nature conservation movements was announced on 23rd May 1999 in Vignola, Italy. The Plan resulted from a three-day meeting convened by IUCN, IFOAM, and AIAB, attended by 70 participants from 24 countries. The Vignola meeting was part of an ongoing dialogue between IUCN the World Conservation Union, and IFOAM the International Federation of Organic Agriculture Movements.

The Action Plan recognises the link in expertise and experience between nature conservation and organic agriculture, and provides a guide for accelerating the growth of organic agriculture that should be implemented by all levels of the private and public sectors.

VIGNOLA DECLARATION

Organic agriculture puts the concept of multi-functionality into practice, including biodiversity, animal welfare, food safety, market-oriented production, rural development and social and fair trade aspects. Organic farming is fundamental to sustainable rural development and crucial for the future development of agriculture and global food security.

Agriculture that is not based on sound practices and is dependent on heavy inputs of chemicals and other synthetic products has accelerated the degradation of our natural ecosystems. This negative impact can be seen in the decline and disappearance in the diversity of species and cultivars. The impact of such agriculture can also be seen world-wide in landscapes where it has contributed to transforming rich biological and landscape diversity into deserts of monoculture.

We embrace the objectives of the Convention on Biological Diversity (CBD): to conserve biological diversity, to ensure the sustainable use of biological resources, and to share equitably the benefits arising from the use of genetic resources. These objectives apply to agro-ecosystems as well as to other types of ecosystems.

We urge the organic and nature conservation movements to work much more closely and more intensively together.

We ask environmentalists, farmers, politicians, industry and international institutions to support and develop organic agriculture as the most ecologically-sound agricultural system.

We invite consumers to support organic agriculture by consuming certified organic products of high quality, such as food, textiles, aquaculture and wooden products.

We conclude that organic agriculture is essential for conserving biodiversity and nature.

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