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Report

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Living on the edge: what future for our urban fringe farms

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Contents

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1. Executive Summary

Background

I grew up in the suburbs, and didn't set foot on a farm until I was 23 years old. Since then I have been working on a mixed livestock farm with a 2-acre market garden about 5 miles to the south-east of Leeds, in the M1-A1-M62 triangle. I have kept goats, made cheese, bred sheep and grown fruit and vegetables for our box scheme. The situation the farm finds itself in, caught between the post-industrial Leeds-Bradford conurbation and the traditionally rich farming country of the Vale of York, has fascinated me since I started there eight years ago.

Farmers on the urban fringe face an interesting set of challenges. High land prices limit expansion or entice farmers to sell up and move out. Proximity to large residential areas means vandalism is a problem, and planning decisions, in my experience, are anti-farming. Neighbours don't enjoy the smelly, noisy reality of farming, and the rest of the agricultural world feels a long way away.

There are, of course, huge advantages. We are within 40 minutes' drive of 5 million people. When we opened our doors on Open Farm Sunday this year 500 people walked in. We couldn't get much closer to our market, but still the farm struggles. I wanted to know if anyone else out there was interested in making urban fringe farming work, what lessons we could draw from the rest of the world, and how we could work together to make better use of our position.

The urban fringe has always been an area of transition as fields are swallowed up for new retail centres, housing estates and office parks, not to mention the infrastructure supporting city life, such as sewerage plants and landfill sites. Farming seems to exist in a different world; a rural activity that generally loses out to the more lucrative and urbanite-friendly consumer service industries.

It is essential that agriculture remains strong in the urban fringes. The public's lack of understanding of agriculture is seen as one of the industry's greatest challenges; a farmed urban fringe would expose the people in our towns and cities to agriculture and the complexities and vagaries we, as farmers, work with.

A Farm Belt around urban centres could act as a buffer between town and country, much as the Green Belt was conceived to be. This would maintain the positive characteristics of both towns and the countryside, with the added benefit that the buffer zone would be producing fresh food for the local markets, less reliant on fossil fuels for refrigerated transport. This is going to be an essential consideration as we adapt to a post-peak oil future.

As urban fringe farms are more visible and accessible to the urban population, I wondered if they might encourage more new entrants into farming.

I wanted to see examples of urban fringe farms developed as distribution centres, or other models in which fringe farms formed a link between urban food outlets and the mainly rural producers.

Nuffield

In Brazil I learnt what role the government could play in supporting a thriving family-scale farming sector near cities. With separate ministries for 'agrarian development' and 'agri-business', the objectives are clearly

differentiated, removing the conflict between social and environmental benefits versus commercial gain inherent in our government's approach to agriculture.

I visited a government-run wholesale market which enables cheap and flexible access to the State-wide market for farmers of all scales. I saw how price controls in groceries run as private enterprises in partnership with the State were aiming to provide small-scale local producers with a fair return for their crops. Federal legislation requires that a minimum of 30% of food supplied through schools, universities and hospitals is sourced from family-scale farms. These policies are aimed at reducing health inequalities and specifically childhood deaths, and have been successful beyond expectations, not least in maintaining diversity in urban fringe farming.

The Sydney basin was a last minute addition to my schedule, and proved to be a fascinating stop. The urban population in Australia is growing faster than anywhere else in the developed world, and with good land being such a scarce resource, farming on the urban fringe has been a hot topic for some time. I met farmers who were working together to access the lucrative urban Farmers' Markets, as well as third generation immigrant families running intensive two-crop hydroponic units supplying the supermarkets. Urban zoning is gradually pricing many of these farmers out of business whilst, paradoxically, the land taxation system would seem to encourage agricultural production.

I met a farmer promoting the introduction of transferral development rights, which would enable farmers to sell the rights for the development of their land, thereby acquiring capital and ensuring the land is kept in production in the decades to come.

The government's minimum plot purchase size is another strategy for discouraging urban development on existing agricultural land, but the pressures within the Sydney basin make for a conflictual relationship between the various parties involved.

Thanks to decades of academic research on the subject there are some fascinating statistics on the value of urban fringe production which make for very persuasive reading.

Probably more than anywhere else in the world at the moment, China's agricultural land is under threat of urban development. The government has stipulated a minimum area of land which must be under production at all times, though there are mechanisms around this. The country's best land is around the cities, which is presumably why the area was originally settled, so the rate of urban growth is threatening to dangerously reduce the nation's food productivity. Crop specialisation on the urban fringe, a range of yield-increasing technologies, government control of production as well as exploiting the tourism potential were some of the strategies we witnessed, and gave much food for thought.

The importance placed on keeping people on the land, providing work and maintaining living village communities when building agricultural policy is something we have much to learn from.

Taiwan, my last stop, introduced me to groups of young people turning their backs on the city and returning to their grandparents' farms. I visited rice and sweet potato farmers who had organised themselves into co-operatives and were doing a great job in marketing their home-grown produce against competition from US-imports. I saw a number of small-scale, highly intensive and profitable farms, which goes against our trend of survival through expansion.

In conclusion...

If we, as a nation, are serious about feeding ourselves in the future, the urban fringe has an important role to play, particularly in producing the highly perishable foods for our towns and cities. However, things need to change. Urban fringe farmers need to work together to access the urban markets, to respond to changing demands from urban consumers, to use the high-quality land available appropriately and effectively as well as engage with the political bodies and the media to ensure that our views are heard.

Our policy-makers need to put mechanisms in place to protect land on the urban fringe for food production as well as consider systems which would encourage food production over recreational usage.

The economic, social and environmental benefits of agricultural production must be written into the new Local Development Frameworks in order that they are recognised in future planning decision-making.

After Nuffield

Since starting my study, interest in urban fringe food production in the UK has increased, with the release of two relevant reports on the subject.

I have taken the decision to move to Manchester to co-ordinate a project developing commercial market gardens on the urban fringe, supplying a farmer-client-owned co-op selling food to the University and a number of restaurants. My Nuffield study has given me the confidence to take this leap, and has been a wonderful foundation for what I hope is a lot more learning to come.

Me, Kirstin

2. Introduction

I have worked at Swillington Organic Farm in West Yorkshire since I graduated from University in 2004. I had studied Chinese and didn't have any interest in agriculture as a profession until I had to start thinking about life post-university. I wanted a job that would be varied and challenging and that would keep me out of an office. I had had an allotment and thought vegetable growing on a larger scale might be the answer. I started looking for somewhere that would have me, with nothing but enthusiasm to offer. Luckily I quickly met Jo Cartwright from Swillington, and started growing vegetables in her two-acre Victorian walled garden.

A couple of years later I decided to exploit a perceived gap in the Leeds market for organic goats' cheese, and bought a small herd of 17 dairy goats. For three years I made cheese in a converted stable and sold it through the farm shop and at farmers' markets. When it was clear this wasn't going to provide a livelihood, I switched to sheep and life has been altogether easier since. I also started working off-farm for the Soil Association on the Community Supported Agriculture project, and for Sustain: the alliance for better food and farming, as Food Co-ops advisor covering the North-east.

Swillington Organic Farm is a 160 acre mixed livestock farm about 5 miles out of Leeds and within earshot of the A1, M1 and M62. I'm told we are within 40 minutes' drive of 5 million people, and that increasing numbers of these people want local, organic food. Yet business is difficult. We retail direct, but finding and keeping customers has always been a challenge. We had problems with our council refusing planning permission for developments on farm, due, I felt, to their lack of understanding of or enthusiasm for agriculture. We suffered thefts and vandalism, much of it from kids living on the housing estates surrounding the farm. And I felt a sense of isolation; we are not part of a farming community. There isn't a local Young Farmers Club, no farmers propping up the bar at the local pub, and no decent farm supplies store to browse and swap stories at. As I travelled around Britain I noticed that most cities are like Leeds; surrounded by acres of horses with little evidence of food production.

I love farming, but I love city life too. I grew up in cities and I enjoy all the distractions they have to offer. I started to develop a vision of a vibrant farmed urban fringe which would bring some logic to our crazy, fossil fuel-reliant food supply chain, by producing the bulk of the city's perishable foods as close to the markets as possible. Farms would also provide educational and tourism facilities for the urban masses in a society which valued agriculture. I imagined young people from non-farming backgrounds would consider farming a more attractive proposition if it meant they could live in or on the edge of cities. I wanted to know if there was anyone else out there also excited about the possibilities urban fringe agriculture has to offer and how this vision could come about. And I wanted to see what we could do to improve things at Swillington.

Nuffield seemed like an impossibly good opportunity to fulfil this dream.

