

CHAPTER FIVE

LOCATING RESISTANCE: ECOLOGICAL AGRICULTURE

In this chapter I examine working utopias as agents of social change and as spaces where resistance to the power and the effects of the dominant agricultural paradigm is located, spaces where an alternative agricultural paradigm is constructed. As such, these alternative rural networks present a serious challenge to modern industrial societies. First, I describe the logic of the alternative agricultural system, its knowledge system, its practices, and the meanings it attaches to food production. I also examine the effects this alternative agricultural system has for the social as well as the natural environment. Secondly, I describe the strategies that working utopias pursue to instigate social change. Specifically, I examine those strategies that seek to enhance and promote the self-reliance and autonomy of an alternative agricultural system, strategies that advertise the alternative, that make it real and visible.

5.1. Ecological Agriculture

5.1.1. Its Knowledge System

The knowledges on agriculture that have been disqualified and considered inadequate to the task of producing sufficient food to feed both the national and ever growing

global population are those that contrast the reductionist, mechanical and objective scientific discourse. These alternative knowledges focus on the holistic relationships and interactions between the various elements of food production, including humans, their work and their environment.¹ Hill visualised the holistic approaches towards assessing food quality as follows:

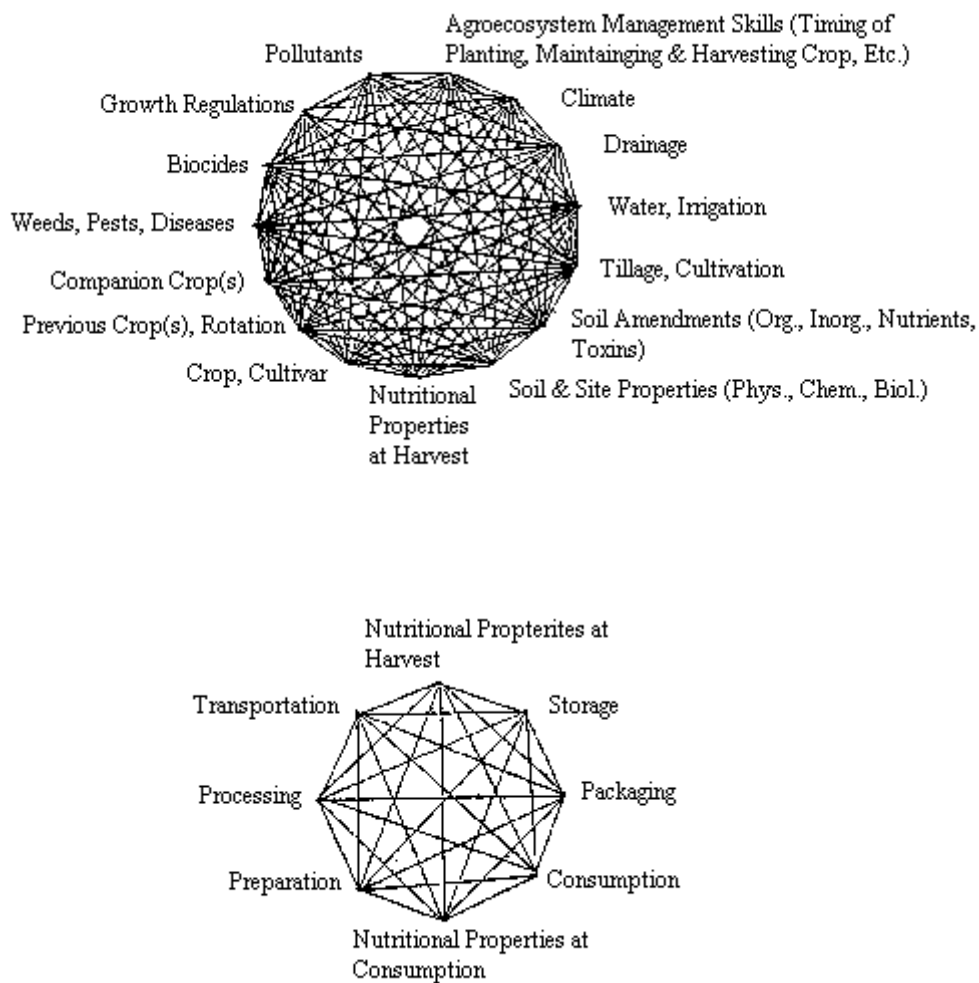


FIG. 9: Holistic interrelationships in ecological agriculture²

¹ Declaration of the International Movement for Ecological Agriculture, 'From Global Crisis Towards Ecological Agriculture', in *The Ecologist*, Vol. 21, No. 2 (March/April 1991), p.107.

² S.B. Hill, *Soil, Food, Health and Holism*, Ecological Agriculture Projects Research Paper No. 2 (St-Anne de Bellevue, QC), quoted in Rod J. MacRae, Stuart B. Hill, John Henning, Guy R. Mehuys, 'Agricultural Science and Sustainable Agriculture: A Review of the Existing Scientific Barriers to Sustainable Food Production and Potential Solutions', in *Biological Agriculture and Horticulture*, Vol. 6 (1989), p.178.

Research from a holistic perspective seeks to provide a deeper understanding “of the land and our relationship to it”³ as well as an understanding of “how the physical world is patterned” in order to get “the planet’s energies to work for us.”⁴ The nature of research involves a continuous observation of the natural system in order to learn from it. “Permaculture is based on the observation of natural systems, the wisdom contained in traditional farming systems, and modern scientific and technological knowledge.” It is not a reductionist science but an approach that looks at “plants and animals in all their functions, rather than treating elements as a single-product system.”⁵ As Lady Eve Balfour pointed out, speaking in 1977 about the pioneers of the organic movement:

They all succeeded in breaking away from the narrow confines of the preconceived ideas that dominated the scientific thinking of their day. They looked at the living world from a new perspective – they also asked new questions. Instead of the contemporary obsession with disease and its causes, they set out to discover the causes of health. This led inevitably to an awareness of wholeness (the two words, after all, have the same origin) and to a gradual understanding that all life is one.⁶

As a result, it is the practitioner who carries out the observation and it is thus the practitioner who produces knowledge that is relevant to his or her particular location. Furthermore, ecological agriculture rejects the conventional mechanistic approach to understanding plant growth, as following quotes illustrate. Sir George Trevelyan, in his Foreword to *The Findhorn Garden*, wrote

³ Graham Bell, *The Permaculture Way: Practical Steps to Create a Self-Sustaining World* (London: Thorsous, 1992), p.30.

⁴ Ibid., p.63.

⁵ Bill Mollison with Reny Mia Slay, *Introduction to Permaculture* (Tyalgum: Tagar, 1991), p.1.

