

WN *Farming*

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Living well off the land: 2





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Here are most of Colin Tudge's books, in various editions, in English and in other languages: *The Famine Business* (1977), *Future Cook* (1980), *Last Animals at the Zoo* (1992), *Future Food* (1992), *The Time Before History* (1997), Darwinism Today (1998), *Neanderthals, Bandits and Farmers* (1998), *The Impact of the Gene* (2000), *So Shall We Reap* (2003), *The Tree* (2005), *Feeding The World is Easy* (2007), *The Bird* (2008), *Missing Link* (2009), *Good Food for Everyone Forever* (2011), *Why Genes are not Selfish and People are Nice* (2013).

Summary

Colin Tudge writes: The commentary continues from the previous issue of WN. For new readers the Editor has asked me to repeat this summary of my beliefs, which are also of all those throughout the world committed to Enlightened Agriculture, or put more simply, Real Farming. I do so gladly.

The future of life on Earth depends on protection, restoration, and promotion of real farming. This is the one and only way to ensure good nutrition and nourishment.

Get farming and its whole environment right, and we get food systems and supplies right. Get food systems and supplies right and we get dietary patterns right. Get dietary patterns right, and we have the basis for nutritious, nourishing, healthy food for all, that protects against disease and promotes good health and physical, mental, emotional and spiritual well-being.

It is as logical as that. It follows that all attempts to get nutrition and health right at any population level that overlook or ignore food systems and supplies, will fail.

Agriculture designed to make the best use of landscape, and to be maximally sustainable, would also provide food of the highest nutritional and gastronomic purposes, and would employ a great many people. Thus it would solve the world's food problems, and also its principal social problems, at a stroke. I say 'would' because this is not how things are now. Agriculture now is designed for a different purpose – to generate money and profits, in the cause of 'sustained growth'.

Everyone in the world ever likely to be born could be fed to the highest standards of gastronomy as well as of nutrition, until humanity comes to an end. We already have most of the necessary methods – maybe all that are needed. We could always do with more excellent science. But we need not depend, as we are often told from on high, on the next technological fix. The methods that can provide excellent food would also create a beautiful environment, with plenty of scope for other creatures; and agreeable and stable agrarian economies with satisfying jobs for all.

In reality, in absolute contrast, we live in and are co-responsible for a world in which almost a billion are chronically undernourished; another billion are horribly over-nourished, so that obesity and diabetes are epidemic, and rising; and in which a billion live on less than two dollars a day; a billion live in urban slums – a figure set to increase and probably at least to double over the past half century. With all this, other species are disappearing so fast that biologists speak of mass extinction.

This all must change now. Once we get food right, everything else we need to do can fall into place. Getting food right means good farming. This means productive and efficient husbandry that is kind to animals, that looks after the environment, and creates fine rural societies. It means providing sufficient safe and nourishing food that people like to eat and from which, traditionally, communities have build their communities and civilisations. Gastronomic excellence is essential, too.

What might we be doing, that would provide good food and employment, in an agreeable world? Why aren't we doing it? How do we get from where we are now, to where we need to be? These questions are addressed here.

Box 1

Good food for everyone forever

Colin Tudge writes: This second part of my commentary includes a lot of bad news about modern industrial agriculture. To cheer readers up the Editor has asked me to preface all this with some good news about the benefits of the Real Farming recommended here, and also to say something specific about food and nutrition. So here it is, with a bonus – something about the gastronomic delights to which we can look forward.

The end result of Real Farming is to produce lots of plants, not much meat, and huge – maximal – variety. In overall structure, this kind of farming reflects nature, which also produces a lot of plants with relatively few animals; and so in principle such farming is as stable and sustainable as nature itself. This is also, of course, the basic structure of traditional farms. These are enormously various worldwide, and from century to century, but basically are structured as described here: arable and horticulture taking pride of place, with animals fitted in where they can. 'Enlightened agriculture', in short, is structurally the same as traditional agriculture as practiced for at least the past 3,000 years in all but the most special environments. It is common sense, and it would raise no eyebrows at all among people who know anything about farming.

Now we come to a series of wondrous serendipities – again blindingly obvious, but revelations in a world in which the obvious has been obscured beneath layers and layers of vested interest and mumbo-jumbo economic theory. Enlightened agriculture, designed to produce as much food possible within the bounds of biological reality, produces lots of plants, not much meat, and maximum variety. These nine words – 'lots of plants, not much meat, and maximum variety' – summarise all the nutritional theory of the past 40 years that is worth remembering: all those thousands of pages of learned reports, and health guides, and what you will. In short: the products of Enlightened Agriculture, designed to respect the biological realities of landscape, crops, and animals, perfectly match the nutritional needs of human beings. Actually it could hardly be otherwise. Human beings are supreme omnivores. We are adapted to eat what nature provides, in the proportions that nature provides it. Enlightened agriculture, which in essence is traditional agriculture, is in essence an abstraction of nature.

But although 'lots of plants, not much meat, and maximum variety' is what people need, is it what they actually want? Don't they want meat, meat, and more meat? Isn't it the duty of all enlightened and altruistic food industrialists to produce an indefinite quantity of hamburgers and fried chicken? Isn't this what 'the consumer demands'?

This is arrogance or ignorance or both 'on stilts'. In truth, 'lots of plants, not much meat, and maximum variety' is the basis of all the world's greatest cuisines: *provencale*, Italian, Indian, Chinese, Turkish, Lebanese, other. These cuisines are democracy in action: they are by the people, of the people, for the people. They have never been significantly improved upon, and never can be. All the world's greatest chefs acknowledge this, they are all in search of traditional flavours and dishes. The products of the modern food industry by contrast are like – well: Kiddicraft against the Taj Mahal. But it is for this foulness, this coarseness, that the glorious tradition that could serve us all so well is being systematically trashed.

In short, the kind of farming that could ensure a steady food supply forever and would feed us to the highest standards of nutrition, would also raise us – all of us – to the highest standards of gastronomy.

The current economy is a catastrophe

So now I begin, with political and economic theory as foist on the world by the most powerful countries led by the US, my own country the UK, and their allies. To know what has gone wrong with food systems in the world, we need to start with money. The economic and political ideology championed by the US as from the Reagan government and the UK as from the Thatcher government, now in effect has become the norm worldwide. It has two aspects which operate in grisly synergy.

Need for ethics

Economics is all too often treated purely as an exercise in handling money: a giant exercise in accountancy. Yet in reality, the economy is the matrix of all our lives, the medium, the mechanism by which we can translate our ambitions into reality (or not, if the economy is unsympathetic). So it is vital to decide first of all what we, as people, communities, or indeed as a species, want to achieve. If we are serious about the future, too, then economies must be anchored in physical reality: what can the Earth itself produce; what can we realistically demand of it.

The first of these – what do we want to achieve; what should we want to achieve? – is largely a matter of ethics, as discussed by moral philosophers and also by theologians. The second question is most obviously, but not exclusively, addressed through science. The best economists, such as Adam Smith, Karl Marx, John Maynard Keynes, and Amartya Sen, are also moralists, who spell out clearly what they think is worthwhile, and why. I am not aware that many have been true 'Greens', with deep concern for other species, as well as for humanity; but this may simply reflect my ignorance. There are more good thinkers out there than I know of.

Obsession with money

The prevailing ideology does not have a clear, coherent, or acceptable moral base. It takes little or no account of the physical realities of the world. The philosophy of this so-called 'neo-liberalism' was first formulated in current form as from the 1960s by Milton Friedman of the University of Chicago. It was then taken into mainstream politics in Britain by Margaret Thatcher's friend and ally Keith Joseph, a Fellow of All Souls College, Oxford, an example of George Orwell's observation that no-one can ever be more foolish than an intellectual. He introduced the idea to Margaret Thatcher, who passed it on to Ronald Reagan; and the governments of both countries, and increasingly of the whole world, became 'neo-liberal'. (This by the way is a bad term, if only because 'neo-liberal' sounds vaguely nice, like 'free market', and 'developed economy', but in reality it is very nasty indeed.