3. Background to Study Tour

3.1 Where is the urban fringe?

My first challenge was to define what was meant by 'urban fringe'. I knew what I was looking for; farms which were on the edge of cities, and affected by those cities. But where to draw the line? More than 80% of Britons live in towns and cities so it is evident that all farmers will feel their influence. I was looking for a more immediate form of interaction; farms which have had to curtail or adapt their operations due to their proximity to an urban centre, or farms which had really embraced the potential offered by their location on the urban fringe.

I came across several definitions during my research:

- *'200m out from the metropolitan boundary'*[1]
- *'from the built-up edge of cities, fringe areas may extend from a radius of five miles for cities of 10,000-25,000 inhabitants to 30 miles for large agglomerations of one million inhabitants or more.'*[2]
- *'The rural-urban fringe is the boundary zone outside the urban area proper where rural and urban land uses intermix. It is an area of transition from agricultural and other rural land uses to urban use'*[3]
- *'Landscape interface between town and country'*[4]

I soon realised, however, that the contexts within the countries I was visiting were so varied, that I would have to use a loose and flexible definition.

In Britain our cities have grown rapidly over the past five decades due to population growth and the proliferation of car use. Land values on the edge of cities have increased and, with farms having to expand to remain competitive, agriculture has retreated somewhat into the rural areas of Britain. The edges of our cities are used for out-of-town shopping centres, new housing developments, horses and other leisure activities. Agriculture just can't pay its way. Our retailers have looked to the rest of the world for the cheapest product, rather than source a more expensive, but local, equivalent.

We have 14 green belts in the UK, and although these place restrictions on development around our cities, they don't specifically encourage agricultural production; in fact, many feel they inhibit the development of farming enterprises.

In addition, there has been much criticism of the Common Agricultural Policy system subsidising unproductive grass growing rather

1 Matt Reed, CCRI

2 p9, 'The rural-urban fringe: a review of patterns and development costs', Marchand, C and Charland, J, 1992

3 http://www.geocases.co.uk/sample/urban1.htm accessed 15/5/12

4 Wikepedia: urban-rural fringe accessed 15/5/12

than food production, putting money in the pockets of larger amenity landowners, rather than food producers.

This all makes farming quite tricky, but especially so on the urban fringe where farms can't expand to compete, can't develop due to planning restrictions, and may have trouble accessing farming services.

I think the future is bright for urban fringe farming. Increasing fuel prices mean it is now more likely that the production of perishable goods, being reliant on fossil-fuelled refrigeration, may relocate to the urban fringe, as close as possible to the end users.

Land prices have remained stable and while the construction industry is stagnant landowners may be reconsidering the long-term benefit of keeping their land in agricultural production.

Increasing fuel prices mean it is now more likely that the production of perishable goods, being reliant on fossil-fuelled refrigeration, may relocate to the urban fringe

At the same time there is a small but growing movement to bring land into collective or public ownership, through land trusts, for food production.

The consumer is more aware than they have been in a long time about the issues involved in food production and the implications of the supermarket-dominated food supply system. Farm visits are more popular than ever and there is a real appetite to engage with farming issues, as proven by the popularity of programmes such as Countryfile and the high profile media coverage of the dairy industry protests in July 2012.

Through researching this subject I have discovered than there are many parts of the world where the importance of agricultural production on the urban fringe is well recognised. In the developing world, generally speaking, infrastructure and transportation is poor, and food production must necessarily take place near to the consumer. The huge urban migration which has taken place in the past 40 years or so has meant many newcomers to the city are farmers, and eke out a living producing food on the cities' fringes.

By comparison, in the UK we don't seem to have considered the possibilities for the urban fringe to play a vital role in feeding our growing population. 76% of Britain is in agricultural use, so it might seem that there is no need to consider urban fringe farming in the way many developing countries do. However, Britain imports £15billion worth of food each year which we could be producing ourselves.[5]

The research that has been carried out in the UK has been from a policy-maker's or consumer's point of view. I felt there was a need to look at the issue from the farmer's point of view.

3.2 Where I went and why

3.2a Brazil – November 2011 4 weeks

During our Contemporary Scholars' Conference in New Zealand we were given a presentation by Milton Suzuki from Bayer Crop Science Latin America, and I decided there and then I had to go. The facts were overwhelming: agriculture represents 36% of Brazilian exports, which constitutes 25% of GDP. Brazil is the world number one producer

5 Caroline Spelman, December 9th, 2010

of sugar cane, coffee, tropical fruits and concentrated orange juice, the largest exporter of tobacco and ethanol and has the world's largest national herd of cattle. The number of people employed in agriculture is increasing. I had heard there was a widespread air of optimism among Brazilian agriculturalists, and I wanted to savour some of that!

Brazil has two mega cities; Sao Paolo and Rio de Janeiro. Both are experiencing 'thinning': the city area is expanding hugely, but the population is not growing in proportion. There is sprawl without the services to support it - sewerage, water supplies and retail facilities - leading to crime, poor health expectancy and unregulated development. The government is therefore keen to discourage poor (mainly rural) people from migrating to the cities, and has been implementing government programs to ensure they can make a livelihood from the land.

I had read an article about the city of Belo Horizonte, about 6 hours north of Rio de Janeiro, in which a city official described it as the world's most 'food secure' city. I spent 3 weeks there, interviewing government officials, visiting government programs to support local family-scale farmers as well as visiting the farmers themselves.

I spent a few days in Brasilia, as I had read that a ring of urban fringe farms had been planned into the city when it was designed in the 1940s. There was no evidence of that when I visited, and no-one I asked knew about it, but the visit provided me with the opportunity to interview an official in the Department of Agriculture, which was a very rewarding experience.

The language barrier proved a challenge, but I was deeply struck by the generosity and kindness of the people I met, who went out of their way to show me around and explain the intricacies of their work.

3.2b Australia – February 2012, 2½ weeks

Australia was a last minute addition to my original travel plans. A chance Twitter search for 'peri-urban agriculture' led me to organisations working in the Sydney basin to promote and protect urban fringe farms, and I discovered a number or academic articles written on the subject. It quickly became clear that I would have a lot to learn from the movement, which is far in advance of anything I had seen in the UK.

Some of the best soils in Australia are in the Sydney basin, and farmers first settled there, around Richmond and Windsor, in 1794 and within five years the area was producing half the colony's grain[6].

The average value of agricultural production in the Sydney basin is $5443/ha. Despite this persuasive data important agricultural land is to be taken out of production.

The population of Sydney is projected to grow by about 50,000 people a year; the city government plans to build 770,000 new homes in the basin by 2036[7] to house these people, primarily in two 'designated growth areas' which would displace 50% of the basin's market gardens.

Research into urban fringe farming in the Sydney basin has been led by Frances Parker of the University of Western Sydney, and

6 Wikipedia, accessed 22/7/12

7 Rachel Cummings, meeting

provides figures for the percentage of food currently supplied to the city; 90% of perishable vegetables, 100% of Asian vegetables, 100% of ducks and 80% of mushrooms consumed in the city are produced by urban fringe farmers. 25% of the gross value of New South Wales's agricultural production is produced on 3% of the state's land, that ring around Sydney which is being steadily encroached upon by housing developments.

The average value of agricultural production in NSW is $136/ha; in the Sydney basin that figure is $5443/ha. Despite this wealth of quantitatively persuasive data important agricultural land is to be taken out of production.

There are between 1000 and 2000 farms in the Sydney basin with an average size of less than 5 acres. 90% of these farmers are from culturally and linguistically diverse back-grounds, i.e. they are recent or established immigrants. I hoped this fact would answer my question as to whether urban fringe farms are more accessible to new entrants. According to Parker, the average age of peri-urban farmers in the Sydney basin is below the national average and falling, another interesting feature worth investigating.

3.2c China – February 2012, 10 days

China is the world's fourth largest country and has the largest population. Until relatively recently China was wholly self-sufficient in food, producing it on just the 14% of land suitable for agriculture. China has been dealing with land pressures for a long time, and as home to several of the world's mega-cities and in the grip of an untrammelled development boom, I wanted to go and see what was happening from an urban fringe farming point of view.

I heard, anecdotally, that China has more people with agricultural PhDs than the rest of the world put together, and the government certainly maintains food security at the top of the agenda. It aims to achieve 95% food self-sufficiency, and judging by the amount of investment we saw, new technologies are an important strategy to reaching that goal. Indeed the current Five Year Plan states:

'We will stick to the path of agricultural modernisation with Chinese characteristics, make safeguarding national food security our primary goal'[8]

I spent a gap year in China in 1998-1999, teaching English in a secondary boarding school in Guangxi Province, neighbouring Vietnam. During that time I learned that China is a complex country and that scratching below the surface is well worth the effort.

