

# Permaculture, Food Security and Development Projects

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I have just spent the last three years working on a book on food security and Permaculture (*Permaculture Strategy for the South African Villages*). Despite this, I was a bit at a loss when asked to write about the particular relevance of permaculture to development projects. I mean surely all of us who are into permaculture believe that it is the most appropriate strategy for any setting. What makes it so special for development work?

I think of permaculture as best considered as a sub branch of the environmental movement – as sustainable agriculture and settlement design guided by permaculture ethics. But more than this, in permaculture writings we can find a fairly clear idea of what *is* sustainable agriculture, sharpened lately by concerns about peak oil and climate change.

- Permaculture is about organic agriculture – we believe that, as a matter of fact, the synthetic fertilisers, pesticides and herbicides that have been used in commercial agriculture damage the soil, our health and other species.
- Permaculture designs for any settlement as a whole must include and emphasize perennial crops – to maintain and retain soils, to provide fodder, for fuel, as well as food.
- Permaculture designers expect a poly-culture to be the most sensible form of agricultural strategy – to maximize biodiversity and to deal with pests and diseases without resorting to harmful chemicals. We favour an integration of livestock and cropping farming, so resources from both can be readily interchanged.
- Permaculture designers believe that a sustainable agriculture has to get away from dependence on oil and gas – we are running out and global warming is a big problem. So fertilisers and pesticides sourced from oil and gas must be replaced and we must have a local agriculture that does not depend for distribution on fossil fuels.

- In consequence, agriculture is ideally something that surrounds settlements and interpenetrates residential areas – the idea is that all food transport can be carried out on foot or by donkey cart.
- This arrangement is also ideal because it makes it easy to recycle the nutrients in human and animal manure and avoids the need to refrigerate animal protein, or vegetable foods. Excess foods produced at one time of the year are to be preserved in storage that does not depend on a plentiful cheap energy supply sourced from fossil fuels.
- Permaculture emphasizes plants and animals that are robust and easy to grow in a particular locale and niche in the agricultural system, not ones that depend on irrigation and synthetic inputs to survive and prosper.
- The implications of this local poly-culture model for agriculture and food distribution is that agricultural jobs are diverse and labour intensive, requiring knowledge of a range of species and their interactions – unlike in today's commercial agriculture and food distribution where most jobs are boring, repetitive and specialized.
- Permaculture emphasizes built structures to retain and use water in the landscape rather than pumping water over long distances using fossil fuel energy – for example local dams, tanks on buildings, swales, spreader bunds and so on.

We can see all this as the accumulated wisdom of the permaculture movement as it comes to grips with how to create a sustainable agriculture and settlement design. What we would have to say about this list is that at the moment many of these ideas are unlikely to be taken up and dominate commercial agriculture – though things could change fairly quickly in the next few decades. There are a whole host of reasons for this that I do not need to remind you of, I am sure.

Yet the fact is that permaculture designs are ideal now for many situations in developing countries and for development projects to relieve poverty and accomplish food security, whether these are organized by governments or international NGOs.

Permaculture is particularly relevant where it makes economic good sense to have a subsistence agriculture – where agricultural labour is not paid and food is being produced for the farmers themselves or their friends, neighbours and families. This is the situation in

all developing countries where food grown for the commercial international market fluctuates in price and can readily become too expensive for the poor. It is the case where most people living in the rural areas do not have a job and are not likely to get one in any feasible scenario of global and national economies. These people have the time to engage in agriculture and they certainly could do with some assistance to their well being through a cheap supply of food. Then they can use what cash they have to improve their lifestyles by accessing goods that only money can buy. It makes sense where there is some ownership of farming land by the poor and underemployed. Or where governments own some public land that could be turned over to permaculture agriculture to supply food for local people. In all these situations, a permaculture strategy can massively increase the productivity of existing subsistence agriculture or introduce it to locations where it has not been practiced.

We can understand the relevance of this by looking at the failures and problems of existing strategies for food security in developing countries.

In the neo-liberal strategy, efficient commercial agriculture, using the latest science, is meant to provide jobs and the money for poor rural people to access food on the market. This strategy has been a patent failure. Two thirds of the people who are going hungry today are living in countries where the “green revolution” has already turned agriculture over to high productivity commercial crops and high input chemical agriculture – mostly India and Pakistan. The rural poor are still starving. It is a shortage of money to buy food, not a shortage of food that is the problem.

The other way of looking at this is to consider what kind of economic growth would be necessary to provide good jobs and food security through bought food. In South Africa, a country I know much about, the amount of growth required to keep employment levels *constant* is 6%. They have only achieved that once in the last 25 years. Meanwhile, 40% of the population as a whole (and 60% in the rural areas) are unemployed. There is no conceivable economic future in which effective commercial agriculture is going to be part of an economic growth rate high enough to draw all these people into jobs and provide them with adequate incomes to buy their food, or pay for electricity for their cooking.