This ideology is materialistic and mechanistic all the way through. It begins with the idea that everything in the world can and should be given a price, expressed in money, and that the task for individuals, groups, and humanity as a whole must be to maximise money, since money is taken to be a symbol of everything that we hold to be worthwhile. It is also Neo-Darwinian. Everyone in the world is invited to shape up and be among the 'fittest' and to fight and compete, in the manner supposed to be Darwinian, to make the most amount of money in the least amount of time.

Since money is presumed to reflect human desire, and human desire in the absence of any serious moral philosophy of life is taken as the prime or even as the sole measure of value, the accumulation of wealth is taken as the measure of all things. The underlying psychological assumption (a crude parody of what Charles Darwin actually believed and wrote) is that all human beings must want to be rich, and to dominate. Therefore the imperative to compete to roll in as much money as possible is seen as an expression of human nature. So the global 'free market', which in reality is increasingly free only for corporations, and which impoverishes and even enslaves much of the world's population, is imagined by its advocates to be natural, inevitable, and even morally good. This nonsense is where the trouble is rooted.

Need for conviviality

The things that human beings hold most dear cannot usually be expressed in terms of money. Most people favour family and friends, general conviviality and peace of mind, above mere personal wealth. Certainly (as many a survey has shown, and is a theme of many a folk-tale) there is no simple relationship between contentment and wealth. Indeed, a single-minded desire to get rich at all costs surely is pathological.



Sifting maize. Much African food production is from family farms, hands-on, done by women

The rulers with no fixed address

The 'free market' is a myth. Business is dominated by those who begin with advantages and privileges and who are prepared to be most ruthless to be the richest as measured by money. The strongest and most acquisitive grow stronger and more loaded with money, while the weak and less materialistic grow weaker and impoverished. This has been the state of the world since the time of Reagan and Thatcher in the 1980s. The rich have become far richer, and the poor steadily poorer.

The global economy is now dominated by an oligarchy of financial combines known as corporations – typically of no fixed address and hence 'transnational'. Most money wealth is concentrated in the hands of a tiny percentage of people – as few as 1 per cent. The vast majority of people worldwide are doing badly. For a large proportion things could hardly be worse. Even the middle classes in countries like the UK where I come from, are far worse off in many respects than their parents were.

Funny money

One of the prime questions for anyone who elects to write the history of humanity is how and why the obvious madness of 'neo-liberalism' was ever allowed dominate world affairs in the way that it has.

The past few decades have also seen the ascendancy of 'finance capitalism'. Money has lost its physical roots (such as gold) and has become abstract. Wealth is multiplied and multiplied again without doing any recognisable work – simply by buying and selling hypothetical bits of companies and transferring fortunes between one currency and another, and lending money at compound interest; all puffed up by a web of arcane mechanisms including the buying and selling of 'toxic' debts. The game has become so complex that even the people who do it for a living don't know how it works, as shown in 2008 when some of the house of cards collapsed.

But although the money that's multiplied on computer screens doesn't really exist – vast apparent fortunes are just digits in a computer – it can be translated into real goods. People who know the right tricks become cyber-billionaires just by playing with other people's money – but can then translate that virtual money into real houses, real land, and, if they choose, into real farms, and thus have a huge and mostly destructive influence on the way that most of us live. Like other countries, the UK right now faces years and possibly decades of austerity which for young people without jobs in effect means that their whole life is compromised, not to say wasted, as we and they seek to pay back an unimaginably huge debt that was run up through abstract games of money and yet, apparently, must be paid back by real work.

Beyond dreams of avarice

The reasons lie in history, in human psychology, in evolutionary biology, and in the end in the over-riding actually metaphysical ideas, dreams and notions. The immediate reason is game theory. The 'neo-liberal' market and finance capitalism do make a few people financially very rich, and often very powerful. These people are able directly or indirectly to install politicians of a sympathetic kind and to employ intellectuals who will provide plausible reasons why what they are and what they are doing is good. The basic arrangement is manifest not least in agricultural research here where I am in the UK. Research even in what once were seen as hallowed and intellectually independent centres of learning such as Oxford, near where I live, must be financed increasingly by money provided by corporations.

Thus it is that colossal amounts of money are now squandered on genetic engineering which cannot definitely be shown to have contributed anything of genuine use to the cause of human food production – and certainly nothing that could not have been achieved by other means. The modified organisms that emerge from genetic engineering serve only to enrich the very few corporations that control most of it. But governments call the money that is thus generated, a contribution to 'Gross Domestic Product', the increase of which is called 'growth' or 'development', and although GDP bears almost no relationship to human welfare, its increase has been and still is the obsessive focus of governments like that of the UK. So they use taxpayers' money to support 'basic' research in molecular biology which then in effect is handed to biotech corporations to produce more GMOs and to make stacks of profit. The scientists who make this possible are grateful to be employed at all, and they go along with the act. Some have shares in it.



An example of real work producing real goods: gathering crops in the fields in Africa

The business of farming

The modern economy is unfolding like a Greek tragedy: it began with a horrible mistake – the ideology of Milton Friedman and his 'boys from Chicago', and the zeal of a few politicians – and the world is now working through the disastrous aftermath

The corporations support the kind of research that produces the technologies that will make them even more plutocratic and powerful, while governments prime the pumps and in turn are rewarded by the spectacle of apparently rising wealth, despite this money being in fewer and fewer hands and not spent on the general good.

Our task is to break this vicious cycle. Meanwhile, we should ask how the logic of the 'neoliberal market' and finance capitalism is making it impossible for humanity to farm in the ways that could feed us without destroying everything else.

Obsession with acquisition

Current economic ideology throws every human being who produces anything at all into direct competition with everyone else in the world. They are all supposed to compete to maximise their own wealth and to dominate – increase their 'market share'. This is assumed to be rational behaviour, and to be what all human beings naturally want to be.

In practice the aim is to maximise profit – total earned minus total spent – and to maximise profit. Whatever the business, entrepreneurs strive to do three things: they believe that they must maximise output; must 'add value'; and must reduce costs. Acquisition is deemed to be rational, and rational is natural, and natural is good. The psychology, biology, and ethics behind all this are nonsense, but it is the notion that prevails nonetheless.

Defenders of this madness are wont to suggest that all criticism must be anti-capitalist (and therefore 'Commie' or worse) or anti-free enterprise (and therefore anti-freedom) or indeed anti-business (and therefore the enemies of corner shops and small farms as well as of corporations including transnational banks).

But to object to current dominant crazy economics and politics is not to object to capitalism as a whole, and still less to object to business as a whole. Those who claim that opponents of 'neo-liberalism' are anti-free enterprise are either ignorant, or dissembling. Traditional capitalists, as manifest in Britain's Tory Party through most of its history, and in the earlier decades of America's Republican Party, had a moral backbone. Traders who were deemed honest and respectable, truly wanted the world to be a better place, and wanted others to benefit from their wealth. Many were

religiously inspired. Modern business as a whole has Puritan roots, and many of the founders of recent and current UK big businesses, some now subsumed into transnationals, were Quakers. The mechanisms of capitalism which led to wealth were seen merely as a means by which to foster human and spiritual values.

Red in tooth and claw capitalism

But what we suffer now is capitalism stripped of its ethical and any spiritual framework. The obsessive drive for profit has swept aside all other values; and in the particular context of agriculture, it has led to methods that are completely at odds – in diametric opposition – with what is truly required. Enlightened agriculture has been written off in the most powerful circles as romantic nonsense.