⁶ Quoted in Prince Charles, *The 50th Anniversary of The Soil Association*, The 1996 Lady Eve Balfour Memorial Lecture, London, September 19, 1996. http://193.68.132/speeches/agriculture_19091996.html

[Findhorn] demonstrates quite practically that plant growth is not only a mechanical process. It appears that myriads of living and intelligent beings are at work within the flowers, leaves and roots ... Man is now called upon to recognize and work with these artisans and artists of living nature ... Our ignorance of the reality of the nature spirits working in the plant world leads us to following all sorts of practices which hurt and alienate those who should be our colleagues.

It is very true that only a limited number of people have as yet developed faculties enabling them to see and communicate with the devas and nature spirits ... Indeed we are not being asked to “believe”, so much as to allow room for a new idea to come in and see where this leads us. We grasp how the community with other beings is telepathic in nature. Therefore we are called on to *love* our plants in a new way, to cherish and talk to them, to speak in thought to the beings of the trees and give them thanks for all their work for us.⁷

Dorothy Maclean, one of the original founders of The Findhorn Foundation, provides another example to illustrate that some branches of ecological agriculture believe in inner forces rather than mere mechanical mechanisms. She received messages from plant devas about composting, the planting of suitable crops at the right time and place, as well as the thinning, pruning, and harvesting of plants. These devas explained to her the role of positive thinking in enhancing the growth of plants:

We see life in terms of the inner force while you see only the outer form and cannot see the continual process taking place. We should like you to try to think in our terms, because it will make things easier for both of us – you will be closer to reality and will also be able to understand us better....

When you look at plants, know that what you see has an inner counterpart simply pulsating with the life you see and much more. As your mind becomes more familiar with this concept and you think of the plants as glowing and moving with life, you will in fact add to that life. By thought, you add to their force and at the same time you draw upon the Source of all life, generating more and more power and more and more life.⁸

⁷ Sir George Trevelyan, ‘Foreword’, in The Findhorn Community, *The Findhorn Garden* (London: Turnstone Books, 1976), p.ix. Emphasis in the original.

⁸ Findhorn Community, *The Findhorn Garden*, 1976, *ibid.*, p.81.

Rudolf Steiner upon whose teaching Bio-dynamic agriculture was built, also rejects the limited nature of conventional scientific approaches. He argues that “we shall never understand plant life unless we bear in mind that everything which happens on the Earth is but a reflection of what is taking place in the Cosmos.”⁹ Furthermore, Steiner also rejects the idea of the detached observer:

One cannot speak of Agriculture, not even of the social forms it should assume, unless one first possesses as a foundation a practical acquaintance with the farming job itself. That is to say, unless one really knows what it means to grow mangolds, potatoes and corn! Without this foundation one cannot even speak of the general economic principles which are involved. Such things must be determined out of the thing itself, not by all manner of theoretic considerations.¹⁰

This notion is also expressed by followers of permaculture: “The earth is our greatest teacher. Through working the land, we will learn about ourselves and a deeper connection to the Spirit of the land until we can reach the point of becoming one with the land.”¹¹ The alternative agricultural knowledge system also rejects universalism and instead seeks “a detailed knowledge of a specific ecosystem”. Finally ecological agriculture rejects reductionism, to quote Steiner again: “The men of to-day say and do many things in life and practice as though they were dealing only with narrow, limited objects, not with effects and influences from the whole Universe.”¹²

The people authorised to make knowledge claims and the methods by which knowledge is produced by the ecological truth regime differs fundamentally

⁹ Rudolf Steiner, *Agriculture: A Course of Eight Lectures*, translated by George Adams (London: Bio-Dynamic Agricultural Association, 1974), p.23.

¹⁰ *Ibid.*, p.19.

¹¹ Ben Law, ‘Re-connecting with the Spirit of the Land’, in *Permaculture Magazine*, Vol. 1, No. 2 (Winter 1992/93), p.23.

¹² Steiner, *Agriculture*, 1974, op. cit., note 9, p.20.

from the truth regime of modern industrial agriculture, and so do the practices, as the subsequent section will illustrate.

5.1.2. Its Practices

In contrast to the dominant agricultural paradigm, ecological practices are qualitative and holistic in orientation and they seek to work with natural processes rather than against them. This truth regime thus justifies a different set of agricultural practices.

5.1.2.1. PERMACULTURE

Permaculture as an idea and framework originated in Australia and is associated with the name of Bill Mollison. Permaculture as a principle is applicable and adaptable world-wide. Permaculture “is a system for designing which can be adapted to any culture or place, but it asks you to see yourself as one with the universe, and to measure its wonder for your mutual benefit.”¹³ Permaculture is not exclusively about food production. It is a philosophy and its principles can be applied to both rural and urban environments. Above all, permaculture is “a vision for rebuilding sustainable and ecologically benign human settlements,”¹⁴ or as the Permaculture Magazine put it, it “is a successful approach to designing sustainable environments which have the diversity, stability and resilience of natural ecosystems, whilst also providing for the needs of the people who use them. It is based on the philosophy of co-operating with nature and caring for the earth and its people.”¹⁵ Permaculture is defined as follows:

¹³ Bell, *The Permaculture Way*, 1992, op. cit., note 3, p.27.

¹⁴ Ibid., p.17.

¹⁵ *Permaculture Magazine*, ‘What is Permaculture?’, Vol. 1, No. 1 (Autumn 1992), p.2.

Permaculture (**permanent agriculture**) is the conscious design and maintenance of agriculturally productive ecosystems which have the diversity, stability, and resilience of natural ecosystems. It is the harmonious integration of landscape and people providing their food, energy, shelter, and other material and non-material needs in a sustainable way ...

The philosophy behind permaculture is one of working with, rather than against, nature; of protracted and thoughtful observation rather than protracted and thoughtless action; of looking at systems in all their functions, rather than asking only one yield of them; and of allowing systems to demonstrate their own evolutions.¹⁶

A system becomes Permaculture “when its design is shown *over time to produce no harm to any other system.*”¹⁷ Permaculture also seeks to make optimum use of energy sources. It seeks to make use of energy provided by the agricultural system, rather than having to incorporate external energies from other systems. For example, animals would be managed on range, that is animals would be on the fields to feed themselves, rather than the farmer having to harvest the feed to feed the animals, or otherwise having to purchase the feed externally. A Permaculture system also values perennial or self-perpetuating plants. Furthermore, Permaculture seeks “to benefit life in all its forms.” Its design arranges elements and components in such a way “that each serves the needs, and accepts the products, of other elements.” Permaculture does not seek power over plants and animals but instead seeks to optimise control and management. It aims to design the system in such a way as to achieve optimum use of all the elements. This means building on the principle of co-existing plants. For example, plants with different root system would be planted next to each other to make more complete use of resources than a single-species plantation would allow. Well-designed permaculture can increase yields, because monoculture patterns cannot use all

¹⁶ Bill Mollison, *Permaculture: A Practical Guide for a Sustainable Future* (Washington, DC: Island Press, 1990), pp.ix/x.

