CAN BRITAIN FEED ITSELF?
SHOULD BRITAIN FEED ITSELF?

Colin Tudge of LandShare argues that the answer to both of these unfashionable questions is a resounding "Yes!" –and we should start the ball rolling immediately.

January 2009

Could Britain grow enough food to feed its own people? Should we even try to do so – or rely, as now, on imports? Could other countries also seek to be self-reliant – and should they? If Britain and other countries did embark on a course of agricultural self-reliance, what other changes would result – to landscapes, economies, and ways of life? What kind of changes would be necessary, to enable self-reliance to come about?

A few years ago such questions would not even have been allowed on to the agenda – or not, at least, on to the agenda of the world's most powerful governments and industries. The prevailing philosophy had it that only free trade and the global market could meet the growing "demands" of humanity. Applied to food and agriculture, this implied that every country should pursue David Ricardo's principle of "comparative advantage" – treat all its crops as commodities, to be sold on to the world market. In turn this meant that agriculture in general should be monocultural – focused on those few crops and animals that in any one country could be raised at least cost and sold for the greatest return.

Self-reliance implies the precise opposite. It requires that each country should contrive to raise *all* the crops and livestock that its people need. Self-reliance does not mean total self-sufficiency and isolationism – the food trade will always be important. But individual countries ideally should import only those crops that in effect are luxuries, and export only what is surplus to home requirements. All trade should of course be fair, bringing real benefits to the producer countries and in particular to the producers. No crop should be traded between regions unless its value is high relative to the environmental costs of its production and transport. In short: it is reasonable and in principle highly desirable for Britain to import tea, coffee, and bananas, providing the exporting countries do well out of it too. But it is highly undesirable to import French beans from Kenya by jumbo jet to sell in Solihull and Crouch End, or for Europe as a whole to import soya that is grown at the expense of the Amazonian rainforest or the Cerrado, with little direct benefit to the people, just to bolster its pigs and cattle.

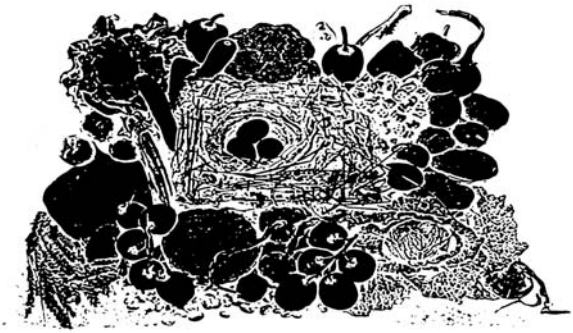
But to achieve self-reliance we need a quite different approach to agriculture and all that goes with it. Self-reliance requires not monoculture but polyculture – combinations and interactions of many different crops and animals. This in turn implies complexity of husbandry, which seems to require labour-intensiveness, which in turn requires a serious shift in economic policy and social structure. Clearly, then, to those steeped in the economic lore of the free market, the idea of agricultural self-reliance has been almost literally unthinkable.

But the events of the past few months have come as a terrible jolt. It has been obvious for many years that present-day, industrialized agriculture and monoculture is not catering for all of humanity -- one in seven people are chronically undernourished while another one sixth are overfed – but the standard response has been to offer more of the same. Now it's clear that more of the same is not an option. We are reaching "peak oil" – meaning that the oilfields just won't be able to keep up with demand. Fresh water will pose even greater problems. Human numbers continue to grow from the present 6.5 billion to an estimated nine-billions-plus by 2050. Hanging over all is the growing reality of global warming, exacerbated in several ways by the carbon-profligacy of industrial agriculture. Then, in 2008, the money market itself, on which all else now depends, began to look extremely rocky. It is not obvious that the present "recession" will ever end; whether we can ever return to the norms of the late 20th century, or whether it is desirable to do so.

In short, it seems hazardous indeed to entrust the world's food supply, and all that is affected by it, to technologies that do not seem sustainable, and to an economy that for many reasons needs re-thinking. Suddenly, more and more people – including people in positions of influence – are beginning to suspect that we need to disengage our agriculture from the vagaries of the world market, and to develop agricultural systems that do not result in such collateral damage. In January 2009 Britain's Secretary of State for Environment, Food, and Rural Affairs, Hilary Benn, told the Oxford Farming Conference that Britain should strive to produce as much of its own food as possible. The question that a few years ago seemed simply to be beyond the pale is now perceived to be urgent.