I travelled with a group of 4 other Scholars and am grateful to them for their company, and to Peter Bloxham and Charlene at PFB Associates in Beijing for all their work in organising a wonderful 10 day tour.

3.2d Taiwan – March 2012, 4 days

I spent a year studying Chinese in Taiwan in 2001, and got to know the modern, urbanised side of the country quite well; around 22 million people are squeezed into the 30% of land which forms a flat strip along the west coast. Taiwan is said to have the world's lowest birthrate, and the highest proportion of university graduates. It is a politically and socially fascinating country, made up of

8 From http://gain.fas.usda.gov/Recent%20GAIN%20Publications/China's%2012th%20Five-Year%20Plan%20(Agricultural%20Section)_Beijing_China%20-%20Peoples%20Republic%20of_5-3-2011.pdf accessed 22/7/12

various waves of immigrants as well as the indigenous aboriginal groups.

When I went back in March, I learnt for the first time about the country's rural life. Taiwan lies within the Tropic of Cancer, has fantastic volcanic soils, and yet imports over 65% of its food stuffs, up from 0% in 1968. This drop in self-reliance is largely down to the political power the US holds over the country; in return for American armaments to defend the country against the Chinese, and the USA's continued political support, Taiwan had to open its markets to the world, but specifically the US, which sells excess rice into Taiwan. This has had a profound impact on the ability of Taiwanese farmers to make a living. I was told that Taiwan's farmers are the most heavily subsidised in the world, though these subsidies are paid indirectly through equipment and infrastructure funding. It was also claimed that Taiwanese agricultural land prices are amongst the highest in the world. For these reasons I thought Taiwan would be an interesting comparison to the UK.

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In a stroke of good fortune I had met John Yang the previous year, when he was visiting Europe to learn about community supported agriculture and visited us at Swillington Organic Farm. He and his colleagues Fox Chang and Rebecca Lin very kindly spent three days taking me to visit a fantastic group of urban fringe farmers who were working hard to get top quality home-grown food into Taipei city.

4. Land Protection on the urban fringe

4.1 Farming vs. urban development

There is a strong argument for the further 'ruralisation' of agriculture. Larger, rural farms without interference or restriction from urban activities would produce food more efficiently. There are of course dangers to this form of concentration of production; the gradual monopolisation of a sector by a handful of firms, the risk of disease epidemics and adverse weather conditions on monoculture crops or livestock and the loss of employment opportunities in rural areas, to name but a few. If strength comes through diversity, a mixed urban fringe including agricultural uses could be an important element of a diverse, vibrant farming industry in this country.

Land for agriculture on the urban fringe must be protected for such a purpose if it is to survive in the face of competition from housing or other developments. This is particularly true for the better quality land. The Department for Local Communities calculates that 11,000 hectares were lost to development between 2001 and 2009.[9] Land suitable for agriculture close to the urban markets needs protecting in order that it can feed us into the future, because once it's gone, it's gone.

The land zoning system in the Sydney basin, designed to protect farmland, was working well for some of those I met, and less well for others.

Frank Ages arrived in Australia from Malta in the 1970s and now grows lettuces for Coles, one of the two dominant supermarket chains.

Frank Ages

He uses a hydroponic system over about 8 acres of a 10 acre plot which is part of a section bought speculatively by a housing developer in 1980. It was categorised as 'rural residential' until it was recently re-zoned for commercial housing, sending the rates rocketing. Frank works in partnership with his three sons who grow on sites further out from the city, and is eagerly anticipating selling up at a much inflated rate and retiring.

Aldo Vambucca

His neighbour, Aldo Vambucca, is a third generation chrysanthemum grower with no children interested in taking on the business. The increase in rates, unrealistically low prices caused by supermarkets sourcing cheap imports, as well as an AUS$4 million relocation cost, has led him to decide to shut down his business.

Frank and Aldo's neighbour, Fred Haskins, has also farmed there for around 30 years, but as

9 http://www.ecifm.rdg.ac.uk/current_production.htm accessed 23/7/12

a tenant won't be able to take advantage of the land sale price. He has been given a year to move on.

Fred Haskins

There is another group of farmers whose land has not been re-zoned for development, but who desperately wish it would be in order that they can sell up and retire. In Sydney I met Ed Biel, an orchardist from Oakdale, who has been working on promoting a system of transferable development rights (TDRs) to protect agricultural land in the Sydney basin, whilst releasing the capital the land would have realised, were it to be developed. It is a system pioneered in the USA, and was based on the idea of 'bio-banking'; the payment of a stewardship fee to farmers to maintain wildlife on their properties, somewhat similar to our stewardship system.

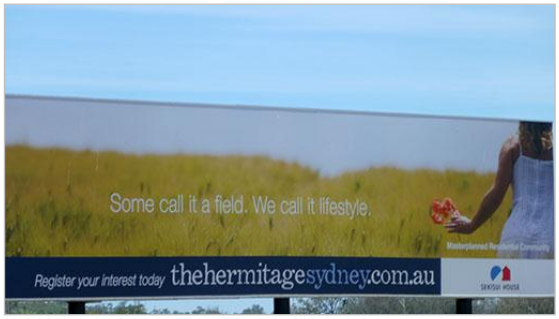
Transferable development rights enable farmers to sell the rights from their own piece of land to the local authorities or developers.

His explanatory document is available in **Appendix 1,** but in summary Ed claims that zoning is not an effective enough mechanism for protecting agricultural land at risk of encroachment from urban areas, primarily because zoning land as agricultural causes land prices to drop relative to land ear-marked for development. As a result, farmers lose an important means of raising the capital needed to develop their businesses. The farms therefore stagnate and go out of business, leading to 'green deserts'. Transferable development rights enable farmers to sell the rights to develop from their piece of land to the local authorities or developers. The local authorities or developers may then use these development rights in a different part of the local authority area to extend an existing plan in a more urbanised area, by adding height to a building for example, or additional square meterage to an office building.

'Older farmers could retire using the proceeds of the TDR sale. They could then on-sell the now restricted farming land, to a new entrant farmer, at a lower price. The lower price would be the initial value of the land (say $1m) less the TDR (say $400,000), making the new sale price $600,000. This is a more realistic figure.

The new farmer could continue farming thus made more viable due to the reduced initial capital cost of the land. If this was carried on for 25 years then a new TDR is created. This TDR would be based on the conditions at the time and the history of production of this new farm.' See Appendix 1

Ed has been working to promote the system of transferable development rights in New South Wales for six years, but says there has been little official movement.



Roadside housing developer's hording, Western Sydney

I was surprised to learn of a similar system in China. The government has a set area of land which must be under agricultural production at any time, which is approximately 120 million hectares or 12.5% of the total land

area. The good agricultural land is primarily along the eastern coast, precisely where the country's population is concentrating. China is clearly under intense pressure to produce food for 1.3 billion people, and part of this strategy, at least nominally, is to protect land on the urban fringe for food production close to the urban markets.

Polytunnels on the edge of Beijing

Every Chinese person is registered as either urban or rural. All rural residents (or peasants, as they are commonly known) have an entitlement to a certain area of land, which varies from county to county. A developer may buy this entitlement and build on a peasant's land on condition that the developer then provides employment for that person. Presumably as a result of this legislation we saw surprisingly large numbers of people on the land, not necessarily doing very much, and in a Korean seed factory we saw groups of women sitting round tables packaging and labelling seeds next to the idle machines which were designed to do the same job.

The developers are also required to bring *into* production the same area of land as they took *out* of production through building works. Very often this land is remote and of an inferior quality. We heard from another visitor with our group, who had been to Sichuan province in the foothills of the Himalayas to visit a new farm which was opened up by a huge development firm in this way. The land was mountainous, prone to landslides and in an earthquake zone two hours away from the city. A road had been blasted through the mountains to get to the new enterprise which was apparently causing disturbance to the local economy and environment in a myriad of ways.

It would seem the authorities are aware of the shortfalls of this policy, as they are concentrating their research efforts into high-yielding varieties to increase productivity, rather than relying in maintaining the best agricultural soils in production.

4.2 Green Belt or Farm Belt

Here in the UK we have green belts around 14 of our urban centres which came about as a result of the 1947 Town and Country Planning Act. The area of land within our greenbelt amounts to 1.6 million hectares. The aim was to keep a buffer between town and country in order to stop sprawl, maintain the characteristics of vibrant towns, and provide leisure space for urban residents. Although the 'retention of farming and forestry' is a stated aim of Objective 6 of the Act, a joint *Campaign for the Protection of Rural England* and *Natural England* report published in January 2010, called 'Green belts: a greener future', noted that agriculture remains a marginal activity within our green belts.[10]

The same report found that 78% of people questioned would like to see more food grown on otherwise unused land in the Green Belt. The nature of agricultural activity in the Green Belt has changed over the years, with a reduction in the numbers of commercial livestock including sheep, pigs and poultry, and a doubling of horses, goats, donkeys and

10 Green Belts for a Greener Future – CPRE and Natural England report

llamas, which might be considered more 'hobby'.