available energy and nutrients.¹⁸ Finally, the productivity of a permaculture holding would be measured not in terms of output achieved, but in terms of the ability of the system to meet human needs:

The productivity of agriculture is usually assessed by the *yield per unit area*. ... Net yield is only one value to consider. In commercial agriculture all value is converted to money, diversity of yield being less important. In subsistence agriculture, human needs determine the value of yields and since our needs are diverse, so should the yield be diverse.¹⁹

Permaculture does not reject the use of scientific knowledge or technology. Yet their application should be adequate to the principles of permaculture. “It means that every time you choose to use technology you do so because you really want to, and because it’s the best way to accomplish your task.”²⁰ Finally, Permaculture advocates Earthcare ethics:

- Think about the long-term consequences of your actions. Plan for sustainability.
- Where possible use species native to the area, or those naturalised species known to be beneficial.
- Cultivate the smallest possible land area. Plan for small-scale, energy-efficient *intensive* systems rather than large-scale, energy-consuming *extensive* systems
- Be diverse, polycultural
- Increase the sum of yields: look at the *total* yield of the system ... also regard energy saved as a yield
- Use low-energy environmental... and biological systems to conserve and generate energy
- Bring food-growing back into the cities and towns, where it has always traditionally been in sustainable societies.
- Assist people to become self-reliant, and promote community responsibility
- Reafforest the earth and restore fertility to the soil
- Use everything at its optimum level and recycle all wastes

¹⁷ Bell, *The Permaculture Way*, 1992, op. cit., note 3, p.29. Emphasis added.

¹⁸ Bill Mollison and David Holmgren, *Permaculture 1: A Perennial Agricultural System for Human Settlement* (Melbourne: Corgi Books, 1978), pp.7/9.

¹⁹ *Ibid.*, p.7.

²⁰ Bell, *The Permaculture Way*, 1992, op. cit., note 3, p.20.

- See solutions, not problems
- Work where it counts (plant a tree where it will survive; assist people who want to learn)²¹

5.1.2.2. ORGANIC FARMING

Organic farming aims at a more thorough incorporation of natural processes such as nutrient cycles and pest-predator relationships into agricultural production processes. It seeks to reduce external and non-renewable inputs, be resource-conserving, and to make greater productive use of local knowledges and practices. Essentially, organic farming seeks to increase the self-reliance among farmers and rural people.²² Organic farming builds on local structures, including production and distribution systems, thus reducing food miles, packaging and waste. However, as Norberg-Hodge pointed out, the issue is not whether people in Britain should be able to buy imported oranges and bananas, but whether their staple food needs should travel thousands of miles when they could be produced within a fifty-mile radius. “Localisation would not attempt to eliminate trade, but it would reduce this sort of unnecessary transport while strengthening and diversifying economies at the community as well as the national level.”²³ IFOAM, the International Federation of Organic Agriculture Movements, identified organic farming principles and practices as follows:

- To produce food of high nutritional quality in sufficient quantity
- To interact in a constructive and life-enhancing way with natural systems and cycles
- To consider the wider social and ecological impact of the farming system

²¹ Mollison, *Introduction to Permaculture*, 1991, op. cit., note 5, p.3.

²² Jules Pretty, *Regenerating Agriculture: Policies and Practice for Sustainability and Self-Reliance* (London: Earthscan, 1995), pp.8/9.

²³ Helena Norberg-Hodge, ‘Bringing the Economy Back Home: Towards a Culture of Place’, in *The Ecologist*, Vol.29, No.3 (May/June 1999),p.215.

- To encourage and enhance biological cycles within the farming system involving micro-organisms, soil flora and fauna, plants and animals
- To maintain and increase the long-term fertility of soils
- To use whenever possible renewable resources in locally organised agricultural systems
- To work as much as possible within a closed system with regard to organic matter and nutrient elements
- To give all livestock conditions of life that allow them to perform all aspects of their innate behaviour
- To avoid all forms of pollution that may result from agricultural techniques
- To maintain the genetic diversity of the agricultural system and its surroundings, including the protection of plant and wildlife habitats
- To allow agricultural producers an adequate return and satisfaction from their work, including a safe working environment²⁴

Organic farming seeks to create integrated, humane, farming systems that maximise the use of locally or farm-derived renewable resources. Lady Eve Balfour, founder of the Soil Association, said that “organic farming is an attitude of mind, it is not a technique”.²⁵ Or as Rodale pointed out, agriculture is “a way of life”, and a “link between people and the earth.”²⁶ The term organic “does not refer to the type of inputs used but to the concept of the farm as an organism, in which all the component parts – the soil minerals, organic matter, micro-organisms, insects, plants, animals and humans – interact to create a coherent whole.”²⁷ The following example of an organic farm shows how the relationship between cattle and farming based on organic principles contrasts sharply to that of conventional practices as outlined in the previous chapter:

Underlying it [the Kite’s Nest Farm’s system of cattle husbandry] is the absolute principle that the animals must never be allowed to

²⁴ IFOAM, International Federation of Organic Agriculture Movements, *Basic Standards of Organic Agriculture*, www.ifoam.org/standard/basic.htm#6.

²⁵ Quoted in Anne Vine and David Bateman, *Organic Farming Systems in England and Wales: Practices, Performance and Implications* (Aberystwyth: Department of Agricultural Economics, University College of Wales, 1984).

²⁶ Robert Rodale, ‘Regenerative Technology’, in *Resurgence*, Vol. 14, Issue 98 (May/June 1983), p.32.

²⁷ Nick Lampkin, *Organic Farming* (Ipswich: Farming Press, 1990), p.5.

suffer. The aim is to interfere as little as possible in the way they spend their lives. As a result the sixty-strong herd of single-suckle cows and their calves live in family groups, some of which represent several generations.

No calf is ever taken forcibly from its mother. Instead the cow weans her calf naturally when her milk supply dries up, about a month before the next calf is due. When the new calf is born the cow transfers most of her affection to it. Even so the older calf remains with her, getting to know its younger sibling and remaining part of the family groups. The entire herd is free to range over all the grassland ... Since the unfertilised pastures are full of flowers and herbs, the cattle have a great deal of choice over what they eat. They are able to select the plants which they know instinctively will provide the balance of nutrients they need.²⁸

In 1946, the Soil Association was founded by Lady Eve Balfour, the author of the book *The Living Soil*, published in 1943. Lady Eve believed that soil was a living ecosystem and that its mistreatment with pesticides and artificial fertilisers would ultimately have an adverse affect on human and other living beings.²⁹ The Soil Association was founded “to research, develop and promote sustainable relationships between the soil, plants, animals, people and the biosphere, in order to produce healthy food and other products while protecting and enhancing the environment.”³⁰ In 1973, the Soil Association aimed to consolidate the consumer interest in organic products. It launched its Symbol scheme and set up and monitored standards for the organic production in Britain.