Farming should indeed be seen as a business: not 'a business like any other' as the crude modern slogan has it, because all types of business are different. But like any business, farms should strive to show a profit: the amount received for goods or services must exceed the cost of producing them. Any business or indeed any ecosystem that consistently expends more than it creates, runs down; and in business, money is a way of keeping track. Accountants are very necessary.



Madagascar. Bringing the fish in from the ocean or rovers to sell in a real market

Farming needs moral foundation

But good farming is good farming. The overall aim must be to produce enough good food for everyone in the world, forever. This means that we must farm according to principles of agro-ecology. The moral foundations must be strong. We won't get anything right unless we give a damn. We must have compassion for all humanity and towards other creatures, and have respect for the fabric of the Earth.

If we do farm as well as is possible, yet still fail to make a profit, then the solution is not to change the farming, but to change the economic structure. Farming should be founded on bedrock principles of biology and morality: on knowledge of what the world is really like, and on a feeling for what is truly good. Economies are human inventions. They can and should be adjusted to our needs and desires – to our lives, and to the realities of biology and physics. To change our way of life for the worse just to suit the economic theory of the day, whether it is that of Milton Friedman or of Joseph Stalin, is absurd. To use science to try to alter the world itself so as to conform to the prevailing economic norm is grotesque – yet this is what current agricultural scientists strive to do, and they make a virtue of it.

John Maynard Keynes, the economist and also a philosopher and statesman, made this point. He wrote: 'To say that a country cannot afford agriculture is to delude oneself about the meaning of the word "afford". A country which cannot afford art or agriculture, invention or tradition, is a country in which one cannot afford to live.'

Driven to despair

For survival, and indeed to live an agreeable life, it should be necessary only to tick along; striving to improve spiritually and socially, which are indices of real progress, but not necessarily in material wealth. Only in ultra-competitive economies, in which the least profitable go to the wall, is it necessary to maximise profit. In agriculture, the single-minded urge to maximise profit has driven many thousands of farmers to suicide. Typically, in the global South, farmers despair because local produce is ousted by cheap imports which are the surpluses from subsidised farming elsewhere, and entire farming systems are swept aside by foreign companies or by local Mr Bigs as they expand their own estates. In the so-called 'developed' world, farmers typically find that the interest they must pay on all the capital they borrowed, in their attempt to industrialise and expand, is just too much. Their debts mount and mount.

Even worse, the collateral damage from over-competitive finance-driven farming is threatening to kill us all. For to maximise profit in any business there are three prime imperatives: maximise output; 'add value'; and cut costs. In moderation, all these requirements make perfect sense and are indeed the essence of business. When they

are taken to extremes, as they are in an economy that is maximally competitive, and applied to agriculture, these principles are disastrous. The urge to maximise output is damaging at many levels. In practice it means maximising yield – of cereal per hectare, or milk per cow, or rate of growth of cattle or pigs or poultry – and bringing more and more wilderness under cultivation.

Wrecking the land

Increase in crops per hectare has largely been achieved by adding chemical fertiliser and zapping everything else that grows with herbicide and pesticide. Worldwide, wholesale, the organic content of the soil is rapidly reduced so the soil loses its innate fertility and needs more and more chemical supplement; and the organic content and hence the texture is lost, so the soil is reduced to dust and is blown away on the wind or washed away by the rain.

Erosion is a huge problem worldwide: about 40 per cent of the world's agricultural land is said to be seriously eroded, with erosion now at 10-40 times the natural background rate. An area roughly the size of India is now irrigated worldwide, and the problems include the rapid diminution of available fresh water (dwindling rivers and aquifers) and salination of surface soil when water is dragged up from deep below. Attempts are being made worldwide to increase yields without such damage by what is now fashionably called 'sustainable intensification', but the greater the pressure to produce, the harder it must be to limit the damage.



Tanzania. This is what most people see as a real market, with fresh food on open display

Brutality and waste

Thus, the pressure placed on modern livestock as they are bred beyond viability and are effectively force-fed (not least with Brazilian soya), is vicious and outrageous. Dairy cows make the point. Cows in a state of nature produce about 1,500 litres (300 gallons) of milk during every lactation, and typically have about 10 calves over a lifetime of up to 20 or even 25 years. Traditional domestic Ayrshires or Shorthorns raised by traditional means typically give 3,000 to 4,000 litres per lactation (600-800 gallons) and commonly have eight to ten calves, the first at age 2 and then one per year, and they are typically slaughtered at around 12 to 15 years old.

By contrast, ultra-modern dairy cows are expected to produce 10,000 or more litres per lactation (2,000 gallons-plus). In the UK such animals typically manage only three lactations and are slaughtered at around age 5. In the US the yields are even higher and many cows manage only two lactations or even only one. The udders of these wretched animals are so big that they can hardly stand, and they are quickly crippled. Even in healthy cows the metabolic strain is enormous – their energy requirement in peak lactation is tripled – and their feed is so concentrated to maintain the yields they are constantly on the brink of metabolic disease. Typically they are slaughtered when their mastitis becomes too bad.

Forest razed for soya

Farmland has been expanded hugely these past few decades in particular by invading tropical forest – the rainforests of South-East Asia and Africa, and both the rainforest and the savannah (*cerrado*) of Brazil. The rainforests of Indonesia and Malaysia have largely been replaced by mono-cultural palm oil, which now is all-pervasive in ultra-processed food and a lot else besides, while the Brazilian forests are taken over by mono-cultural and increasingly genetically manipulated soya, intended not as human food but as feed for European livestock. Modern mythology has it that dairy cattle will not yield and beef cattle (and pigs and poultry) will not grow without soya. Yet farming flourished in Europe for several thousand years before any European knew that soya existed!

We are told that all this frenetic production is necessary, and that the environmental damage and the cruelty, regrettable though they may seem (at least to the soft-hearted) are therefore unavoidable. We are told that the alternative is to let people starve. Many politicians clearly believe this. So too, apparently, do some of the scientists, economists, and industrialists who advise those politicians. But this just isn't true. The world already produces enough to feed everyone who is ever liable to be born. The task is not to produce more, but to produce what we need sustainably – truly sustainably – and without cruelty, and to make sure that it gets to the people

who need it; or – much more to the point – to make sure that people worldwide are in a position to grow what they need for themselves, and to decide what they really want. The real reason for the present emphasis on ever-increasing production is the drive to maximise profit. The more you can produce the more in theory you can sell and the greater the potential surplus. That's the idea.

If we were serious about the future we would care about our fellow creatures and indeed about our fellow human beings and would know that truly one key purpose of agriculture is to provide 'enough's enough'. But in the present political and economic ideology, with its imperative to increase profit and also to make more profit than anyone else – either that or perish – there can never be 'enough'. The drive to increase output and then to increase it again is seriously misguided, based on misconception if not on downright lies. But it is evidently what the policy-makers think is necessary, and what most agricultural scientists are still striving to achieve.



Senegal. Pounding millet. Farming, growing and producing with all the family involved

Burning, or preserving

There is more, and it is worse. When agriculture is conceived in purely commercial terms, it is too easy to feed people. The market tends to be 'inelastic'. If we didn't waste so much food, and if we learned again how to cook traditionally, we could all eat very well indeed. But this raises problems for agriculture that strives to be maximally profitable. Appetite doesn't increase with wealth, so as people grow richer they don't necessarily need to eat more – not if they are content with good traditional cuisine. The problem for the farmers who want to maximise profit is not primarily to maximise output but to sell their produce – and how can they do this if people already have enough, and the market is already 'saturated'? If we farmed properly, it would be all too easy to produce a surplus – but surplus means surplus, and what people don't need they won't buy, or only at knock-down prices.