A Farming Belt around our cities could work in a similar way to a Green Belt; areas of high quality land on the edge of urban areas would be protected for agricultural production through a range of pro-farming planning policies in which food production becomes a priority land use.

Thanks to my Nuffield travels, particularly in Australia and China, I have come to appreciate our planning laws; they may be considered restrictive at times, but we have large areas of beautiful countryside because of them

Thanks to my Nuffield travels, particularly in Australia and China, I have come to appreciate our planning laws; they may be considered restrictive at times, but we have large areas of beautiful countryside because of them.

However, the planning guidelines protecting the best agricultural land refer to rural areas:

> *'While the Government aims to minimise the loss of farmland, particularly the best and most versatile land (grades 1, 2 and 3a), it also recognises the need for a positive approach towards a more diverse rural economy.'*[11]

Guidelines specifically for good land on the urban fringe should be drawn up to provide protection in the planning process.

Whilst it could be said that our planning laws control development on the urban fringe well relative to other countries, it is also true that huge areas of good land are sitting fallow, either awaiting development, or perceived economically unviable to farm due to the small acreage. Mechanisms to encourage absent landlords to allow access to these plots of land for farming purposes should be considered, such as Australia's land taxation system, discussed in the following chapter.

11 http://archive.defra.gov.uk/foodfarm/landmanage/land-use/index.htm accessed 23/7/12

5. Land use on the urban fringe

If Britain is to be able produce enough food to feed a growing population in the future, the land available must be used appropriately to ensure it is producing the quantities of food it is capable of, for the long term. This is particularly crucial when the best categories of land are near urban centres. Towns and cities used to be surrounded by a ring of market gardens which put the best soils to best use, as near to the end market as possible. I believe this system was eminently sensible, and that moves should be made to move back towards something similar.

5.1 Promoting food production

I was told that in New South Wales the dream was to live on a 'lifestyle plot'; a rambling house on 10 acres within commuting distance of the city. I spent a day with urban planner Ian Sinclair who showed me countless examples on the western fringes of Sydney of good quality farmland swallowed up by housing developments. The added sting is that the houses are generally near the service road, leaving large parcels of unproductive lawn at the back to be mown. From a British urban fringe farming perspective, it seemed outrageous, but I was then reminded of the difference in scale and perspective between our two countries.

There is a land taxation system which seems to encourage farming. Agricultural land is exempt from land tax, whether that land is used by the land owner or a tenant, and agricultural activities are defined as:

- *"cultivating crops for the purpose of selling the produce*
- *maintaining animals (including birds) for the purpose of selling them, their natural increase or their bodily produce*
- *commercial fishing and commercial farming of fish and other seafood*
- *keeping bees for the purpose of selling the honey*
- *commercial plant nursery, but not including a nursery where the principal cultivation is maintaining plants pending their sale to the public*
- *growing flowers, orchids or mushrooms for the purpose of sale."*[12]

Interestingly, non-rural, i.e. urban land used for commercial agriculture, is also exempt:

"If the land is not zoned rural, non-urban or rural residential, the land may be exempt from taxation if the dominant use of the land is for primary production and the use of the land:

- *has a significant and substantial commercial purpose or character based on primary production activities, and*
- *the size or scale of the activities is large enough to be considered a business, not just a hobby, and*

12 http://www.osr.nsw.gov.au/taxes/land/exemptions/primary/ accessed 24/7/12

- *is engaged for the purpose of profit on a continuous or repetitive basis (whether or not a profit is actually made).”*

Although I did see large area of lifestyle plots with non-productive gardens, this system seems to me an interesting and sensible approach to promoting agricultural production. Those who can afford to buy a large block of land can afford to pay the rates, and it may well deter small-scale speculative buying.

My hope is that the 2013 CAP reforms include some similar measure to prioritise …. food production over amenity uses.

My hope is that the 2013 CAP reforms include some similar measure to prioritise commercial production, in particular food production, over amenity uses.

I suspect the Chinese approach to shaping agricultural production would be a step too far down the line towards government interference if suggested here! Our hosts for a day in Daxing County, south of Beijing city, were a group of local government officials who described the government subsidy system. In a given area the local government decides how much of each product needs to be produced, according to a central government plan. This is made public and farmers who respond positively by planting the 'correct' crop are rewarded in the form of new infrastructure; a reliable or previously non-existent water supply, electricity, as well as free fertilisers and other inputs. It must be said there are advantages to this form of centralised planning; Beijing, now a city of 20 million people, has been well supplied with local food, though we did hear that for the first time food was having to travel greater distances as the surrounding fields were disappearing under blocks of flats.

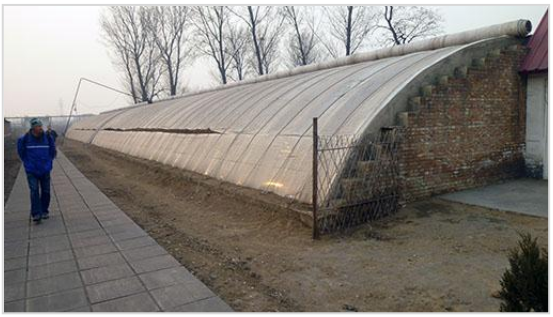
5.2 'Sustainable intensification'

An over-riding theme to the farms I visited around the world was intensified production. With land prices on the edge of cities making expansion impossible, farmers found differing ways to increase their income from their land.

In the Sydney basin I saw hundreds of acres under hydroponics, mainly to supply the salad and Asian vegetables for the city's wholesale market and supermarkets. The set-up is relatively capital intensive, but has the benefit of being mobile. With protection and semi-controlled conditions, supply could be guaranteed year round.

The Grimi family, Riverview Farm, Western Sydney

The Beijing Agricultural College is home to the Beijing Academy of Urban Agriculture which incorporates projects working on the research and development of high-technology yield-increasing methods. The laboratories we were invited to visit were working on potatoes and strawberry breeds, and were extremely impressive and clearly very well-funded. Apparently the results are available to the farmers around Beijing to promote production on the urban fringe.



Strawbery polytunnels on the edge of Beijing

Strawberry breeding programme at the Beijing Academy of Urban Agriculture

In Taiwan I met Mr Huang, a chicken farmer who had set up an egg unit on the edge of the capital, Taipei city. He is 50m off the main motorway leading out of the city, and can be in the heart of the business district in under 10 minutes. He designed his own buildings, and claimed they circulated fresh air so effectively that he had never had to treat his

> *"If you have 10 acres, use one: be the best you can be on that one acre.*

birds for respiratory conditions. The litter was inoculated with Effective Micro-organisms and therefore did not smell, to keep the neighbours happy. His farm is intensive yet customer-friendly, with his farm shop on site for sales at the weekend. Mr Huang makes enough from one acre to support himself and two adult sons and gave me this piece of advice: *"If you have 10 acres, use one: be the best you can be on that one acre, and only when you have achieved that expand onto the second acre."*

Mr Huang's egg farm, Taipei City

In Sydney I met John Houston, general manager of Pepe's Ducks which produce 75,000 birds a week, constituting 100% of the city's consumption. Pepe's own six farms themselves and contract a further 18, enabling the company to expand production and attain this dominance of the market. Although the processing unit is discrete, and the contract farms well hidden off the main roads, John explained their difficulties with the urban planners. He said an application to expand or adapt their premises usually took two years to process, making business unviable. Government standards being imposed make farming in urbanised areas increasingly difficult due to bio-security and waste disposal regulations. As a result, John explained the company had a 20-year plan to move away from the edge of the city to a rural location with fewer planning restrictions.

During my time in Sydney I was generously hosted by Nuffield scholar Matt Simmons and his wife Sue, and her parents Barbie and Ray, who farm free-range pigs about 10 miles north of Pepe's Ducks. While I was there their local abattoir was closed down due to a public complaint regarding Halal slaughter methods. As a result they now drive their pigs one-and-a-half hours to the other abattoir in the Sydney basin. They imagine life would be easier moving 'out west'; over the Blue Mountains into rural New South Wales.

5.3 Adapting to changing markets

This trend of livestock production moving away from the city is mirrored in the CPRE/Natural England report referred to in the previous chapter, and although it is prompted by bureaucratic red tape, it also seems sensible and in line with appropriate land use around cities. To remain viable, urban fringe farms need to respond to change in the market. The Chinese growers in the Sydney basin are a great example.