What are the realities? Three months ahead of the Oxford Farming Conference, also in Oxford, a group of government representatives, academics, farmers and general thinkers met to discuss this very issue [(1)]. I played some modest role in helping to organize the meeting and this is my personal impression of it.

Can Britain feed itself?



If we, humanity, seriously want to provide good food for everybody then we have to design farming specifically for that purpose – what in various books [2] and articles I have called "Enlightened Agriculture". This seems obvious, yet it has rarely been acted upon. Present-day British farming is designed somewhat schizophrenically to fit in with the European Common Agricultural Policy on the one hand and the global, ultra-competitive free market economy on the other – and to "compete" it needs to be maximally profitable in cash terms. Enlightened farming, intended to feed people well and to go on doing so without wrecking the rest of the world, must be designed according to basic principles of biology. Such a system is *not* intrinsically profitable, within the present global economy. Enlightened agriculture and maximally profitable agriculture are different concepts and must be structured quite differently.

If we did farm as if we really wanted to feed people, then *of course* Britain could be self-reliant. We could easily produce enough temperate crops to keep us all well nourished in times of crisis – enough, that is, to feed the 70 million people who may well be living here within a decade or so. Even more to the point: *most* countries worldwide could be self-reliant if they chose to be, including most of those that have appeared on the news in recent years as basket cases.

This can be shown with a few back-of-the-envelope calculations – and they need to be back-of-an-envelope because although the question is of extreme importance, there have been no formal studies. To make things easy, let's just first focus on the macronutrients – energy ("calories") and protein. Macronutrients, above all, means cereals – grown on the field scale, in arable systems. Cereals provide calories and protein in roughly the proportions that human beings require and in practice human beings worldwide derive half of all our energy and two thirds of all our protein from just three of them – wheat, rice, and maize; astonishing statistics, but apparently the case. Overwhelmingly, in Britain, cereal means wheat. So if we grow enough wheat, we are at least halfway to our target. Indeed, for the purposes of calculation, we might reasonably ask if it is possible to produce *all* of our energy from wheat (and hence all our protein too). Could we, in fact, grow enough wheat to feed all of the 70 million people who could well be living here within a decade or so?

The answer, it seems, is “Easily!”
Let’s assume that each and all of us should have 3000 calories every day. In truth, men who are not labourers or athletes generally need about 2500 calories a day, while women need only about 2000 and children need even less – so 3000 a day leaves plenty of leeway. But it’s a reasonable starting point.

Three thousand food calories is contained in just one kilogram of wheat. So one kg per head per day is enough. That means that each of us would need around 365 kg of wheat per year – just over one third of a metric tonne (which is roughly the same as an imperial ton). So one tonne can feed three people for a year. The average yield of wheat in Britain at present is around 8 tonnes per hectare. So one hectare can feed 24 people for a year – meaning that it could in theory provide them with *all* of their protein and energy. So to feed 70 million people we would need 70 million divided by 24, which is roughly 3 million hectares of wheat. This is almost exactly the amount of land which, in practice, Britain now devotes to arable farming (which isn’t all wheat, other cereals are nutritionally roughly equivalent). In short, in theory, we already have enough arable land to provide us all with all our most basic provender.

But human beings do not live by bread alone, or by wheat alone. We also need various essential fats and a range of micronutrients – minerals, vitamins, and what might be called “paravitamins” which do not all occur in cereals. To supply these we also need horticulture – fruit and vegetables; some oilseeds (grown on the arable scale); and, preferably, at least some livestock. Have we got room for these too?

Plenty, is the answer. Eighteen million hectares of Britain is now deemed to be agricultural. With three million for wheat that leaves 15 million for fats and micronutrients. In practice, in present-day Britain, in addition to cereals we also produce 1.17 million tonnes of non-cereal arable crops, and devote 140,000 hectares to potatoes, and 69,000 hectares to horticulture. For good measure we raise ten million cattle, 34 million sheep, five million pigs, and 167 million poultry. So what's the problem?

Ideally, the different forms of agriculture – arable, producing staples such as wheat; horticulture, for fruit and vegetables; and livestock – should be mixed, with each kind of crop and animal played off against all the others, in imitation of a wild ecosystem. Even more broadly, scientist and organic farmer Professor Martin Wolfe argues that *all* farming should be conceived as an exercise in agro-forestry – crops and livestock should always be integrated, in many different ways, with trees. More of this later.