The answer these days is to waste the surplus, profitably. More than half the world's surplus is fed to livestock. This is not because of need for extra meat, but because this removes the ceiling on cereal production. If the market for meat is saturated, the carcass and much else can be thrown away, leaving only the most expensive cuts, which is what supermarkets do already (when did you see scrag-end of lamb, among the most succulent of cuts, in a supermarket? Who can get tripe these days?)

Burning food

Now, too, there's an even cleverer way of getting rid of surplus cereal – one that is absolutely open ended. It is burned. Or rather, turned into 'biofuel', positioned as a triumph – the powers-that-be make a virtue of everything they do. This removes the ceiling entirely. When food becomes fuel, enough can never be enough. We can always turn up the heating, or drive bigger cars, or illuminate our cities some more. Frenetic production of meat and now of biofuel is excused on the grounds that this merely meets public 'demand', and to satisfy demand is to be democratic, and democracy is good. Those who question such short-term thinking and object to the cruelty are written off as anti-democrats, or indeed as 'eco-fascists'.

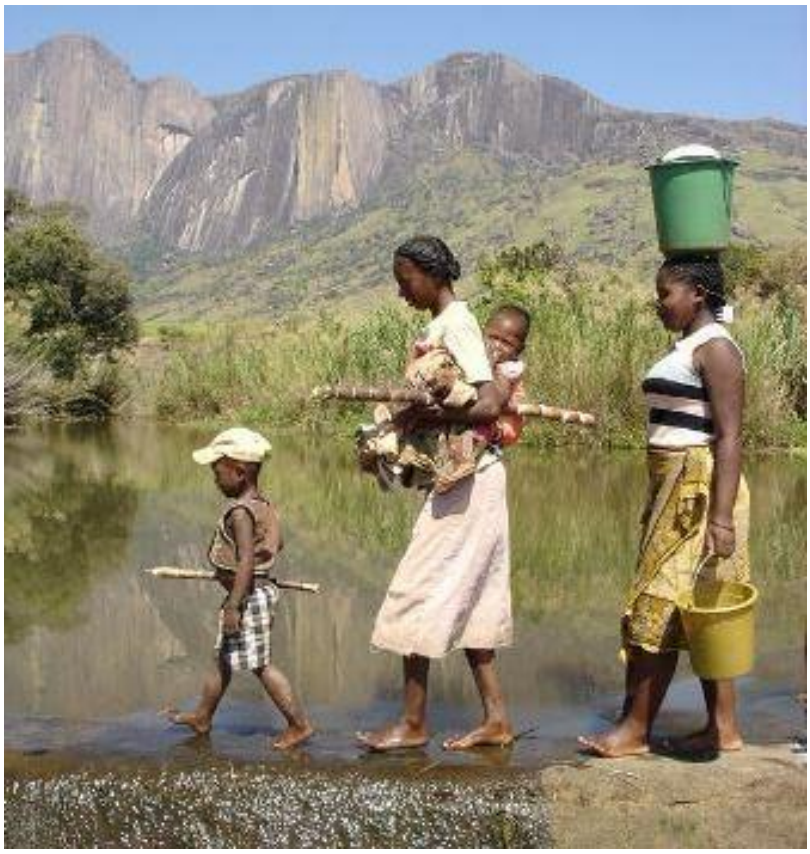
But what does 'demand' mean in this context? Where are the protest groups, 'demanding' more steaks or bigger SUVs? Demand in this context is merely a measure of what aggressive salespeople are able to sell, in a culture designed to be ultra-materialist, in which people are encouraged to flaunt their success in material goods. The world is finite, but success in the current economy depends on ever-greater, open-ended consumption. 'Demand' is a commercial invention. It has nothing do to with real need or true desire. The perceived need to satisfy this spurious demand is immensely damaging. Forests are felled, our fellow species die out, and the soil disappears on the wind. The damage may well prove terminal.

Valid processing

Most crops and meat cannot be eaten raw. They have to be turned into easily consumable and tasty food. That means processing, which adds value. Traditionally, the ancient crafts of preservation and other types of processing supported trades and communities: milling, baking, brewing, wine-making, pickling, butchery, charcuterie, cheese-making – and of course cooking. The greatest civilisations have always been underpinned by great food cultures, and all of them can be seen in crude commercial terms as exercises in value-adding.

But the frantic urge to make more and more, turns what ought to be sensible and aesthetically appealing into something grotesque: over-the top packaging; out-of-season fruit grown at the expense of local landscapes and whisked across continents to western supermarkets (never mind the flavour, feel the distance); ultra-processing to the point where most products are ready-to-eat or –to-heat.

Traditional processing was an aid to the craft of cooking. Now – like most agricultural science and technology these days – it is designed to replace the need for craft. Human ingenuity and originality are sidelined. Autonomy is lost. The technologies that ostensibly save labour also are disempowering. Again, too, all the necessary high-tech tricks are oil dependent.



Madagascar. Families walk to and from the farm every day, being active in company

Diseases, disasters, dispossession

Worst of all, though, is the perceived need to cut costs. This is extremely dangerous. Britain's livestock over the past 30 years has suffered a series of appalling epidemics. The foot-and-mouth disease outbreak of 2001 was the worst in history. The 'mad cow disease' epidemic beginning in Britain in the 1980s was unprecedented. Mercifully, some of the diseases of livestock do not infect humans, but some do and can be lethal – including mad cow disease (which manifests in humans as a variant of the invariably deadly Creutzfeld-Jacob disease; and swine flu and bird flu. All these epidemics have been caused in the end, one way or another, by cut-price husbandry.

The meaning of epidemics

One reason is that the most effective short-term way to cut costs is to reduce the labour force: to sack people, and replace human skill, knowledge, judgement, and indeed wisdom, with machinery and industrial chemistry. No-one really knows how the foot-and-mouth outbreak of 2000 really arose. Many say that there were simply too few stockmen and women to monitor the animals properly – particularly sheep, which may harbour the disease in a fairly cryptic form – and too few veterinarians to make routine checks. Certainly the disease spread as rapidly it did – from Northumberland in the extreme north-east of England to Devon in the southwest and Kent in the southeast within days – because there now are too few markets and abattoirs, so animals now must travel vast distances for the dubious privilege of changing hands and being slaughtered. Since they are carried at high speed (oil and hence transport are still relatively cheap and roads are subsidised) they can take their diseases with them before they have time to show symptoms. Previous outbreaks in Britain, before the frantic stripping of labour, remained fairly local.

In the absence of human skill and hands-on craft, the complex systems of agro-ecological farming that sound biology demands – judicious mixtures of different crops and different livestock, and low-input, quasi-organic husbandry – become impossible. When profit is the sole or principal driver, and people are sacked to cut costs, the husbandry must be as simple as possible. Thus the profit-is-all economy drives the world to monoculture – the factory farm and the prairies of identical crops from horizon to horizon, all prime targets for epidemics that must be controlled by more and more sophisticated industrial chemistry, buoyed up these days by biotech, all enormously capital-intensive, all requiring greater and greater sales just to pay the interest on the bank loans. For the technical and commercial oligarchies in charge, this is immensely profitable. Governments like that of the UK are in thrall to profit.

Meanwhile vast numbers of people worldwide are thrown out of work, and while the ecological consequences of farming without people are not yet fully evident – the

worst is yet to come – the social consequences of unemployment are already obvious. Joblessness is the prime cause of the global poverty that politicians claim to abhor, and periodically pretend to pledge themselves to 'do something about'.