²⁸ Graham Harvey, *The Killing of the Countryside* (London: Vintage, 1998), pp.168/169.

²⁹ *The Guardian*, ‘Lady Who Saw that the Answer Lay in the Soil’, 8 January 1991, p.4.

³⁰ Soil Association Certification Ltd. *Standards for Organic Food and Farming* (Bristol: The Soil Association, 1998), para. 9.101, p.95.

5.1.2.3. OTHER ALTERNATIVE AGRICULTURAL APPROACHES

Bio-Dynamic Agriculture

What later became known as bio-dynamic agriculture is an approach to farming based on eight lectures given by Rudolf Steiner in the 1920s. In bio-dynamic agriculture, as in the previous two approaches, the farm is considered “as a kind of individual entity in itself – a self-contained individuality.”³¹ Where bio-dynamic agriculture differs from these approaches is in its emphasis on cosmic and spiritual forces.

Everything connected with the inner forces of reproduction and growth – everything that contributes to the sequence of generation after generation in the plants – works through those forces which come down from the Cosmos to the Earth: from Moon, Venus and mercury, via the limestone nature ... On the other hand, when plants become foodstuffs to a large extent – when they evolve in such a way that the substances in them become foodstuffs for animal and man, then Mars, Jupiter and Saturn, working via the silicious nature, are concerned in the process.³²

Pest control in bio-dynamic farming is based on homeostasis and inoffensive substances. Complex life processes are stimulated and regulated by bio-dynamic preparations for soils, plants and manures. Food production processes are integrated into the environment, aiming to build a healthy landscape while attention is paid to the natural rhythm. Bio-dynamic agriculture aims for balanced conditions for plants and animals in healthy systems. In fact, “any manures or the like which you bring into the farm from outside should be regarded rather as a remedy for a sick farm ... A thoroughly healthy farm should be able to produce within itself all that it needs.”³³

Bio-dynamic agriculture does not produce pollution, it achieves maximum conservation of soils, water quality and wildlife, and it promotes regionalised mixed

³¹ Steiner, *Agriculture*, 1974, op. cit., note 9, p.29.

³² *Ibid.*, p.25.

production, more transparent producer-consumer relationships, and nutritional quality of food.³⁴ Furthermore, there is more to food, as Steiner argued, than calorie intake or substance. Food also needs to provide humans “with the proper living quality of forces”.³⁵ Nutrition as it is today, Steiner argued “does not supply the strength necessary for manifesting the spirit in physical life. A bridge can no longer be built from thinking to will and action. Food plants no longer contain the forces people need for this.”³⁶ Bio-dynamic agriculture and the food it produces is not just about feeding a society. It is also about stimulating spiritual experiences, about nurturing the will for action, and about encouraging spiritual impulses to be carried so that “the earth may be healed”.³⁷

Natural Farming

Natural farming is a farming practice developed by the Japanese farmer Masanobu Fukuoka. Natural farming complies “with the natural order”.³⁸ Fukuoka believes that the forms of intervention and techniques practised by modern conventional farming have only become necessary because “the natural balance has been so badly upset beforehand by those same techniques that the land has become dependent on them.”³⁹ Fukuoka experimented with crop growing in order to develop a method close to nature, a vision, he claims, conventional farming lacks. His farming practices are based on four basic principles:

³³ Ibid., p.29.

³⁴ www.attra.org/attra-pub/biodynamicap1.html.

³⁵ Steiner, *Agriculture*, 1974, op. cit., note 9, p.66.

³⁶ quoted in Ehrenfried Pfeiffer, ‘Preface’, in Steiner, *Agriculture*, 1974, op. cit., note 9, p.5.

³⁷ quoted in Pfeiffer, *ibid.*, p.7.

³⁸ Masanobu Fukuoka, *The One-Straw Revolution: An Introduction to Natural Farming* (Emmaus: Rodale Press, 1978), p.40.

³⁹ Ibid., p.15.

- Non-cultivation. The earth cultivates itself naturally.
- No chemical fertiliser or prepared compost.
- No weeding by tillage or herbicides
- No dependence on chemicals.⁴⁰

Fukuoka is also critical of Western nutritional science because it fails to adjust the diet to the natural cycle. “The diet that results serves to isolate human beings from nature.”⁴¹ Instead, Fukuoka advocates a diet defined “according to the local environment, and the various needs and the bodily constitution of each person.”⁴² In order to change farming practices, consumers have to change, too. Consumers are equally to blame for the current farming crisis, he argues, because by demanding and being willing to pay high prices for food produced out of season they have contributed to artificial growing methods, the use of chemicals, and food-miles.

The Findhorn Foundation

Dorothy Maclean, one of the original founders of The Findhorn Foundation, received messages from plant devas about how to practice the planting, growing and harvesting of plants. At Findhorn, therefore, gardening rules and practices are informed by communication with plants:

We don't have any gardening rules as such, for rules would limit something that is growing and evolving each day ... Always warning plants before doing anything to them – pulling weeds, transplanting, pruning, cutting the grass – might be considered a rule we follow, but essentially that just means loving the plants and therefore letting them be aware of and share in our actions. Once we have warned a plant about an impending change, we give it time to accept that change and be ready for it. It is far more important to open the lines of communication than to establish rules. Communication, however, is not necessarily talking to plants with

⁴⁰ Ibid., p.34.

⁴¹ Ibid., p.140.

⁴² Ibid., p.143.

words but rather coming into that unity with them that makes us aware of their needs and how best to help them grow.⁴³

The diverse range of alternative agricultural practices outlined in this section emphasise connection and relationships, flow and systems. They emphasise particularity, locality, people and Nature. Its effect on the socio-economic and natural environment will be outlined next.

5.1.3. Its Effects

It is difficult to state the effects that ecological agriculture has on the practitioner, as well as the social and natural environment, without ultimately applying the rules of the dominant scientific regime of truth in order to achieve the task of assessment. A number of such studies have indeed been carried out in this area and it has now been accepted that organic farming reduces the risks of pesticide and nutrient pollution, that it protects the landscape and the soil,⁴⁴ that crop rotation as practised by organic farmers maintains biodiversity,⁴⁵ and that a higher densities of birds can be found on organic farms than on conventional farms.⁴⁶ According to the House of Lords Select Committee on European Communities' report on *Organic Farming and the European Union*,

Fungal diseases in conventional crops occur more frequently because they receive higher inputs of nitrogenous fertiliser, resulting in thinner cell walls, and sap which is more sugary and therefore

⁴³ Findhorn Community, *The Findhorn Garden*, 1976, op. cit., note 7, pp.162/163.

⁴⁴ MAFF, *Organic Farming Scheme*, para.3.9/5, www.maff.gov.uk/environ/envsch/ofs.htm.

⁴⁵ Roger Urwin, Barbara Bell, et al. *The Effect of Organic Farming Systems on Aspects of the Environment*, prepared for Agricultural Resources Policy Division of MAFF, August 1995, p.2.