Whatever the details, Enlightened Agriculture must focus on arable and horticulture, with the livestock slotted in as and when – cattle and sheep feeding mainly on grass, and usually in places where arable is difficult; while pigs and poultry live on leftovers and surpluses. The result is to provide plenty of plants, not much meat, and maximum variety. And here we encounter two wondrous serendipities. First, "plenty of plants, not much meat, and maximum variety" encapsulates, in nine words, the essence of nutritional theory of the past 30 years; and it also captures the essence of all the great cuisines of the world from

Italy via Turkey to China and India. In short, farming that is designed primarily to provide *enough,* sustainably, also provides us with excellent nutrition and the best possible cooking. So we would eat much better than we do now if only we farmed as if we really wanted to feed people. One of my own little slogans, indeed, is that "The future belongs to the gourmet" – a sentiment very much in line with the Slow Food Movement, founded in Italy by Carlo Petrini in 1986 and now with a presence in 132 countries. In short, to secure our food supply well into the future we don't even need to be austere -- and this would be just as true even if we grew all our basic crops at home.

Complications

Alas, of course, life is not quite so simple. I based these calculations on present-day yields of wheat – eight tonnes a hectare. But such yields are produced by industrial methods -- the kind that are now called "conventional". But this, as is widely agreed, is not sustainable – not least because it depends so heavily on oil. For this and other reasons, more and more farmers and consumers are turning to organic methods – without recourse to oil-based fertilizers, pesticides, or herbicides. Organic farmers must practice rotations, leaving fields fallow (more or less) so although their maximum yields can be as high as the industrialist's, when averaged over several years they are lower – perhaps only four tonnes per hectare. We must acknowledge, too – although fashions can change – that people in Britain are accustomed to high-meat diets. For these and other reasons Simon Fairley from *The Land* magazine has explored not one, but several different models of future possibilities.

As he is the first to point out, Simon Fairley's own calculations are also back-of-the-envelope, although more detailed than mine. He has picked up on the thesis of Kenneth Mellanby's book of 1975 – *Can Britain Feed Itself?* Sir Kenneth too emphasised that his book was only a preliminary sketch – and

yet, more than 30 years later, it is still the most thorough assessment.

How many we can feed, and how easily, depends on what we are trying to do, says Fairley. The most difficult course would be to farm organically by which he calls “permaculture” (with rotation of crops and livestock) and to provide a diet relatively high in meat. But we could still be self-reliant even then, although we would have to use just over 15 million hectares of the current 18 million available.

If the entire nation were to become vegan, says Fairley, then we would need only just over 11 million of the 18 million hectares to feed ourselves. This, of course, is not likely to happen – and on agricultural grounds alone I reckon that this isn’t actually desirable. An all-plant agriculture is *less* efficient biologically than one that makes judicious use of livestock. The mistake at present is not meat *per se* but meat produced *at the expense* of crops that could feed people. Thus in Britain as in the world over about half the wheat is used to fatten pigs and even cattle – and so the animals are actually competing with us for food. This is profitable – but also illustrates why profitability *per se* is the enemy of sound farming. Clearly, however, as Fairley points out, a vegan diet is easier to provide than the high-meat diets that we now regard as the norm. We should also of course, he says, produce more timber, both for fuel and construction. Wheat, too, might be conceived as it commonly was in the past as a source of thatch (for which we would need some long-strawed varieties and not just the semi-dwarf kinds that are now the norm).

So in some details Fairley's conclusions seem very different from my own – but still he says, "It is patently obvious that Britain can feed itself". Now, surely, we need further study to reconcile and extend these two approaches: on the one hand starting with basic nutritional requirements and average production figures and working outwards, as I have done; and on the other, working through the different scenarios, as Simon Fairley has done. Surely the question is too important just to abandon for another three decades or so [3]?

What's going to happen?

Times are changing beyond any doubt but what is *really* going on and how will things turn out? Observers steeped purely in economic theory – particularly that of the past 30 years – take it to be self-evident that in the end, markets will solve all and that what we see now is just a blip. Those of biological background see inexorable decline. Hardin Tibbs is an independent strategy consultant and associate fellow at Oxford University's Said Business School. He was a member of the Chatham House food supply project (UK Food Supply in the 21st Century: The New Dynamic) and sought to bring order to these wildly diverse opinions – to ask which is most likely and what might be done.

