

What is sustainability?

Over millions of years a wide variety of life forms and processes have evolved. We haven't yet discovered them all and some will inevitably disappear before we know what they are. We certainly don't understand them but we humans have developed an agricultural and industrial system which ignores the balance generated by nature. We are determined to develop ever-more complex equipment and processes which ignore our natural environment and try to change it.

We produce farm products which require unsustainably high volumes of fresh water, whilst ignoring the methods which nature developed to maintain biodiversity. Is it any wonder that people have become increasingly concerned about our impact on climate change? We seem to have a great need to build machines which rely on the continuity of resources designed to maintain the economic imperative. Of course there are plenty of politicians (and others) who don't accept the effect we are having. They (like tobacco company executives arguing that there is no link between smoking and lung cancer) insist that global warming is just a cycle and there is nothing we can do about it. Perhaps they are right! But perhaps not. Are we all prepared to risk irreversible damage to our atmosphere, our soils and our waterways?

Chemical Farming

Industrialisation has allowed our civilisation to develop artificial farming techniques. We are now able to take almost any landscape, destroy what is there and turn it into what we see as important – if we are too dumb to think about the consequences. The deliberate destruction of forests, grasslands and even swamps is just mind-boggling. But we have done it and we are still doing it. We see fertile areas and systematically remove all vestiges of plant and animal life before ploughing the ground, without any thought for the consequences of destroying the microflora and microfauna in the soil.

It's all done in the name of progress – and creating an agricultural monoculture. We replace native species with exotics in the belief that they will perform 'better' (or at least will put more dollars in our pockets). Monocultures often thrive in the short term but they tend to crash in the end. It doesn't make much difference if its wheat, potatoes, grapes, olives or just rye grass and clover, the traditional outputs don't keep pace with population growth, and we chase ways to maximise production. This usually means dumping truckloads (or plane loads) of fertilisers to boost production. Insecticides and herbicides are spread like confetti to try to stop all the little bugs and things from spoiling our fun. There's no doubt it works and makes farmers and governments heaps of money (for a while). But it all falls in a heap when the reality hits that you can't keep doing this!

Agriculture driven by chemical inputs increases short term productivity and nutritional levels to unprecedented levels but the cost is the destruction of our soils. Our farming practices mean that throughout the world, we use more water than falls naturally as rainfall.

The area of soils which is productive is gradually reducing every year while the population increases exponentially.

In Australia, we have one of the world's most difficult agricultural environments – semi-arid in most parts, shallow topsoils, low nutrient levels and high salinity levels in subterranean soils. In the first 200 years of European settlement, Australians reduced the fertility of much of the landscape by inappropriate farming practices, increased soil and water salinity to near catastrophic levels and reduced biodiversity.

The levels of carbon in soils once measured thousands of years, but are apparently now span only a handful of years – a testament to the decreasing levels of life in soils.

It has been shown that chemical fertilisers harm and kill plant micro-organisms, thus eliminating the possibility of natural nutrient cycling. Combined with the application of pesticides and herbicides in an irrigated monocultural environment, the chemicals are aiding the desertification and salinisation of productive lands.

Erosion effects – the elimination of natural flora (not to mention the microflora) has caused enormous damage to the structure of Australian soils. Together with wholesale tilling, our soils are routinely badly eroded, to the point where a major rain season (if we ever see serious rain again) may result in catastrophic removal of topsoil. Serious erosion can be readily viewed in any dryland area of Australia – ranging from minor to extreme – and the problem is worsening with all major attempts at redressing the problem being largely ineffective.

Our political and economic systems have developed such that our balance of payments² has been in negative territory (importing far more than we import).

A significant proportion of that imbalance is the result of importing chemical fertilisers to feed our naturally 'poor' soils. The fertilisers, while allowing for profitable crops in the short term, are contributing to the acidification and salinisation of our soils. Their use produces excess levels of soluble nutrients in soil - which has two effects, increased nutrient stored in subsoils, and increased nutrient loads in waterways. The former is just a waste, the latter is the cause of untold pollution of waterways in a world with an increasing freshwater deficit.

What's the cost to human health?

While we are feeding an unprecedented number of people, there are still significant shortcomings. Ours may be the only generation in recorded human history to not live longer than our parents – a testament to the falling food values of our diet, overeating and obesity-related illnesses in some parts of the world, and malnutrition, starvation in others. How did we get it so wrong?

The natural process

1. There are no chemical fertilisers or pesticides or herbicides in nature.

Organic wastes in natural forests fall to the ground where they are consumed by a plethora of micro-organisms. No-one has gone close to calculating how many species exist today, let alone what existed before human intervention, but some estimate them to be in the millions.

In a complex and poorly understood web, these species interact such that one organism's byproduct is another's food – and from the competitive melange that makes up our soils, nutrients and energy are constantly and sustainably returned to so-called higher plants where the process of capturing the sunlight and gases from the atmosphere results in even more life – a perfectly sustainable ecosystem, with *increasing* biomass. Compare this to our man-made system in which biodiversity and biomass are spiralling ever-downwards.

There have been numerous studies of practical farming techniques utilising natural systems and it has been demonstrated that the elimination of chemical fertilisers, reductions in the use of pesticides and herbicides, show little or no loss in productivity. The net result – which should be relished by farmers – is that profitability can go up, not down, by using these natural methods. Unfortunately most will keep doing what they have always done. And eventually go broke!

There are no irrigation channels in the natural Australian landscape. Instead, there are chains of ponds – swamps and wetlands, sometimes covering hundreds of square miles – connected only during floods by intermittent streams. Water is retained in the landscape and does not flow 'unused' to the ocean. Plant and animal forms have adapted to this natural sequence, and thrive in what often appears as a barren and inhospitable landscape. As plant biomass increases, the flow of water is slowed, causing water levels in the swamplands to increase, thus providing more opportunity to grow more plants – and on goes the cycle. The result – increased biomass, and increased biodiversity.

In nature, waste is always re-used locally. Everything is inter or co-dependent, and synergies abound. Plants and animals don't live in isolation, instead they are part of complex, diverse and inter-related communities. Monocultures seldom exist, and by-products are processed then consumed where they fall.

An organism's by-products are exuded in a way to maximise the benefit to the organism. Plants, for example, exude simple sugars from their roots to eliminate their "wastes" - and micro-organisms convert these sugars into water soluble nutrients which are then used by the plant.

Everything is cycled and re-used in an upward spiral – increasing biomass and biodiversity. Nothing goes unused.

We are not as smart. In our industrial, chemical model, we create foods and other products, transport them vast distances to markets, in order to participate in a 'market economy'. Then we deal with our waste as a separate commodity, not part of our production cycle. What a con!

Phil Westwood

Freeranger Eggs

0402070531

for further information check out:

<http://www.freeranger.com.au>

<http://bassbush.htmlplanet.com>

<https://www.facebook.com/FreerangerEggs>