

PRESENTATION ON LAND MANAGEMENT

Sutton Yard, September 2019

We have seen the images of rain forests burning and melting ice caps on our televisions. Catastrophic climate change is here; heralded by hurricanes and tropical storms with wind speeds of incredible intensity as the atmosphere heats. We will all be in the jaws of the Tiger soon.

Page | 1

This situation has been brought about by the industrial revolution and an era where expanding economies, copying the western model, are motivated solely by satiating a consumer frenzy of compulsive acquisition.

There are solutions, but these rely on urgent political consensus, both here and in the international arena. Unfortunately, our politicians appear incapable of grasping these issues, let alone resolving them, swayed as they are by the professional lobbyists employed by multinational corporations.

This wave of planetary destruction is incentivised by the demands generated for raw materials from the developed world, whether it be minerals, beef, soya, palm oil or timber.

To return the earth to an equilibrium, we must reduce our gaseous emissions, lower the current excessive levels of these gasses in the atmosphere and halt all economic demands that are directly or indirectly levelling the forests, the lungs, of our world.

Zurich university has identified zones around the world that are not currently used for agriculture and which could be planted with the 1.1 trillion trees that are required to bring stability back to the climate. These will cover 11% of the land surface. But, trees take time to grow. In the short term, soluble iron particles dusted over the nutrient depleted mid oceans, would generate vast algal and phytoplankton blooms; which whilst encouraging fish stocks, would also remove mega tonnes of CO₂ from the atmosphere and deposit it on the abyssal floor.

What can we do, here in the UK? Human activity in Britain generates some 454 million tonnes of CO₂ a year. Around 14% of this is derived from agricultural emissions on intensive arable land. The committee on climate change has recommended the planting of 30,000 to 50,000 hectares of trees every year until 2050. Farmers and land owners can meet this challenge provided they

receive a return that reflects the planting costs, the subsequent care of the young trees and the income foregone from the previous cropping regime.

Pastoral farming can also make a substantial contribution to addressing these issues but only by adopting organic or ecologically friendly principles. If a rotational ley system incorporating legumes was encouraged; with a third of the 3.9 million arable hectares growing pasture legumes and subsequently fed to livestock, then 325 million tonnes of Co₂ could be sequestered.

Furthermore, replacing the current temporary grasslands with leguminous leys could sequester a further 200 million tonnes of carbon with no loss of productivity and no further need for artificial nitrate applications. This would also provide a huge boost for invertebrates, soil health and inherent fertility.

At Cholderton, we practice a ley farming system. All fertility is generated by the decomposition of animal manures and from the utilisation of herbal leys comprised partly of deep rooting legumes. These leys are dominated by Sainfoin, Lucerne or Red & White Clover. The grasses Meadow Fescue, Timothy and Cocksfoot are added to the mix. There are 300 dairy cows, their young stock and a flock of 350 ewes.

500 acres of arable crops are grown. These include Winter Oats, Spring Barley and a mix of oats and vetches, autumn sown for arable silage. The oats and vetches are followed by a summer sown crop of Stubble Turnips which are succeeded, after grazing, by a Spring Barley crop, under sown with the ley mixture in the following year. As herbal leys become tired, generally after 5 years or so, they are ploughed and succeeded by 2 cereal crops. No weed control or fertilisers are required; the crops being sufficiently clean and fertile to give reasonable yields. I would expect Winter Oats to exceed 2.25 tonnes per acre and Spring Barley 2 tonnes per acre in a normal year. The cereals are then ground and fed back to our livestock. We retain some for our own seed.

There is an area of around 500 acres, mostly on the side of a steep line of hills, with very thin soils. This was historically sheep grazed down but was ploughed during the war. It was suitable to return to downland and this was achieved with the assistance of the Countryside Stewardship Scheme. This has been a great success with a wide range of downland plants present and several species of butterfly including the Adonis Blue, Chalkhill Blue, Small Blue, Marsh

Fritillary and the Duke of Burgundy Fritillary returning to breed in areas where they have not been seen for 70 years.

This is a traditional approach to farm management and one with which my great grandfather was familiar 140 years ago. What relevance does this anachronistic system have in a world of high tech agri business?

Last year, I was asked to work with EFTEC, an accountancy practice specialising in the economic and environmental implications of differing rural land management techniques. EFTEC evaluate the natural capital and the public goods generated by a farm. This is judged by examining the eco systems, clean water, clean air, carbon sequestration as well as the farms productivity in terms of food and landscape value. EFTC found that over a 50 year period, a conventional farm of our size would generate a loss of £8.8 million in terms of environmental damage, whilst we would accrue a benefit of £0.5 million over the same period. This demonstrates that our farming practice is ecologically sustainable.