Tibbs presented the four possible scenarios developed by the Chatham House team. The first is optimistic – it says that the present economic decline is "just a blip". But, he says, this would be justified only if the market behaves as standard theory says markets do behave, and only if physical conditions – notably the weather – remain favourable. Then, the economy would recover and again would "grow". Then, farmers would respond to the high food prices by producing more. Oil prices would fall – perhaps to around $65 a barrel -- so there would be less investment in biofuels, which would free more land for food. Indeed, in the way these cycles go, the world would move back

into overproduction – when prices would fall again, and farmers would contain their efforts, and so on.

In the second scenario the global demand for food continues to increase, partly because there will be more people and also because, in particular, Asians are consuming more meat. Indeed, demand could slightly outpace supply. Perhaps the weather will not be favourable, and losses will mount. Fuel prices could stay high, too – oil at $90-100 per barrel – and then demand for biofuels would increase, and the price of fertilizer would also be high. All this ensures that food would remain expensive. This would contribute to inflation and lead us again towards recession. Food stocks would be reduced as attempts were made to reduce the price. The general state of the economy would be that of "stagflation". This outcome is eminently plausible, says Hardin Tibbs – and indeed is already with us. But its stability depends on a critical balance between the contributing factors. So if, for example, oil prices rose too much above $100 then the whole structure would begin to rock.

The third scenario envisages more fundamental change. We hit peak oil – where demand begins clearly to outstrip supply. The price reaches around $150. But then, use would be restricted as climate change became obvious, international carbon prices would be agreed, and environmental regulations would be toughened up. But as the weather continues to change, crops would begin to fail. As time went on it would seem less and less possible simply to go on producing more and more, however clamorous the market became. In the light of all this, the world would start to adopt a more "eco-technological" approach

(though if it did this too slowly we could still be overtaken by events. Farming cannot change course overnight). Yet in this scenario Tibbs is again envisaging economic recovery. Thus, after an initial rise, food prices would start to fall again.

In the fourth scenario, the most nightmarish of all conceivable chickens truly come home to roost. Crops and livestock fall foul of new diseases. The shortage of water becomes obvious, and critical. This leads to political disturbance, and oil prices zoom to unprecedented levels -- $200 or more. Food gets dearer as inputs become dearer. To reduce the price, the grain stocks are released, which means they are run down. Governments control the price of food and ban exports. The weather remains bad and harvests are below expectation. In many poor regions there are serious famines. All this leads to civil unrest and war, leading to even higher fuel prices, and so on and so on. The economy collapses. In short, scenario four looks very like tailspin.

But although this fourth scenario is the most extreme it is not, says Hardin Tibbs, the least likely. The least likely, it seems, is scenario 1 – the one that says the present troubles are "just a blip" and all can soon return to "normal". Perhaps, says Tibbs, our ambition should not be to strive for more and more productivity, by means that are more and more "efficient", which is now the norm. Rather, we should establish a tolerable position, and learn to stay in it. Indeed. So what does this imply in practice?

The structure of farming to come: "The New Agrarianism"

Hardin Tibbs's suggestion that instead of trying to "grow" our economy we should perhaps try simply to reach a satisfactory point and stay there, is precisely what nature contrives to do. Wild ecosystems do change over time and they tend to become more complex if left to themselves but their overall productivity does not increase, and there is nothing in nature quite like the "efficiency" that is deemed so vital in engineering and in modern economies. Indeed, nature achieves its remarkable resilience by being extraordinarily *in*efficient by the criteria of engineering and the modern economy. For engineers and business managers are anxious above all to eliminate what they call "redundancy" -- any suggestion that any particular part of the operation might be repeated. All vital functions are performed by one section only, and only once, with no slack in the system at all. Nature, in absolute contrast, is modular, and it repeats each functional module a thousand, a million, or many billions of times. So it is that an ecosystem can lose 90 per cent of its species and still re-emerge in some new form – as clearly has happened many times in the Earth's history. A human being may lose a limb or even half a brain and still function perfectly well. But a highly integrated, highly "efficient" machine or an economy will fail if any one part of it fails – which is why, once one of the world's

banks had collapsed in 2008, the rest followed like a row of dominoes.

Enlightened Agriculture does imitate the broad structure of nature. As in a wild ecosystem it is modular: based on small to medium-sized units. In detail, each of the units is unique, different from all the others. But all are similar in principle. All achieve productivity and sustainability by matching many different crops and classes of livestock against each other.