The Asian population of Sydney constitutes 18.8% of the total population, and is made up primarily of people from the People's Republic of China, Vietnam, the Philippines, South Korea and Taiwan.[13] They represent a huge market, and fortunately Sydney has the climate to produce culturally-appropriate foods. Many of these immigrants arrived from farming backgrounds, and settled in Australia through farming.

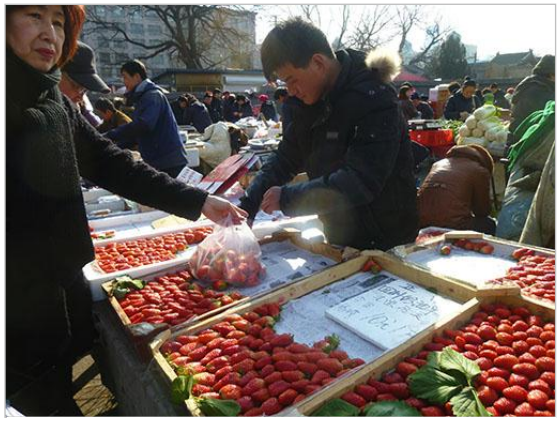
Hok Min arrived from Guangzhou in southern China 30 years ago and worked for a relative, growing Asian vegetables. He then leased his own farm, and 15 years ago bought the plot he currently works. He produces a range of vegetables including Chinese chives, basil, parsley and water convolvulus which he sells through the wholesaler market supplying Sydney. He is a member of a management investment scheme, one of two for his ethnic group, which lends money to members to help them develop their businesses.

Tang is from a group of Hakka Chinese from Vietnam known as 'boat people', and arrived in Australia in 1978. He spent two years working for a friend who then financed him to start his own place. Tang grows Asian

Hok Ming, Western Sydney

vegetables and buys in from his neighbours to deliver into the city five nights a week.

Of course there is a need for balance between specialising for the market and maintaining diversity. We were told in Beijing that the only urban fringe farmers making a profit were the strawberry producers. I was not surprised to hear they were doing well, as we saw ripe fruit in a polytunnel in February when temperatures are sub-zero. The crop was heavily reliant on chemical inputs however, and the usual economic, biological and social risks associated with monoculture production remain.



Fresh produce market, central Beijing

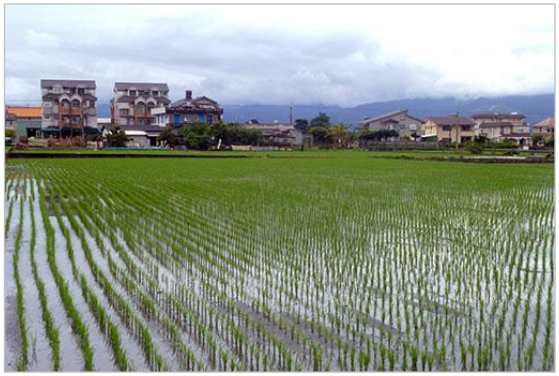
13 http://en.wikipedia.org/wiki/Sydney,_Australia#Demographics accessed 24/7/12

Leafy green vegetables growing in sub-zero Beijing

Displaced peasants employed to manage a College polytunnel , Beijing

In Taiwan I met a group of young people who were bucking the trend and bringing their grandparents' unused farms back into production. Not only were they going into what is a dying industry in Taiwan, they were producing sweet potatoes, a crop known as 'peasants' food'. They had formed a group to sell into Taipei city, had produced some incredible marketing materials and seemed to be making the most of a wave of public anger at US food imports; whilst I was there the Taiwanese government passed a bill allowing the importing of beef contaminated with ractopamine, a leanness-enhancing drug,[14] due to pressure from the US government. The sweet potato growers were not the only producers using words like 'natural' and 'organic' and concepts such as low food miles and 'knowing your farmer' to promote their product in the face of stiff price competition.

I met a co-operative of rice growers who were using a natural intensive farming method, a system of rice intensification (SRI), and carrying out research in conjunction with Cornell University in the USA.[15] They had increased rice yields without chemical inputs and were marketing their produce as a group in the city. Taiwanese revere rice in a similar way we do single malt whisky. It comes from an ancient tradition with associated romantic connotations. The group I met were charging a premium for their rice and were able to make a living from a sector which had all but vanished until this turn-around.



Mr. Jian's SRI rice fields, eastern Taiwan

14 http://focustaiwan.tw/ShowNews/WebNews_Detail.aspx?Type=aALL&ID=201206080011 accessed 24/7/12

15 http://sri.ciifad.cornell.edu/countries/srilanka/index.html for more information

7. How policy-makers can support urban fringe farming

Brazil was a lesson in what can be achieved by government intervention into the agricultural 'free market'.

I decided to go to Brazil, and specifically Belo Horizonte (BH) after learning about the *Fome Zero* programme – or Zero Hunger. This strategy *"intended to ensure the human right to adequate food to those in greater need"*[16], and had 4 main strands:

- access to food
- agricultural production for domestic consumption
- job creation
- public participation

According to the Ministry of Agrarian Development (MDA), "ensuring this right is a prerequisite for citizenship and for a nation to be considered civilised".

Family farms are important in Brazil. They and their production chains account for 32% of Brazil's agribusiness GDP and 70% of food eaten within Brazil[1].

The authors of the strategy reinterpreted the phrase 'free market' to mean free for all to participate in. I was struck by the impact of these approaches, so different from our own, and the effect they could have on the social role agriculture could play in Britain.

The success of Zero Hunger in BH led to its being adopted nationally. It was implemented by the Ministry for Agrarian Development, which states:

"We believe in the importance of family farming for global food security, which should be encouraged in order to ensure the human right to food, job and income generation, expanded sustainable production, and consumption of healthy food products."[17]

Family farmers are defined in law as those who:

- farms less than four fiscal modules[18]
- predominantly relies on family labour
- the household income predominantly comes from agriculture
- the family operates the farm[19]

Family farms are important in Brazil. They and their production chains account for 32% of Brazil's agribusiness GDP[20] and 70% of food eaten within Brazil[21]. These facts, combined with the government's investment in micro-

16 The Fome Zero (Zero Hunger) Campaign: The Brazilian Experience', 2011, *Da Silva, Del Grossi, De Franca* (Eds); FAO

17 'The Fome Zero (Zero Hunger) Campaign: The Brazilian Experience', 2011, *Da Silva, Del Grossi, De Franca* (Eds); FAO

18 1 fiscal module = 7ha in metropolitan areas, and up to 100ha in rural areas, depending on the region. From http://siteresources.worldbank.org/EXTARD/Resources/336681-1236436879081/5893311-1271205116054/BenattiPaperGOV4.pdf , accessed 2/7/12

19 http://www.ifad.org/events/agriculture/doc/papers/berdegue.pdf , accessed 2/7/12

20 MDA, November 2009

21 MDA: 'More Food: A Family Farming Plan for Brazil', April 2010

credit schemes for farm machinery meant Brazil's agricultural industry as a whole felt the effects of the 2008 food commodity price hike far less acutely than North America and Europe[22].

Although family-scale agriculture is not specifically urban fringe, because of the Brazilian trend towards larger rural farms and the scale of the country I thought there would be useful comparisons to be drawn with the UK.

The Zero Hunger program consists of a whole raft of "structural, specific and local policies" covering rural, small and medium-sized cities as well as metropolises, but I'm only able to cover here the ones I saw in action. However, I highly recommend further investigation. Despite being aimed at reducing malnutrition, the programme has had a profound impact on the average farm income and works towards greater farmer ownership of the supply chain. These are both aspects which would benefit farmers in the UK, not just those on the urban fringe.

7.1 CEASA

CEASA are wholesale markets located in the capital of each Brazilian state. The CEASA in BH is the largest in Latin America and incorporates the Producers' Market – 3ha of sheds reserved for producers primarily of horticultural produce from the home state, Minas Gerais (which is about the same size as France). 11,000 producers are registered, and around 3,000 trade regularly, with 1,200 on the main trading days. Pitches measure 6 x 2m, and can be booked on a one-off basis, or reserved regularly. Each pitch is easily affordable at around £4 a day. Individuals as well as restaurants are welcome to buy here, but the main customers are the *sacolao,* or greengrocers, which dominate the fresh fruit and vegetable market with about 80% of the share.

The producers' markets perform a function we are missing in the UK

In an attempt to combat price-fixing the market administration installed electronic screens which display product, quantity and price on the last trading day in BH, Sao Paolo and Rio. However, I was told by a former government advisor in Brasilia that the CEASA have come to be controlled by the regional Mafia, particularly the pineapple and watermelon supply chains.

