### Sustainable Agriculture: A Definition

An agriculture that can continue indefinitely into the future without degrading its resource base. Derived from the concept of the carrying capacity of ecosystems this concept is a powerful one for analysing systems but is often used very loosely. The first question to ask is what is the resource base of an agricultural system? As a checklist consider whether the following are maintained by the agricultural system that you are examining or trying to create.

1. The fertility of the soil and the overall health of the ecosystem
2. The health of the water cycle
3. The well being of the people who are working the land
4. The health of those fed by it
5. The energy balance of the system (energy in versus energy out)
6. Where food is sold, does the return cover the true costs?
7. The outreach effects. Are the inputs required by the agricultural system themselves produced in a sustainable way?

This last is usually the hardest question and likely to require the most compromise. For example it is questionable whether using plastic for poly-tunnels is indefinitely sustainable, but without it our diet in this community would be greatly narrowed or we would be supporting even more use of oil in transport costs.

### Organic Farming

Most Europeans call this Biological Agriculture and over the last fifty years it has developed into a well-codified set of principles and practices. The International Federation of Organic Agriculture Movements (IFOAM) expresses the aims of organic farming thus:

* To produce food of high nutritional quality in sufficient quantity
* To work with natural systems rather than seeking to dominate them
* 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 as far as 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 environment
* To consider the wider social and ecological impact of the farming system

A complementary description from the US Department of Agriculture is:

*Organic farming is a production system, which avoids or largely excludes the use of synthetically compounded fertilizers, pesticides, growth regulators and livestock feed additives. To the maximum extent feasible, organic farming systems rely on crop rotations, crop residues, animal manures, off farm organic wastes, and aspects of biological pest control to maintain soil productivity to supply plant nutrients and to control insects, weeds and other pests.*

The existence of agreed standards based on national systems brought together by IFOAM has allowed international trading of organic products to take place with a good level of assurance that products are really organic. This is, however, currently under threat from two sources. First there is pressure from governments to reduce standards and secondly there are those in the World Trade Organisation who see high standards as a block to trade and therefore legally challengeable. There are also areas in which strict codes can be adhered to without conforming to the underlying spirit of organic methods and sometimes it feels as if codes bring about a complacency that prevents further developments

### Biodynamic Farming

This is a system of farming based on the insights of Rudolf Steiner the spiritual teacher and founder of the Anthroposophical movement. It has given rise to many communities where his teachings on Education, Architecture, the Arts, Agriculture and pretty much all aspects of life have been developed. The agricultural ideas are all based on a series of ten lectures he gave in the 1920’s, but have been developed since by thousands of farmers worldwide. The fundamental principle is to see the whole farm as a physical and spiritual being whose well-being is in the care of the farmer.

If that health is maintained abundance will be the result. This good health requires the integration of a variety of animals, which have different functions in the life of the farm compared by Steiner to the organs of the human body. He strongly criticised the use of soluble fertilisers that was just becoming the progressive thing in farming at the time, saying that only little seedlings need soluble nutrients whilst established plants need to “work” for their nutrients to be healthy. He also gave detailed descriptions of how to use the phases of the moon and positions of the planets to help plant growth and how to make fertilizers, which, applied in homoeopathically diluted form could control plant growth and health. Farmers worldwide in spite of the fact that Steiner had no agricultural experience or specific education and received all his information through a process of meditative thought follow these recipes. Biodynamic farming has its own certification system, which covers all the requirements for organic farming plus certain additions including a longer conversion period.

### Permaculture

Permaculture is more a system for thinking about design for food production (in conjunction with all other aspects of life) than a system of production itself. It is based on the principles of Care for the Earth, Care for human beings (as of course part of the Earth) and Fair Share. It is thus fundamentally dedicated to sustainability. It is also committed to decentralisation and is unlikely to want to attempt to produce any kind of standards for production. What it most wants to do is to provide tools for people to promote their creativity and power to build a better future. To this end its greatest achievement is probably to have created a self-developing global network of Permaculture Design teachers. Its ideas about food production are focussed on imitating natural systems with their innate stability but low productivity and then finding ways to increase that productivity. Organic farming by contrast has tended to take the very productive but less stable agricultural systems that exist and try to build more stability into them. For example Permaculture tends to suggest mixed species cropping whilst organic farmers achieve biological diversity more through crop rotation so that they can keep the high labour productivity achieved by growing larger areas of one crop.

Nothing is gained by adherents of these different systems competing against each other though many new ideas can come into being through co-operation within and between the different traditions. They are all there to be adapted to whatever situation we find ourselves in and the fundamental basis for all of them is the desire for sustainability. So let’s use what we find works and invent as many new contributions to the art of living on the land.