But this in turn has huge logistic, social, and economic implications. Enlightened farming systems are necessarily complex. This means they must be labour-intensive – they require a great many farmers of high expertise. This means, too, that although enlightened farming may be technically highly advanced (there is nothing Luddite about it), the structure of farming overall is far closer to tradition than is the "conventional", industrial kind. With lots of people on board in highly complex systems there is no obvious advantage in scale up. The default position, then, for enlightened farms, is to be small to medium-sized, and labour-intensive (and as high-tech as necessary – neither more, nor less). Because many different crops are grown in any one place, and to ensure the best possible quality and to minimize transport, as much food as possible should be produced locally.

In absolute contrast, today's industrial farming is designed expressly to be "efficient" – where efficiency is defined in terms of cash. Modern farming is required like every business to maximize returns while minimizing costs. But these

requirements militate against the obvious need for global justice and long-term sustainability. Maximizing returns means maximizing productivity and added value – and these are often achieved at the expense of sustainability, for example as tropical forests are felled to make pasture, which then declines into desert; and deserts are irrigated to make them yield but hence become salinated and so become barren.

Minimizing costs means, above all, reducing labour – because labour, in traditional systems, is the most expensive input. Now, in Britain and the US, less than one per cent of the total workforce is working on the land – and in Britain the average age of farmers is approaching 60. Labour is replaced with heavy machinery, industrial chemistry, and biotech. Capital outlay is heavy – but within the debt economy the necessary cash could be borrowed. The result is a treadmill -- the farmer must then maximize output while minimizing costs in order to service the debts; but so long as the cash economy holds up, the balance sheet can be made to look convincing. But since such systems must keep labour to a minimum so as to minimize costs, the husbandry must be as simple as possible. So the industrialized, high-capital, debt-economy approach leads naturally to monoculture. In addition, since machinery operates most economically on the largest possible scale – there are big advantages in scale-up. Thus in Lincolnshire, nowadays, we may find just one full time worker on a 1000 hectare arable farm. In such systems there is little or no scope for local production. Typically, different crops and classes of livestock are produced in different regions or even in different countries and transported across country or from one side of the world to the other. When

oil is cheap, and with suitable tax breaks and subsidies, the figures add up, and that is all that is deemed to count.

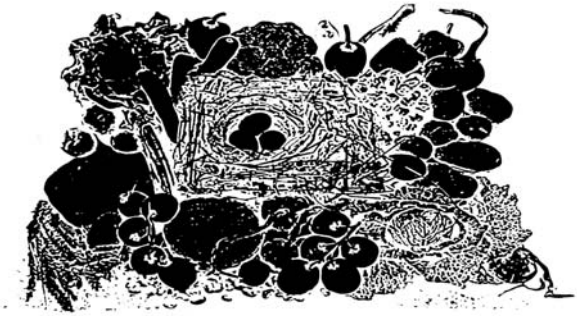
World politics, the law, logistics, and the whole global, integrated industrial and financial system with all its banks and corporates now favours industrial farming. Countries that are still primarily agrarian – in the Third World as a whole and in India in particular 60 per cent of people work on the land – are urged to follow the western lead: primarily that of Britain and the US. The countries that are still agrarian should surely be encouraged and helped to stay that way at least until there is any convincing alternative employment – which, as oil dwindles, will not be any time soon. The task is not to destroy traditional systems but to build on them and to make them work. Britain and the US, perceived as global brand leaders, in truth have gone way out on a limb. Both countries, probably, need at least 10 and perhaps 20 times as many expert people on the land as they have now. If Britain is to be self-reliant in food and to go on being so then it certainly needs, as a matter of urgency, to increase the number of farmers. This, perhaps, would be the greatest social and economic shift that could now be conceived in Britain. But it makes perfect sense, and indeed is necessary, and urgent.

Yet such a suggestion goes completely against the received wisdom of the past half century, and the cards are stacked firmly against it. Legal problems include those of planning permission and of tenure. The new generation of farmers will need somewhere to live, and the traditional houses have been knocked down or bought up by city people as second homes. It is hard these days to rent land on the long term because

landowners fear that they will lose out – but sound agriculture needs the long term. Logistic problems include the lack of expertise. Farming in its traditional forms has been run down partly as a matter of policy and partly through simple neglect. Small fields need to be re-created out of large and infra-structure installed for the small-scale. But above all there's finance. Farmland is now ludicrously expensive, to buy or to rent. The problem that does *not* seem to arise is the one that governments and economists insist is overwhelming. For received wisdom has it that country people have fled to the towns because they want to – because they hate the countryside. In truth, life on traditional farms has been made impossible, economically and logistically. People are leaving the land worldwide largely because they will starve if they do not. Many people now in cities, given half a chance, would far prefer to work in the country. Not everyone, of course -- but enough to make agriculture work as it should.