The deserted land

Agriculture for the past several thousand years – ever since it really began to catch on, some time after the last Ice Age – has been the chief occupation of humankind by far. At the end of the Second World War, 80 per cent of Japanese people worked on the land. In Rwanda now, it's 90 per cent. In the global South the average is now 60 per cent. But in UK and in the US now, the proportion of the workforce on the land is around 1 per cent. In the US, which Thomas Jefferson conceived as 'a nation of small farmers', the prison population now outnumbers the population of full-time farmers. Crime prevention in general and prisons in particular are big business and contribute wonderfully to Gross Domestic Product and 'development'.

The UK and the US and other 'mature market economies' are widely perceived as the world's leaders. They represent 'progress'. They are indeed 'developed'. So it is that over the past several decades and more, western governments and commercial companies and their attendant experts (or at least the ones who tend to be most highly paid) have been spreading monetarist ideology throughout the world.

Farmers in Africa and India, whose ancestors made a living from tiny patches of unpromising land, generally with little or no government or social assistance and typically in the teeth of opposition and certainly of contumely, have been and are being told that they should be more like us. This in practice means that most of those who now farm should now clear off and make way for people who are more up-to-date. This commonly means that small farms and villages and local economies are replaced by foreign-owned estates that grow cash crops and other commodities. The dispossessed farmers are forces into the cities. It's a fair bet that most of the billion who now live in urban slums worldwide are ex-farmers and their families or their immediate descendants. A few years ago delegates from the UK government were telling Indian farmers that they should farm the British way. But 60 per cent of India's people work on the land. If they followed the Brits, half a billion people – far more than the population of the expanded European Union – would be out of work.

In India a few years ago I asked some Indians in high places what the dispossessed half-billion were supposed to do with their lives. There are alternative industries, I was told. What industries, pray? Information technology, came the answer, and tourism. Well, India's IT industry is indeed wonderful, but IT worldwide employs at most a few million. Bangalore alone, in theory, could saturate the whole world market. IT could not employ half a billion ex-farmers even if they all had PhDs from MIT. Neither can tourism. Besides, most jobs in tourism in practice are for cleaners; and why it is better to clean a hotel at 4.00 am and then be bussed out of sight to the

shanty, than it is to be a small farmer, is hard to fathom. 'Progress', if it means anything, should mean social and spiritual progress: increase in self-fulfilment which in general means autonomy, or at least the choice to abandon autonomy voluntarily.

Farming can use people's skills fruitfully. It can provide satisfying and useful work literally for billions. To deny those billions the right to work so as to make a minority rich is a crime against humanity; and the destruction of landscapes and wildlife is a crime against nature or, in the language of Christian theology, a mortal sin.

The 10 per cent guide

To be sure, in some countries the proportion of people on the land may well be higher than is ideal. If 90 per cent are on the land then the farmers have very few people to sell to, apart from each other, and so seem doomed to a life of subsistence. But the 1 per cent farm labour force of the UK and the US is far too few.

In the absence of authoritative studies (the most serious matters tend to remain unstudied), I suggest as a starting hypothesis that no country should ever have fewer than 10 per cent on the land, and that none should have more than 50 per cent on the land. That would mean that India, now with 60 per cent, is roughly on course. Its main task is to look after the farmers it's got. The UK on the other hand, is in deep trouble. It needs at least 10 times as many farmers as it now has – to rise from the present 150,000 or so to nearer 1.5 million (though they need not and should not all be full-time). So the UK could do with at least a million more farmers; and since the average age of UK farmers is now over 60, we need them soon. It's not India but the UK – and the US – that urgently needs to change its ways. The flow of instruction needs to be reversed.



African traditional food culture is based on shared meals and shared dishes

The answer

So what are we going to do to stop the rot, and put the world on course? First, we need to think deeply, from first principles, about what we really want to achieve and why, and re-design the infrastructures needed to fulfil those ends. This process of re-thinking should never stop. The fundamental questions constantly have to be re-addressed. Secondly, we have to start doing the practical things that need to be done.

The powers-that-be – corporations, big banks, governments, and their attendant intellectuals and experts – are not listening. Many of them seem to feel that the status quo is OK, or as good as it can get, and even if it isn't, it will be if we just keep doing what we are doing. All who are employed in positions of influence are, by definition, doing well out of things as they are now, and they don't want to jeopardise their own positions. They tend to suggest too that all of us could be equally successful if only we knuckled down.

Many in high places, too, are in denial. They don't acknowledge the problems that are listed here: to many of them climate change is just hype; mass extinction doesn't matter – the dying creatures have had their day; the worldwide poverty is temporary – soon to be corrected by the market and high tech – or is simply the downside of Darwinian competition, and so is natural and inevitable, and besides, is not as bad as it seems; 'we can't turn the clock back'; and so on, and so on.

We cannot expect the powers-that-be to solve the world's – our – problems. Their minds are elsewhere and they treat all critics as irritants and subversives. The few politicians who do speak out are sidelined, and outspoken academics are liable to lose their tenure. People in power are not all bad, of course not, but they stay in power by focusing on power, and that's not the same, not by any means, as solving the world's problems.



African meal: Simple. Home-grown, familiar, nutritious, delicious, shared, as it should be

The great re-think

In short, if we, people at large, Ordinary Joes, give a damn, then we have to do whatever needs doing for ourselves to a large extent despite the powers that be. So:

Everything is linked to everything else: everything to some extent influences everything else and depends on everything else. No one thing is the centre of the whole, for everything may claim to be the centre. The rarest moss on the remotest hillside would no doubt think, if it could think, that the entire cosmos revolves around it, created for its own benefit; and in a way that feeling would be justified.

But some things are more influential than others, and are more influenced than others by the world at large – and so some are more central than others. Of all the things that happen in the world nothing is more central than agriculture. It affects every other aspect of life, human and otherwise; and is affected by everything else. We absolutely have to get agriculture right.

Agriculture must come first

If we do get it right then everything else that we might feel is important, from our own personal fulfilment to the well-being of humankind to the survival of our fellow creatures, has a chance of succeeding. If we don't get agriculture right, then everything else is compromised. But to get it right we have to get all the things right that bear upon it – including the economy, our political structures, the kind of science we choose to practice and the technologies we choose to develop, and maybe above all, our attitude: to each other, to other species, and the world as a whole.

If we don't give a damn, or if we regard the world and our fellow creatures, and indeed other people, simply as resources, and treat them as such, then we will have – well, the kind of farming and the kind of world that we have now. If we took serious things seriously, we would practice Enlightened Agriculture, taking our lead from the principles of agro-ecology.

Since agriculture is influenced by everything else we can't put it right in isolation. We need to re-think everything else as well – economics, politics, science – and attitude, which is a matter of moral philosophy and metaphysics which go far above and beyond matters of religion of the Christian type. All these subjects are of course infinite. The discourse is surely as old as humanity.

Here are a few pointers, discussed at greater length in my latest book, *Why Genes are Not Selfish and People are Nice*.

Remembering democracy

We can take economics and politics together, for it is always hard to say where one ends and the other begins. Red in tooth and claw ruthless and reckless capitalism has been the economic and political norm since Margaret Thatcher and Ronald Reagan promoted oligarchical corporations when they were in power in the 1980s. As the global market grew, so democratic socialism, which had been a great force in Britain, Europe, and the US since the 19th century, was killed off. With Tony Blair as leader and prime minister for a decade after 1997, Britain's 'Labour Party' committed hara-kiri. It began to call itself 'New Labour' and became in basic ways indistinguishable from the Conservatives. As Britain's present prime minister David Cameron, whose job before politics was in public relations, said in 2013, 'We're all Thatcherites now'. Oh no we are not, Mr Cameron.