In the leftist strategy for food security, local commercial farmers are assisted by a government decision to prevent imports of cheap food from overseas – with a ban or with tariffs. While this would localise food production and distribution, it would not solve the problems of the poor by itself. The price of food would actually go up. So the second arm of this solution is for governments to buy food and distribute it to the poor – or to set a price for food. While this could make sense, it is politically very unlikely to be implemented in any thorough way. Most developing countries depend on investment by international companies, global exports to gain international currency and loans from international agencies. Any program of tariffs and government food pricing would very likely lead to real or de facto sanctions that could beggar the country's economy.

Looking at development initiatives, the attempt to create more *profitable* farming by local farmers to produce food for local people commercially:

- (a) is not a very easy thing to do and quite expensive for a government or NGO to fund
- (b) does not solve the problems of unemployment in the rural areas – efficient commercial farming does not employ many people
- (c) would never be able to solve the problems of the poor who cannot afford food

What we need is an alternative economic strategy for the rural poor. This third strategy depends on the promotion of cheap routes to agricultural productivity. The poor do not have the funds to implement high input agriculture and they do not have to in order to be productive. This strategy also depends on a different kind of distribution of agricultural products – outside the market.

We can think of this strategy as an attempt to answer three key questions for food security for a developing country.

1. Is there any government or NGO intervention that can help the poor and is not going to cause the trade and investment repercussions entailed by the leftist strategy?

2. Is there any way of increasing the productivity of local agriculture for local people that does not require an expensive increase in chemical inputs and long term environmental problems for food production?
3. Is there any way to distribute the products of this more effective agriculture that make sure that the poor will actually be able to eat the food?

Subsistence agriculture is the answer to all three questions. Subsistence agriculture is a very real phenomenon in much of the developing world, in large parts of Sub Saharan Africa, the Pacific, Latin America and South America. What I mean by a subsistence agriculture is that the products are distributed to the immediate and extended family and to friends outside that family *without cash payment*. This can be regarded as the ideal form of “multifunctional” agriculture for developing countries – an agriculture that can function to fulfil a number of different goals at once.

- It can provide a sense of purpose for people who are made to feel that they have failed because they have not got a job or missed out on the affluence promised in development ideals. Such people can overcome a sense of failure as they provide food for themselves and their communities.
- It is extremely effective in distributing agricultural products to poor people. They do not have to spend a cent getting access to the food that is being produced; it is completely protected from the price fluctuations of the world market.
- Subsistence agriculture fits well with the goals of sustainability. If people believe they are going to be farming for themselves, their families and their communities for the indefinite future, they have a motive for looking after their land. Subsistence agriculture has to be cheap, which means that there is no option to use environmentally harmful chemicals or expensive and damaging irrigation strategies.

Subsistence strategies should not be seen as being in opposition to attempts to help the poor by creating employment – but as complementing those efforts – enabling the poor to be ready and fit for employment options that may become available.

While “subsistence” agriculture is defined in terms of its economic characteristics, what we also need to look at is a program of effective sustainable technologies that are cheap enough to improve the productivity of subsistence farming. It is the permaculture strategies described at the beginning of this article that make the most sense.

- Because poor people farming for their own subsistence cannot afford expensive agricultural inputs anyway.
- Because perennial crops are necessary to provide the fodder and mulch that is going to enable poor people to feed their animals, create compost and enrich their soils; they are necessary because trees can provide cheap fuel where people cannot afford kerosene let alone electricity; they are necessary to provide a range of resilient crops that can weather some dry seasons and still produce food.
- Because the labour costs of harvesting a poly-culture are not a problem when people are unemployed anyway and growing their own food; because a poly-culture is the best way to guard against pest damage without paying for expensive inputs; because the integration of livestock with home gardens, local orchards, wood lots and cropping makes sense to provide cheap protein and enrich soils with manure.
- Because oil dependent agriculture is rapidly becoming too expensive for the poor to afford – this crisis is not going to suddenly evaporate, it will get worse.
- Because a subsistence agriculture means that you are growing food for yourself and the people you know – and transporting those crops on foot or by donkey cart in a local area.
- Because a local agriculture, based on the idea of zones in permaculture, makes most sense in terms of recycling nutrients – human and poultry manure for home gardens; legume shrubs, trees and annual vines, cut for fodder and used as mulch in orchards, pastures and cropping fields.
- Because robust animals and plants are the most likely to take off in rural development sites, where expensive inputs and irrigation will not be available,

where an emphasis on existing plant resource strategies is preferable to the introduction of delicate and difficult commercial species.

- Because we can only hope to attract people to a new strategy for using their unpaid work if the work that we are offering them is interesting and creative and makes for an aesthetically pleasing environment – just what a bio-diverse poly-culture agriculture can do well.
- Because in the long run the poor will never be able to afford reticulated water supplies sourced from large dams to run their agriculture. They will not be able to afford a tap supply of clean water to their homes and governments will never supply this. They need a domestic supply that is clean, close to the home and affordable. They need an agriculture that saves its own water. Tanks for household gardens and the domestic supply; swales and bunds for agriculture further away from the house.

Of course in the long run, permaculture will make economic good sense for all of us or we will starve to death as our civilisation falls apart. But in the short run it certainly makes very good sense for rural development work, whatever economic philosophy you are starting from.