Despite the odds, there are moves throughout Britain and in other countries to make the changes that are needed. Almost invariably these are *people's* movements: governments, big industry, and most banks have their minds on other things. The transition town movement is a general, growing trend. The Slow Food Movement has become a serious political force and is vital because the shift in farming cannot work without a commensurate recovery of food culture: consumers have to appreciate what local farmers produce and pay for quality and provenance as well as for bulk. There are many individual initiatives of many kinds, too, moving in the same, enlightened direction. The specific purpose of LandShare, co-sponsors of the Oxford meeting, is to identify, coordinate, and encourage such initiatives. Here are some of them.

Paths to self-reliance



If Britain is to achieve self-reliance in food, and continue that way, then we need to make changes on three fronts. First, technical and scientific. We will need to develop new technologies – for example to provide sustainable sources of energy, and scaled-down mechanical devices (such as rotovators) that would take much or most of the back-break out of small-to-medium scale, labour-intensive farming; and we need to focus agricultural science not on the technologies that seek to maximize potential yield but, for example, on those that enhance nitrogen fixation, and biological pest control. We also need a second tier of experimental husbandry to try out such systems in the field and, for example, to re-explore the possibilities of mixed cropping with different combinations of livestock (meaning polyculture) – the kind of research that used to be carried out by the government's Experimental Husbandry Farms. Some relevant studies are in train but on the whole such issues are horribly neglected (as governments and big business seek to rescue the status quo with high tech, and in particular with GM).

Secondly, we need to shift structurally; to create new patterns of fields with appropriate systems of tenure that tip the balance from industrialized monoculture towards labour-intensive polyculture. On his farm in Suffolk, Professor Martin Wolfe is developing a model of organic agro-forestry that could surely be adopted with suitable modifications throughout Britain, and indeed the world over. He has divided the flat, otherwise prairie-like fields with rows of trees of various kinds: hazels and willows for short term use (not least for biofuel); hardwoods such as walnut and hornbeam for long-term investment – growing and increasing in value while the cash market fluctuates; and fruit trees. Particularly in an organic system, and perhaps surprisingly, rows of trees judiciously placed do not reduce the yield of crops grown in between. But they do provide wind-shelters, and "beetle banks" – predatory insects to reduce pests – while steadily increasing the capital value of the farm. The strips of land between lend themselves beautifully to rotations.

Thirdly, because the politics and economics of the past few decades has favoured industrialized agriculture so emphatically, we now need a whole raft of legal, logistic, and economic measures to restore the balance. In theory there are many ways to do this [(4)], but two requirements seem outstanding. First, partly to spread the costs and for other reasons too, land might best be owned or controlled communally: either by communities as forms of social enterprise; or by cooperatives. Secondly, there is a serious role for part-time farmers. Indeed, worldwide, some of the world's most significant agriculture is operated by part-time farmers

-- including the crofters of Scotland who commonly combined farming with fishing. To a significant extent, communal ownership and part-time farming go hand in hand. Individuals can invest just part of their money and their time in farming while keeping their other interests intact – as writers, accountants, plumbers, town councillors, what you will. Among other things, it's a good way of spreading options in uncertain times.

Again, in Britain, several promising models are already in train. Stroud Common Wealth, chaired by Martin Large, is already up and running in the Gloucestershire town of Stroud and meeting "great and growing enthusiasm" from the 24,000 inhabitants, and the population around. Among its initiatives is the development of Community Farm Land Trusts for "sustainable agriculture and horticulture, controlled by and for the benefit of local communities". Gloucestershire Land for People, is a community land trust that may in the future hold land in trust for farming.

Stroud also has its own Community Supported Agriculture project: Stroud Community Agriculture (SCA) Ltd, organised as a Community Co-operative with around 200 members and renting land on two farms. SCA Ltd hopes at some point to deliver food at reduced costs. "Stroud 'food-co' -- not Tesco!" should be the hub of local food supply, says Martin Large. But SCA is talking to the five supermarkets in the area – and 80 per cent of their apples now come from local suppliers. Stroud also has a thriving weekly award winning farmers' market, Allotments flourish, too. Stroud overall is a vibrant Transition Town with a social

enterprise centre, social enterprise workspace, and re-skilling classes in traditional skills from bottling fruit to hedge laying – all set up by Stroud Common Wealth. “In short”, says Martin Large, “we set out to achieve a complete overhaul of the way we conventionally live – and already we have a thriving, and mutually supportive community”.