The producers' markets perform a function we are missing in the UK. If a producer is too small to supply the multiples or wholesalers, and is unable or unwilling to expand, what options are open to them? Selling at Farmers' Markets and directly through farm shops, but this is time consuming and distracting. A producer's market like the one I saw in Brazil would be a very appealing alternative, and one which could support an agricultural urban fringe effectively.

CEASA state wholesale market, Belo Horizonte

22 MDA: 'More Food: A Family Farming Plan for Brazil', April 2010

7.2 ABC – ABastaCer (*Suppliers*)

These are greengrocers set up in partnership between the city prefecture and privately-owned companies. The prefecture provides a shop in a favourable location in a residential area on a ten-year tenancy at below-market rate. Private companies bid for the right to rent the shop from the prefecture. In return for the privileged location, the company must commit to either (a) supplying 20 staple items at a prefecture-set rate which varies monthly (about 2⁄3rds of the market price) and the remaining items at a normal price, or (b) supplying 33 staple items at a fixed price (currently about 25p/kg).

ABCs are inspected by the prefecture at least once a week. Any discrepancies are noted with a warning – three warnings and the firm loses its licence to run the ABC.

The ABC I visited was called ABC Saramenha, part of ABC Norte, a group of six shops run by Rosilene and Elizeu, three of which are ABCs, three of which are private.

They buy from the producers' market at the CEASA in Belo Horizonte, straight from the producer. This short supply chain is aimed to provide the best price for both producer and consumer.

Although ABCs don't pay business rates, they are charged a fee to use the ABC brand – ABC Saramenha's licence fee went up from around £400/month to £1800/month in the latest round of bidding. Despite these charges, Rosilene explained that running an ABC is a profitable business.

The customers I spoke to were unaware that they were shopping in a 'government scheme', and I was told that the ABC brand was very well-respected; so much so that unlicensed greengrocers are illegally using the signage.

I was extremely interested to see this public-private partnership at work, especially given that it has become so successful. In this 'age of austerity', when we are unlikely to see an increase in government funding, this model could be a useful guide.

Price-controlled ABC greengrocers, Belo Horizonte

7.3 The School Meals programme

I visited two separate groups of farmers both supplying local schools. An important policy under Zero Hunger stipulates that 30% of food provided to school children at lunchtime must be sourced from family-scale farmers, providing them with a guaranteed market for a year. In 2009 this programme covered 40 million children throughout Brazil – a huge market of which a sizable proportion is protected for relatively local, smaller scale farmers.

In Sete Lagoas, a small town an hour to the north of BH, I met a group of farmers who had migrated to the city 30 years previously. As unemployment levels in the town increased, the town council began to worry about social unrest. In response they provided the unemployed yet skilled farmers with access to unused land on the edge of the town, on condition that they allocate a proportion of their harvest to supplying the town's schools and government buildings. This program has grown to include a number of sites in Sete Lagoas, and has become a key element of the national Zero Hunger strategy.

The program has become a good news story in Sete Lagoas, to the extent that new housing projects in poor areas must now include an area set aside for cultivation.

Migrant farmer, Sete Lagaos

Commercial vegetable production on the edge of Sete Lagaos

For every good news story though, I was told of scores of farmers who had sold up and moved further into the interior, their capital gains funding children through university and ensuring a relatively comfortable retirement. Brazil's relaxed planning procedures make selling up to weekend home development companies a lucrative option. It is clear that no matter what incentives and markets are available, as long as development is permitted, agricultural land will be lost to building sites.

The MDA state *"to ensure food security...changes are needed in the current economic development model, which leads to social exclusion, of which hunger is only another visible result, as are unemployment, extreme poverty and income concentration".*

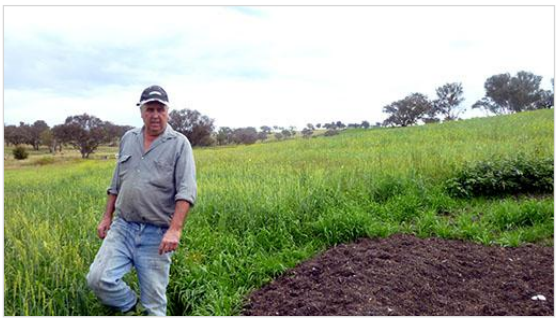
Brazil is, of course, a very different country from the UK. But we also suffer social exclusion, manifested in malnutrition and unemployment. What I saw in Brazil can be a lesson on how we might reassess the value of agriculture, the markets and the government's role between the two. Government intervention in the markets is rarely a popular suggestion here, particularly in the current political climate, I suspect. But we need a change, and we would do well to study the Brazilian example.

8. Making the most of the fringe

8.1 Nutrient capturing from the city

Life on the fringe of a metropolis heaving with millions of consumer-crazy humans has many advantages, one of them being the option of using city waste to add fertility to farmland. Human waste from Sydney's largest sewerage works is treated to produce a rich, safe fertiliser which Jeff McSpedden was adding to his rape crop with great results. He bought it in at a very reasonable price of $2/tonne, and spread at a rate of 50 tonnes per hectare. Safety procedures are stringent; during the treatment of the waste in the city heavy metals, oestrogen, disease-causing pathogens and non-biodegradable materials are filtered out. The waste is then transported to Australia Native Landscapes[23] at Blayney, NSW and left to dry. It is ready to spread 30 days after collection. Both the Environmental Protection Agency and Australia Native Landscapes carry out inspections to ensure that the bio-solids are used safely, according to regulations, not within 5m of a road, in gullies or within 100m of a water course. Jeff reported that neighbours complained about the smell on the day of application, but that it dissipated quickly. Bio-solids are spread every five years, and fertility peaks in the second year.

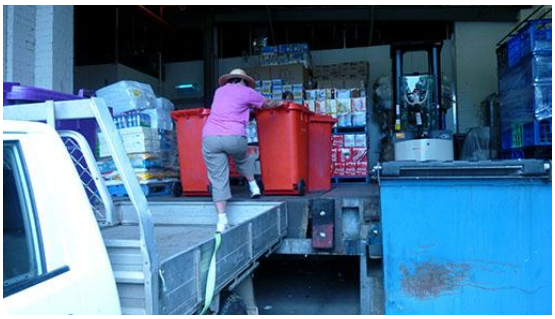
Councils are under increasing pressure to reduce their landfill mass so a scaled up processing of city waste to add back to the soils that feed the city makes perfect sense. One of our neighbouring suburbs, Rothwell, to the south-east of Leeds, has been trialling a household waste for anaerobic digestion



Jeff McSpedden and his 'humanure' application, Bathurst, NSW

scheme; the results could be of great benefit to urban fringe farmers.

Meanwhile, a more simple approach would be that used by my hosts in Sydney, who collected four bins a day of fruit and vegetable scraps from their nearest supermarket to feed to their free range pigs.



Collecting supermarket waste for pig feed, Western Sydney

8.2 Tourism

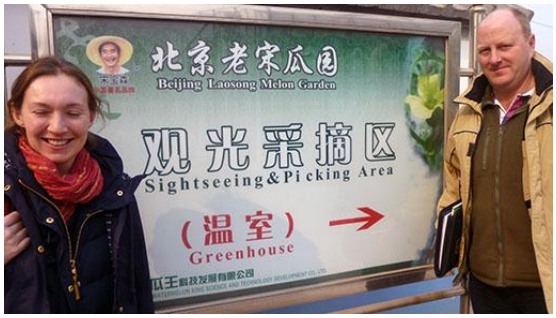
I set off on my travels expecting to find examples of the farmed urban fringe being used as a tourist draw, and two of the most interesting examples I saw were in Beijing, and the Hawkesbury Trails around the Sydney basin.

23 http://anlscape.com.au/agriculture_horticulture accessed 2/7/12

Beijing

The domestic tourist industry in China is well-developed and extensive. The watermelon growers in Daxing County, south Beijing have cashed in in style! About 16,500 acres of the county are given over to watermelon production, producing 240 million kilograms of fruit a year, according to the Daxing county government officials who were our guides for the day.

Each year a national watermelon festival is held, attracting visitors from all over the country. We visited one operation which had set up a visitor centre to lure in and entertain city visitors. About an acre of greenhouses had been given over to a sort of watermelon fantasy land, with bridges over ponds and streams, watermelon cavern lunch benches, and the all-important photo opportunity structures.