⁴⁶ British Trust for Ornithology & Institute of Arable Crops Research – Rothamsted, *The Effect of Organic Farming Regimes on Breeding and Winter Bird Populations*, Parts I-IV, BTO Research Report No. 154 (Norfolk: November 1995), para.2.4., p.5.

more nutritious for both pests and fungi ... The evidence from practical experience was that organic farmers do not report major problems with fungal diseases or pests.⁴⁷

The same Select Committee also cites the result of research projects carried out by the Veterinary Epidemiology and Economic Research Unit of the University of Reading which concluded that animal health control methods used in organic farming (a) guarantee similar, and occasionally better, animal health situations on organic farms in comparison with conventionally managed farms; and (b) reduce, without jeopardising animal welfare, the general dependency of livestock production on the use of antibiotics.⁴⁸ Furthermore, since nitrogen comes from the air rather than from petroleum and natural gas supplies, the exploitation of natural resources is halted.⁴⁹

Ecological farming also seeks to regenerate the local community by producing and consuming locally. Permaculture advocates community co-operation. "This inter-independence within a locality and independence in relationship to outside areas will establish itself in time, within a permaculture framework."⁵⁰ Although, again, there is no research to back up this claim, a recent study funded by the Economic and Social Research Council on LETS schemes found "that LETS are effective vehicles for tackling social exclusion and forging social inclusion".⁵¹ Furthermore, it has been suggested that under conventional distribution patterns only about 5 pence in every pound spent on food reaches the farmer, with the remainder

⁴⁷ House of Lords, Select Committee on European Communities, Session 1998-99, 16th Report, *Organic Farming and the European Union*, 20 July 1999 (London: HMSO), para.60.

⁴⁸ *Ibid.*, para.62.

⁴⁹ Jerome Belanger, 'Correcting Some Misconceptions about Organic Farming', in Ray Wolf (ed.) *Organic Farming: Yesterday's and Tomorrow's Agriculture* (Emmaus PA: Rodale Press, 1977), p.15.

⁵⁰ Mollison and Holmgren, *Permaculture 1*, 1978, op. cit., note 18, p.12.

⁵¹ Colin C. Williams, 'LETS Get it Right', in *Permaculture Magazine*, No. 27 (2001), p.17.

going on transport, packaging, colouring and advertising.⁵² Both the farmer and the consumer can thus profit from a more direct link between the two, as achieved in farmers' markets and box schemes.

Furthermore, ecological agriculture has fundamental effects upon the conduct of individuals. "Permaculture is a way of arranging your life to be happy and abundant. You can meet your own needs without making anyone else's life less pleasant. Human habitats can be made highly productive with much less work than is taken to make them destructive under present systems."⁵³ For those applying permaculture principles to food production, the nature of work will change.

[M]aintenance work in permaculture is low and by the time of maturity work on some elements of the system is nil. This is partly due to the use of wild and little-selected plants. Generally, highly cultivated plants need high nutrient levels, protection from pests, pruning and other work by man in order to ensure high yields and even survival of the variety.

If it is possible to develop a system which, when mature, provides diverse products for a community with minimal work input, it leaves the community free to engage in more complex and useful activities than the continual effort of food production.⁵⁴

The relationship between people and people, and between people and Nature, will change, too. Permaculture emphasises that "[l]ife *is* cooperative rather than competitive, and life forms of very different qualities may interact beneficially with one another and with their physical environment."⁵⁵ Permaculture is "about creating wealth without environmental damage".⁵⁶ Essentially, working according to permaculture principles means that "you will no longer be able to differentiate

⁵² Helena Norberg-Hodge, 'Reclaiming Our Food: Reclaiming Our Future', in *The Ecologist*, Vol.29, No.3 (May/June 1999), p.212.

⁵³ The Permaculture Association, <http://www.permaculture.org.uk/whatis/principlestext.htm>

⁵⁴ Mollison, and Holmgren, *Permaculture 1*, 1978, op. cit., note 18, p.10.

⁵⁵ Mollison, *Permaculture: A Practical Guide*, 1990, op. cit., note 16, p.2.

⁵⁶ Bell, *The Permaculture Way*, 1992, op. cit., note 3, p.17.

between work and leisure. Your goal will be to make all life a relaxed, constructive way of behaving.”⁵⁷ Permaculture ethics, its principles and practices “can be used by anyone, anywhere”.⁵⁸ There is thus no exclusion or social stratification. “*Care for the earth* means care of all living and nonliving things ... It implies harmless and rehabilitative activities, active conservation, ethical and frugal use of resources, and ‘right livelihood’ (working for useful and beneficial systems).”⁵⁹ Social relations will no longer value competitive and selfish behaviour but aim towards co-operation and harmony. Permaculture “empowers the individual to be resourceful, self-reliant and a conscious part of the solution to the many problems facing us – both locally and globally.”⁶⁰

And finally, ecological agriculture has implications for the social structure. It is essentially anti-statist and seeks to promote local, de-centralised structures. The Wholesome Food Association (WFA) operates without a bureaucratic system. Here, as a representative explains, the consumer can discuss farming methods directly with the farmer and vice versa, rather than relying on Government officials and experts to function as intermediaries.

We invest the power to create, manage, and choose at the local group level as long as natural growing and production methods are strictly adhered to. Therefore bottom-up and not top-down growth and control is fostered. Large top-down structures will not cope with exceptions. Rules tend to be centred on what brings in the most profit and-or what makes it easier for staff to manage. Many of our modern work patterns are based on the software that was purchased and thus are limited by the experience of the programmer. Local control by a group allows problems to be solved from where they occur and exceptions to be made based on research and common

⁵⁷ Ibid., p.20.

⁵⁸ *Permaculture Magazine*, ‘What is Permaculture?’, Vol. 1, No. 1 (Autumn 1992), p.2.

⁵⁹ Mollison, *Introduction to Permaculture*, 1991, op. cit., note 5, p.3.

⁶⁰ Simon Pratt, *The Permaculture Plot: The Guide to Permaculture in Britain*, fourth edition (Clanfield: Permanent Publication, 1996), p.4.

sense rather than “by the book.” Blanket rules, regulations that govern all decisions regardless of individual, geographic, and cultural differences are part and parcel of the “big is better and more efficient” syndrome.