One trouble is that no-one much under 50 can remember the world before worship of money took over, or has experienced democratic socialism. Some who are old enough to remember clearly have selective memories. So the current madness is now equated with capitalism – it is what many people, including many in positions of influence, clearly think capitalism is, which emphatically it is not. At the same time socialism in many people's minds is taken to mean rigid, top-down economic and political control. So those who now point out the obvious shortcomings of the global market are accused of being 'anti-capitalist'; and to be 'anti-capitalist' is said to be socialist not in a democratic but a Stalinist sense. So a surprising number of people who ought to know better have reconciled themselves to the way things are now.

One-nation statesmen

Socialism properly construed is perfectly compatible with democracy. Indeed the two are natural soulmates, for socialism is or should be about what's good for the people, and democracy says that the people should be able to decide for themselves what's good for them. When Margaret Thatcher first introduced monetarist thinking her most vehement opponents included two former prime ministers from her own political party, Harold Macmillan and Edward Heath. Both were capitalists through and through – Macmillan a director of the famous publishing house and Heath (like Thatcher) the offspring of an independent grocer. It was clear to them as it was to most traditional members of the merchant classes, capitalist though they were committed to be, that the economy, and the government, must serve the people.

The economy must be morally constrained. The face of capitalism, as Heath put it, all too easily becomes 'unacceptable'. But in the 'neo-liberal' ideology, the only thing that's unacceptable is failure. Profit circumscribes morality. Apart from a few taboos such as child pornography, whatever people will pay for is deemed to be good.

I can illustrate this from the politics of the UK in my own lifetime. The most gifted champion of democratic socialism in the UK in the years after the 1939-1945 war was Aneurin ('Nye') Bevan, a Welsh miner. He denounced Joseph Stalin and his successors in the USSR, as surely as he denounced Imperialist right-wing politicians like Winston Churchill. He, like Macmillan and Heath, was content with free enterprise – provided it did not become dominant. As he wrote in his personal manifesto of 1952, *In Place of Fear*: 'A mixed economy is what most people of the West prefer. The victory of Socialism need not be universal to be decisive ... In almost all types of human society, different forms of property have lived side by side… But it is a requisite of social stability that one type of property ownership should dominate. In the society of the future it should be public property'.

Real public ownership

There is no mention in this of state ownership. 'Public' need not mean 'state'. Harold Macmillan and his pre-war predecessor from the merchant class Neville Chamberlain, were champions of publicly financed housing, and each ensured that hundreds of thousands of such houses were built. Both Aneurin Bevan the hero of the traditional British Labour Party, and Harold Macmillan the archetypal upper middle class merchant Conservative, can be classed as social democrats, Bevan on the left wing of social democracy, and Macmillan on the right. Both favoured the mixed economy and differed only by matters of degree – the ratio of public to private ownership. But the differences between Bevan and Stalin, and between Macmillan and Thatcher, are absolute. Bevan the socialist and Macmillan the capitalist had far more in common with each other than either did with dictatorship of bureaucrats or dictatorship of corporations.



Tanzania. Fruits of the earth. Traditonally the value and use of them all is well-known

Common ownership

A mixed economy within a social democratic type of governance, could serve the world very well. It would be essentially capitalist, yet constrained within a clear moral and social framework – within the comfort zone of all the major political parties of Britain before Margaret Thatcher materialised. Before her, very broadly speaking, the economy and the politics of the UK and the US were unfair in many ways, but there was belief in government 'of the people and for the people', as America's great hero, Abraham Lincoln, put the matter.

Small business at the core

There is nothing frightening about social democracy; its core is the small business. Adam Smith spoke of Britain as 'a nation of small shopkeepers' and Thomas Jefferson, another great American folk-hero, spoke of the emerging US as 'a nation of small farmers'. If we wanted to be unflattering we could call such a political economy 'proto-capitalist' or perhaps '*petit-bourgeois*' – or indeed 'peasant' – a word that has become a term of abuse but needs to be restored.

There is an irony here for the British, and others too. Margaret Thatcher came into politics as the champion of small business. Her lifelong hero was her father, Alfred Roberts, a North Midlands grocer who became mayor of his town, and who was a lay preacher anchored in Christian morality. But the distorted version of capitalism that Mrs Thatcher introduced is the ideology of the fat cats, the corporations and the big-deal financiers. Institutions and people like this have no sense of community or morality. This ideology is the enemy of the kind of farmers and the kind of agriculture that could truly feed the world.

Need for mixed economy

With the wisdom of another half century, I reckon we should add two significant addenda to Aneurin Bevan's vision of the mixed economy. The first is spelled out by Martin Large in his book *Common Wealth*. He says that a great deal of any one country's wealth, including the land, should be owned or at least controlled neither by private owners nor by public ownership, where 'public' actually means the state or some municipality, but by the community. A community can be a local community or a club of like-minded people, like Britain's National Trust. Either way, Martin Large envisions that ownership should be divided between private, government, and community – and the greatest of these should be the community.

In common with many others now, I am dissatisfied with the term 'social democtacy', partly because it carries baggage from bad ways of running things done

in its name. Forms of economics and society in which community ownership or control predominate have been called 'economic democracy'.

We should not get dewy-eyed about leaders from the past, however admirable they were within the general world-view in which they lived. Very few politicians or any other public figures in the recent past have had any 'green' vision and mission. Many have had a strong sense of what society should look like, with emphasis on justice and equity, with different views on what those terms mean and on what should be done. But all were entirely anthropocentric. They took it for granted that human beings are the only creatures that really matter, and that we have a right and destiny to alter the world for our own convenience, and can simply leave all non-humans to fit in as best they may. But we know now that this world-view is all wrong, for a start because it is not a view of the world, but just of one species.

We can now see that the whole world could collapse if we don't start treating it with respect. We need to temper all policy with the wisdom and morality of ecology: not anthropocentric, but 'biocentric', or indeed 'Gaia-centric'. I stand for what can be termed 'green economic democracy'. There is nothing frightening about it, except to the small very powerful minority with vested interests in the mad way things are now.



Senegal. Serving fresh tea as refreshment and welcome for family and travellers

Box 2

The Real Farming Manifesto
Good Food for Everyone Forever

This Manifesto appeared in the previous issue of World Nutrition. For new readers the Editor has asked me to repeat it here. I do so gladly!

This is the Manifesto of the Real Farming movement, of which I am a founder. It is addressed to the people of the UK and It applies everywhere in the world.

Providing the people of the world with a dependable supply of healthy nutritious foods is perhaps the greatest challenge facing humanity. Our current farming methods are clearly failing. They are over-dependent on fossil fuels; they damage soils and deplete scarce water resources; they degrade everyday foods; they reduce biodiversity and squander precious wildlife; they pollute our global environment. They are part of a global food system that is at the mercy of speculators and is every bit as precarious as the world banking system.

It doesn't have to be like this. The Earth's natural resources are easily able to provide a good, healthy diet for everyone living on the planet today – and everyone likely to be living on it 50 years from now and indeed forever. All it will take is an agriculture based on principles of sound biology rather than economic dogma.

Our aim is to encourage and stimulate fresh thinking on this, the greatest challenge of our time. We don't believe high-input, industrial agriculture is capable of reform. Rather than feed people, its aim is to serve the interests of global chemical, trading and investment corporations. Far from creating a secure supply of high quality food, today's agribusiness can be counted on to obstruct progress.

We believe the people of this country – and the people of the world – are entitled to the best foods our land can provide. We will investigate the most effective ways of achieving this. Though we are passionately committed to good science, we're not convinced that new technologies are required to feed the world well. The key to securing good food for all is rather the careful management of the world's natural resources by well tried and trusted methods. What's needed is the radical re-working of the very best traditional systems.

Among the glittering prizes of a rational farming system are the host of social and environmental benefits that go along with it. As well as fine food, good agriculture will provide clear streams, teeming wildlife and thriving rural communities.