Laoning watermelon themepark

Square watermelons, for efficient packing and premium pricing

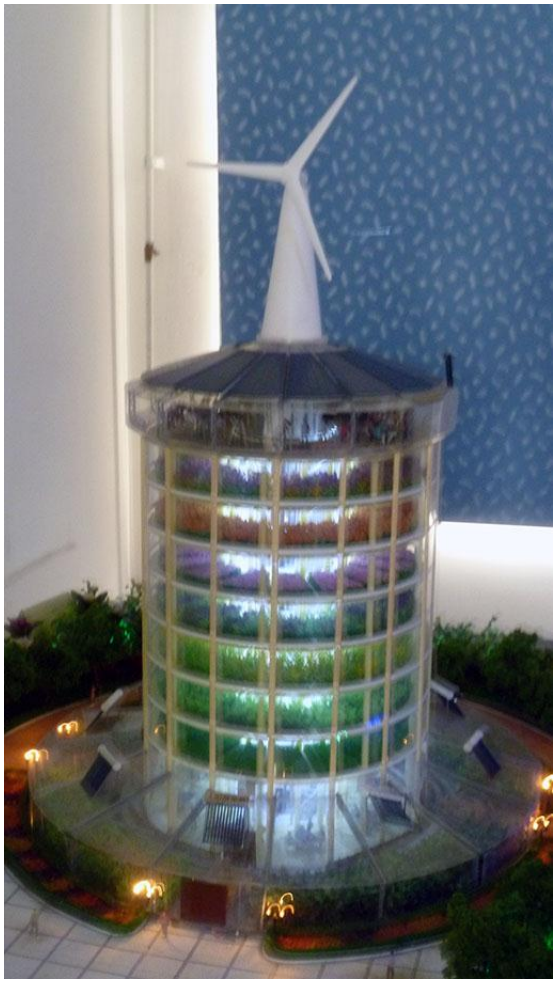
Hydroponics on display at the watermelon theme park

This park was also showcasing some fascinating hydroponic growing, such as the leeks and lettuces shown at the foot of the previous column.

The urban fringe 'agriculture as tourism' sector in China is worth about $3 billion, according to the Food Ethics Council, with room yet to grow.

Another interesting convergence of agriculture and tourism on the edge of Beijing was the Beijing Agricultural College's farm, also in Daxing County. The site was almost complete, bar the seven storey, wind-powered rotating greenhouse shown in the model in the foyer: *see picture on next page.*

In addition to a greenhouse complex shaped like a butterfly, a state-of-the-art (and empty) mushroom house, and extensive orchards, they had also built row upon row of brick-backed poly-tunnels growing stir-fry greens, herbs and strawberries. Each tunnel was managed by a local farmer who lived with their family in the entrance hut. These tunnels seemed to be run as a public-private joint enterprise – members of the public sign up to buy produce from a specific tunnel, visiting at the weekend to collect their produce and wander round to see how the food is grown. The day we visited it must have been at least 10 degrees below zero, yet the farmers were harvesting an impressive crop of strawberries, and good quantities of green vegetables.



Model of rotating greenhouse, Beijing Agricultural College's farm

Sydney

Hawkesbury Harvest is a membership organisation set up by a group of individuals from a range of backgrounds including farmers, retailers, craftsmen and academics in order to *'increase consumer access to nutritious, safe foods while developing the opportunity for agri-based tourism'*[24] in the Hawkesbury river basin to the west of Sydney, before the Blue Mountains start. I met founder members David Mason, Alan Eagle and Ian Knowd who described the development of Hawkesbury Harvest.

A key part of their work has been to devise a series of 'Farm Gate Trails' through the area, taking in producers, farmers markets, hotels, restaurants and scenic spots.

A key part of their work has been to devise a series of 'Farm Gate Trails' through the area, taking in producers, farmers markets, hotels, restaurants and scenic spots. The trails are available as a free pdf download from their website[25] or in hardcopy from tourist information offices throughout the state (see Appendix 2). This work was initially supported by local, federal and state funding, and aims to be self-financing through charging businesses advertised on the maps.

The Hawkesbury Farm Gate Trail is not the only example of this form of tourism promotion in Australia, but as far as I'm aware, we don't have anything like it yet in the UK. I imagine a farm and food-focused cycle tour guide around our cities and towns would be a huge attraction to urban residents and visitors alike**. See Appendix 2.**

One of the stops on the trail is Bill Shields's orchard. In 1999, when the local grocers' shops closed down, Bill converted his orchard to a pick-your-own. He maintains his prices at one third to one half of supermarket prices in order to counter any notion that apples direct from the orchard are a luxury product. Bill says, as a tourist destination it is important to ensure his visitors have a good experience every time; his stock is always of the best quality, without blemishes. He uses boron

24 http://hawkesburyharvest.com.au/home.asp accessed 14/7/12

25 http://hawkesburyharvest.com.au/farmgate_members.asp?catID=2 accessed 14/7/12

additives to combat canker and pheromone and UV light traps to avoid using chemical pesticides, to make his orchard more visitor-friendly. He is vigilant about keeping his website up-dated two or three times a week, highlighting the importance of maintaining good communications with customers if retailing direct.

Bill's location on the main road into Sydney from the west certainly helped him, but I visited other farms off the beaten track, and The Hawkesbury Farm Gate Trail was clearly helping to get customers there.

9. Making a noise on the fringe

As well as engaging with customers, urban fringe farmers would benefit from a good relationship with local government and community.

Steve Jones of Broken Bay Oysters[26] on the Hawkesbury estuary is a good example of a mutually beneficial relationship developed through dialogue between his group and their neighbours.

An outbreak of the QX parasite in the Hawkesbury estuary wiped out the oyster industry in 2004. In 2006 Steve and 13 other oyster farmers formed the Broken Bay Oyster Association Inc. with the aim of rebuilding the industry in the estuary to the highest environmental and quality standards.

They started working together on marketing their industry; they spent much time and money on cleaning up the estuary and converted their infrastructure from the traditional tarred wood to plastic to reduce the risk of disease. They worked to ensure local press covered this good news story, and being so close to Sydney, they have become the easiest port of call for dignitaries wanting to show off the Australian oyster industry to visitors. They formed good relations with the local authorities through projects such as Clean Up Australia[27].

Community relations have been fostered by Broken Bay Oysters financially supporting local functions and they are now regarded as a symbol of the estuary's good health, and a vital part of the local economy.

Steve pointed out that the authorities prefer working with a group of producers rather than lots of individuals, and their association has enabled Broken Bay Oysters to negotiate at an inter-state level on issues such as disease control and sprat imports. They have joined the New South Wales Farmers Association for better political representation.

Broken Bay Oysters have used their collective strength to negotiate an increased lease period from one year to 25, as well as environmental measures to improve their business, such as toilet facilities in parks upstream.

Setting up this kind of association is not an easy step, Steve concedes; it relies on an articulate and presentable person who has the technical know-how and interpersonal skills to negotiate the process.

Urban fringe farmers have a very particular range of issues to face. But they are a disparate group – diverse geographically, in scale and in terms of what they produce. My sense is they lack political representation; as they form such a small portion of the farming community, their issues are not raised at a national level through the NFU or similar. Collective political engagement seems to have worked well for the oyster farmers on the Hawkesbury estuary, and could serve as a model for farmers isolated by geography or industry, be they on the urban fringe or rural.

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26 http://www.brokenbayoysters.com.au/our-people/aglign-pty-ltd/ , accessed 4 June 2012

27 http://www.cleanup.org.au/au/ accessed 4 June 2012

Steve Jones of Broken Bay Oysters on the Hawkesbury Estuary, NSW

Their commitment to environmental stewardship and community relations has turned the industry around

10. Conclusions

Urban fringe farms can and should play an important role in feeding Britain in the future because:

- some of our best land is on the urban fringe, we should be using it appropriately
- they have optimal access to the market, which will become increasingly important in a post-fossil fuel economy
- they have an educational role to play, to bridge the gap between the farming and non-farming populations
- urban fringe farms may be more accessible to new entrants

There are challenges here and in the countries I visited:

- high land values, making access to land for expansion/starting out difficult
- reduced or polluted natural resources
- tension with non-farming neighbours
- anti-agriculture planning policies

and opportunities:

- access to vast, lucrative urban markets
- diversification opportunities – tourism, bio-diversity schemes as well as retail
- urban fringe farms as distribution hubs for food from further out
- urban waste used on farm

But things need to change for urban fringe farming to play this role

Farmers need to:

- work together to access the markets
- adapt to market demands
- be the best they can be, using the land appropriately and productively
- consider alternative approaches to expansion and financing
- engage in local and regional political processes to ensure their needs are represented in public policy making

Our policy makers need to:

- protect land for food production
- ensure the planning system recognises the value of agricultural enterprises in providing the '3 pillars of sustainability'; social, environmental and economic
- consider a land tax which encourages food production

- ensure the new CAP payments support food producers not hobbyists

City residents can do their bit by demanding local, buying direct from urban fringe farms, and visiting them when possible.