To summarise, the goal of ecological agriculture is to work with Nature, and to reduce the input of natural non-renewable resources. It seeks to avoid pollution and rejects the use of artificial inputs. It respects biodiversity and the natural landscape. The dominant scientific regime of truth requires proof of these claims and sets out certain criteria for who can establish this truth and by which methods. Proponents of ecologism, however, would argue, that there is no need to carry out extensive research projects to prove that ecologism is more benign to the environment and beneficial to human societies. They would argue that each individual knows intuitively that this is the case. Declan Kennedy, for example, wrote that “The eco-village is a manifestation of a great intuitive energy that comes from the deep understanding of nature and knows that both we and nature are in real danger”.⁶¹ Or as John Talbott put it, “What is it about sustainable communities and this strange modern vision of the village that seems so appealing? I think it is that somewhere in each of us is the knowledge that a better way of living on our earth exists ... each of [us] has that intuitive knowledge that it is possible.”⁶² Ecological agriculture is thus about something else that cannot be caught by scientific studies or grasped by the scientific discourse. As Marian Van Eyk McCain wrote:

I shall never forget the taste of my first home-grown carrot. I had planted the seeds, watered them, weeded them and watched the feathery green fronds grow, and finally the carrots underneath were

⁶¹ Declan Kennedy, ‘What is an Eco-Village’, in *Living Lightly*, Issue 8 (Summer 1999), p.16.

⁶² John L. Talbott, ‘Introduction’, in The Findhorn Foundation, *Eco-Villages & Sustainable Communities: Models for 21st Century Living* (Forres: Findhorn Press, 1995), p.8.

big enough to harvest. Magic! I now grow many other things besides carrots. I have never tired of the magic.⁶³

Ecological agriculture is about the magic of witnessing seeds transform into plants, about spirituality, about reconnecting with the Earth. Its attributes cannot be caught by positivist inquiries carried out by a detached observer because, as an ecological food producer explains, “spirituality is arid if disconnected from getting one’s hands dirty.” Ecological agriculture enriches the practitioner both spiritually and emotionally, it promotes harmony and co-operation, and it maintains a sustainable natural and social environment.

The ecological paradigm also empowers people since it enables them to meet their own needs. In their decision-making, ecological food producers are guided by their environment, their unique senses and experiences, and not by external authorities that set guidelines and laws. As Mollison said, “to let people arrange their own food, energy, and shelter is to lose economic and political control over them.”⁶⁴ Individuals who provide for their own food, energy and shelter regain control over their lives. They are not guided by the necessities or the criteria of a capitalist economic system or the requirements of an efficient and productive industrialism, nor is their behaviour determined by man-made policies which aim to increase their economic utility. In effect, the practitioners of an ecological agriculture resist the modern agricultural paradigm not by fighting or seeking to change the policies of a particular set of institutions or organisations but by resisting the effects the dominant agricultural truth regime has on the food they eat, on the producer of food, as well as on the social and natural environment in which food is produced and consumed. In

⁶³ Marian Van Eyk McCain, ‘Something Worth Digging For’, in *Resurgence*, No.201 (July/August

other words, there is a political dimension to ecological agriculture, as I seek to illustrate in the next section.

5.2. Its Strategies for Change

In the theoretical part I argued that real change can only be achieved by those activists who seek to delink from the existing societal model and to enhance the autonomy and self-reliance of the alternative, democratic and participatory societal structure and its correlating knowledge system. To be effective, social movement strategies should make the alternative reality visible and real, and they should be geared towards re-appropriating the rural space. In this section I describe three particular strategies pursued by ecological agriculture. These are life-style politics, eco-communities, and projects aimed at developing and strengthening local food economies.

5.2.1. Life-style Changes

The problem, as Permaculturists recognise, is *not* that human societies do not know the solutions to dealing with the environmental problem. As Mollison reminds us, “We know how to solve every food, clean energy, and sensible shelter problem in every climate; we have already invested and tested every necessary technique and technical device, and have access to all the biological material that we could ever use.”⁶⁵ The real problem, according to Mollison, is that these solutions are not

2000), pp.66/67.

⁶⁴ Mollison, *Permaculture: A Practical Guide*, 1990, op. cit., note 16, p.506.

⁶⁵ *Ibid.*, p.506.

implemented because there are people who have vested interests in the maintenance of the current state of affairs. “The tragic reality is that very few sustainable systems are designed or applied by those who hold power, and the reason for this is obvious and simple: to let people arrange their own food, energy, and shelter is to lose economic and political control over them.”⁶⁶ Permaculture is thus a political strategy, because it emancipates individuals and provides them with the tools to take control over their own food, energy and shelter:

We should cease to look to power structures, hierarchical systems, or government to help us, and devise ways to help ourselves. Thus, the very first strategies we need are those that put our own house in order, and at the same time do not give credibility to distant power-centred or unethical systems.⁶⁷

This strategy is essentially Gandhian in nature, emphasising non-violent resistance and non co-operation. Gandhi argued that if people refuse to co-operate with an unjust or unethical system, its foundation will crumble. Permaculture teaches that social change and the protection of the environment depend upon the individual, upon the willingness of individuals to take personal responsibility for his or her actions and to design their lives so as not to harm Nature or other human beings. Permaculture itself is a strategy for bringing about social change. Permaculture is an alternative social framework of knowledge with a unique set of hard core principles that sets it apart from modern industrial societies. By opting for Permaculture principles, individuals grant this alternative societal state legitimacy and practise non co-operation with the modern industrial paradigm. Graham Bell, in the introduction to his book on Permaculture, writes that

⁶⁶ Ibid., p.506.

⁶⁷ Ibid., p.506.

This book is about taking control of your life ... By making conscious decisions in designing our lives we can manage our resources well, reducing wastage This book is an invitation to accept your own role as a leader in the greening of the planet ... It does ask you to limit your personal consumption. It does encourage you to accept and demand responsibility for your own life This is the first and essential step to world wide rejuvenation of natural justice ... accepting the responsibility for making your life harmonious with the need of the planet.⁶⁸

Permaculture argues that an engagement in conventional political activism, or an organised green movement are no prerequisites to achieving social change. Instead, as Bell argued, individuals need to make life-style changes to become part of the solution.

We don't need a green movement. We don't need movement. We don't need organisations. What we need is *doing* and *being* as individuals, in the place where we come from, in the growth and spirit of learning of the culture from which we come. In the regeneration of the human soul, we do not need complicated systems. We need to have gardens. We need to plant trees. We need to rub each other's back, to have quiet moments ... What we need is spontaneous regeneration in as many places as possible which can sow the seed for spontaneous regeneration everywhere. One of the very difficult things about this is that it means tolerating difference...⁶⁹

Permaculture training is thus essentially political. It teaches us to do things ourselves, to be self-reliant and not to depend on the external authority of experts. The strategy for social change advocated and practised by permaculturists is thus personal, it identifies the individual as the key actor for change. Permaculture seeks to bring about social change from below.

⁶⁸ Bell, *The Permaculture Way*, 1992, op. cit., note 3, pp.17/20/26.

⁶⁹ Graham Bell, 'The Spirit of Permaculture', in *Permaculture Magazine*, Vol. 1, No. 1 (Autumn 1992), p.4.