But Stroud is a small town surrounded by countryside. Surely such schemes have nothing to offer to big cities? But they do – as is abundantly demonstrated these days in Havana, in the siege economy of Cuba; and indeed in Hackney, one of London’s most urbanized of boroughs. There, Julie Brown and her associates have set up “Growing Communities”, a social enterprise group to grow food for Londoners in a sustainable, independent, localized system.

Julie Brown and her colleagues have approached their task formally. They first identified organic farmers and growers who were already within reasonable distance – and found about 40, including some urban organic market gardens. Then they set up a buying scheme, exclusively for produce that was seasonal, fresh, and minimally processed. The produce is distributed through a weekly organic farmers' market, an apprentice scheme, a volunteer programme, a box scheme, a collection scheme, a community pick-up, with a community-led food trading system complete with management committee, staff, customers, members and volunteers. The whole operation is zoned with military efficiency as shown on the Growing Communities Food Zone Diagram; salad and perishables are grown closest to the centre of distribution, while potatoes and vegetables, which can

be stored for longer, can come from further afield. In the spirit of enlightened agriculture (and indeed of traditional, commonsense husbandry) livestock is fitted in as and when. As is traditional (and commonsensical) acceptable waste is fed to pigs and chickens. The overall structure is patchwork – making use of what land there is. Starter farms have apprentice schemes. Now, farms and holdings within a radius of around 56 miles supply about 1500 customers week with an annual turnover of around £600,000.

Overall, the Hackney people in the scheme have a strong voice with direct influence over their own food supply – what there is, and how it is produced. As in Stroud, as in any place where such schemes have been tried, the community as a whole has discovered a new spirit, a new communal vigour. “We wanted to turn the present system on its head”, says Julie Brown. “We believe that a human-scale, low-carbon, mixed-farming food system, in and around urban areas, is the way forward. Growing Communities produces good food, good friends, good work, and enriches our lives,”

Some, of course, will see all these schemes merely as eccentricities; pleasant enough hobbies, but quite unable to make any serious contribution to the world’s all too pressing food problems. They are not, the sceptics will say, *realistic.* But, this means only that they do not conform with present norms -- and it’s clear that present norms have already failed. The world needs something that really is new. When we apply a little biological and social reality we see that what the world needs is precisely what these schemes provide: food produced as locally

as possible, with maximal community involvement. People should know what they are eating.

It's also clear that governments and the corporates are not going to take the necessary initiatives. Whatever is done to make the necessary changes, must be done by private or community initiatives. That the schemes do not fit easily with the economic status quo is obvious – but it's the economic status quo that is unrealistic, producing an ever-growing pile of money that has no anchorage, either in moral or social aspiration or in the realities of biology and physics, which is the realest reality of all. Clearly, too, anyone who tries to do anything that is *not* immediately in line with the economic status quo, has to be prepared to work for less than the market price. So the changes that really matter have to be pursued as hobbies, or subsidized by various social and other schemes. Indeed, farming can never be as instantly profitable as simple, urban, industrial pursuits – not unless it is itself turned into a simple industrial pursuit, as has been the ambition of the past 40 years. If we want good farming then we have to insulate the economy of agriculture by whatever means are necessary from the ups and downs of mere cash – again, the very opposite of current dogma, which sees the market as the arbiter of all. In short, today's eccentrics and hobbyists are pioneers – bringing about the transition that the world now so desperately needs.

So what can we conclude? Where do we go from here?

Pointers to the future

The answer to the specific "Can Britain Feed Itself?" seems to be a resounding "Yes". My own arithmetic says that this is easy and even when Simon Fairley and others stir in the complications there are still no insuperable difficulties. "Should we?" is more controversial – although once we distinguish "self-reliance" from "self-sufficiency" it is less obvious why it should be. The advantages seem obvious. Security is surely desirable. Besides, the kinds of changes that would be needed to make Britain self-reliant – or any country – are the kind that the world needs anyway. Thy all lead towards greater sustainability – a shift from mere productivity and profit into systems that are firmly rooted in biological and physical reality. A strategy of national self-reliance would also help to define the kinds of changes that are needed globally in agriculture as a whole – agrarian, economic, political, and social.