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The Nuffield China team : John Martin, Kirstin Glendinning, Steve Jack, Stephen Briggs and Laura Stewart

11. Recommendations

To farmers:

- co-operate to access urban markets and bulk-buy in-puts
- be flexible – prepare to change what you produce in reaction to the market, including tourism and bio-diversity, if it supports your food production
- use land appropriately, probably focusing on high value, fast-growing crops
- participate in local, regional and national political organisations to promote your interests – be loud!
- Consider land protection mechanisms in your succession planning

For policy-makers:

- write agriculture into Local Development Frameworks
- public procurement policies to support urban fringe farmers
- map grade I and II land and introduce strong policies to protect it
- consider land taxation system to encourage owners of Grade I and II land to use or rent it out for food production
- adapt the CAP subsidy system to ensure money is going to food producers, not horse owners and amenity grass growers

The rest:

- demand local, everywhere!

12. What next?

As a result of my Nuffield study I have taken the decision to leave Swillington Organic Farm and move to Manchester to work with The Kindling Trust[28], a small organisation which works on a range of sustainable agriculture initiatives. I will be co-ordinating a project to promote volunteering on food growing gardens, with the aim of promoting peri-urban food production.

The Kindling Trust has set up a co-operative of producers and buyers called Manchester Veg People, supplying into the university and restaurants in the city. Kindling also ran a project documenting the demise of the city's market gardening heritage. The hope is to go some way to restoring the city's farmed urban fringe and train a new generation of farmers, particularly vegetable producers.

I hope to join Manchester Veg People as a producer of tomatoes or sweet and chilli peppers, using some of the many vacant commercial-scale greenhouses on the urban fringe to the south of the city.

I have found this study hugely rewarding and hope to be able to continue in some form, perhaps through post-doctoral research. I think it is important to be able to provide quantitative as well as qualitative evidence for the argument in favour of urban fringe farming.

28 http://www.kindling.org.uk/home

Thank you's

My biggest thanks go to my sponsors, the **John Oldacre Foundation**. I hope the findings in my report are of interest and use, and thank them for supporting a topic which many may consider 'fringe' to the agricultural industry in our country.

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Appendix 1 : Transferable Development Rights

This is a system being developed by Ed Biel in Sydney, Australia. See page 11 of this report.

TRANSFERRABLE (SALEABLE) DEVELOPMENT RIGHT AS AN EQUITABLE MEANS OF PROTECTING AGRICULTURE WITHIN THE SYDNEY BASIN. Ver. 2012.1

By Ed Biel, Orchardist, Oakdale NSW

Background

It is unarguable that due to unfettered growth, the Sydney Basin has developed beyond the capacity of the region to supply:

1. Sufficient Water
2. Adequate transport.
3. Clean unpolluted air.
4. Pleasant environmental surroundings.

In recent times there has been a push to retain the remaining agricultural lands surrounding Sydney and curtail residential expansion into all but a few selected growth centers (Bringelly and Rouse Hill).

The preservation of this 'green space' close to Sydney has been declared to be desirable by all political parties and is seen as a vote winner by each of them – the cost of residential land notwithstanding. Although the current Liberal Government appears to be more "pro developer", than the previous long term Labor one.

Sydney-siders would not like to see a mega metropolis stretching from the sea to the mountains, in a basin choked with pollution, gridlocked with traffic and panting for water.

The retention of 'good looking' farmland surrounding Sydney provides needed amenity and perception of space for the residents. It is a buffer between the expanding centers of Newcastle and Wollongong, to the north and south and the Blue Mountains to the west.

This policy of retaining sustainable vibrant farming communities adjacent to large cities is practiced all over the developed world, particularly in Europe and the United States, but there the similarity ends.

Features of Agriculture in the Sydney Basin.

With few exceptions Agriculture in the basin is made up of small family run enterprises on small holdings of land. Economies of scale are hard to achieve. Production Statistics for the Basin are available and are significant.

These farms are run very efficiently with small overheads – mainly due to the unpaid labour provided by the families and their willingness to work 7 days a week for extended hours. Most of the land is owned outright and little Mortgage finance is taken up (there are some exceptions) – **but they are all slowly going broke**.

Profitability has been declining; due mainly to oversupply situations developing in most commodities, forcing prices down. (These over supplies are not due to production from the Sydney Basin – but rather huge volumes coming from the larger agricultural enterprises in other parts of Australia. Declining exports due to high dollar pressures on exporters.)

The dominance of 2 retailers in the food industry has led to an unhealthy and anti competitive duopoly determining price. The real wholesale price for agricultural produce has declined steadily over the past 15 years.

Costs of inputs have been steadily rising and new statutory compliance costs have also eroded profitability.

The only up-side over the past two decades has been the steady increase in value of rural land in the Sydney Basin (Mainly due to speculative developers purchasing land for future residential subdivision). Farmers who wished to retire or inject capital into their farms sold off portions or entire farms at high prices and moved to cheaper areas, (both in and outside the basin) and continued to farm, or retired. In the 1970's farms were sold around Holroyd, Blacktown, Baulkham Hills etc and moved to Windsor, Camden and Wollondilly.

The Effect of Preserving Agricultural land in the Sydney Basin without TDR

Let me say at the outset – Zoning land for agriculture WILL NOT make agriculture take place in that zoned area. Profitability will.

- Agriculture will slowly but inexorably die and cease to exist.
- Land values in preserved areas will plummet (no demand from developers)
- Landholders will become *'landed peasants'*- holding land which they cannot farm profitably.
- The land will become degraded, unattractive and full of weeds as the landholders cannot afford to maintain it.

The Answer -Transferrable Development Right (TDR)

1. Create through legislation a Development Right which can be attached to productive Agricultural land. (i.e. land which is actually producing a commercial agricultural product and which has been so used for say 3-5 years– not just empty land zoned for agriculture)
2. Value the Development Right based on the current and historical (10year average) productive use of the land and its sustainability. This values the amenity of the land to Sydney not just its financial profitability.
3. Allow farmers to negotiate with developers, anywhere in the Sydney Basin, the purchase of that development right and transfer that right permanently from the agricultural land to the development site.
4. Once the TDR has been moved it ceases to exist for a long period. However, it renews after 25 years of continuous commercial agricultural production. This provides an incentive to keep the land in production continuously. It also provides new entrants, who have purchased TDR expended farms, with a 'nest egg' for their retirement

The Result

The price of each TDR would be established using a formula which valued the product, the intensity of the system, the location and any significant socio-economic, environmental or amenity values.

A formula would have to be devised converting TDR units to dwellings, units or houses, floors in a commercial office building, sq meters of industrial building, car parking spaces or any other thing which a developer wishes to construct, in an allowable zone, for profit.

The most highly productive agricultural activities and hence the most sustainable, would attract a higher value to developers.

This would allow an injection of capital into these farming businesses to allow capital for modernization and/or expansion or for working capital.

Older farmers could retire using the proceeds of the TDR sale. They could then on-sell the now restricted farming land, to a new entrant farmer, at a lower price. The lower price would be the initial value of the land (say $1m) less the TDR (say $400,000), making the new sale price $600,000. A more realistic figure.

The new farmer could continue farming thus made more viable due to the reduced initial capital cost of the land. If this was carried on for 25 years then a new TDR is created. This TDR would be based on the conditions at the time and the history of production of this new farm.

The agricultural portion of the Sydney basin would flourish.

The un-farmed portion of the land would be encouraged to be brought under sustainable commercial agriculture so as to create a TDR (after say 5 year minimum),which could be on sold. Thus the process continues and repeats.

Summary.

The process as described provides an incentive for developers who, motivated by profit and are also able to promote themselves as good community citizens by providing viable farmland for Sydney (or any other large regional town or city) which is providing food, employment and good environmental outcomes for the inhabitants of the city.

The profit comes to them by enabling intensification of proposed developments within the permitted, residential, commercial and industrial zones already in existence. E.g: A developer may have paid say $400,000 for a TDR from a market garden (say 4 units of $100,000 each). These 4 'tdr' units allow an extra 2 residential dwellings to be built on a unit development of previously 18 residences (now becomes 20 residential units) – the extra residences are sold for $500,000 each, they cost say, $200,000 each to build. A profit of $200,000 for the developer for these two extra units in the earlier development of 18. This represents a return of 25% on the extra outlay of $800,000. This is over and above what the developer could expect to make on the sale of the original 18 residences.

The same logic can be used for a commercial or industrial development anywhere in the Sydney Basin.

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Appendix 2: Hawkesbury Farm Gate Trail – see page 25