5.2.2. Eco-Communities

As Talbott argued, “What we need however, is not more bad news – but something that shows us a positive way forward. We need a vision of how humanity can work and live together in harmony with each other and the planet; a vision that will bring a sense of hope and inspiration to our path into the next century.”⁷⁰ Here, the creation of Constructive Programmes is the second key strategy. Gandhi argued for the construction of an alternative to replace the unjust or unethical existing order. This strategy is vital in that it promotes self-reliance and self-empowerment. Examples of such Constructive Programmes are intentional communities. An intentional community is a “relatively small group of people who have created a whole way of life for the attainment of a certain set of goals. [They] emerge as a result of a number of people consciously and purposefully coalescing as a group in order to realize a set of aims ... they attempt to create an entire way of life, hence, unlike organizations or social movements, they are intentional *communities*.”⁷¹ A number of such alternative projects have been introduced in chapter one, two of which are intentional, one of which was an unintentional community. The Hockerton Housing Project, the community at Brithdir Mawr, and The Findhorn Foundation are only three such examples. These projects experiment with non co-operation while actively constructing an alternative social structure in which humans can live in harmony with Nature.

Each of the three communities considers itself to play an active part in bringing about social change. Members of Brithdir Mawr “act as a focus and an

⁷⁰ Talbott, ‘Introduction’, 1995, op. cit., note 62, p.8.

inspiration”. As one of the members explained, “I would not expect that everyone would want to live as we do here, it may seem rather extreme to many, but I see it as an educational tool which people can refer to in the ‘greening’ of their own lives.” The community also plays “quite a big role at the moment” because its members “push at the planning system’s assumptions about people living in nature.” The project is a “demonstration of the possibility of living simpler lives.” “Most important perhaps” the community is considered by its members “as inspiring people to do things themselves – empowerment”.

Members of the Hockerton Housing Project consider their role in showing the way towards a society based on ecological principles to be in providing an “exemplar”, to show people that it “can be done” and “is being done by ordinary people”. The project shows “that everyone can reduce their negative environmental impact/ecological footprint without significant loss of comfort/convenience”. Above all, “HHP is action and is proving that sustainable lifestyles are ok.” The Findhorn Community, too, considers itself to play a part in the transformation towards a new more harmonious societal system by giving of energy waves, as mentioned in chapter three. Carol Riddell wrote that

Human energy waves spread themselves out from their sources, just as light spreads from a candle flame. A group of people who are living in the attempt to discover and express inner truth will give off a different energy than that of a group of people who are striving to fulfil themselves by acquiring possessions...

All this is rather important in understanding the working of the major transformation of which our community is a part ... The real significance of the Findhorn Community is in the energies it generates ... Fulfilled people have an influence on unfulfilled people...

⁷¹ Barry Shenker, *Intentional Communities - Ideology and Alienation in Communal Societies* (London: Routledge & Kegan Paul, 1986), p.10. Emphasis in the original.

We work in conjunction with other centres and individuals ... In this way we are part of a network of energy transformation on the plant which is spreading wider and wider ... We believe that the development of a new humanity will not come about by the slow multiplication of people seeking a new lifestyle. There is a threshold level, above which new consciousness will simply 'be there' for everyone.⁷²

Finally, there are also educational initiatives. As mentioned, *The Findhorn Foundation* is a major centre for adult education with more than 4,000 residential visitors annually. Both HHP and Brithdir Mawr welcome visitors to their projects. Another example of an educational group that seeks "to show people sustainable living and working in practice" is Green & Away. Green & Away was established in 1991 as an outdoor holiday for members of the UK Green Party. Since 1993 it organises outdoor conferences for voluntary organisations, charities and campaigning groups.⁷³

These eco-projects do not seek to engage with the institutions and elites of modern industrial societies. They materialise their ideas of an alternative sustainable society in space and make their social structure visible by inviting people, by inspiring people, to visit, to learn, and to make changes to their life-styles. These eco-projects do not seek to instigate change by voicing and expressing their grievances and demands but by giving off energy, by their thought and feelings, and by their ecological state of being. Even the members of Brithdir Mawr did not set out to pose a challenge to the planning authorities; they merely practised their alternative low impact life-styles and materialised it by re-appropriating farm land and by managing it according to an ecological rationality. It was the planning authorities that set out to

⁷² Carol Riddell, *The Findhorn Community: Creating a Human Identity for the 21st Century* (Forres: Findhorn Press, 1990), pp.48-50.

⁷³ See www.greenandaway.freeserve.co.uk.

fight and obstruct Brithdir Mawr because they do not comply to what is the norm. And by being forced to engage with the planning authorities, Brithdir Mawr had to channel vital energies away from further developing and strengthening their alternative societal state and towards fighting representatives of the modern industrial societal model.

5.2.3. Developing Local Food Economies

The Wholesome Food Association (WFA) is a local symbol certification scheme and was launched in September 1999 by “amateur gardeners who wanted to encourage people to consume local, chemical-free excess produce from their gardens.”⁷⁴ Currently, there are 50 members. Its purpose is twofold. First, it seeks “to educate people about the healthful benefits of consuming fresh, locally produced/grown, wholesome food”. And secondly, it seeks to encourage the local production and consumption of food, thereby hoping to “rebuild and renew local economies and communities”. The WFA encourages people “to action by growing and selling excess veggies and meat to their neighbours thus keeping money local and rebuilding the local economy.” It operates “on a small scale, within communities, where people know each other. Instead of bureaucracy, it is based on local knowledge, interpersonal relationships – and trust.”⁷⁵ Its food travels only a few, if any, miles.

The WFA pursues an ‘open gate’ policy which encourages consumers to visit the place where the food they purchase is produced. The control of each group

⁷⁴ Unless indicated otherwise, the source of information are interviews with the chair, now director, of the WFA and WFA material. See for example *Information for Affiliated Producers and Supporters, Autumn 2001* (Dartington: WFA Ltd.).

⁷⁵ Van Eyk McCain, ‘Something Worth Digging For’, 2000, op. cit., note 63, p.66.

remains at the local level, with each group being autonomous. As Marian McCain argues, “each time we choose to buy something locally produced, rather than patronizing the supermarket, that simple action helps our local community to become more self-sufficient.”⁷⁶ The members of the WFA recognise that “We are part of the regeneration of community.” It also practices non co-operation because its participants “favour small and local and abhor the transnational greed and disregard for every other aspect of existence except profit.”⁷⁷

Several points are worth emphasising about the project. First of all, the WFA is built on “bottom-up and not top-down ... control”. It is build on *trust* rather than on an official inspection mechanism. It practices an “Open Gate” production and growing policy where each member signs a pledge at the beginning of each growing season, promising to uphold WFA principles and to allow visits from other producers and customers. The WFA operates within local communities where people know each other. Secondly, it emphasises local control as this “allows problems to be solved from where they occur and exceptions to be made”. Individual, geographic and cultural differences can be accommodated in this scheme. Thirdly, local production and consumption reduces the problem of food miles, storage, packaging, and supermarket standardisation. Furthermore, the WFA recognises and allows for diversity within the scheme where appropriate. A representative stated that “I really feel that’s a great asset to an organisation to have the power to make the changes at the small end rather than somebody sitting at a twelve storey building in Brussels saying ‘Well, it’s too much trouble having 55 different little regulations to administer, so we have one and everybody has to follow this one because I want one person to

⁷⁶ Ibid., p.66.

oversee this, I don't want 55'." And finally, the WFA assists in personal empowerment:

[T]hat is an empowerment, to grow your own food, to grow a bit of excess and offer it to people in the village, people in the town ... By growing excess and assisting people to consume it, putting it out there for them to buy is an action statement. This is a statement of your beliefs. I'm putting my beliefs into practice. It might sound trivial or small but I don't think we can hang up upon how grand the plan is as long as there is something you can do that you know is helping in some way ... So you don't ever want to stop doing anything because it's small. Everybody is doing a little bit. That's what I mean by empowerment.