Emphatically, Self-Reliant Britain is *not* an exercise in isolationism, or in little Britain-ism. Rather, a self-reliant Britain would provide a model for the rest of the world to emulate – a pleasant contrast to the warning that it provides now. Most countries could be self-reliant, and if they were they would not be anything like so dependent upon and hence beholden to foreign

powers, and to economic mechanisms and technologies over which they have no control. Self-reliance, in short, is a necessary component of self-determination, which in turn is a key component of democracy. A self-reliant Britain that also traded fairly would be a positive force for good in the world – and, such is our wealth and our scientific clout, our potential to do good is enormous. What a grand change that would be.

But at present there are some alarming gaps in information, and in the efforts made at official levels to plug those gaps. The question, "Can Britain Feed Itself?" is obvious, and is obviously heuristic; by addressing it, we clearly must address a great many other related and equally cogent issues as well. Yet it seems that this question has never been formally addressed by people with the resources to do the job thoroughly. All the calculations so far have been back-of-the-envelope, even including Kenneth Mellanby's and Simon Fairley's.

There are even bigger and grander questions that again have been neglected. One of the biggest is – "How many people should be working on the land? What is the best ratio of agrarian people to urban?" Adam Smith asked this in the 18th century but since then it seems to have been sidelined. In Britain and the US the assumption of the past 40 years has been "The fewer the better" – since fewer workers means cheaper food and, the dogma has it, cheapness is all. But as a result, farmers and farming worldwide are in dire straits. Dispossessed farmers and their families now swell the world's urban slums which now, according to the United Nations, contain a billion people. For this and many other reasons I become more and more certain that all countries should have a strong agrarian base; that none –

including Britain and the US – should have fewer than 10-20 per cent of its people on the land while the countries that are not already ultra-industrialized should realistically aim for around 50%. Farming is the world's biggest employer by far and it is hard to see what else could usefully be done by the 2.5 billion people or so who are now involved in it, especially in an age of dwindling oil. Again, this is back-of-the-envelope. But again -- where are the formal studies?

This brings us perhaps to the most disgraceful feature of all – that decisions of huge magnitude that affect the whole world are currently taken by default. The most far-reaching strategies are based on nothing more than dogma. One current dogma simply tells us that cheap is good. Another tells us that agrarian life is necessarily intolerable and that agrarian economies must be "backward" – and, contrariwise, that people flock to the cities because people really like cities. In truth city life can be foul, not just for the slum-dwellers, while agrarian life can be very satisfying and indeed enviable – but it has not been because the countryside worldwide has been neglected or systematically undermined, or handed over to the rich for their own purposes. If only we saw that an agrarian base for all is *necessary*, and set out to make agrarian living agreeable, then the dogma would surely fall away. The point is not to be nostalgic, and luddite, and seek to restore the agrarian past, but to create a *new* agrarianism, using the ingenuity of modern science and technology to make it work. Enlightened agriculture is an exercise in "science-assisted craft".

Beyond any doubt, these are exciting times. The world's troubles are of many kinds and all too obvious. They won't be put right by more of the same, or by ad hoc tinkering. We need to re-think everything from first principles. Agriculture is a very good place to start. National self-reliance in food for Britain and most other countries is not the complete answer of course; but it does concentrate the mind wonderfully. As things are, though, it seems that the serious initiatives that the world needs must come from private individuals. I helped to put together the symposium that inspired this essay at the personal invitation of Sir Crispin Tickell, as director of the James Martin Policy Foresight Programme. There are many more questions to be addressed – formally, thoroughly, and urgently. I suggested long ago that Britain (and the world) needs a College for Enlightened Agriculture, to focus attention where it is now so obviously needed. This seems the ideal time to get it started.

Footnotes

(1): This article is a personal account of a symposium held in Oxford on October 15 2008 that brought together delegates from government, with academics, farmers, and policy makers from business and civil society. The meeting was hosted by the Policy Foresight Programme at the James Martin Institute for Science and Civilization and chaired by the Programme's director, Sir Crispin Tickell. It was organised principally by Colin Tudge, Ruth West, and Tom Curtis, all representing the

LandShare organization. A formal, complete account of the proceedings can be found on the James Martin 21st School website (the Programme moved from the Institute to the School in January 2009)

http://www.21school.ox.ac.uk/downloads/briefings/PFPShould_Britain_Feed_Itself.pdf

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(2): See, for example, *Feeding People is Easy*, Pari Publishing, 2007.

(3): Relevant to this is LandShare's current inquiry, "How to Feed a City", which seeks in the first instance to quantify the food requirements of the city of Oxford, and then to extend the principles to other towns.

(4): LandShare is also beginning a project to explore the kinds of logistic and legal changes that are needed, and ways of bringing them about.