Our members include farmers, academics, writers and business people. We are united by the desire to see the people of Britain and the world provided with better food than they are currently offered. We have no agenda other than to secure a system of agriculture that feeds the world well.

Please support us. Join us on this adventure. What we're seeking is nothing less than a renaissance – for farming, for our countryside and for the world.

Natural philosophy

Science must be re-thought too, for what it's for, and for what it is. The idea of what science is and what it can do has, over the past 200 years, been bungled. For the 17th century founders of modern science in Europe, and their mediaeval forerunners, science was based on religious morality. They sought to read God's mind by studying his works. But the Enlightenment thinkers of the 18th century excluded God. This – absurd but true – led to a type of science that in rejecting religion, rejected morality as well. In the early 20th century the dominant philosophy in the 'Anglo' world was 'logical positivism'. This proposed that what could not be 'verified' by science, or preferably 'proved' by mathematics, was metaphysical and as such, literal nonsense. So a strange type of 'science' that eliminated values was seen as the one and only meaningful source of knowledge.

Science as religion

As from the middle decades of the 20th century, a succession of English-speaking philosophers have pointed out that all insights of science are provisional and partial, and that the foundations of mathematics cannot be verified. They also have pointed out that ethics and morality are not the property of religion, at least of the types that include Christianity. So logical positivism faded away. But its thinking survives, in the form of a belief in materialism and measurement, with special importance given to mathematics. This ideology is central to the work of most scientists and the policies of most power-brokers, including industrialists and politicians. For them, science of the type that is tyrannised by data and tyrannises with data, is the route to truth; indeed, as said in court, it points to the whole truth. We are given to understand that if we do enough science of this sort we will one day be omniscient. This kind of science has become a kind of religion.

This materialistic science has given rise to a mounting tide of 'high' technologies like biotech and computers, as opposed to those like windmills and ploughs that grew out of craft. Science is leading us to omniscience, so science-based tech will make us omnipotent. Or so it seems to be imagined. Meanwhile, more very expensive research is needed. These ideas together – anthropocentricity, plus the belief in our own omniscience and omnipotence, at least in the not too distant future – have fostered the conceit that it is our task in life simply to make ourselves more comfortable, and that to do this we simply have to take the world by the scruff of the neck and shake and bend it to our will; and that we have the right, the knowledge, and the power to do so. Nature is there to be controlled and indeed 'conquered'.

This conceit legitimises 'neo-liberalism', the ideology of reckless and thoughtless greed. The fabric of the world and our fellow creatures are seen as 'resources' to be

turned into commodities to be sold for the highest possible price to maximise profit. Despite the fabric of the world and other species being real, and wealth in its modern form an abstraction, the conversion of the one to the other is seen as progress. It is weird, but it makes a few people materially very rich indeed, and it is the people with the most money who control the means of information and so set our scene.

Reconstructing science

So science needs to be put in its proper place. It is not the royal road to the truth. The value of the technologies that emerge from it, while often ingenious and sometimes awe-inspiring, is limited. We can destroy large chunks of nature, but it is and always will be beyond our full understanding and way beyond our 'control'. The idea that science of the type that is now dominant can lead us to omniscience and omnipotence is fatuous.

Worse: science as such has no ethical framework, no moral content. It can tell us up to a point how the world works and how to manipulate bits of it, but it does not and cannot tell us what we ought to do. To be turned into useful and morally acceptable action, science must be contained within moral and social principles. Otherwise it is highly dangerous. 'Neo-liberalism', which stands for turning the whole living and physical world into raw material for profit, and for enabling the most powerful and ruthless and careless to dominate, is a monstrous spawn of current dominant science.

Science betrays agriculture

So we have another irony. The biotechnologists and nanotechnologists who claim to be ultra-modern, in truth are rooted in a view of science at least a century out of date. The science and technology that truly could be making our lives more pleasant and secure, and helping to save our fellow creatures, have in large measure become our enemy. We see this in agriculture, which is essentially a craft or a series of crafts. The role of science and high tech should be to assist that craft and the people who practice it. Instead it is employed by huge and essentially predatory financial powers to replace the craft and to shove the craftspeople aside. This is a tragedy.

Crucially, too, one particular idea from science has proved to be most unfortunate. Charles Darwin, widely acknowledged as the greatest of all biologists, rooted his idea of natural selection in the idea that all creatures are bound to compete for resources, leading to what his follower Herbert Spencer called 'the survival of the fittest'. This idea, added to a few others – including for example the fact that human beings spend so much on war – has led to the notion that human beings, as well as all creatures, are predominantly competitive. So – the notion goes – competition drives natural selection, and the ability to compete is favoured by natural selection. The idea that we are by nature above all competitive, is taken to justify the maximally competitive 'greed is good' dominant political and economic theory.

But natural selection works perfectly without competition. It points out that some creatures are better at surviving and breeding than others, but it has nothing to say about why some survive better. Since Darwin suggested that to survive we must compete, and since competition implies conflict, the idea has got around that the best or the only survival tactic is to bash others before they bash you: that alliances are pure expedients, enabling the allies to bash some third party more effectively.

In truth, though, common sense and a great deal of modern biological theory and observation tells us that usually, the best survival tactic is to cooperate with one's fellows; and cooperation is enhanced, in thinking species like ours, by a true concern for others, which includes compassion and conviviality. The ultra-competitive economy is most unnatural – and counterproductive, since human beings (and all creatures) can achieve far more by working together than by pulling apart.

Reasons to be nice

Compassion is the principal ingredient of all the ethical systems of all the great religions. They all tell us to be nice to each other. They tell us too, as the most recent progressive philosophy of science tells us, that the universe in the end is not of our making and is beyond our understanding, and what we don't understand we should treat with humility. If we regarded each other and other species with compassion, and the world with humility, we would not treat them purely as resources, to be manipulated at will for personal enrichment.

Many of the assaults we now make routinely upon other creatures and the Earth in the name of 'economic efficiency', and pretend are progress, or indeed in high-flown vein are 'Man's destiny' are crimes against nature, or indeed blasphemy. That we don't see them in this way shows how far we have wandered from common sense, or from any sense of real morality.



Africa. Gathering a harvest. Many small farms in Africa are cooperatives or run by families

Time to be born again

So what in practice can we do? The world needs a sea-change. In principle there are three ways to bring this about. Two won't work, or at best only up to a point.

Reform – let us not kid one another

The first is by reform – incremental change from where we are to where we want to be. In practice this means going cap in hand to politicians and corporations and asking them, please, if they will change their ways. The typical response (if you can manage to arrange a meeting at all, and if the powers engage in serious conversation if they do agree to meet) is 'No', because the changes proposed, however small, do not conform to existing strategy (which of course was the point of asking for change in the first place).

We cannot move incrementally from where we are to where we want to be unless each step along the way is possible and indeed plausible. But the message to the big transnational supermarkets that buy from all around the world, playing one farmer off against another, with endless processing and manoeuvres between producer and consumer, is that they are not necessary. Some of their techniques are worth adopting – the bar-code with the single check-out is a useful tool – but the complexities, designed to divert funds from the food system into the hands of shareholders, are almost entirely superfluous.

So we don't want big transnationals simply to change their ways ever so slightly. We need them to disappear. Overall, we should of course continue to talk to the powers-that-be whenever there is any real hope of serious conversation, not least because many good people are now working for destructive companies or governments but are far from comfortable doing so, and would be pleased to find an alternative outlet for their talents.

Revolution – into the fire

The second great route to change is by revolution. But although direct action is often necessary and sudden change can lead to good and permanent change here and there, violent action of the kind we usually call 'revolution' cannot bring about the sea-change that the world needs. The collateral damage from revolution is enormous – to life, infrastructure, and the fabric of the world. Revolutions also are immensely difficult to control, and rarely lead to the intended goal. Revolution often leads people out of the frying pan and into the fire. As a route to permanent, beneficial global change it is not to be advocated.