This re-appropriation of space is not unique to the countryside. Other examples of urban projects that seek to promote local food economies are the Springfield Communities Gardens, situated next to a large regeneration estate in south-east Bradford, Gardening for Health, a Bangladeshi women's organic allotment project, the Peasant Collective, a voluntary allotment group growing organic vegetables on a city centre site, the Growing Communities, established on a reclaimed building site in Hackney, North London, Green Adventure in Brixton, and the Carshalton Friends of Organic Farmers. These are all examples of projects that seek to bring food production back into the local community.⁷⁸ These attempts are supported by projects such as the Henry Doubleday Research Association which started a club which aims to disseminate seeds outlawed under EC and national legislation. The public can join

⁷⁷ Ibid.

⁷⁸ See Mark Fisher, 'Food, Land and Money', in *Permaculture Magazine*, No. 22 (1999), pp.3-5. Mark Fisher, 'Bradford's Organic Odyssey', in *Living Earth*, No. 193 (January 1997), pp.16-18. Adam Rock, 'Community Harvest', in *Resurgence* (March/April 2001), No. 205, pp.48-49. See also *Sustain*, the alliance for better food and farming, www.sustainweb.org. Judy Steele, 'Consumerism: Combined Harvest', in *The Guardian*, 30 November 1994, p.24.

this club for an annual subscription rate. Subscribers have free access to the centre's collection of some 300 outlawed seeds and can grow their vegetables from them.⁷⁹

These projects seek to develop local food economies and in doing so announce that alternative economic processes are possible. The distribution system associated with modern industrial agriculture, profit-driven economic activities, competitiveness and the impersonality of supermarket shopping need no longer be accepted as natural and given. These projects show that there are other possibilities. These projects re-establish the link between producers and consumers, in fact they seek to overcome the specialisation into food producers and food consumers that modern industrial societies demand. These projects provide opportunities for people to get engaged in food production, to experience the magic of growing food, but above all to regain control over and gaining the skills necessary to meeting their own needs. These projects offer people another experience which opposes the rationality of a capitalist market economy.

5.3. Conclusion

In this chapter I described the alternative knowledge system and correlating practices of an ecological agricultural system. It differs from the dominant agricultural system in terms of the interests it serves, the meanings it attaches to food production and consumption, the effects it has on local communities, on farm animals and the environment, as well as in terms of the inclusive nature of its knowledge production.

⁷⁹ Michael Hornsby, 'Vegetable 'Library' Sows the Seeds of Rebellion', in *The Times*, 4 July 1992, p.7. Henry Doubleday Research Association, Ryton Gardens, Ryton on Dunsmore, Coventry CV8 3LG.

The underlying rationality of an ecological agriculture recognises the complexity of the interrelationships that are involved in food production. It perceives Nature as a living, dynamic, spiritual system which the food producer needs to accept and adjust to. Food cultivation means working with natural processes and conditions so as not to harm the balance and the biodiversity of the system. Food production is non-exploitative and it perceives energy flows, cosmic forces and celestial rhythms over and above material substances.

The practitioners of an ecological agriculture are governed by a different knowledge system which in turn gives legitimacy to a different set of agricultural practices as well as food distribution and consumption patterns. The emphasis of its economic system is on meeting human needs locally, to provide others with nutritious, healthy food that has been produced without causing harm to other systems. This economic system is guided by a different set of principles and does not take the competitive, exploitative, impersonal nature of prevailing economic systems as given. These working utopias resist the dominant agricultural paradigm not by fighting its institutions, by voicing grievances or by using force against its elites or representatives, but by practising an alternative agricultural rationality, by taking on an educative role, and by making this alternative real and visible. These working utopias live in a different world, they act as laboratories for social change by questioning how basic human needs are met and by testing alternative solutions. Here, it is the daily engagement of individuals, their change in life-style practices, that presents the identifying feature of an ecological collective action towards social change. Life-style practices are therefore an important form of political activism and a source of power.

Eco-projects produce new knowledge and technologies, they construct new meanings, they implement new practices and in doing so they announce to the wider public that “something else” is indeed possible, something else that does not require manifestos or expertise but simple life-style changes. These projects do not seek to bring about change by operating through conventional political processes, by seeking to impose binding policies upon wider parts of the population. Instead, they seek to bring about change from below by inspiring other people to make life-style changes.

These projects also reveal the weaknesses and shortcoming of the dominant agricultural systems. They make the irrationality, the exploitative nature, of the dominant system visible. They show that food can be produced without the negative side-effects caused by conventional methods. They refuse to co-operate and give legitimacy to the modern agricultural structures and instead promoted and advocated an alternative agricultural system. They resist the domination exercised by the scientific truth regimes. They refuse to be governed by a truth regime which has attached a not-to-be-taken-seriously status to ecological practices and knowledges. By making the advantages, strength and viability of an ecological agriculture system visible, these eco-projects question the very claims to truth and superiority which were originally made to enthrone the modern agricultural paradigm. As such, they challenge the very hard core assumptions upon which the modern industrial paradigm is being built. What is more, this challenge to the modern agricultural system does not emerge from ‘The South’ or ‘The Third World’ but from within its own territorial boundaries. Eco-projects re-appropriate the spaces formerly colonised by the modern industrial rationale. These projects re-grow hedges, they re-introduce wildlife and biodiversity; they re-introduce people into the countryside, people that work and live on the land;

they build small, low impact dwellings that integrate into the surrounding landscape; they employ people and horse power, they make use of local skills and resources; they produce knowledge, food and energy on site. These working utopias make a decentralised, sustainable social structure real and visible in space.

The subsequent chapter will now examine how the dominant, modern industrial agriculture paradigm responded to the criticism and challenges posed both by ecological agriculturists as well as environmental organisations. I examine whether the dominant agricultural paradigm set the standards for what counts as agricultural truth, or whether disciplinary boundaries have been shifted, whether the science-society boundary has been re-arranged, as a result of green movement activism.