Consider the issue of ground water. Conventional arable farmers are under little restriction with the use of nitrogenous fertilisers. Nitrate Vulnerable Zone regulations merely state that 'no more nitrate should be used than the crop requires'. However, half of all applied artificial nitrate is wasted. I run a small water company, supplying drinking water to just over 2000 people in the surrounding area. Some 30 years ago, I became aware that nitrate levels in our water were increasing year on year and that in 25 years, we would be near or over the World Health Organisation's limit of 50mg per litre of nitrate in drinking water. I turned the farm over to an organic system to try and mitigate these nitrate levels and stem the increase. My efforts had little effect. Subsequent testing by the Environment Agency established that the nitrates in our water did not come from our farm, but upstream and were derived from nitrogenous fertilisers and effluent from sewage treatment works. It is currently costing our water company some £50k per year to remove nitrates originating from these sources.

The EA study demonstrated that the very low nitrate generation from our stock, less than 50kg per hectare, was not contaminating ground water and we are therefore benefitting other extractors downstream.

A further example is evident with carbon sequestration. Soils hold twice as much carbon as the atmosphere. If one can increase soil carbon by 10%, then atmospheric carbon will reduce by 20%. Sainfoin, which has been grown at Cholderton since 1730, is a remarkable example of this. It is a highly nutritious plant which has 4 times as much root as Lucerne and is the most drought resistant plant that can be grown in the UK.

Legumes, especially Sainfoin, with their deep roots, associated microbes and mycorrhiza, build a soil bank of trapped carbon whilst improving soil structure, fertility and organic matter simultaneously. One meter depth of soil containing just 1% of carbon is equivalent to 100 tonnes of carbon per acre. It is possible to increase this to 250 tonnes per acre utilising deep rooting legumes. Here, we have a key, which can if turned in the right direction, help arrest global warming.

The UK had a far more sustainable agricultural industry in the 1950's and 60's than it has now. The Milk Marketing Board had been set up to ensure that milk was made available to consumers for a reasonable price and that farmers received a fair return. As a consequence, dairy farms were spread all over the country and a mixed farming system, with its rich wildlife and diverse landscape, prevailed. With the demise of the MMB, dairy farms were thrown into the rapacious hands of the big retailers. They paid as little as they could and sold milk as a loss leader in their stores for less than the price of water. Looking at the price my father received for his milk in the 1970's and allowing for inflation, the price of conventional milk should be 70 pence per litre today. For my organic milk, I am currently receiving 34 pence per litre.

Low prices and lack of support forced former mixed farms to adopt an all arable system. This may have been good news for the multinational agri chemical companies, pedalling their toxic wares, but was disastrous for the environment.

Some of the dairy farms that remain have survived only by adopting industrial methods where excessive numbers of cows are kept in sheds, never feel the sun on their backs and are milked 3 times a day. The prodigious yields of milk given by these wretched and over exploited cows are only possible due to a major part of their diet being composed of soya grown in the ashes of the Amazonian rainforest. Thus, unsustainable practice here is directly promoting environmental destruction. It is a fallacy to believe that low food prices are a public benefit when they are incentivising deforestation and environmental damage in any part of the world.

It is clear that world trading agreements are no longer fit for the purpose. Shipping alone is responsible for some 30% of global Co2 emissions and is hence a major driver of global warming and climate change.

Consumers and traders may benefit from the movement of goods from lower cost economies to ours but this can be unfair to manufacturers and farmers in our own country. Here, waste and emissions are strictly regulated. Regulation increases the cost of production and hence the price of the completed product. Why is the importation of similar goods from another part of the world permitted where no environmental regulations are enforced? By importing goods from farmers and manufacturers not subject to regulatory control, we have generated a distortion in the trading cycle, which operates directly against our farmers and manufacturers and encourages a process of environmental degradation, subsidised by our consumers.

The universal application of sustainable ecological principles to agriculture and land management is essential to combat climate change. Embracing ley farming and developing a form of parochial self-sufficiency, where locally grown feed is fed to local livestock and where local food is sold to local people is the way forward.

We must achieve a degree of compatibility and balance with the limited resources of our planet. Sustainability, not necessarily economic growth, should be the focus of our and future generations. It is by adopting a fresh approach and a different economic doctrine that the planet can be safe guarded for the future.