Rebirth – this is the way

There is one line of action that really is possible, and has often worked, and indeed is happening now the world over: This is renaissance; rebirth. We should not simply be trying to persuade the powers-that-be to change their ways, for that is largely a waste of time. We should not go out of our way to pick fights, because that is exhausting and the results are too uncertain. But we can create something new and better; and to a very large extent we can do this within existing laws (and indeed with the law very much on our side) and within existing, accepted, norms.

Laws must often be challenged and we do need new economic thinking, but it is surprising how much can be achieved even within the present framework, despite the powers-that-be. As the alternative is built, and can be seen to be superior, the institutions of the present powers-that-be, from the mega-supermarkets to the standard political parties, will surely wither on the vine.

The rebirth must come from us, the people, driven by groups of people worldwide, coming together to form communities, clubs or 'convivialities', which may or may not become formally recognised companies or charities or trusts. The communities may be bound by geography – a village, a town – or they may be separated geographically but bound by common interest. There are plenty of formal, legal structures out there to suit particular needs: Community Interest Companies; Community Supported Agriculture; trusts; many kinds of cooperatives, and so on.

There are many financial devices too, that can channel money from people who truly want to help (as opposed to taxes, which are taken willy-nilly) to be used for purposes that people truly want (again, unlike quite a lot of tax). Those who give may be donors, expecting nothing in return except some involvement in the end result; and some may be investors, looking for some return. The growing principle of ethical investment is crucial: people investing specifically in enterprises that they feel are good and worthwhile.



Africa: Fresh produce on sale in an open market from co-operative farming

Community farming

There are an increasing number of ways of raising funds to get new enterprises off the ground. These include crowd-funding, in which would-be entrepreneurs go on the net to tell the world at large what they intend and ask for help. So it was that the British company Sarvari, which breeds non-genetically manipulated blight-free potatoes (although government and commercial scientists in Britain tell us that blight resistance is impossible) raised £10,000. Such sums do not compare with the multi-millions or billions commonly invested by the big-shots on dams and highways and so on, but they commonly achieve far more, without collateral damage.

Ways of directing income streams into worthwhile enterprises are numerous and various. I and my wife (Ruth West) are pleased to be involved in a group called 'Funding Enlightened Agriculture' which aims to help new food and farming enterprises. One way forward, simple in principle, is for people in any one village, say, simply to band together to buy a farm. At first the idea seems ridiculous. The price of farmland is these days determined not by its usefulness but (like everything else in a monetised economy) by the whims of speculators. Thus good agricultural land in the UK typically costs around £10,000 an acre (roughly $US 15,000 an acre, or 40,000 euros a hectare). Farms these days, we are given to understand, must be of several hundred acres to be 'financially viable', so the cost of anything worthwhile is generally supposed to be prohibitive. Farming for those who have not inherited land must be exclusively for multi-millionaires or corporations.

Community self-sufficiency

But a farm of 20 acres could make a serious difference to the wellbeing and health of a village. That would be easily enough to supply at least 2,000 people with fruit and vegetables throughout the year, plus chickens and eggs, and top-raise at least one cow. Twenty acres at £10,000 per acre makes £200,000. If 200 people formed a cooperative and each put in £1000 (not a huge sum these days) the village could buy its own small farm. If the village cooperative so decided, it could employ a professional smallholder or grower at least part-time, but ideally the villagers would do most of the work themselves. There are plenty of village-scale cooperatives of many kinds throughout Britain and the world (although they don't all own farms) and an immediate benefit is the improvement in social life and all-round conviviality.

Nothing brings people together more surely, than working together. Cooperative gardening removes all the barriers of age, class, scholastic status, gender, race, religion, political bias, and so on and so on. Village farms would also re-introduce families and especially children to the realities and wonders of farming: which even country children these days are cut off from, as the monocultures are planted and

harvested by peripatetic contractors with vast and forbidding machines. Among those children (or indeed adults) will surely be many who catch the farming bug, and will form the next generation of farmers.

Doing well off the land

If the farm succeeds, and there is no reason why it shouldn't, the cooperative may decide to rent more land, preferably but not necessarily next door, and expand into grazing (a small dairy would be a great asset) and perhaps into small-scale arable (which needs to be taken far more seriously than it is). Preferably the three kinds of enterprise – horticulture, arable, pastoral – would be rotated, to give a truly mixed farm with the resulting synergies. Such a unit – say, 60 acres, with 20 acres owned and 40 rented to reduce up-front costs and increase flexibility – would be a great commercial asset as well as an amenity. Such units are not deemed to be 'economic' in the conventional agricultural economy only because, as things are, banks and middle men take about 80 per cent of the proceeds. If they are cut out, as they can be if start-up costs are low and the food chains are short, so that the farm or the village-owners and the paid employees receive 100 per cent of the proceeds, then everyone can do well, and the circulating money stays in the community and is not bled off by anonymous city shareholders.



Senegal. Soft drink, no chemicals. Fresh coconut milk is still available in tropical countries

Community farming

We must all think strategically, so that we can protect and guide our own lives and those of our families and communities. It is absurd that our lives these days are shaped by politicians, financiers and perceived intellectuals with whom we have no direct contact (or none of any consequence), who do not understand or sympathise with the problems of most people's everyday lives, who have no experience that enables empathy, and who may not (and in many respects obviously do not) share our values. It is doubly absurd that societies in which this is so nonetheless call themselves democracies.

Yet there is no good reason, absolutely none, why people at large should not be involved directly in framing agricultural strategy – and this should extend to the roots; including the planning of scientific research. So it is that modern colonialists have been telling African nations in general that they should adopt the farming strategies of the North and the technologies that go with them, and sweep their traditional agriculture aside. In truth, the people of Africa and indeed anywhere in the world are best served by their own indigenous agriculture and the role of science should be to help to solve the problems of indigenous farming, insofar as it is able.

Science that obliterates the craft and the communities that make it work is the enemy of humankind. Michael Pimbert of the University of Coventry has been demonstrating means whereby scientific research is planned from the outset in collaboration with the local people, with the people having first say on what they want to achieve.



Africa. Time to celebrate with a party feast for the family, and friends and neighbours

Real farming

Box 2

The College for Enlightened Agriculture

To make Enlightened Agriculture – Real Farming for short – work, there's a great deal of thinking still to be done. Most of the necessary ideas seem to be out there already – in farming practice, agricultural strategy, economic and political theory, and there is certainly enough science to be going on with. Even though the most powerful forces in the world consistently pull in the wrong directions, there are also enough examples out there of new ways in action, which together to change the world.

Yet we should never stop investigating. Even more to the point, right now, the many different ideas in the various disciplines (farm practice, economics, political theory, science, moral philosophy) do not cohere. We need a coherent statement – not as a universal algorithm for all time but at least to define in broad terms what we want to achieve and the kinds of ways we know could get us there. We also need to convey the best ideas to the world at large: to the new generation of farmers; to all the people (all of us) who create the societies, the milieu, in which good farming and cooking can flourish; and to educate the present powers-that-be, or at least those who care to listen, to wean them away from their present fixed ideas.

To this end, I and others are establishing a College for Enlightened Agriculture at Schumacher College at Dartington in the west of England. The first introductory course is planned for this October. Please get in touch.

Our Campaign for Real Farming website is: *www.campaignforrealfarming.org*



Africa. Mangoes for sale at the side of the road, freshly fallen from the tree

Further reading

The Campaign for Real Farming. Website: *www.campaignforrealfarming.org*

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Status

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